Islamic Republic of Iran

The First National Report for the Convention on Biological Diversity

Prepared by
National Biodiversity Strategy and Action Plan Secretariat
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1) *The Ministry of Agriculture and the Ministry of Jehad-e-Sazandegi are merged and the new Ministry of Jehad-e-Keshavarzi is formed.*
2) *The Ministry of Mining and the Ministry of Industry are merged and the new Ministry of Mining and Industry is formed.*

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In The Name of God

Foreword

I am pleased to see that the two years of work by Iranian experts has resulted in a comprehensive document. The Convention on Biological Diversity (CBD) is an important international document reflecting a turning point in attitudes towards nature. The Convention emerged with the backing of extensive scientific research, comprehensive global concern and widespread willingness to conserve nature, and acknowledges the inherent values of nature and biological diversity.

Conservation of biological resources and the environment has always been a way of life for Iranians, but the new concept of conservation of biological diversity is in line with the increasing degree of human influence on nature. From the philosophical aspect, most of the damage is caused by the increasing demands for consumer goods and energy that is exacerbated by population growth.

This report and the effort that went into producing it clearly reflect our principles with regard to environmental conservation. The cooperation among different public and private sectors indicates that they all believe in their responsibilities towards the environment. This integrated approach shows Iran's new strategy towards ecological sustainable development with "social mobilization" as a key element.

The international co-operation with our partners in the environmental sectors can be best observed in the valuable technical assistance we have enjoyed from Global Environment Facility, United Nations Development Programme, United Nations Environment Programme and World Conservation Union (IUCN). The Islamic Republic of Iran is willing to broaden its co-operation aiming at conservation of its environment and national heritage for future generations

Dr. Masoumeh EBTEKAR
Vice President of the Republic
and Head of the Department of Environment

Acknowledgments

At the national level, this report was overseen by a Steering Committee. Many distinguished Iranians served on the Committee, representing a full range of environmental and development interests.

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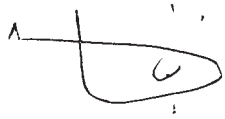
Preface

The present document is the first National Report of the Islamic Republic of Iran to the Convention on Biological Diversity. It was drawn up with support from UNDP/GEF as an Enabling Activity through the "National Biodiversity Strategy and Action Plan" (NBSAP) Project, under the supervision of a Steering Committee, including representatives of the Department of the Environment, Department of Administration and Planning, Ministry of Science, Technology and Research, Ministry of Agriculture, Ministry of Oil, Ministry of Jehad-e-Sazandegi (Construction and Rural Development), Ministry of Interior, Ministry of Foreign Affairs, Ministry of Energy, Biodiversity sub-committee of the National Committee for Sustainable Development (NCSD), University of Tehran, Environmentalists Association (an Iranian NGO) and UNDP.

During an initiation workshop in Tehran, held in February 1999, the importance of the preparation of the Biodiversity Strategy and Action Plans was debated and discussed by national and international experts. During the workshop the guidelines set by the Steering.

Committee, IUCN and the international consultant were used to select the members of working groups from volunteers who wished to participate.

A series of workshops (Marine April 99, Paleontology May 99, Forest June 99, Soil July 99, Deserts August 99, MAB Sites September 99, Arasbaran May 2000, Urmia ("Uromiyeh") June 2000, Strategies July 2000 and Biosafety August 2000) was held to incorporate the viewpoints of national and local stakeholders. The results of these workshops were used in preparation of the National Biodiversity Strategy, National Action Plans and some project drafts.



Anoushirvan NAJAFI

Deputy Head of DoE for Natural Environment & Biodiversity
and Chairman of the NBSAP Steering Committee

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Executive Summary

Modern life has weakened the connection between man and nature. Human has actively exterminated many valuable species on earth and unfortunately, the trend is continuing. Modern technologies have made the remotest areas on earth accessible to man, causing vast destruction of habitats and ecosystems at an ever-increasing rate. Destruction of ecosystems and depletion of habitats will result in the continual extinction of living species on Earth and lessen the capacity of the environment to provide vital services (e.g. clean water). The history of human interaction with natural ecosystems demonstrates numerous cases of environmental mismanagement. Many actions have, in spite of good intentions, ended in disastrous consequences. At a species level, Iran has already lost two of its most spectacular carnivores, the **Persian Lion** and the **Caspian Tiger**, as a result of uncontrolled hunting and habitat destruction. There are other threatened species, which demonstrate the urgent need for conservation measures.

The first section of the report describes Iran's natural resources and some of the major uses. Five major biomes are identified. Iranian habitats support some 8,200 species of plants, of which almost 2,500 are endemic. There are 12.4 million hectares of forest, and some 8,900 hectares of mangroves along the southern coasts of Iran. Field studies in Iran confirm the presence of over 500 species of birds and 160 species of mammals. The wetlands of Iran are globally significant; large populations of migratory birds winter at these wetlands or use them on their way to and from wintering areas in Africa or the Indian sub-continent. Because of its large size and varied ecosystems, the Islamic Republic of Iran is one of the most important countries in the Middle East and Western Asia for conservation of biological diversity. In the global context, the increasing rate of habitat destruction and loss of species prompted a new global vision for wildlife and habitat conservation. The Convention on Biological Diversity changed protection priorities from species to ecosystems. This may be clear in approach, but the implementation of a regulatory regime faces many problems, mostly due to inadequate size of protected areas, technical and administrative management inadequacies, and discouraging rigidity of protected area acts. However, the new approach to the protected areas and to conservation of biological diversity calls for inclusion of environmental concerns in all national or regional development policies. Iran's biological diversity is the basis for its sustainable development, and the country's biological resources are described in terms of aquatic resources,

In the global context, the increasing rate of habitat destruction and loss of species prompted a new global vision for wildlife and habitat conservation.

The root cause of environmental problems is related to insufficient capacities for conservation efforts.

coastal areas, agriculture, forests and rangelands, and wetlands. The protected area system is described; outside this system biological diversity conservation is very weak and Ecological Sustainable Development (ESD) policies have not been applied. Eco-tourism is poorly developed despite Iran's spectacular potential in this globally expanding area of economic development.

The second section describes the threats to biological diversity. The environmental problems of Iran are as follows:

- Inadequate general knowledge on the importance of ecological processes and biodiversity.
- Lack of accessible information about the country's environmental condition.
- Inappropriate exploitation of resources.
- Production and consumption patterns incompatible with environmental conservation.
- Inappropriate location of some economic activities.
- Lack of acknowledgement of the environmental considerations in sectoral and regional macro policies and programs.
- Weakness in executing the environmental acts, regulations and monitoring programs.
- Lack of accepted environmental standards.
- Lack of clear definition of land use and management.
- Inappropriate population concentration in several ecosystems.
- Lack of clarity of policies.
- Shortage of the experts in environmental protection and management.

The activities which pose an environmental threat to the biodiversity of Iran include: overgrazing, poaching, tree cutting, removal of shrubs and bushes for fuel, conversion of land for agriculture, road construction, mining, power transmission and military activities. Some of these, for example, daming of rivers, may have amelioration techniques available (e.g. fishways). Many of these practices have neither ecological justification nor economic rationality. Improved land use and management practices which are systematically implemented are urgently required. The root cause of environmental problems is related to insufficient capacities for conservation efforts.

The third section describes Iran's international, regional, and bilateral undertakings in the field of biodiversity conservation, while the fourth describes future plans. Four strategies are proposed for conservation of biodiversity in future, and are to be incorporated into the next three National Socio-Economic Five-Year Plans, from 2001 to 2015. The first strategy aims at the promotion of public participation. The second strategy relates to the formation of biodiversity information, monitoring and reporting systems. The third strategy includes reorganization of institutional structures for ecologically sustainable use. The fourth strategy deals with systematic management and enhancement of biodiversity resources. A series of Action Plans will be developed for the implementation of these strategies.

The Islamic Vision of Biodiversity

The story of the Flood and the Ark in the Holy Koran is important, as it shows that, from the very earliest times, all forms of animal life were considered to be essential. The first conservationists were the Noah family; no species were to become extinct. All forms of animal were acknowledged to have a value in the affairs of mankind.

The Holy Koran introduces nature as a blessing of God, to be exploited wisely and to be preserved and protected. The necessity of being and the right to existence of all creatures is emphasized in many religious writings.

The Islamic Republic of Iran, as a Muslim country, benefits from valuable Islamic teachings and a system of values for conservation of nature and its components. There are many verses (e.g. Talagh/3, Taha/81, Saad/27, Hood/56 & 61, Mo'menoon/71, Baghareh/205, An'am/38 & Sajdeh/7) in the Holy Koran that emphasize the importance of nature and wise use of resources.

The first conservationists were the Noah family; no species were to become extinct. All forms of animal were acknowledged to have a value in the affairs of mankind.

Holy Koran (Talagh 3):

"And give him sustenance from whence he thinks not, and whoever trusts in Allah, He is sufficient for him; surely Allah attains His purpose; Allah indeed has appointed a measure for everything."

Holy Koran (Taha 81):

"Eat of the good things We have given you for sustenance, and be not inordinate with respect to them, lest My wrath should be due to you, and to whomsoever My wrath is due, he shall perish indeed."

The religious leaders of the country, following Islamic guidelines, have also emphasized the great importance of environmental protection.

Great Leader of the Islamic Revolution, Imam Khomeini:

"Islam controls nature for reality and it conducts every thing to unity and monotheism."

(Sahif-e noor, Volume 8, page 6)

Leader of the Islamic Revolution, Ayatollah Seyed Ali Khamenei:

"Protecting the environment and natural resources should be regarded as a vital subject in the country."

(Iran News, March 6, 1999)

President Seyed Mohammad Khatami:

"Based on the Holy Koran's sublime teachings, the earth is a cradle for mankind and should be a safe, peaceful and happy place. Lack of insight and in-depth knowledge is a critical issue in the contemporary era. Islam addresses human needs at all times and offers practical mechanisms with regard to coexistence of man and environment."

(Iran Daily, December 8, 1999)

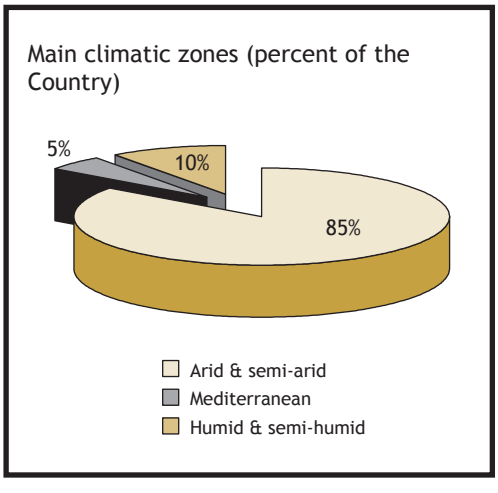
Chapter 1

Current Status of Biodiversity Conservation and Ecological Sustainable Development in the Islamic Republic of Iran

Geographical and land characteristics

The Islamic Republic of Iran comprises a land area of 1.64 million km^2. It lies in the northern part of the temperate zone, between latitudes 25°03' and 39°47' north and longitudes 44°14' and 63°20' east. The average altitude is over 1200 m. Iran is bordered by Turkmenistan, the Caspian (over 900 km of coastline), Azerbaijan, and Armenia in the north, Afghanistan and Pakistan in the east, the Persian Gulf and the Sea of Oman in the south, and Iraq and Turkey in the west.

The country features three main climatic zones (map 3):



- Arid and semi-arid regions of the interior and far south, which are characterized by long, warm and dry periods, sometimes lasting over seven months, and covering nearly 85% of the country. The annual precipitation rate in such regions varies between 30 and 250 mm (map 4).
- Mediterranean climate (mainly in the western Zagros mountains, the high plateau of Azerbaijan, and the Alborz mountains), characterized by warm, dry summers and cool, damp winters, with annual rainfall between 250 mm and 600 mm, (map 4) and covering about 5% of the land surface.
- Humid and semi-humid regions (mainly in the Caspian, but also in west Azerbaijan and the southwest Zagros), with an annual precipitation rate of 600 mm to 2000 mm (map 4), also covering about 10% of the land surface.

The six main watersheds are: Caspian (177,000 km^2) in the north, Persian Gulf and Sea of Oman (430,000 km^2) in the south, Urmia (53,000 km^2) in the northwest, Markazi (831,000 km^2) in the central region, Hamoun (106,000 km^2) in the east, and Sarakhs (44,000

Most of Iran is considered the center of origin of many genetic resources of the world, including many commercially valuable plant species such as Medicago sativa, or medicinal and aromatic species.

The topographic variations have given rise to five biomes, namely:

Irano-Touranian (ITP):	Arid and semi-arid plains and deserts.
Irano-Touranian (ITM):	Arid and semi-arid mountains.
Zagrosian (Z):	Semi-arid Zagros mountains.
Hyrcanian (H):	Semi-humid and humid Arasbaran and Hyrcanian mountains and Caspian plain.
Khalijo-Ommanian (KO):	Dry southern coastal plains with high humidity.

In the unprotected areas biodiversity is diminishing rapidly; during the last 45 years 1.5 million hectares (44%) of Iran's deciduous temperate forests have been deforested.

km^2) in the northeast (map 5). The total annual volume of precipitation in these main basins (28-year average, 1969-1997) is estimated at 408 billion m^3.

Flora and fauna

Most of Iran is located in the Palaearctic realm and is considered the center of origin of many genetic resources of the world, including many of the original strains of commercially valuable plant species such as *Medicago sativa*, or medicinal and aromatic species. The southwest has some Afro-tropical features, while the southeast has some species from the Indo-Malayan sub-tropical realm (map 6).

Iranian habitats support some 8,200 species of plants, almost 2,500 of which are endemic. Currently, there are 12.4 million hectares of woodland, and some 8,900 hectares of mangroves along the Persian Gulf coast. Field studies confirm the presence of over 500 species of birds, 160 species of mammals, and 164 species of reptiles (26 endemic species).

The wetlands of Iran are globally significant. Large populations of migratory birds winter at these wetlands or use them on their way to and from wintering areas in Africa or the Indian Sub-continent. The marshes of the south Caspian lowlands in Iran's northwest are particularly important for over 20 species of ducks and geese while the mud flats of the Persian Gulf coast are of critical importance for shore birds, gulls and terns. A variety of marine mammals inhabit the southern waters of Iran.

At present only protected areas afford reliable protection to Iran's biodiversity. In the unprotected areas biodiversity is diminishing rapidly; during the last 45 years 1.5 million hectares (44%) of Iran's deciduous temperate forests have been deforested. Rangelands and marginal farmlands are vulnerable to desertification, which is being exacerbated by soil erosion, over-grazing and over-exploitation of marginal farming areas. Coastal habitats and water resources are being degraded by oil, industrial and agricultural pollution and overfishing. In addition, large tracts of wetlands (called "Hoor") were devastated during the "eight-year imposed war", and require restoration.

Aquatic and marine living resources

In Iran, the availability of water sources, such as rivers, springs and lakes, determines the scope, location, and the sustainability of all human activities. Iran, with two of the world's most arid deserts, Dasht-e-Kavir and Dasht-e-Lut covering nearly one third of the country, is one of the most arid regions of the world (map 6).

Marine living resources play an important role in the food security of the country. Many of the aquatic resources are exclusive to the region, and therefore are of great importance in the context of biological diversity. Seafood protein comprises a large proportion of protein consumption in the world. In Iran, fish consumption has increased in the last two decades, but it is still below the average global consumption, at about one third of the international rates. The marine environment of Iran comprises three distinct water bodies, namely, the Caspian to the north, and the Persian Gulf and the Sea of Oman to the south.

The Caspian

The Caspian, the largest lake in the world, is located in the northern part of Iran. The area of the Caspian is about

422,000 km^2 with 6397 km coastline, of which more than 900 km is on the Iranian side (map 5). About 350 seasonal and permanent rivers flow into the Caspian from Iran, the four largest being Sefidrood, Shalman, Shafarood, and Tonekabon. The highest salinity level, 12.7 parts per thousand (about one third of ocean salinity) is reached during the summer. The average water temperature in the coastal regions throughout the year ranges from 15.9°C to 17°C. Water temperature difference between the coldest area (in the northern parts of the Caspian) and the warmest area (in the south) is 4°C during winter and 16°C during summer. There are over 120 fish species in the southern Caspian, which are commercially divided into sturgeons and bony fishes. The bony fishes are further divided into kilka (small fish of the family Clupeidae) and other species. The main commercial species are as follows:

- Sturgeons: Beluga *Huso huso*, Russian sturgeon *Acipenser guldenstadti*, Iranian sturgeon *A. persicus*, and Sevruga *A. stellatus*. Iranian caviar, a famous and exclusive product worldwide, is produced by these species.
- Kilkas: *Clupeonella delicatula, C. engrauliformis, C. grimmi*.
- Other bony fishes: Kutum *Rutilus frisii kutum*, Mullets *Mugil auratus* and *M. saliens*, Carp *Cuprinus carpio*, Bream *Abramis brama*, Pike-perch *Lucioperca lucioperca*, Roach *Rutilus rutilus* and Salmon *Salmo trutta caspius*.

A mammal species, namely, the Caspian Seal inhabits this water body.

Southern waters

Two important water bodies are located along the southern borders of Iran. The Persian Gulf has an area of 239,000 km^2, which stretches 990 km from the Arvandrood river to the Sea of Oman, with an average width of 240 km (map 5). The maximum water depth reaches 280 m with an average of 36 m. The Persian Gulf is one of the warmest areas in Asia. The highest and the lowest water temperatures recorded are 40°C and 13.8°C. Although the salinity of the Persian Gulf is alleviated through its connection to the open sea, it is still more saline than the open sea and ranges between 37 to 43 parts per thousand.

Lack of regulations regarding site selection and effluent characteristics is one of the concerns of environmental officials.

The Sea of Oman is surrounded by Iran in the north, the Indian Ocean in the east, and Oman in the southeast. The water temperature is lower than in the Persian Gulf, because of the water depth and its connection to the open sea. The highest and lowest surface water temperatures recorded are 23°C and 19.8°C respectively.

There are 336 fish species (belonging to 107 families) in the Persian Gulf. Different species of marine mammals are observed in the southern waters of Iran, including blue whale *Balaenoptera musculus*, fin whale *Balaenoptera physalus*, sperm whale *Physeter catodon*, humpback whale *Megaptera musculus*, common dolphin *Delphinus delphis*, black finless porpoise *Neomeris phocaenoides*, and dugong *Dugong dugon*.

Aquaculture

In order to ensure national food security, and to compensate for the regulatory limitations in fish catch, the Iranian Fisheries Organization ("Shilat") has tried to increase the production of commercially valuable species and decrease reliance on wild stocks.

Concentrated efforts to develop aquaculture throughout the country were initiated in the 1980s. In 1992 fish production in inland water bodies and fish farms was about 12% of total fishery production. One of the recent activities of Shilat is propagation of shrimp culture along the southern coasts, as well as hatcheries to produce shrimp larvae. Lack of regulations regarding site selection and effluent characteristics is one of the concerns of environmental officials. The effluents of fish farms, carrying large loads of organic matters and in some cases chemicals, adversely affect aquatic resources including bottom vegetation in riverbeds or coastal waters.

Rivers

Iran has more than 3,450 rivers (including seasonal rivers). Within the six main watersheds there are 37 major river basins. The most important (with their average annual flow) are: Karoun River (Persian Gulf) 24,000 million m^3; Dez (Persian Gulf) 2,784 million m^3; Sefidrood (Caspian) 3,998 million m^3; Aras (Caspian) 5,700 million m^3; Zayandehrood (Markazi) 1,208 million m^3; Hirmand (Hamoun) 5,800 million m^3; the inflow to Lake Urmia (from all rivers) is 5,971 million m^3. These figures show clearly that the head of the Persian Gulf and the Caspian receive the highest flows, while the other four watersheds receive relatively low inflow. Rivers are natural habitats for aquatic species, small animals, birds and a specialized flora.

Coastal regions

The coastal zone is that space in which terrestrial environments influence marine (or lacustrine) environments and vice versa. Coastal regions have important economic values. Many infrastructure facilities, such as harbors and power plants, are constructed in these regions. Iran benefits from long shorelines in its northern and southern borders.

A large variety of plant and animal species is observed in the coastal ecosystems. Mangrove forests are unique coastal wetlands, important fish habitats and nursery grounds. Marine turtles, many on the endangered list, live in these ecosystems. The following marine turtles have been observed in Iranian waters: Green Turtle *Chelonia mydas*, Leatherback Turtle *Dermochelys coriacea*, Olive Ridley Turtle *Lepidochelys olivacea*, Loggerhead Turtle *Caretta caretta*, Hawksbill Turtle *Eretmochelys imbricata*, and Black Turtle *Chelonia agaziz.*

Wetlands

Much of Iran falls into the dry or semi-dry category. In such a climate the presence of wetlands, marshlands and water bodies play an important role in the well-being of the natural environment, wildlife and human beings. There are more than one hundred sizable wetlands in Iran, 20 of which have been listed in the Ramsar Convention's "List of Wetlands of International Importance".

Wetlands occupy the transitional zone between permanently wet and generally dry environments, sharing characteristics of both aquatic and terrestrial environments but not belonging exclusively to either. Under the Ramsar Convention (adopted at the Iranian city of Ramsar on the Caspian coast in 1971), wetlands are defined as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters". The Convention also provides that they "may

incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands". Therefore, wetlands are everywhere, and it is probably simplest to think of the Convention as having an interest in the management of all water ecosystems (whether permanent or temporary, natural or artificial) which are not deep marine waters. Iran has designated 20 sites, covering about 0.7% of the country for the Ramsar "List of wetlands of international importance" (Table 1).

Agriculture

Agriculture, utilizing biological resources of various ecosystems, has an intimate relation with biological diversity. Thirty three million hectares of the land area are classified as arable, however only 15.5 million hectares are under cultivation, 8.5 million hectares of which are classified as rainfed land. Annually irrigated crops occupy 5.7 million hectares.. There is the potential to increase the amount of irrigated crops to nearly twice the present level, but this has not been achieved, due to a variety of limitations and problems including shortage of water and serious threats of soil degradation and soil salinity.

In spite of the climatic diversity and genetic variety of plants in Iran, most improved agricultural plants are grown from imported varieties, which are susceptible to pests and diseases, resulting in excessive use of pesticides. It is estimated that 1000 plant varieties have been lost because of lack of comprehensive management policies.

With over 120,000,000 livestock units (including sheep, cattle and goat) in the country, Iran is an importer of meat. The reasons include: population growth, weakening of traditional rangeland and livestock management systems and their capacity to supply expanded markets, the low added value in livestock production, and the lack of balance between rangelands and modernized methods of animal breeding. For example, instead of making better economic use of 20 million tons of manure produced yearly, chemical fertilizers are used. Despite demonstrable detrimental environmental effects, consumption of chemical fertilizer increased from 300 tons in the mid-1950s to 700,000 in 1978 and 2,400,000 tons in 1997.

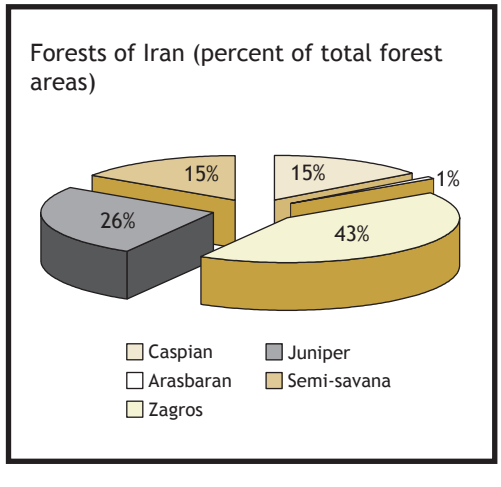
Despite demonstrable detrimental environmental effects, consumption of chemical fertilizer increased from 300 tons in the mid-1950s to 700,000 in 1978 and 2,400,000 tons in 1997.

Forests and rangelands

Forests

Today forest areas cover some 12.4 million hectares (about 7.5% of the area of the country). It has been estimated that this figure was about 18 million ha. 40 years ago. Apart from the large-scale loss of area, biomass and the health of that which remains is being depleted. The forests of Iran can be classified in five zones as follows:

- ***Caspian broadleaf deciduous forests*** consist of a rather narrow green belt in the north of Iran with a current area of about 1.9 million hectares, whilst it was some 3.4 million hectares 45 years ago.



In Iran, areas protected by the Department of Environment cover 8.5 million hectares.

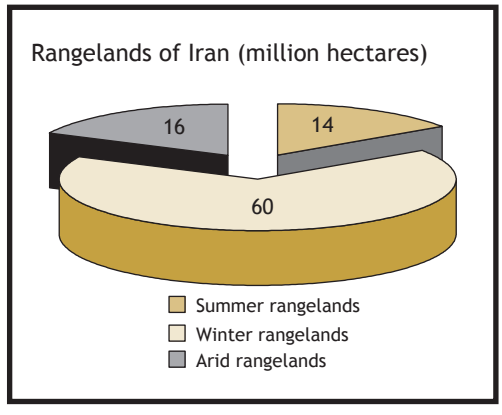
The yield of these forests has been reduced from 300 tons/ha. to 100-110 tons/ha. during the last four decades.

- ***Arasbaran broadleaf deciduous forests*** are in the northwest of Iran. They support many endemic species and are very degraded. The forest area is estimated at 120,000 ha. (compared to original 500,000 ha).
- ***Zagros broadleaf deciduous forests*** consist mainly of oak forests in the west of the country. This forest has an area of 5.5 million hectares and currently produces 8 tons/hectare biomass compared to 12 million hectares and 125 tons/ha. five decades ago.
- ***Irano-Touranian evergreen juniper forests***; almost all high-mountain environments of the country outside the deciduous forest areas, were covered by the Persian Juniper *Juniperus polycarpus*. The area of these juniper forests was estimated at around 3.4 million hectares 50 years ago with a biomass of 30 tons/ha. Currently the most optimistic figures are 500,000 hectares, with a biomass of 5 tons/ha. In addition, there are currently 2.5 million hectares of other evergreen forest.
- ***Semi-savanna thorn forests***, with an area of about two million hectares, cover narrow bands in the west of the country and a wider belt in the south along the Persian Gulf and the Sea of Oman. The biomass of these forests is currently estimated at 2 tons/hectare. Unfortunately no data are available on the former area and biomass of these forests.

Rangelands

Rangelands comprise some 54.8 % of the total land area of the country, covering more than 90 million hectares. They play the most important role in soil protection. The condition of 16% of the rangelands is excellent, whereas 66% are in favorable to medium condition and 18% are in poor and degraded form. They can be classified in three types:

- ***Summer rangelands***: Production per hectare 580 kg of dry biomass. Mainly in humid and semi-humid zones of the Caspian and high plateau of Azerbaijan.
  Area: 14 million hectares.
- ***Winter rangelands***: Production per hectare 184 kg of dry biomass. Mainly in the Mediterranean and semi-arid zones in western Zagros and Alborz Mountains.
  Area: 60 million hectares.
- ***Arid rangelands***: Production per hectare 52.5 kg of dry biomass. Mainly around central arid zones.
  Area: 16 million hectares.



The national protected area system

The protected area and reserve system provides the core areas for biodiversity conservation. This reserve system is not sufficient in itself for long-term

conservation, and must be harmonized with conservation efforts in other areas and land-uses. In Iran, areas protected by the Department of Environment cover 8.5 million hectares (about 5% of the land area, (Table 2, map 7). The Department of Environment's goal is to increase this proportion to 10% of the national land area. It is a priority to make the reserve system Comprehensive, Adequate and Representative (CAR) in regard to Iran's biodiversity assets. Limited tourism and research occurs in these areas. Details of different categories of protected area managed by the Department of Environment are given below.

In addition, other ministries also manage a number of protected areas; for example the Forests and Rangelands Organization of the Ministry of Jehad-e-Sazandegi manages 131 reserves with a total area of over 111,000 ha. Of these, 19 are Natural Forest Parks, 91 are Forest Reserves, and 21 are Natural Parks

National Parks (11 sites)

These represent some of the most outstanding examples of the nation's geological, ecological, historical, archaeological and scenic features. Management includes minimum active management necessary for ecological conservation. National Parks and National Natural Monuments serve dual functions of conservation and eco-tourism, and are typically selected as outstanding examples of biodiversity ecology, and geological scenic resources that are of national and global importance. In recognition of their dual function, some park infrastructure is constructed, but under strict conservation and architectural control. The total area is 1.3 million hectares covering 0.8% of the national land surface (Table 3).

From both ecological and economic perspectives, the most important national parks are Golestan and Urmia. Both enjoy a wider range of ecosystems than the other parks of Iran, and have potential for increased tourism. Golestan is located in the northeast of Iran along the Caspian, and is characterized by temperate to humid deciduous and hardwood forests, while Urmia, one of the largest deep saline lakes in the world, is located in the province of Western Azerbaijan.

Wildlife Refuges (25 Sites)

There are 25 wildlife refuges, which currently cover about 1.9 million hectares (1.2% of the national land area). These habitats are protected for their native wildlife. Hunting, fishing and capturing of wildlife are prohibited. These areas contain public-use areas in which limited farming and grazing are permitted (Table 4).

Protected Areas (47 sites)

Protected areas support representative ecosystems with nationally significant wildlife, but do not justify the intensity of management of a fully-fledged national park. These are areas with single or multiple use objectives, with a total area of 5.3 million hectares (3.2% of the national land area, Table 5). They may cater for ecological, scientific, economical, educational, cultural and recreational interests. Human settlements are often present, and it is proposed to establish integrated management plans governing the present human settlement, grazing and agriculture. The Supreme Council of the Environment has adopted a bill (in 1999), according to which 10% of the

existing forests are added as protected areas under the management of the DoE.

Five rivers, namely Chalus (Caspian watershed), Karaj, Lar, Sardab and Jajeroud (all in the Central watershed) are also protected by DoE.

Wild species and their habitats do not receive as much attention as domesticated species, despite legislative support.

National Natural Monuments (6 sites)

These are small areas, with unusual phenomena of scientific, geological, historical and/or natural history interest. Management includes maintaining certain species or special features (Table 6).

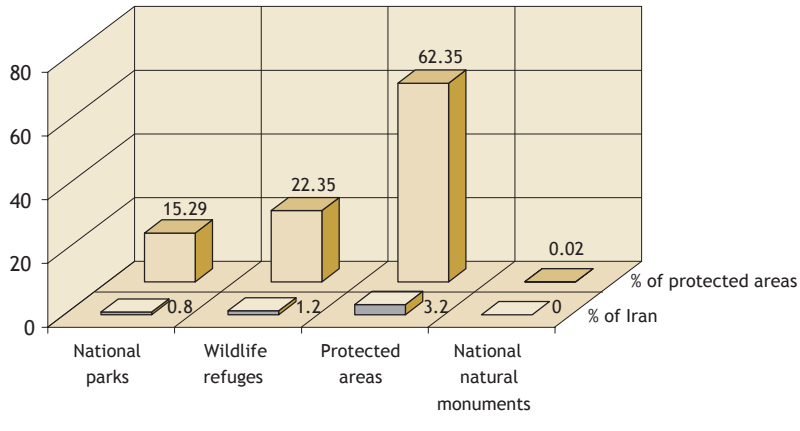
Hunting Prohibited areas

These areas are suggested by DoE to provide a rest period and an opportunity for population restoration. The condition of the animal population in this area is continuously monitored to make adequate decisions and change, if needed, the preservation category of the region. A two km wide area along the Iranian borders is included in this hunting prohibited areas (Table 7).

Biosphere Reserves (9 sites)

Biosphere Reserves are areas of terrestrial and coastal/marine ecosystems, or a combination thereof, which are internationally recognized within the framework of Man and Biosphere Program (UNESCO/MAB). Biosphere Reserves should preserve and generate natural and cultural values, through management that is scientifically correct, culturally creative and operationally sustainable. All Biosphere Reserves enjoy protection under one of the national protected area categories listed above. Iran has 9 MAB sites with a total area of 1.9 million hectares (Table 8).

The national Protected area system



Non-protected public land areas

Non-protected areas are under severe pressure, ranging from minimum to almost complete destruction of important biodiversity assets. There are demonstrable declines in the quality and quantity of habitats over vast areas caused by soil erosion, salinization, and lowering water tables. Soil erosion, declining fertility and productivity of rangelands and arable lands, sedimentation in reservoir lakes, destructive floods (quadrupled during the last forty years), and destruction of natural habitats are the main components of the estimated losses. Major changes in land use should be undertaken in these environments. These environments, because of their huge surface area, support substantial parts of the biomass of Iran's biodiversity.

Ex-situ conservation

All the measures so far indicated reflect instances of *in-situ* (within habitat) protection. However, scientific evidence and traditional knowledge have demonstrated the value of genetic resources of wild and domesticated species as sources of biological diversity, and thus, techniques and specific advanced methods have been developed

for protection of species and rehabilitation of ecosystems worldwide.

Iran has kept pace with such activities and developed comprehensive national plans, subject to periodic revision. The government has established education and research centers and has undertaken affirmative actions across the country throughout the recent decadespast. These actions were necessary because of the rich and diverse, but fragile ecosystems of Iran. Collecting and preserving of seeds, planting and maintenance of rare plant species, developing advanced techniques of seeding, testing adaptation capacities of seeds, hybridization of plant and animal species and microbial genetic engineering are only a few of the recognized practical experiments directed in Iran towards *ex-situ* conservation.

These activities have been directed towards establishment of natural history museums, seed and gene banks, botanical gardens, wildlife breeding centers and animal safe habitats, herbaria and microbial collection centers. These centers have been established in conjunction with *in-situ* practices to support existing populations, regardless of their size. Ongoing research provides the basic knowledge required on endangered, depleted and sensitive species.

Almost all such centers have been established by the governmental sector, and different organizations are charged with the well-being of various groups of organisms. For example, the Ministry of Agriculture deals with affairs related to crop and fruit plants and breeding of silkworms; the Ministry of Jehad-e-Sazandegi is responsible for maintaining forests, rangelands, poultry and livestock, fishery and honey bees; and the DoE looks after wild species of animals, birds (endangered species in particular) and non-commercial marine species.

It is quite evident that wild species and their habitats do not receive as much attention as domesticated species, despite legislative support. Although, this may be unavoidable at present, forceful functioning and continuous monitoring and assessment by the DoE will be of critical importance for conservation of biological diversity and to proper functioning of ecosystems.

The major *ex-situ* conservation centers of Iran are:

- ***The National Museum for Natural History*** was founded in 1973 and is now a part of the Department of Environment. The mission of the Museum and its affiliated branches in all provinces is to become a major source of public information and a center for scientific studies and research activities. The construction of a new building covering more than 45,000 m^2 began on World Museums Day in 1999 with the theme of "the pleasure of discovery". It is anticipated that such a modern museum will stimulate advanced studies by Iranian and visiting foreign experts in all the varied disciplines of natural sciences and natural history.
- ***Pardisan Eco-Park*** embodies the ideals and the aims of the DoE for conservation of biodiversity as important world heritage. Its themes have two dimensions. Firstly, it is concerned with nature, the history of Earth in its galactic context, and with a range and variety of wildlife, as well as physical and geological formations. The second dimension includes

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Iran's variety of different ecosystems has excellent tourist potential. The climatic variations combined with natural ecosystems and landscapes create unique natural scenery and range of biodiversity assets. The efforts of the government are directed towards ways of promoting tourism without sacrificing cultural and environmental values.

the relationship between human and environment and to represent the interaction between them. The master plan includes re-creation of major biomes of Iran on an unprecedented scale. This eco-park will play an important role in public awareness on biodiversity assets of Iran.

- ***The National Botanic Garden*** is run by the Ministry of Jehad-e-Sazandegi, and consists of a botanic garden illustrating the various biomes of Iran and the world, together with a herbarium with more than 100,000 specimens. Smaller scale herbaria and botanic gardens have also been established by provincial research centers and universities.
- ***The National Gene Bank*** is affiliated with the Ministry of Agriculture and contains seeds of plant species (exotic or endemic); there are also specialized seed banks for rice, dates, citrus fruits, forage plants, and forest vegetation.
- ***Cell and Tissue Culture Centers*** are newly established centers and are at the developmental stage.
- ***The Microbial and Fungal Collection Center*** was established by the Ministry of Science, Technology and Research (formerly Ministry of Higher Education) for research, education, industrial exploitation and bio-technological investigations.
- ***Zoos*** are usually established by metropolitan municipalities, though their function is more for public recreation and education than for less for research and breeding.
- ***Wildlife Breeding Centers*** are established by the DoE specifically for threatened animal species. Examples include the station in Arasbaran for the local Red Deer *Cervus elaphus*, and Dasht-e-Naz in Mazandaran for Mesopotamian Fallow Deer *Dama dama mesopotamica*.
- ***Fish Propagation Centers*** produce millions of fingerlings annually, for release in the Caspian and for sale to fish hatcheries. These centers contribute substantially to research on fish breeding, and on the feasibility of introducing new aquatic species to inland waters and coastal environments. These centers are run by Iranian Fisheries Organization.
- ***Aquaria*** are relatively new in Iran. They are mostly established by municipalities as recreation centers for the urban population. A large Aquarium Center is being constructed by the private sector on Kish Island as a tourist attraction center, but will also contain laboratories for research on conservation of ornamental fishes.

Eco-Tourism and Recreation

Iran's variety of different ecosystems has excellent tourist potential. The climatic variations combined with natural ecosystems and landscapes create unique natural scenery and range of biodiversity assets. Outdoor recreation activities are popular and widespread among Iranians. In spite of the development of modern life and urbanization, many people prefer to seek fresh air and nature at the weekend. But outdoor recreation has not yet been included in management policies, and there is no comprehensive management

plan on this subject. As a result, destruction of nature and natural scenery occurs in the suburbs of large cities, because of a lack of public awareness. There has been very limited public education for nature utilization and people are not familiar with the values of biodiversity. Illegal construction of houses and villas in naturally sensitive areas has also exerted pressure on ecosystems.

Despite continuous efforts to attract tourists over the last 60 years, successive governments have not been successful. Eco-tourism is one of the developing sectors in global economy. Tourists can enjoy Iran's rich biological diversity, including the forests and the Caspian in the north, the deserts of the central regions, mangrove forests in the south, as well as the coral reefs and exotic fish in the Persian Gulf. The income earned by eco-tourism can be partially spent on preservation of ecosystems.

The issue of tourism was mentioned in the first (1989-1994) and second (1995-2000) National Socio-Economic Development Plans. Generally, it can be concluded that tourism has not been successful in these plans. Some of the reasons for this failure are as follows:

- The role of the private sector in this industry is not well defined.
- Tourism is not looked upon as an industry among decision-making government bodies.
- Lack of international advertisement.
- Lack of well-trained human resources.

The efforts of the government (Iran Touring and Tourism Organization affiliated to the Ministry of Culture and Islamic Guidance) are directed towards ways of promoting tourism without sacrificing cultural and environmental values. Properly organized eco-tourism has the potential to promote a new area of economic growth and assist the community in recognizing the value of better protection and enhancement of Iran's biodiversity.

Chapter 2

Threatening processes and Management

Laws, Planning and Management

The Environmental Protection Act (1974) is the major law for environmental conservation in Iran. According to this act, different categories of natural protected areas have been established in Iran and are administered by the DoE. Although these sites have been carefully selected to represent all types of environments and habitats in Iran, it is obvious that a low percentage of Iranian territory (about 5%) has been designated for conservation. This small percentage is not adequate for conservation of such a vast country and must be made more comprehensive, adequate and representative of the various ecosystems. It has also been suggested that only in the protected areas do plants and animals enjoy acceptable degrees of protection. Legislation governing the environment declares many species of wildlife as "protected" and these species are legally protected wherever they may occur, but this may not always accord with "de facto" protection. Of course, protection is more effective within the protected areas where environmental protection guards are continuously present.

The strengthening and enhancing the management of the Department of Environment as the highest authority in the field of biodiversity conservation has been instrument in promotion the objectives of the nation. The President, Seyed Mohammad Khatami has placed great importance for environmental matters and for capacity building schemes in this field.

The Supreme Council of Environment is a legislative body that enacts relevant regulations and the classification of protected areas. The Chairman is the President of the Republic. Other members of the Council are the Ministers of Agriculture, Foreign Affairs, Industry, Interior, Jehad-e-Sazandegi, Health and Medical Education, Science-Technology and Research, the Heads of the Department of Environment, Department of Administration and Planning (formerly Plan and Budget Organization) and the Institute of Standard and Industrial Research.

Major projects require an Environmental Impact Assessment (EIA) to evaluate the degree of damage inflicted on the environment, and the ways to reduce, eliminate or remedy these impacts. The Government of the Islamic Republic of Iran is in the process of formalizing the EIA. Biodiversity is one of the major factors which has to be fully considered and studied in the process. Special attention must be paid to the protection of natural ecosystems, such as forests and habitats of wildlife. The concept of "no net loss" of biodiversity assets will be implemented in development assessments and approvals.

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Projects needing an EIA and the methods of assessment will be reviewed and updated at intervals, to ensure that progress is made in keeping up with the technical know-how of international environment bodies.

As biodiversity conservation is critical to ESD it is important that all sectors of the community and economy contribute. It is also important that major business and agencies adopt environmental performance into their planning and reporting. Internationally, concepts of a "triple bottom line" are being developed. This means that business and government agencies have to consider financial (economic), social and environmental aspects of their activities and formal public reporting.

Threatening Processes

Iran has been losing its biodiversity in an alarming rate. The Persian Lion *Panthera leo persica* and the Caspian Tiger *Panthera tigris virgata* were magnificent mammals, which are no longer with us. The Government of the Islamic Republic of Iran is determined to make sure that these losses do not continue in the future.

In recent years, there has been a growing awareness of the value of biological diversity. This increased awareness followed a period of relaxation in the conservation of nature and sustainable use of the environment and its components, which was mainly due to the following parameters:

- High rate of population growth.
- Inflexibility in application of conservation laws in protected areas.
- Inequity in the ownership, management and flow of benefits from the use and conservation of biological resources.
- Inadequacy and deficiencies in knowledge bases regarding biological diversity and ecological features.
- Constraints and institutional inadequacies (implementing capabilities) and lack of adequate policies and economic systems to determine the actual value of natural resources and biological diversity components.

One of the serious threats to most Iranian ecosystems is drought because much of Iran lies in the dry or semi-dry regions. Activities which pose a direct environmental threat to the biodiversity of the country include: overgrazing, poaching, tree-cutting, removal of shrubs and bushes for fuel, land conversion to agriculture, road construction, mining, power transmission, and military activities. Many of these practices have neither ecological justification nor economic rationality. For instance, overgrazing may produce a very short-term increase in production but long-term degradation and economic loss of the asset, i.e. decline in productivity or absolute loss of potential due to soil erosion and decline in forage quality and quantity. Improved land use and management practices are urgently required. Although the above activities have been minimized in protected areas, throughout the rest (95%) of the country, there is little control over these threats.

Threats to biodiversity in the Caspian

The Caspian is the largest lake in the world and is connected to the distant Baltic through canals and the River

Volga. This makes it very vulnerable to the effects of industrial pollution. Oil exploration activities by the Caspian littoral countries have increased in the past decade. There are also international plans to transport oil and gas through pipelines under the Caspian. These activities will certainly have adverse effects on marine and coastal ecosystems in Iran.

On the domestic side, development of coastal communities, release of sewage into coastal waters, as well as polluted rivers threaten coastal ecosystems. Population growth and unemployment in the region also increase illegal fishing. Man-made barriers and obstacles close the migration routes of fishes, and no fishways are built along their migration routes; therefore, many spawning grounds are destroyed. Fish ladders are an important ameliorative action and should be required for all activities that prohibit fish movement. This is a good example of the contribution the water sector could make to biodiversity conservation.

Threats to biodiversity in southern waters

Major fishing grounds are near oil production areas and transportation routes. Destruction of spawning grounds and nurseries is one of the major threats to biological resources in the Persian Gulf and the Sea of Oman. Over-fishing and illegal fishing by international fishing vessels is one of the major sources of concern. Limited bottom trawling is still used for shrimp catch, which seriously threatens seabed habitats. Iran benefits from coral islands and, as in many other regions in the world, use of these habitats need great care.

Threats to biodiversity in rivers

Rivers are under severe pressure because of population increase and human activities. Dam construction and inappropriate exploitation of riverbeds throughout Iran has changed the biological characteristics of many rivers. Many man-made water reservoirs have closed the migration routes of fishes coming from the sea. No fishways were planned for these dams. In many highly populated areas, communities living along riverbanks destroy vegetation and habitats, as well as causing water pollution. The biological diversity in many rivers, near urban communities has been sharply reduced.

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Threats to biodiversity in coastal areas

Coastal pollution is one of the major causes of habitat destruction and biodiversity reduction. Estuaries and coastal wetlands such as mangrove forests are very vulnerable to water pollution. The population of marine turtles has decreased throughout the world. Among the reasons for this decline are water pollution, destruction of habitats as well as theft of eggs. Habitat fragmentation is an increasing problem in the coastal regions. Wildlife sites have become fragmented because of increased coastal development, effectively removing and fragmenting areas of scarce habitats. One of the other impacts of fragmentation is the formation of obstacles and barriers to movement of animals between habitats, which, in turn, reduces the interaction between populations.

The major sources of coastal pollution include the ballast water of oil-tankers, offshore oil exploration facilities, flow of wastewater and sewage, heavy metal pollution caused by import and export activities, and thermal pollution from

the return water in the cooling systems of large industrial facilities (such as power plants).

Threats to biodiversity in forests

Iran is relatively poor in terms of available forest area, and thus vulnerable to rapid destruction. One of the problems threatening Iranian forests is illegal logging, over and above the logging permits issued by General Office of Natural Resources. Rural people who reside with their livestock in the forests also threaten biodiversity assets. There have been relocation efforts, but they have not been completed. Another source of forest destruction is the large number of fires. In 1996 during a national study, 439 fires were recorded, affecting a total forest area of 5829 ha.

The rangelands are being destroyed and their productivity reduced by up to 1.5% per year. The major threats include overgrazing, land conversion for agricultural activities, and lack of comprehensive management plans.

Clearing of native vegetation in forest ecosystems has caused both habitat destruction and fragmentation. Implementation of major industrial forest projects accompanied by traditional overexploitation by the rural communities have widely modified, and in many cases, destroyed the northern forests of the country. Removal of trees and vegetation cover is now estimated to contribute to a large proportion of soil erosion in Iran. Clearing land for agricultural use, forage production and grazing, firewood and charcoal production has reduced forests by 30% over the last 40 years.

Pressure on forests primarily derives from overgrazing, conversion to cropland and fuel wood demand in remote areas. The annual cut of fuel wood exceeds the sustainable yield. Measures to improve the efficiency of fuel wood use, to substitute alternative fuels for fuel wood and to improve harvesting operations in the commercial forests will be required to reverse this trend. Agricultural land clearing is now under control but overgrazing continues to be a persistent problem in all forest areas, due to over licensing of grazers and enforcement limitations on illegal operations.

Threats to biodiversity in rangelands

Conversion of marginal rangelands into agricultural lands has caused destruction of pastures and has led to widespread soil erosion. On the other hand, the livestock population is about three times more than the carrying capacity of the rangelands. Among the major functions of pastures in Iran are: sustainable production of agricultural products, balancing role in the climate and water flow, production of forage, production of medicinal and industrial herbs, and conservation of soils and of wildlife habitats. The rangelands are being destroyed and their productivity reduced by up to 1.5% per year. The major threats include overgrazing, land conversion for agricultural activities, and lack of comprehensive management plans. ESD principles must be adopted and implemented in this environment.

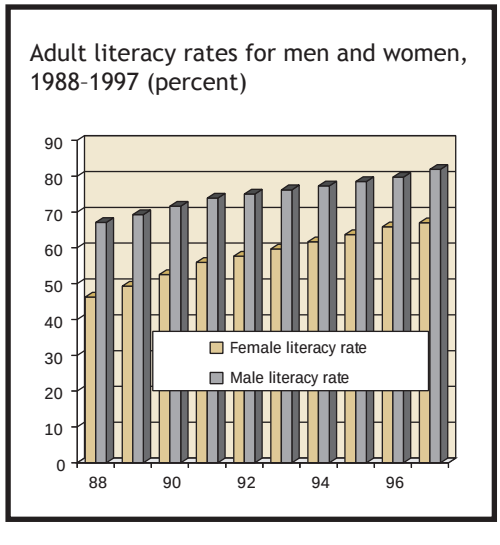
Threats to biodiversity in wetlands

Various factors threaten wetland ecosystems and undermine their productivity and functional role. These factors include infilling for land reclamation, drought, dam construction, up-stream development (erosion and sedimentation), aquaculture activities, pollution and nutrient input, water diversion (irrigation), overgrazing, overfishing, illegal hunting, as well as uncontrolled recreation and tourism activities and infrastructure.

Biological diversity and people

The population growth rate in Iran has been very high during the past few decades. Previously, the population doubled during a 60 year period (1891-1951) but this doubling period is now reduced to 26 years. According to the most recent official population census in 1996, the population is over 60,100,000, which indicates a reduction in the average annual growth. It is estimated that, if the present decline in the growth rate persists, the population will be over 100 million by 2010. The population of Iran is composed of about 12,400,000 households with an average of 4.8 individuals in each.

Population in cities and villages is 61.3% and 38.3%, respectively, and the remainder being nomads. Age distribution demonstrates a young population. The largest age group is the 10-14 years old age group (9,080,676 individuals). Literacy of people over 6 years of age is 79.5%. About 85% of the population over 10 years of age have employment and the remaining 15% are unemployed. Across Iran the mean population density is 37 individuals per km^2 with Tehran (372 individuals per km^2) having the highest and Semnan the lowest (5 ind./km^2) densities.



Villagers and nomads have valuable traditional knowledge for conservation of biodiversity. Mechanisms should be found to collect and implement these cultural heritages.

Access to genetic resources

Genetic diversity is an important element of biodiversity, and that is why the reserve system must be comprehensive, adequate and representative, to conserve *in situ*, not only ecosystems and species but also populations and the genetic diversity that they contain. Iran needs to expand its knowledge base of the genetic diversity within its biodiversity, establish a framework and policies for access to, and use of, genetic diversity based on public and environmental good. It is appropriate that museums, herbaria and other institutions clarify the genetic resources and variation available in nature and inform additions to the reserve system.

Activities regarding conservation of genetic diversity include data collection of genetic resources and preparation of the "Domestic Animal Diversity-Information System of Iran (FAO/DAD-IS)". There are research centers on fish species (particularly sturgeons), medicinal plants and field crops. There are research stations on cattle, sheep and goat, cow, camel, horse and poultry used for research on genetic resources.

Introduction of alien species

Iran is a vast country sharing boundaries with seven countries and two large water bodies; hence the process of exchange of species across the man-made boundaries occurs regularly. The natural introduction of species is inevitable and does occur naturally throughout the

Environmental research centers and monitoring stations in provinces of the country are responsible for controlling and monitoring the state of the environment and pollution levels in air, soil and water.

world, as the species with the greater powers of adaptation survive, expand and dominate new territories.

False practices have aided this process and in the past have introduced some species of plants and animals, in many cases with disastrous results. One example is the introduction of Azolla *Azolla pinnata* from the Southeast Asia into the Anzali wetland. Although this aquatic plant was meant to be quarantined in a small pool, it escaped and found its way into the natural environment where it flourished. Now this species (which is quite useful in southeast Asia) has become a pest, competing with the other native species for vital resources such as light and nutrients. Similarly, introduction of Grass Carp *Hypopharyngodon idella* to the Hamoun Wetland, one of the most natural and unpolluted aquatic ecosystems, yielded disastrous results, destroying the natural integrity of this ecosystem.

As in many other parts of the world, the introduction of exotic species into the wild has resulted in disastrous consequences in Iran. Responsible organizations, such as the Department of Environment and the Ministry of Agriculture, are anxious to control any such actions and the Government of the Islamic Republic of Iran is determined to control any such trans-boundary transits. Customs and quarantine must be based on the "Precautionary Principle" and potential for exotic organisms to cause environmental damage.

Pollution control and biodiversity

Observation of environmental regulations and pollution control guidelines will certainly have positive effects on conservation of biodiversity. New technologies and economic instruments to assist movement away from polluting activities is a priority. Rapid industrialization and urbanization exert great pressures on the environment, which make the implementation of pollution control acts an important obligation. The Department of Environment is responsible for implementation of pollution control acts. The Air Pollution Control Act gives the DoE the task of compiling standards for each district and of setting standards for emission of pollutants from various sources (including specifications for each source) with the assistance of related organizations. The DoE is also in charge of implementation of air pollution control and of specifying permissible fuels and conditions of their consumption. Recently, the DoE adopted some new regulations pertaining to the location of new factories. According to these regulations, the establishment of polluting industries in city suburbs is prohibited. The more polluting factories must be established at a specified distance (with buffer zone) from metropolitan areas, and measures designed to reduce air pollution will be implemented.

Environmental research centers and monitoring stations in 28 provinces of the country are responsible for controlling and monitoring the state of the environment and pollution levels in air, soil and water.

Public Awareness

Public awareness leads the community to increase its appreciation of biodiversity assets and in the medium to long term, to support the allocation of resources for biodiversity conservation. Obviously, improving public knowledge has a direct relation to the quality and quantity of information about biodiversity. This

information is the result of research and most critically should be presented to the public. There needs to be an increase in expertise in addressing strategic questions and better analysis of the information, leading to management orientated outcomes. Equally, there is a need for the development of databases to make the information accessible to a broader audience (including all land and water managers) and results of studies should be "translated" and presented for public use.

The issue of public awareness faces the following parameters:

- The low level of general knowledge of the environment, ecological processes and biodiversity.
- Lack of accessible information about the country's environmental condition.
- Inappropriate exploitation of resources.
- Production and consumption patterns incompatible with environmental conservation.
- Inappropriate location of some economic activities.
- Lack of acknowledgement of the environmental considerations in sectoral and regional macro policies and programs.
- Weakness in executing the environmental acts.
- Lack of accepted environmental standards.
- Lack of clear definition of land use and management,
- Population concentration in several ecosystems.
- Unclear policies, regulations and monitoring programs.
- A shortage of resources available to the DoE, lack of co-ordination and promotion of community participation.
- Weakness in coordination between responsible executive organizations.

In 1998 the Department of Environment formed a "Participation Bureau' to assist environmental non-governmental organizations (NGOs). The bureau provides legal counseling and logistical support for NGOs. According to the bureau's data bank more than 150 environmental NGOs were formed during 1998-2001. The establishment of this Bureau is in the direction of new government policies to promote public participation in environmental affairs. The number of environmental NGOs has had a very positive trend.

Chapter 3

International Role of the Islamic Republic of Iran

International Conventions and Agreements

Iran has accepted international legal responsibilities, which in part reflect its moral, ethical and scientific obligations to protect its biodiversity assets. In the context of these obligations it should be remembered that Iran has the most significant biodiversity assets in the Middle East. This, along with the large size of the country, means it has the best opportunities for long term conservation plans.

The Islamic Republic of Iran is a member of the following environmental related conventions:

- Convention on Biological Diversity (CBD)
- Convention on Wetlands (Ramsar)
- Convention on Control of Trans-boundary Movement of Hazardous Waste
- Convention to Combat Desertification
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- United Nations Framework Convention on Climate Change (UNFCCC)
- World Heritage Convention (WHC)
- Montreal Protocol on Ozone-layer Depletion Substances
- Bio-Safety Protocol

Iran became a state member of IUCN —the World Conservation Union— in 1973, but suspended its membership and moves are in hand to reinstate membership.

Regional and bilateral cooperation

The Regional Convention for Co-operation to Protect and Improve Coastal Zones and the Marine Environment (ROPME, 24 April 1978) was approved by the Iranian Parliament (Majles). Therefore, the proceedings of the Convention are a domestic as well as an external obligation for the government and related organizations, for the purpose of protecting the marine environment in the Persian Gulf and the Sea of Oman.

Following a scientific and technical co-operation agreement signed between the governments of Iran and the former Soviet Union (1971), conclusive bilateral meetings were held to discuss problems and find solutions to the environmental problems of the Caspian. Since the collapse of the Soviet Union, the Caspian littoral republics and Iran have held ongoing discussions on the protection of the Caspian environment and agreed

Iran has the most significant biodiversity assets in the Middle East. This, along with the large size of the country, means it has the best opportunities for long term conservation plans.

on the Caspian Environmental Program (CEP).

Currently Iran has bilateral environmental cooperation with the governments or research institutions of many countries.

Chapter 4

Policies and Future Implementation

Second National Socio-Economic Development Plan

Biodiversity conservation is integral to sustainable development. The Second National Socio-Economic Development Plan (1995-2000) asserted that all economic and social activities must be performed within the constraints of environmental and biodiversity conservation and management. The following issues had to be addressed:

- All major development projects (productive and infrastructure) must have EIA; i.e. be evaluated on the basis of their potential environmental effects and include ameliorative actions in both the planning and implementation stages.
- Major industrial and mining activities must be conducted consistently with ecologically sustainable development principles and within the framework of environmental standards and regulations.
- Exploitation of the country's natural resources must be on the basis of long-term sustainability which balances the need for economic value, environmental protection and inter-generation equity; and
- Domestic energy consumption must aim to minimize adverse environmental effects (e.g. pollution, move from oil to gas, or preferably to renewable sources such as solar energy).

The National Biodiversity Action Plan and the Third National Socio-Economic Development Plan

The third National Socio-Economic Development Plan (2001-2005) includes two major paragraphs (Paragraphs 104 and 105) and several subparagraphs on environmental issues. These paragraphs address issues such as sustainable exploitation of natural resources, environmental liability and redress, support of green industries, as well as EIA.

Two environmental studies were carried out prior to the NBSAP, namely, the "National Strategy on Environment and Sustainable Development" and the "National Resolution Plan". Unfortunately, some parts were not implemented, because the mechanisms for their integration into the national development plans were not completely understood. These valuable experiences will be used in implementation of NBSAP. There have been great efforts to ensure the implementation of NBSAP in the Third National Socio-Economic Development Plan.

There have been great efforts to ensure the implementation of NBSAP in the Third National Socio-Economic Development Plan.

Four strategies have been proposed for conservation of biodiversity.

- The first strategy aims at the promotion of public participation. Involvement of private sector and non-governmental organizations to improve conservation activities and put biodiversity into the mainstream of the community.
- The second strategy relates to the formation of biodiversity information, monitoring and reporting systems. These systems would be used as environmental management tools and will be accessible to all sectors.
- The third strategy includes reorganization of institutional structures for sustainable use.
- The fourth strategy deals with the systematic management of biodiversity resources (A full description of the strategies and action plans will be included in the "National Biodiversity Strategy and Action Plans" report).

For the above-mentioned strategies, about 80 action plans are under consideration and 35 are already being implemented. One of the fundamental activities is to prioritize these plans. In order to coordinate the activities between different organizations, establishment of a committee is proposed.

Annex 1

Tables

Table 1. Ramsar Sites in Iran

International Wetland	Area (ha)	% of Ramsar Sites in Iran	Province	Management Status *				
				1	2	3	4	5
Urmia Lake	463600	0.28	West & East Azarbaijan	✓	✓			
Bakhtegan-Nairiz Lakes & Kamjan Marshes	108000	0.07	Fars	✓				
Shadegan Marshes & Tidal-Mud-Flats of Khor Musa	190000	0.12	Khozestan				✓	
Hamoun-e-Saberi	50000	0.03	Sistan & Balochestan			✓		
Parishan Lake & Dasht-e-Arjan	6600	0.00	Fars		✓	✓		
Miankaleh Peninsula, Gorgan Bay & Lapoozaghmarz	40000	0.02	Mazandaran				✓	
South End of Hamoun-e-puzak	10000	0.01	Sistan & Balochestan			✓		
Amirkelayeh Lake	1230	0.00	Gilan				✓	
Khuran Straits	100000	0.06	Hormozgan		✓	✓		
Deltas of Rud-e-Gaz & Rud-e-Hara	15000	0.01	Hormozgan					
Anzali	15000	0.01	Gilan			✓	✓	
Kobi lake	1200	0.00	West Azarbaijan					
Shorgol, Yadegarlu, Dorgeh Sangi Lakes	2500	0.00	West Azarbaijan					
Bandar Kiashahr Lagoon & Mouth of Sefid Rud	500	0.00	Gilan					
Hoor-e-Baho	34400	0.02	Sistan & Balochestan			✓		
Ghouri-Gol Lake	120	0.00	West Azarbaijan					✓
Alagol, Ulmagol & Ajigol Lakes	1400	0.00	Golestan					
Deltas of Rud-e-Shur, Rud-e-Shirin & Rud-e-Minab	20000	0.01	Hormozgan					
Gavkhouni Lake & Marshes of the Lower Zaiandeh Rud	43000	0.03	Fars					
Shidvar	870	0.00	Hormozgan				✓	
Total	1104290	0.67						

** 1-National park, 2-Biosphere reserve, 3-Protected area, 4-Wildlife refuge, 5-Hunting prohibited area*

Table 2. Type and area of protected areas in Iran

Type	Area (million ha)	% of Iran	% of Protected Areas
National Park	1.300	0.79	15.29
Wildlife Refuge	1.900	1.16	22.35
Protected Area	5.300	3.23	62.35
National Nature Monument	0.002	0.00	0.02
Total	8.502	5.18	100.00

Table 3. National Parks in Iran

National Park	Area (ha)	% of Iran	Biome	Province
Golestan	91,895	0.06	H [1] / IT [2]	Golestan
Urmia Lake	463,600	0.28	ITP [3]	West & East Azarbaijan
Tandureh	30,780	0.02	ITM [4]	Khorasan
Bamou	48,075	0.03	ITM	Fars
Khojir	11,570	0.01	ITM	Tehran
Sorkhe-Hessar	9,380	0.01	ITM	Tehran
Tang-e-Sayad	5,400	0.00	Z [5]	Chahar Mahal & Bakhtiary
Kolah Ghazi	46,860	0.03	ITM	Esfehan
Bakhtegan	160,000	0.10	ITP	Fars
Kavir	420,000	0.25	ITP	Tehran & Isfahan
Khabr	110,000	0.07	IT	Kerman
Total	1,397,560	0.86		

Table 4. Wildlife Refuges in Iran

Wildlife Refuges	Area (ha)	% of Iran	Biome	Province
Angoran	28600	0.02	ITM	Zanjan
Bakhtegan	167830	0.10	ITM / ITP	Fars
Shadegan	296000	0.18	KO [6]	Khozestan
Mooteh	200000	0.12	ITM / ITP	Esfehan & Markazi
Kolahghazi	5865	0.00	IT	Esfehan
Miankaleh	68800	0.04	H	Mazandaran
Touran	565000	0.34	ITP	Semnan
Amirkelayeh	1230	0.00	H	Gilan
Rochoon	63750	0.04	IT	Kerman
Khoshyeylagh	135000	0.08	ITP / ITM	Semnan
Biston	31250	0.02	Z	Kermanshah
Dez	5340	0.00	KO	Khozestan
Karkheh	3600	0.00	KO	Khozestan
Ghamishloo	85750	0.05	IT	Esfehan
Kiamaki	84400	0.05	ITM	East Azarbaijan
Miandasht	52000	0.03	IT	Khorasan
Mehroyeh	7468	0.00	IT	Kerman
Dodangeh	6700	0.00	H	Mazandaran
Lavandvil	949	0.00	H	Gilan
Semeskandeh	937	0.00	H	Mazandaran
Selkeh	360	0.00	H	Gilan
Kharko	312	0.00	KO	Boshehr
Shidvar	160	0.00	KO	Hormozgan
Fereidonkenar	148	0.00	H	Mazandaran
Dasht-e-naz	55	0.00	H	Mazandaran
Total	1,811,504	1.07		

Table 5. Protected Areas in Iran

Protected Areas	Area (ha)	% of Iran	Biome	Province
Angoran	96130	0.06	IT	Zanjan
Arasbaran	72460	0.04	H	East Azarbaijan
Kavir	250000	0.15	ITP	Tehran
Hamoun	193500	0.12	KO	Sistan & Balochestan
Arjan	52800	0.03	IT	Fars
Tandoureh	23000	0.01	ITM	Khorasan
Touran	1325250	0.80	ITP	Semnan
Tang-e-sayad	17690	0.01	IT	Chahar Mahal & Bakhtiary
Hara	85686	0.05	KO	Hormozgan
Geno	27500	0.02	KO	Hormozgan
Bisotun	50850	0.03	Z	Kermanshah
Dez	10623	0.01	KO	Khozestan
Karkheh	9427	0.01	KO	Khozestan
Alborz-e-markazi	399000	0.24	H / IT	Tehran & Mazandaran
Bahram-e-gour	385000	0.23	ITP	Fars
Gando	382430	0.23	KO	Sistan & Balochestan
Hormoud	201625	0.12	KO	Fars & Hormozgan
Kalmand	175000	0.11	ITP	Yazd
Oshtorankuh	98250	0.06	Z	Lorestan
Marakan	92715	0.06	ITM	West Azarbaijan
Dena	86500	0.05	Z	Kohkiloyeh & Boyer ahmad
Haftad gholeh	82000	0.05	ITM	Markazi
Bijar	72600	0.04	Z	Kordestan
Sefidkuh	69500	0.04	Z	Lorestan
Sabzkuh	60780	0.04	Z	Chahar Mahal & Bakhtiary
Parvar	68475	0.04	IT	Semnan
Jajrud	51650	0.03	ITM	Tehran
Mond	46700	0.03	KO	Boshehr
Heleh	42900	0.03	KO	Boshehr
Ghorkhod	34000	0.02	IT	Khorasan
Lisar	33050	0.02	H	Gilan & Ardebil
Lar	31000	0.02	ITM	Tehran & Mazandaran
Jahan nama	30600	0.02	H	Mazandaran
Sarigol	28000	0.02	IT	Khorasan
Varjin	28000	0.02	ITM	Tehran
Nayband	19500	0.01	KO	Boshehr
Serany	17800	0.01	IT	Khorasan
Salouk	16000	0.01	IT	Khorasan
Lashkardar	16000	0.01	Z	Hamadan
Siah keshim	4500	0.00	H	Gilan
Faror	3620	0.00	KO	Hormozgan
Manesht & Ghelarang	27750	0.02	KO	Ilam
Bashgol	26125	0.02	IT	Zanjan
Sorkh abad	116500	0.07	IT	Zanjan
Bidoyeh	94275	0.06	IT	Kerman
Kuh-e-Bafgh	144375	0.09	IT	Yazd
Mianjangal-e-Fasa	58125	0.04	IT	Fars
Total	5,259,261	3.20		

Table 6. National Natural Monuments in Iran

National Nature Monuments	Area (ha)	% of NNM Areas	Province
Laleh-e-Vajgoon	170	9.44	Chahar Mahal & Bakhtiary
Sarv-e-Harzevil	0.6	0.03	Gilan
Dehloran	1400	77.78	Ilam
Khoshk-e-Daran	227	12.61	Mazandaran
Sosan-e-sefid	0.6	0.03	Gilan
Sahoulan cave	2	0.11	W. Azerbaijan
Total	1,800	100.00	

Table 7. Hunting Prohibited Areas in Iran

Restricted areas	Area (ha)	% of Iran	Province
Jazireh Eslami	34700	0.02	E. Azerbaijan
Goorigol	160	0.00	E. Azerbaijan
Garah geshlag	48000	0.03	E. Azerbaijan
yakanat	58800	0.04	E. Azerbaijan
Sahand	130000	0.08	E. Azerbaijan
Zoorabad	38000	0.02	W. Azerbaijan
Dareh shahidan	41000	0.02	W. Azerbaijan
Agh gool	900	0.00	W. Azerbaijan
Gardeh git va meymand	255	0.00	W. Azerbaijan
Bayan	35000	0.02	W. Azerbaijan
Ag dagh	65000	0.04	Ardabil
Gandiman	40000	0.02	Ardabil
karkas	91764	0.06	Esfahan
Henna	18750	0.01	Esfahan
Kolak	76000	0.05	Ilam
Bina bijar va chegar	50000	0.03	Ilam
Mand	75000	0.05	Boshehr
Gavdeh	200000	0.12	Tehran
Lar	30000	0.02	Tehran
Shayda	108000	0.07	Chahar mahal-o-Bakhtyari
Chagar khor	2500	0.00	Charmahal-o-bakhtyari
N. and W. of Salook	20000	0.01	Khorasan
Heydari	39300	0.02	Khorasan
Bagh Keshmir	18440	0.01	Khorasan
Dor badam	15000	0.01	Khorasan
Boz may	28000	0.02	Khorasan
Parvand	16900	0.01	Khorasan
Hengham	100000	0.06	khorasan
Naybandan	116700	0.07	khorasan
Shir Ahmad	24000	0.01	khorasan
Halali	120000	0.07	khorasan
Hezar Masjed	12000	0.01	khorasan
Raeesi	50000	0.03	Khorasan
Daroneh	60000	0.04	Khorasan
Deymeh	15500	0.01	khozestan
Karani	30000	0.02	khozestan
Khorasanlo	70000	0.04	Zanjan
Tapal	30000	0.02	Semnan
Khanar	44000	0.03	Semnan
Sefid koh-e- arsak	66600	0.04	Semnan

Table 7. Hunting Prohibited Areas in Iran *(continued)*

Restricted areas	Area (ha)	% of Iran	Province
Nosrat abad	130000	0.08	Sistan-o-Balochestan
bozman	30000	0.02	Sistan-o- Balochestan
Sefid abeh	30200	0.02	Sistan-o-Balochestan
Koh-e-mol boland-e-mook	12000	0.01	Fars
Dareh bagh	14000	0.01	Fars
basiran	90000	0.06	Fars
Kohestan	90000	0.06	Fars
Hava va tangheh-e-khor	80000	0.05	Fars
Dallan	30000	0.02	Fars
Padena	40000	0.02	Fars
Toot-e-siah	20000	0.01	Fars
Chaheh naft	90000	0.06	Fars
Ghorm	50000	0.03	Fars
Kharman kooh	20000	0.01	Fars
maharloo	25000	0.02	Fars
Alamoot	111118	0.07	Gazvin
Danesfhan	33000	0.02	Gazvin
Tarom-e-sofla	47000	0.03	Gazvin
Palang dareh	30000	0.02	Qom
Siah koh-e-sirjan	45000	0.03	Kerman
Anjirak va Raber	23281	0.01	Kerman
Koh-e-nodar hengh	250000	0.15	Kerman
Qood gool	50000	0.03	Kerman
Shahr-e-babak	100000	0.06	Kerman
hashilan	450	0.00	Kermanshah
Bozin	13000	0.01	Kermanshah
Zeleh zard	50111	0.03	Kermanshah
Badr-o-parishan	45000	0.03	Kordestan
Zarineh obato	24000	0.01	Kordestan
Zarivar	2000	0.00	Kordestan
Padenayeh samirom	40000	0.02	Kohgiloyeh va Boyerahmad
Khamin	50000	0.03	Kohgiloyeh va Boyerahmad
Gamishan	20000	0.01	Golestan
Chelcheli	33100	0.02	Golestan
Bojagh Kianshahr	800	0.00	Gilan
Talab estil	138	0.00	Gilan
Ashkorat olia	40000	0.02	Gilan
Deylaman darfak	34400	0.02	Gilan
Nave asalem	5000	0.00	Gilan
Sarkhangool	150	0.00	Gilan
Estakhr Ajdaha balooch	250	0.00	Gilan
Talabhaye Poldokhtar	5550	0.00	Lorestan
Lafoor	10000	0.01	Mazandaran
Hezar jarib	12000	0.01	Mazandaran
Do hezaro se hezar	60000	0.04	Mazandaran
Siah bisheh	9000	0.01	Mazandaran
Razan	400	0.00	Markazi
Golzar-o-Neyzar	5500	0.00	Hormozgan
Asad abad	90000	0.05	Hamadan
Khangarmaz	10000	0.01	Hamadan
Nashr	6500	0.00	Hamadan

Table 7. Hunting Prohibited Areas in Iran *(continued)*

Restricted areas	Area (ha)	% of Iran	Province
Malosan	10000	0.01	Hamadan
Dareh anjir	150000	0.09	Yazd
Ariz-o-Bajgan	560000	0.34	Yazd
Boroieh	100000	0.06	Yazd
Border line	1034000	0.63	Iran Borders
Total	**5882217**	**3.58**	

Table 8. MAB Sites in Iran

Type of MAB Sites	Area (ha)	% of Iran	Biome	Province
Urmieh Lake	463600	0.28	ITP	West & East Azarbaijan
Arasbaran	72460	0.04	H	East Azarbaijan
Kavir	420000	0.25	ITP	Tehran
Golestan	91895	0.06	IT / H	Golestan
Dasht-e-Arjan	52800	0.03	IT	Fars
Miankaleh	68800	0.04	H	Mzandaran
Touran	565000	0.34	ITP	Semnan
Geno	27500	0.02	KO	Hormozgan
Hara	85686	0.05	KO	Hormozgan
Total	1,847,741	1.12		

(Endnotes)

[1] H= Semi-humid and humid Arasbaran and Hyrcanian mountains and Caspian plain.

[2] IT= Irano-Touranian.

[3] ITP= Irano-Touranian: Arid and semi-arid plains and desert.

[4] ITM= Irano-Touranian: Arid and semi-arid mountains.

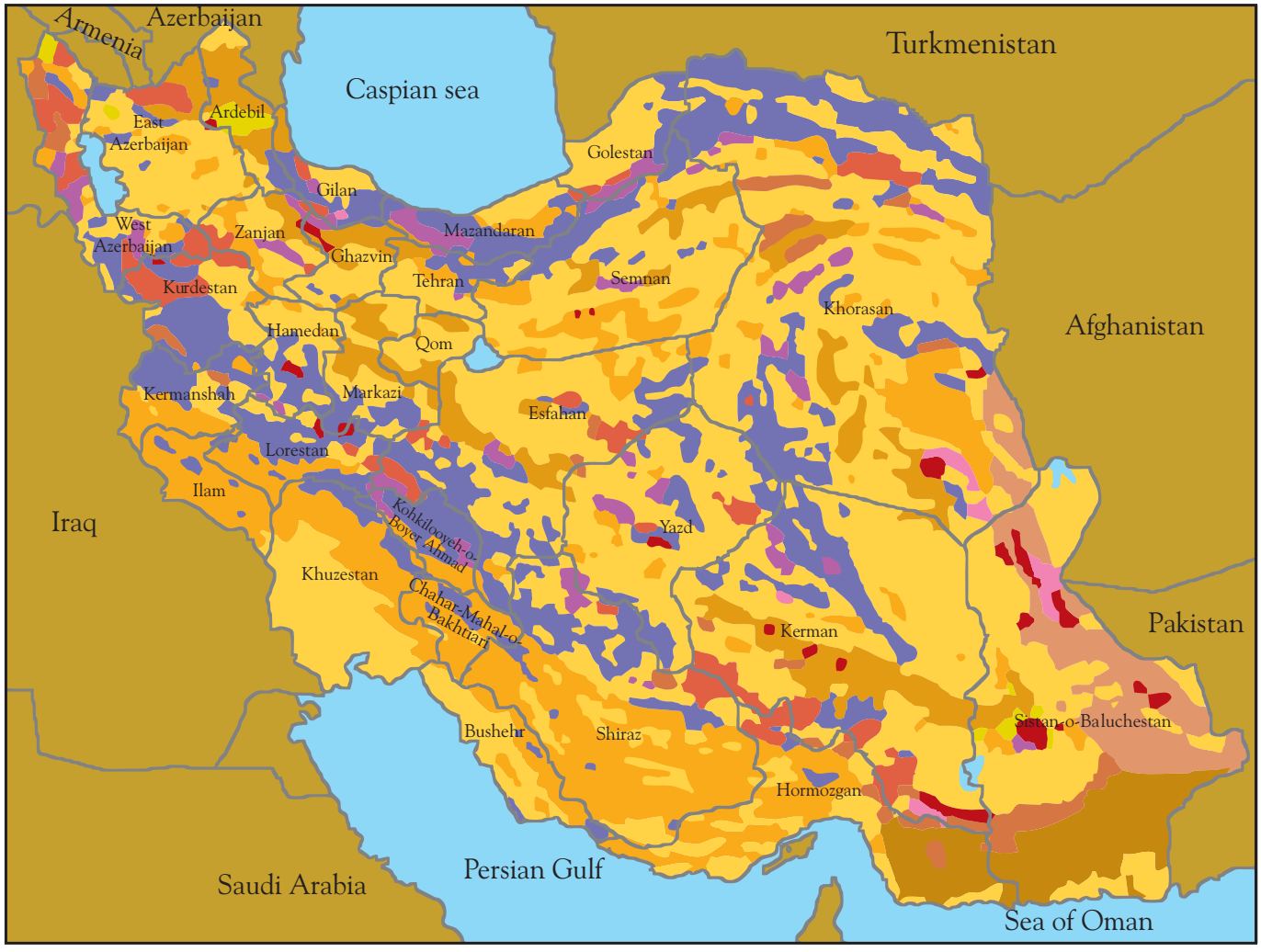
[5] Z= Semi-arid Zagros mountains.

Annex 2

Maps

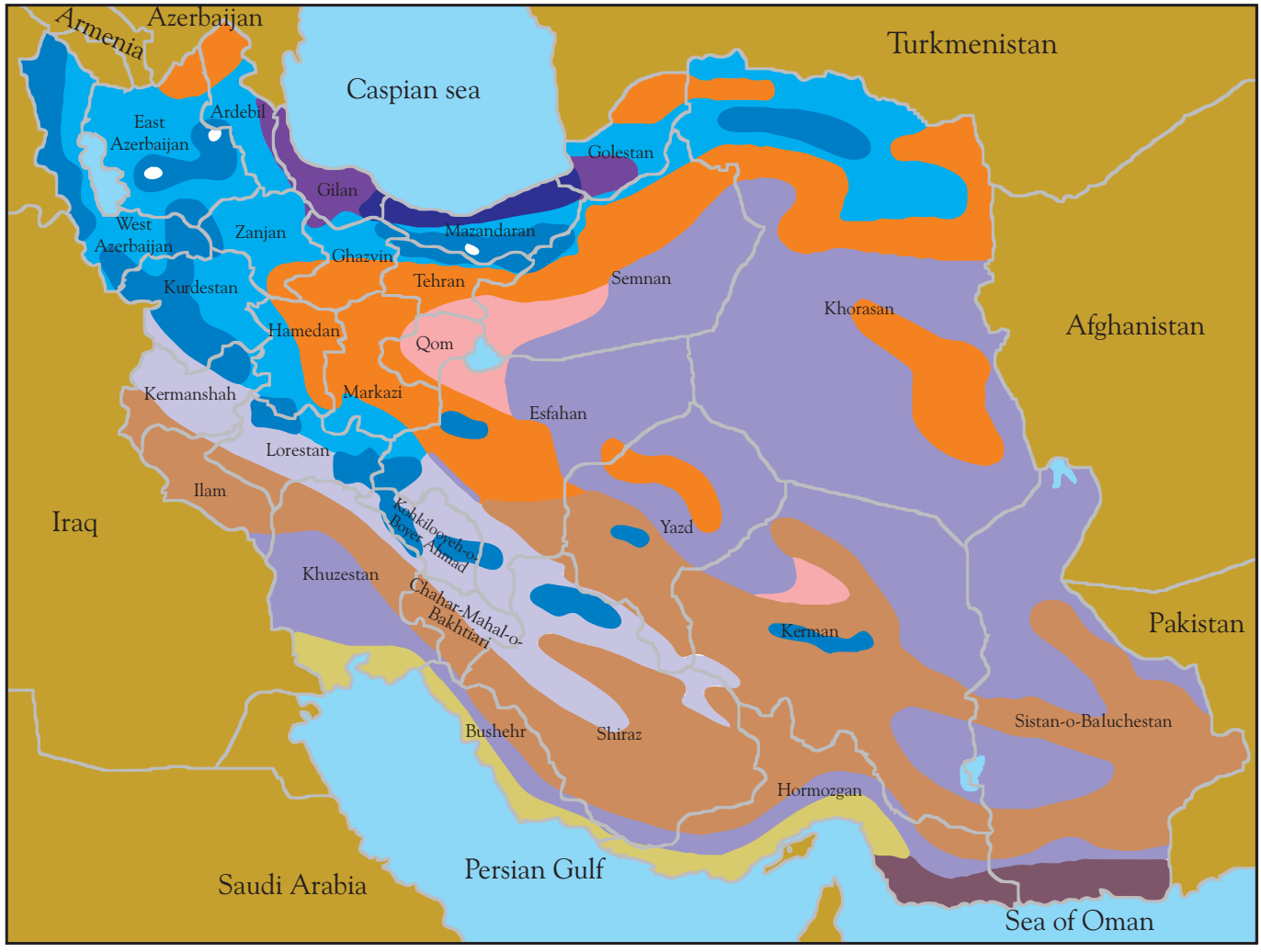
map 1: Islamic Republic of Iran

map 2: Geological map



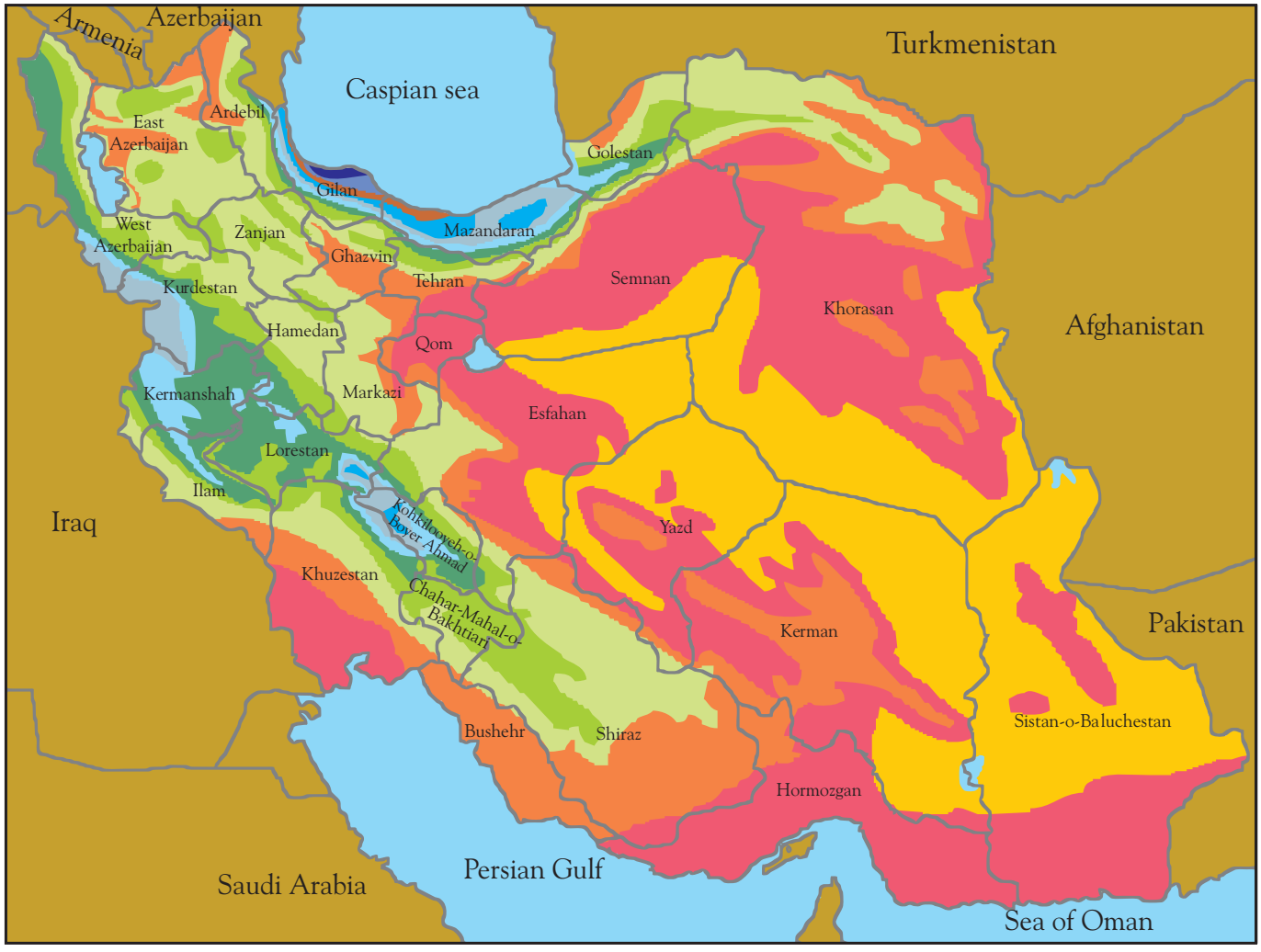
- Quateracy
- Igneous rocks
- Tertiary
- Igneous rocks
- Paleogene
- Upper cretaceous-eocene
- Sedimentary rocks
- Paleozoic
- Mesozoic
- Precambrian
- Metacambrian
- Intrusive igneous rocks

map 3: Climate map



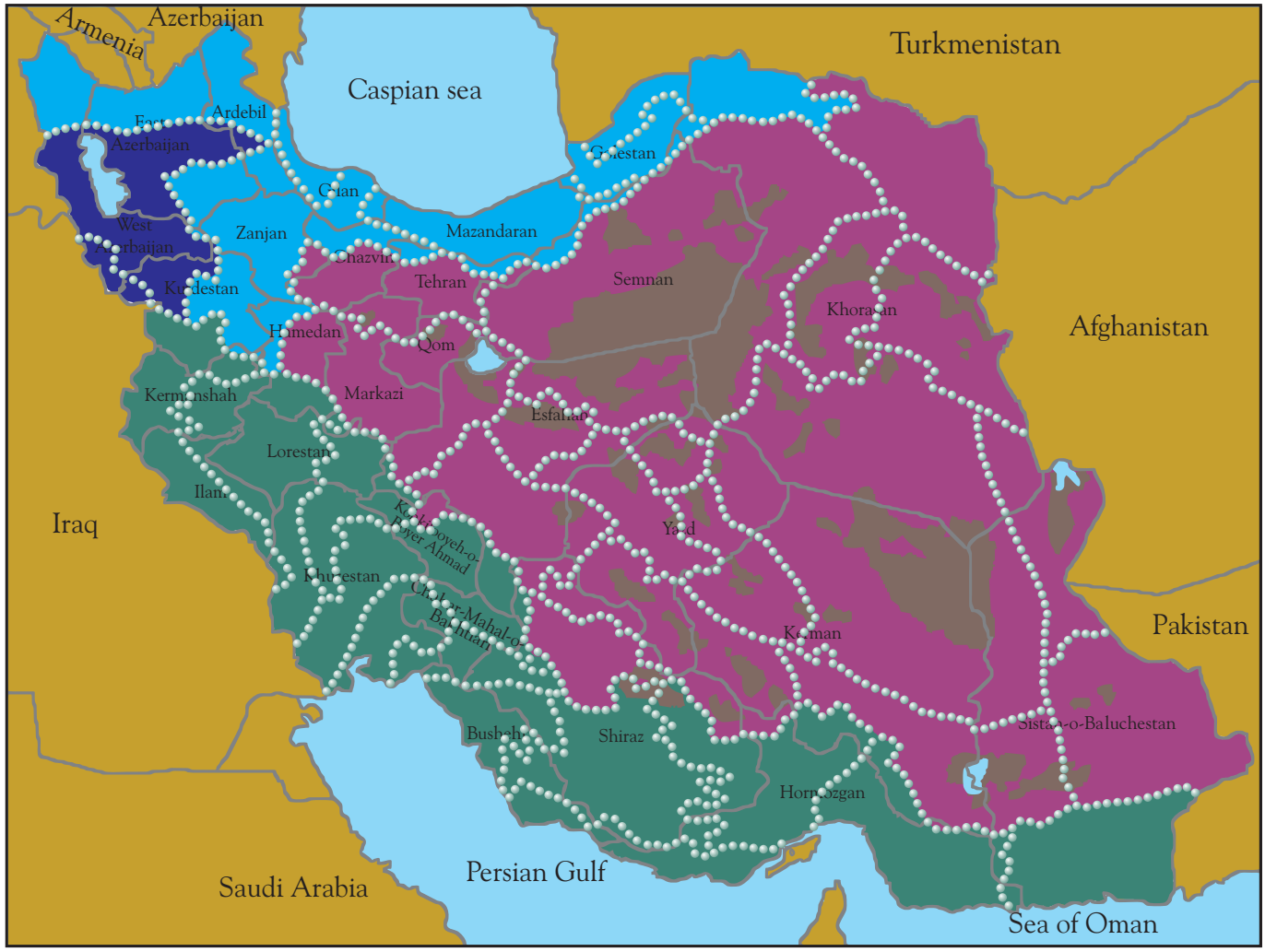
- Semi-desert cold
- Semi-desert warm
- Arid desert
- Warm and arid desert
- Warm coastal arid
- Coastal arid
- Very cold mountain
- Cold mountain
- Very humid caspian temperate
- Caspian temperate
- Spring mediteranean
- Mediteranean

map 4: Annual precipitation



- Less than 100 (ml)
- 100 - 200
- 200 - 300
- 300 - 400
- 400 - 500
- 500 - 600
- 600 - 800
- 800 - 1000
- 1000 - 1200
- 1200 - 1400
- 1400 - 1600
- 1600 - 2000

map 5: Watershed basins

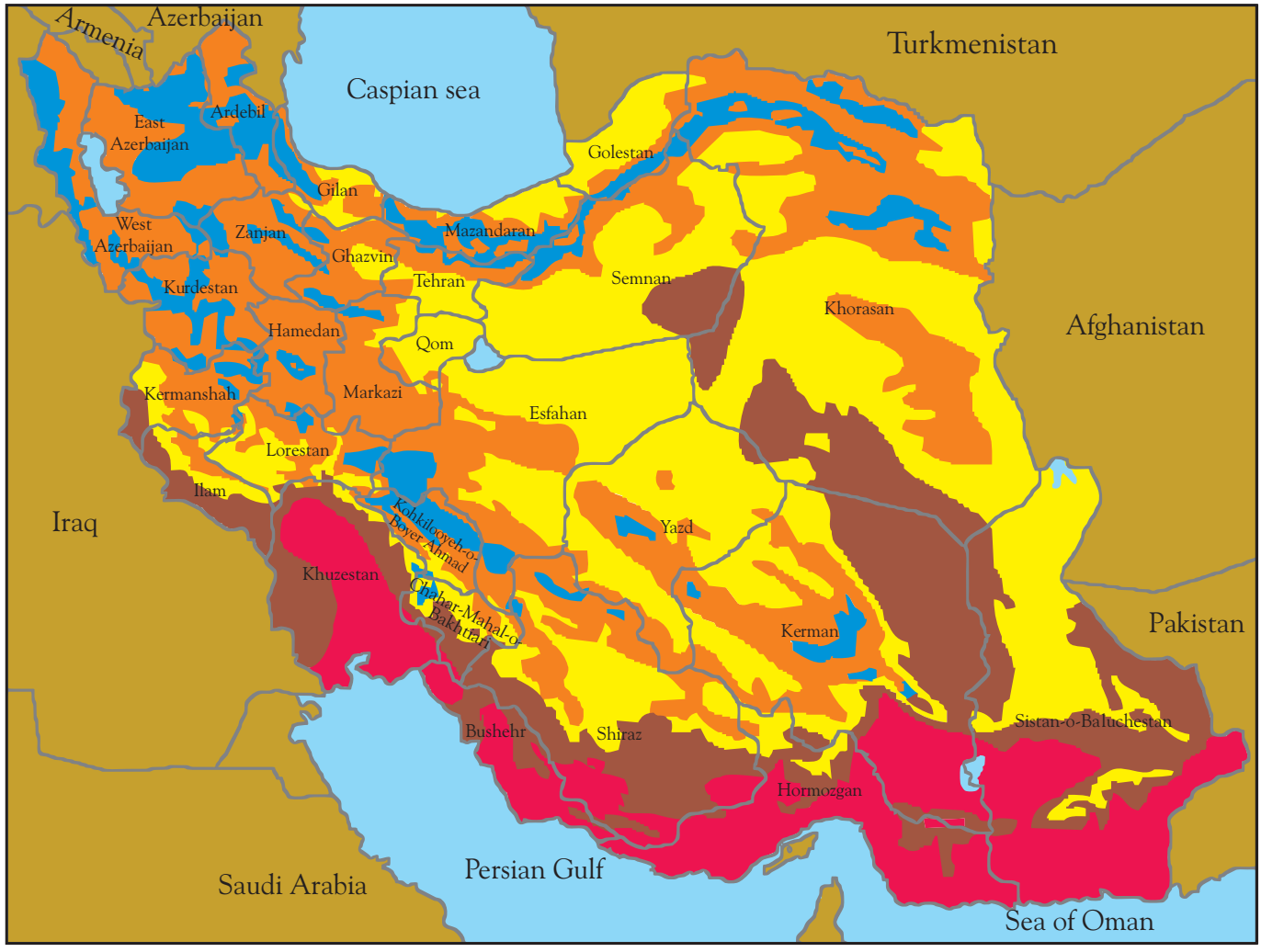


- Caspian sea basin
- Urmia lake basin
- Persian gulf basin
- Inner plateau basin
- Deserts
- Watershed regions

map 7: Protected areas

- National park
- National Natural monuments
- Wild life refuges
- Protected area
- Biosphere reserve

map 8: Annual mean temperature



+5 (Celsius degree)
+10
+15
+20
+25
+30

۱- ناکافی بودن آگاهی‌های عمومی در خصوص اهمیت فرآیندهای اکولوژیک و تنوع‌زیستی.
۲- عدم دسترسی به اطلاعات در مورد شرایط زیست محیطی کشور.
۳- بهره‌برداری نامناسب از منابع.
۴- الگوهای تولید و مصرف ناسازگار با حفاظت محیط زیست.
۵- مکان‌یابی نامناسب برخی از فعالیت‌های اقتصادی.
۶- ضعف در اجرای قوانین و مقررات و برنامه‌های پایش زیست محیطی.
۷- نا آگاهی از ملاحظات زیست‌محیطی در برنامه‌ها و سیاستهای کلان بخشی و منطقه‌ای.
۸- فقدان تعریفی مشخص از مدیریت و کاربری اراضی.
۹- تمرکز نامناسب جمعیت در برخی از اکوسیستم‌ها.
۱۰- فقدان شفافیت در سیاست‌ها.
۱۱- کمبودهای تخصصی در مدیریت و حفاظت از محیط زیست.

فعالیت‌هایی که باعث تهدید و تخریب تنوع زیستی در ایران می‌شوند عمدتا شامل موارد زیر هستند: چرای مفرط شکار بی رویه، بریدن درختان، استفاده از شاخه‌ها و علف‌ها برای سوخت، تبدیل منابع طبیعی به اراضی‌کشاورزی، عملیات راه‌سازی، معادن‌و فعالیت‌های نظامی که برخی خرابی‌های حاصله را می‌توان با بکارگیری فنون موجود تا حدودی ترمیم نمود ولی اصلاح فوری کاربری اراضی و اقدامات مدیریتی مورد نیاز است. علت ریشه‌ای مشکلات زیست محیطی به ظرفیت های ناکافی در اقدامات حفاظتی باز می‌گردد.

بخش سوم به تشریح فعالیت‌های بین المللی، منطقه‌ای و معاهدات در خصوص تنوع زیستی و حفاظت از آن می‌پردازد، حال اینکه بخش چهارم به برنامه‌های آتی اشاره دارد. برای حفاظت از تنوع زیستی در سه برنامه پنج ساله توسعه کشور (۱۳۷۹ تا ۱۳۹۳) چهار راهبرد (استراتژی) پیشنهاد شده اند. راهبرد اول آموزش و ترغیب مشارکت‌های‌مردمی را دنبال می‌کند. راهبرد دوم به تشکیل نظام اطلاعاتی، سیستم‌های پایش و مطالعه تنوع زیستی مربوط می‌شود. راهبرد سوم سازماندهی مجدد ساختارهای نهادین در امر استفاده پایدار را در بر می‌گیرد. راهبرد چهارم در مورد مدیریت نظام‌مند و حفاظت از منابع تنوع زیستی بحث می‌کند. مجموعه‌ای از برنامه‌های عمل در مورد هر یک از راهبردها نیز نگارش یافته‌است.

چکیده

زندگی مدرن امروزی رابطه انسان و طبیعت را روز به روز ضعیف‌تر و کمرنگ‌تر کرده است. انسان به طور آشکارا و مداوم گونه‌های بسیار با ارزش را نابود کرده و متاسفانه این روند همچنان ادامه دارد. فن‌آوریهای نوین انسان را قادر ساخته که به نقاط بسیار دور دست در کره زمین دسترسی پیداکند و این امر به صورت رو به تزایدی موجب انهدام و تخریب بیوم‌ها، زیستگاه‌ها و اکوسیستم‌ها شده است.

تخریب اکوسیستم‌ها موجب انقراض گونه‌های زنده کره زمین و نیز کاهش ظرفیت محیط زیست در تامین خدمات اساسی برای انسان (مانند آب سالم) خواهد شد. تاریخ استفاده و بهره‌برداری انسان از طبیعت نشان دهنده موارد زیادی از مدیریت ناصحیح است. بسیاری از فعالیتهای به ظاهر فریبنده انسان در محیط زیست، در نهایت به تخریب آن انجامیده است. در سطح گونه‌های جانوری، ایران دو گونه از نادرترین جانوران خود را به نام های **شیر ایرانی** و **ببر مازندران**، به علت عدم کنترل شکار و تخریب زیستگاه‌های مربوطه از دست داده است. گونه‌های در حال انقراض فراوانی نیز وجود دارند که نیازمند حمایت و حفاظت عاجل هستند.

بخش اول گزارش ملی تنوع زیستی جمهوری اسلامی ایران به کنوانسیون تنوع زیستی، به وضعیت منابع طبیعی ایران و برخی بهره‌برداری‌های عمده از آنها اشاره می‌کند. پنج بیوم اصلی در ایران شناسایی شده است. زیستگاه‌های ایران پناهگاه حدود ۸۲۰۰ گونه گیاهی است که از آن ۲۵۰۰ گونه بومی هستند. از این زیستگاه‌ها ۱۲/۴ میلیون هکتار به عنوان اراضی جنگلی و ۸۹ هزار هکتار به عنوان پوشش مانگرو در سواحل جنوبی ایران طبقه بندی شده اند. مطالعات صحرایی در ایران نشان می دهند که بیش از ۵۰۰ گونه پرنده و ۱۶۰ گونه پستاندار وجود دارد. تالاب‌های ایران اهمیت جهانی دارند، جمعیت زیادی از پرندگان مهاجر در این تالاب‌ها زمستان گذرانی می‌کنند و یا در مسیر راهشان به آفریقا و هندوستان در این تالاب‌ها مدتی توقف می‌کنند. به علت وسعت زیاد و تنوع اکوسیستم‌ها، جمهوری اسلامی ایران یکی از کشورهای شایان توجه در خاورمیانه و غرب آسیا در خصوص حفاظت از تنوع زیستی به‌حساب می آید.

کنوانسیون تنوع زیستی اولویت‌های حفاظتی را از سطح یک گونه به اکوسیستم‌ها ارتقا داده است. دست‌آورد این طرح ممکن است در نظر اول بسیار آسان دست یافتنی تلقی شود ولی اجرای این سیاست‌ها و قوانین مشکلات بسیار زیادی را برای مجریان در بر خواهد داشت. بیشترین این مشکلات ناشی از نامتناسب بودن وسعت مناطق حفاظت‌شده، کاستی‌های علمی از نظر مدیریت و انعطاف‌ناپذیری قوانین مناطق حفاظت شده‌است، اگر چه اتخاذ رویکردی جدید در مورد مناطق حفاظت‌شده و حفاظت از تنوع زیستی مستلزم توجه خاص به مسایل زیست محیطی چه در ابعاد جهانی و منطقه‌ای و نیز از نظر سیاستهای توسعه‌ای حایز اهمیت است. گزارش ملی تنوع‌زیستی ایران، اساسی را برای توسعه پایدار منابع اتخاذ کرده و ذخایر بیولوژیکی کشور، براساس منابع آبی، منابع ساحلی، کشاورزی، جنگلی و تالاب‌ها توصیف می شوند.

صرف نظر از مناطق حفاظت شده، در سایر نقاط کشور، حفاظت از تنوع زیستی بسیار ضعیف بوده و سیاست‌های توسعه پایدار اکولوژیک اعمال نشده‌اند.

بخش دوم گزارش به بررسی عوامل تهدیدکننده تنوع زیستی می‌پردازد. مشکلات محیط زیست ایران عبارتند از:

الف

جمهوری اسلامی ایران

اولین گزارش ملی
به

کنوانسیون تنوع زیستی

تهیه شده توسط
دبیرخانه طرح تدوین استراتژی و برنامه عمل ملی حفاظت از تنوع زیستی
دی ماه ۱۳۷۹