COUNTRY REPORTS

THE STATE OF **THE UNITED ARAB EMIRATES** BIODIVERSITY FOR FOOD AND AGRICULTURE

UAE STATE OF KNOWLEDGE OF BIODIVERSITY FOR FOOD AND AGRICULTURE

Introduction:

Biodiversity is important in itself and has high value, it is the source of several benefits of goods and services that support the well-being of the economic and social society, such as food supply, provision of building materials, mild climate, disaster mitigation, renewal of soil fertility, disease control, and the provision of genetic resources, therefore the biological diversity is the mainstay of human welfare , livelihoods and culture.

Biodiversity is of great importance to United Arab Emirates, where the advantages of many important environments that have multiple values. Desert environment supports different types of many plants that have adapted to the harsh climatic conditions which important source for grazing and used as feed for animals which are of great value in the stabilization of sand dunes, it also has many medical uses, in addition to it's considered as a source of adaptive genes making them an important source of biodiversity for food and agriculture. In the mountain environment wildlife have adapted to these systems and their habitats of fresh water in valleys and springs, and due to the nature of the rugged, they are considered as a refuge ideal for wildlife for some species that are under pressure, such as the Arabian leopard. The mountain environment in the state consist about 44% of the wild plants, and 42 % of wild mammals, and 24% of reptiles and 17% of birds. Also constitute the valleys and plains of sedimentary environment that important pastoral areas of the country due to fertility. Marine and coastal environments plays an important role in providing food, where fishing is the lifeblood of traditional life in the community, the marine environment has also been used historically for transportation, while collection of pearls form in the recent past, the cornerstone of economy for the community. The marine and coastal environment habitat for many marine species, which represent sites for hatching important fish and contribute to the protection of the beaches of coastal erosion, also play a role in contributing to mitigating the effects of climatic change, and is a source of interest in industrial, commercial, cultural and recreational activities.

I- Assessment and monitoring of biodiversity for food and agriculture:

The current status of biodiversity for food and agriculture in the UAE:

1- More than 800 species of plants were recorded on the country level, and distributed to various environments, and contrasting vegetation in terms of density and coverage by high areas and the rate of rainfall, the most endangered species were (Nannorrhops ritchieana) , (Desmidorchis flavus) , (Limonium carnosum) and (Salix acmophylla).

2-As for the animals, it has been recorded 48 species of wild mammals including the Arabian oryx (Oryx leucoryx) and Mountain Gazelle (Gazella gazella) and deer sandstone (Gazella subgutturosa) , (Hemitragus jayakari) and several globally endangered animals.

3-The United Arab Emirates is rich in species of birds as more than 440 species and many of them recording registered in the International Union for Conservation of Nature as threatened with extinction, including the Falcon (Saker Falcon, Falco cherrug), bustards (Houbara, Chlamydotis macqueeni) and cormorants Socotra (Socotra Cormorant) which UAE has made great efforts to protect them.

4-As for the reptiles and amphibians scored at the state level nearly 72 species, including truck tail lizards, sea turtles and the Arab frog and promise of endangered species.

5- Coral reefs: the most prominent marine habitats of coral reefs where abounds with more than 40 species of coral reefs, which are located along the coast of the state and concentrated on the outskirts of the islands, and can be divided according to the physical conditions into two sections: the coral reefs that resides on along the coast of the Arabian Gulf is relatively shallow and which is characterized by high heat and salinity, and rare presence of types of soft corals in this region, and the other section is the east coast on the Sea of Oman, which is characterized by the presence of the depths of the largest and different terrain with less temperature and salinity and rich in coral. Coral reefs are facing important risks like climate , increasing the acidity of the oceans, as well as pollution and bridging the coast and overfishing.

6-Pressure on wildlife and habitat destruction lead to the extinction of many species, including 6 species of mammals, which is considered extinct like Arabian oryx (Oryx leucoryx), (Capra nubiana), (Canis lupus), (Hyaena hyaena), (Panthera pardus) and (Hystrix indica). These factors are threating more than 150 other kinds.

Environments of UAE:

United Arab Emirates has advantage of existence of many important environments, and are summarized as follows:

1.Desert environment:

UAE lies in the arid tropical zone which extending across Asia, North Africa, the desert sand make about 80% of the country's total area, which is home to different types of seasonal plants , adapted to harsh climatic conditions of the country, which constitute an important source of food for animals, and contribute significantly to install sand dunes and combating desertification and to minimize the impact of global warming, also these plants have multiple uses in folk medicine, perfumes, incense and food for people in some of the local popular dishes. Desert is home to many animals, including a large number of hawks, and so is the hunting sport using Arab hawks of the old traditional practices, which are enjoying great popularity. Another important practice in UAE is training camels, and keep the original genetic resources, and is held annually in the state of international racing camels and horses, and given the importance of heritage for these types of many centers established research to improve these breeds and keep the original of them.

2.Mountain environment:

Stone Mountains constitute a barrier in the east and north of the state, and works as an area to collect rain water, and surface water runoff which considered the region's only source that feeds the groundwater. There are many organisms that have adapted to special habitat mountain systems in fresh water catchment areas and valleys such as dragonflies, frogs, fish and others. The nature of the rugged mountains make it a very ideal refuge for wildlife for some threatened species such as the Arabian leopard endemic. Examples of such environments where Jebel Hafeet which is a protected area in the Abu Dhabi with environmental and historical importance, it has been more than 181 species of plants in the region recording. Other examples Wurayah Valley ,one of the important reserves in Fujairah, which is one of the three most important global habitats of the Arab Cleanse, also its a home to about 44% of the wild plants, and 42% of wild mammals and 24% of reptiles and 17% of birds.

3.Sedimentary Valleys Environment:

These valleys are filled with water during periods of limited rainfall, while the plains pastoral environment are more water-saturated, and looks in the form of tracts of land which is surrounded by highlands, and because of retaining the water level is close to the surface soil, it has helped the growth of many plants which, making valleys and alluvial plains of the most important state pastoral areas due to soil fertility. One of the main valleys in the state are Wadi Bih , Wadi Welding , Wadi Busira and Wadi Wurayah.

4.Marine and coastal environment:

Arabian Gulf and Sea of Oman includes ecosystems of great value and unique diversity, which includes a group of islands, reefs , marine grass , salt marshes and mangroves. In addition to the self-worth, their role in the conservation of biodiversity they provide community services and varying degrees of importance such as food, feed ,goods and many of the genetic resources and contribute to the protection against the effects of climate change, such as rising sea level and regulate temperature and reduce the effects of global warming, as well as used as areas of recreational and educational , they form the basis of the natural and cultural heritage of the citizens of the country.

Fishing is a valuable source of food for a long time. Citizens have historically been associated with the sea; and there are many well-known traditional fishing methods. It is traditional practices drying fish and save them for later consumption as food for human or animal and thus contributing to maintaining the ecological balance. As the marine environment has historically been used for transportation. Prior to the development of the petroleum and natural gas state, pearl collection was an important resource for the country's economy with the rest of the other coastal and marine resources. It is worth mentioning that the sea grass and coral reefs and mangrove habitats for many marine species have also represent important sites for spawning fish, and feeding sites in addition to contribute to the protection of beaches and coastal erosion. The mangrove forests, which cover about 120 thousand hectares of land along the shoreline, an integral part of the state coastal ecosystems, mangroves also contribute to the absorption of greenhouse gases.

5.Ecosystems of Fresh Water:

Fresh water is limited resources. There is some running water, which settles a year-round in some of the deep grooves (valleys) in mountain environments, and some marshes and artificial lakes. The valley in Fujairah is a good example of freshwater systems, which announced in 2009 wetlands reserve at the international level. The region is a unique hydrology system allows ongoing access to water among the rocks which is a fresh-water tables, waterfalls and pools. Water channels are considered traditional heritage have contributed for many years in the exploitation of water resources in a sustainable manner and estimated to 150 channels while 50 of them resorted still currently working depending on the annual rainfall and runoff valleys fed.

Trends of Biodiversity Status in UAE:

1.Plant Biodiversity:

It was recorded about 640 plant species in the state in 2010 , the number of plant species that have been recorded in 2013 raise to 731 plant species . The increase in the number of species recorded are due to research that are made by the concerned authorities, universities and research centers and the Ministry of Environment and Water in cooperation with international experts and that during the last period, in addition to the high proportion of environmental awareness of the importance of maintaining the wild genetic vegetation and diversity.

Among the plants that have been registered 10 types of Gymnosperms and Ferns. Among the flowering plants there are 156 single-lobe type (Monocots) and 565 bi-lobe type (Eudicots). There are 386 genus of

vascular plants represented in the 83 families. Among the most important families in terms of the number of species, the family of cereals (Poaceae) , (Asteraceae) , the legume family (Fabaceae) and the Crusades family (Brassicaceae).

2.Animal Biodiversity "Mammals":

It was recorded 48 kinds of wild mammals in the country . The distribution of these mammals (18) families and (8) Orders are the rank of carnivores (Carnivora) , rank Artiodactyla (Artiodactyla) individual fingers rank (Perissodactyla , rank Rodents (Rodentia , rank Aleupreat Hyracoidea), rank Alorenbaat (Lagomorpha , rank eaters insects (Insectivora , rank Alkhvashiyat (Chiroptera) of these 48 species, there are (6) extinct types from the local environment and is the Arabian Oryx (Oryx leucoryx) which have been restored. (Capra ibex) , (Canis lupus) , (Hyaena hyaena), the Arabian leopard (Panthera pardus nimr) and Porcupine (Hystrix indica). Among the endangered species that need to protect are the Arabian oryx and the sand gazelle and deer mountain from a cultural perspective, as these animals are considered among the beloved animals.

Factors affecting the biodiversity for food and agriculture in UAE:

1. Climatic Change

Climatic change is different to its impacts from threats president of the Gulf region and the Arab, which is classified among the most categories of countries in the world to the sensitivity of potential climate change impacts, which is expected to increase in air temperature of 2 to 5.5 degrees Celsius as well as expected decline in rainfall at the end of the 21st century, which can cause a shorter winter season, dry and runners-up hotter, increasing vagaries of the weather, and the phenomena of air unstable. The impact of climatic change on the coastal area clear where that often coastal areas densely populated includes about 85% of the population and more than 90% of the infrastructure and many sub-ecosystems sensitive and a lot of cultural heritage sites task, and predominantly character sandstone, which is prone to erosion easily and low so it is particularly vulnerable to the effects of sea level rise through direct immersion, and the erosion of beaches, saltwater intrusion, have found that their vulnerability to climate change is very high, and, in particular, will affect sea-level rise caused by changing the level of climate negatively on the existing infrastructure of important coastal ecosystems and the planned development.

Reports of the adaptation to climatic change has made clear that coastal areas will experience severe water inundation due to rising sea level, where it is expected that the current crawls inside to the shore line significantly. As it is expected that all coastal cities in the UAE will experience increasing levels of immersion, and contain marine and coastal environments in the country on a unique community of organisms that have adapted to withstand extreme environmental conditions, but natural adjustment to warm temperatures may not be enough to withstand the increasingly to temperatures warmer, and it will lead this immersion levels to a number of negative effects on ecosystems and sensitive areas along the state coast effects , as recent studies have shown that the degree of the sea surface in the Gulf region temperatures have increased at a rate much higher than the global average of 0.2 ° C / decade The following is a summary of the main expected impacts:

• Marshes areas which rises above sea level only a few meters, will be at immersion seawater change and salinity.

• Mangrove forests in the face of rising sea level is expected in the future could crawl to the top. This means that their number will be reduced mangrove forests in the state because of immersion coasts and the death of a large proportion of them due to rising sea level.

• Seaweed environments keeps the local biological diversity, but there is an important part of sea turtles and other organisms food chains will be affected negatively rising sea surface and changes heat in the tides and the different salt content and changing water depths as well as the change of carbon dioxide content in the oceans , which will be reflected in the presence of sea turtles and dugongs that rely on the richness of seaweed environments.

• Coral reefs susceptible to thermal change and rises in temperature of sea water, where the expected temperature rises of between 1.5 and 2.6 degrees Celsius will exceed physiological limits may coral reefs be borne, it has been shown the impact of warmer sea temperatures on coral environment reefs where more than once suffered from repeated episodes of coral bleaching phenomenon.

• Fisheries where the seasonal change based on the rate of temperature in the center and in the surrounding sea surface with time, it is expected to be affected as a result, some of the most important fish such as kingfish negatively affected.

2. Population Growth

The increase in consumer patterns and modern living population lead to the acceleration of the rate of degradation of ecosystems, which increased pressure on various natural resources, especially water, fisheries and arable land. Population growth has increased very rapidly , population is estimated in 2015 by FAO is about ten million citizens and residents.

3. Economic growth

The need to achieve positive economic growth rates put pressure on the environment; and lead to an increase in infrastructure projects, which leads to less arable land area, and increase the exploitation of natural resources, increasing energy consumption and the consequent increase in emissions of pollutants.

4-Urban Sprawl

The urban sprawl and industrial pollution resulting from them, as well as infrastructure projects contribute to increased pressures on biodiversity and the destruction of habitats of many species through road construction and the establishment of factories, enterprises and commercial activities resulting as pollutants contribute to soil degradation and less vegetation and the disappearance of many living species , increased soil salinity , decreased soil fertility, low quantity and quality of water wells as a result of pumping water and the lack of groundwater recharge, in addition to the negative impact on wildlife.

Pressures on Biodiversity in UAE

The above-mentioned factors led to pressures on biodiversity, and the pressures are summarized as follows:

1. Invasive Species

Invasive species is one of the most important factors affecting negatively on biodiversity, in United Arab Emirates Invasive species have introduced many kinds by mistake with the increase in commercial activity or illegal trade in wild species. Introduced some plants that bear the high temperatures and salinity into the country for use in the forest and landscape cultivation in cities, as an example Prosopis (Al Goeve) tree (Prosopis juliflora) and introduced many other species fled from their owners and began to compete for

food with native species, which may cause serious consequences for wild life in particular and the environment in general. It is provided that the species of animal that acquisition of personal rock pile and began to multiply and spread. It is believed that the bird Almaina or known Indian Almaina access the state three decades ago as increased recording spread sites from 10 sites to 30 in Abu Dhabi over the past decade and there are many other birds that are considered invasive in the state such as domestic Raven and other mammals, birds and invertebrates. Despite the absence of precise figures for invasive species in the state, but he has been doing a preliminary study of exotic species in the state, which included many of the endemic species was recorded (149) invasion kinds.

2. Red Tide

Red Tide is a phenomenon of natural phenomena that have a historical record as old and found fossils of marine life deaths associated with the microscopic organisms in large numbers. In recent years , red tide phenomenon has become much repetition, but that in some areas up the intensity of phytoplankton causing red tide phenomenon ratio of between 20 and 50 times what it is in the territorial waters may continue its presence in some cases to more than 13 months. In UAE phenomenon lasted nearly nine months during 2008 and 2009, Showed plant plankton that cause red tide in several colors, including green, red, yellow, brown, gray, as well as without color and the color is due to pigment chlorophyll present their type. This phenomenon may constitute a destructive factor not only on marine life in its various forms, but also on human health, they may follow multiple losses include his life and destroy its economy and its income and its environment.

3. Waste

Waste have increased in the state, especially in recent years, increased at a high rate and in an unprecedented way. Not only solid waste, but also hazardous materials, it formed the issue of collection and treatment of waste, in various forms, considerable pressure on the competent bodies concerned with this matter. Waste management issue occupies a leading position in the list of priorities of the environmental issues identified by the national environmental strategy and plan of environmental action in UAE.

4. Overgrazing

The overgrazing is one of the most dangerous threats on the natural desert environment. At present time no longer owners of herds rely on natural desert plants, it has become the main source of feed for livestock animals, in addition to providing water free of charge, which can increase the number of herds and breeding largely relying on imported feed. In the past, the shepherds of nomads keep herds relatively smaller and moving them from one place to another depending on water e, land and natural vegetation limits, but today, they are kept large herds in relatively small areas and are not need to move, keeping in the same place for a long time, leading to the erosion of land plants and the removal of natural vegetation. As a result, overgrazing has led to a decline in some plant species suitable for grazing significantly such as Arfaj (Rhanterium epapposum). In some cases replaced those palatable species of animals and other poisonous plants such as (Calotropis procera) and (Rhazya stricta). The worsening impact of overgrazing in the past few years due to the scarcity of rainfall, resulting in a diminished chance of plants to retain spatial existence, let alone restore their lost spaces.

5. Risks of Migratory Species of Wildlife Animals

There are many of migratory species of wildlife animals taken from areas of the State spread her like sea turtles, birds of prey, sharks suffer as where the likes of other wild animals from some of the risks that threaten their existence. With regard to the risks posed to sea turtles, development projects and development on the coast threats that lead to the extinction of coral reefs and areas of seaweed, which means reducing the shelter and important areas for nesting, as well as from other major risks, overfishing and fishing unintentional (accidental) and illicit trade, as is the collection of turtle eggs a big problem facing the turtles on the beach, in addition to the pollution solids such as plastic materials, which devoured turtles by mistake, thinking it Jellyfish are also among the risks facing the sea turtles. With regard to the risks faced by dugongs (dugong), the death of 75% of dugongs on the coast Abu Dhabi dating back to the causes suffocation and drowning resulting from illegal fishing, in addition to the loss of the citizen because of coastal development activities and climatic change. The risk to birds include major changes in habitat, whether the loss or deterioration or destruction of these habitats, which affect the availability of food for these birds. Housing construction and industrial activities and infrastructure projects and other of land uses and activities that lead to a significant reduction in the number of birds. Fishing operations and tampering with bird nests also contribute to increased mortality rates of birds in addition to that is a threat to the success of the proliferation of those birds pollution operations. The risks to the sharks lies in over-fishing and the use of by-catch of fish and fishing nets illegal growing on the marine environment and human pressures.

6. Tourism activities:

The direct use of natural resources, renewable and non-renewable in the administration of properties have a greater direct impact of tourism in a particular area. A key factor in the sustainability of land use is to identify suitable land for housing construction and the establishment of infrastructure and selection of suitable sites have the most appropriate construction materials for construction, as that would lead the intensive use or unsustainable land to erosion and loss of biodiversity. Can also conduct the wrong of tourism activities (such as driving off-road, picking plants, the use of firearms, fishing, diving, direct run-over of plants and small animals) that directly affect the qualitative composition of organisms and wildlife. Tourists traveling cause an increased risk of bringing exotic species on the local environment, it is also the intensity of the presence of tourists can cause confusion in the behavior and habits of nutrition and reproduction in animals. Moreover, some activities related to tourism lead to dramatic changes in wildlife environments in which they live.

7. Desalination and Sanitation:

There is about 70 desalination plant for water in different locations in UAE, and are classified into two main categories: Fossil fuel power stations (distillation multistage fluorescence and distillation multi-effect) and stations reverse osmosis, constitute about 81% and 19% of the production capacity of water desalination .

8.Pressures on environmental resources:

A-Underground water :

Historically, the water was used in a sustainable manner after that is extracted from shallow groundwater wells that are dug by hand and pumped into the traditional fallow system and assembling water through dams. However, during the last three decades, the rapid economic development with the substantial increase in population and the significant growth in the agricultural sector, led to increase the demand for water at high rates, this situation has caused a decline in the water table, which led to the drying up of

many shallow wells and interruption water from the traditional fallow system, has resulted in the increased reliance on non-traditional sources of water, such as desalination and re-use of treated wastewater, and take action to manage traditional water sources and alternative such as dams to feed the underground reservoirs and dams to store surface water and wells for groundwater recharge and reducing losses groundwater and the transfer of water from the other emirates.

B-Coastal Habitats:

State characterized by coasts stretching along 2390 km in both the Arab Gulf and the Sea of Oman, and includes a variety of environments, including coral reefs and sea grass and mangrove trees, islands and sandy beaches and rocky and muddy coastal marshes, waters provide habitat for many important endangered marine organisms global extinction, such as turtles and dugongs rostral. In addition to its important role in the preservation of biodiversity, these environments provide many ecosystem services, including food, entertainment and protection of beaches and make up the marine environment an integral part of the cultural heritage of the local community of the UAE, has been fishing and pearl the main pillar of the national economy, prior to the development of oil and gas sectors has led economic development rapidly to advance the urban development and expansion of the infrastructure which go together with a marked increase in the population, and the presence of many heavy industries on the coast which use sea water for the purposes of desalination or cooling create pressure on coastal environments. This coincided with the reclamation and excavation in tidal areas for the purposes of recreational and residential activities, and the development of fishing efficiency resulting drain on important marine resources economically, has been escalating led in the frequency of coastal activities to a number of consequences that require management and rapid intervention to ensure the sustainability of this important environments.

C-Fisheries:

Fisheries is one of the main pillars of food security in the United Arab Emirates and an important indicator of economic and social development and a source of livelihood for the segments of society involved in fishing and other related professions career, and currently there are many problems facing fishing sector as a result of reduced fish stock size in the country and that the consequent increase burdens and costs in supplies and fishing equipment and fuel to workers in the profession as a result of after the current fisheries areas and lack of economic viability of fishing trips which leads to the reluctance of fishermen and reduce the production process and the impact on consumers and all professions associated with this sector.

Needs and Priorities of biodiversity in UAE:

Ministry of Environment and Water in collaboration with the United Nations Environment Programme / Regional Office for West Asia released the first National Strategy of Biodiversity in 2015, it has been issued the formulation of national targets in handling the threats that have been referred to previously.

The following are the priorities and objectives of the National Biodiversity Strategy:

1. Integrate biodiversity concepts in all sectors and community

• Implement awareness programs targeting all residents of UAE to be at least 75% of the citizens of the state are aware of the values of biodiversity, protection, and sustainable uses.

• Integrate biodiversity values in the planning and decision-making processes.

• The abolition of incentives, including subsidies which caused harmful effects to biodiversity, taking into account social, economic and cultural effects.

• Increase the number of government and non-governmental institutions that measures and plans adopted to achieve sustainable production to reduce the impact on biodiversity in the country.

2. Strengthening the knowledge base and capacity-building for conservation , management and sustainable use of biodiversity.

• Assess and monitor the status and direction of the main elements of biodiversity and linked to the process of decision-making.

• Taking into account the practices and traditional knowledge and innovations related to conservation and sustainable use of biodiversity in the development of local and national policies and legislation.

3. Improve the status of biodiversity by protecting habitats and species and genetic diversity and rehabilitation of degraded ecosystems.

• UAE ranked among the top 10 countries in the sub-index on biodiversity within the environmental performance of the index from the University of Yale.

• Save 12% of terrestrial areas and inland water, and 14% of coastal and marine areas, through, a representative network of ecosystems of protected areas and with effective management, taking into account, as appropriate, linking of particular importance to biodiversity and system services areas ecosystem.

• Develop and implement programs to improve the conservation status of 70% of the more threatening species with extinction.

• Reduce the rate of loss of natural habitats, including critical habitats, by 25%.

• Improve the contribution of ecosystems in carbon stocks by protecting and start the rehabilitation of at least 50% of degraded habitats, helping to mitigate the effects of climatic change and desertification.

• Carried out at least 90% of the plans for the rehabilitation of degraded ecosystems that provide essential services.

• Conservation and protection of important genetic resources in the state.

4. Reduce the pressure on land and marine ecosystems.

• Managed in a sustainable manner at least 70% of important and vulnerable to depletion of marine living resources.

• Sustainably managed 50% of public and private land, the exploited for the purpose of agriculture, aquaculture and forestry, to ensure the conservation of biodiversity.

• Reduce pollution from different sources to levels that do not damage the sensitive ecosystem functions and biodiversity.

• Identify all types of exotic and invasive species and pathways and develop and implement management plans to control the priority species.

• Develop action plans and begin to implement to reduce the impacts of human activities on marine ecosystems and sensitive improve the resistance to the effects of climate change.

5. Strengthen cooperation and coordination at the local, regional and global level in the relevant biodiversity conservation areas.

• Adoption of the biodiversity strategy by the federal government began to implement their programs at all levels in the state.

• Allocate financial, human and technical resources for effective implementation of the national strategy for biodiversity of the state at the federal and local levels

• The implementation of relevant biodiversity effectively and consistently agreements.

6. Prepared strategies that contribute to the conservation of biodiversity in the UAE:

- The National Strategy of the marine environment and coastal areas.

- The National Strategy to Combat Desertification.

- The national strategy to preserve water resources

- The National Strategy of biosecurity

- Environmental Performance Index

Order improvement of biodiversity index within the environmental performance index (EPI); where the state ranked (15) position in 2014 compared to (23) position in 2012. And first place in the marine reserves index in 2014 after it was occupies (33) position, reflecting the efforts made by UAE in the field of preservation of the ecosystem statues.

II-Sustainable use and conservation of biodiversity for food and agriculture

The protection and propagation of the species:

Many pilot projects aimed at sustainable use and preservation of wildlife and biodiversity as interested in the first place to raise the level of importance of the species and conservation such as plants, mammals, birds, reptiles and invertebrates, fish and amphibians.

1. Natural Reserves

The number of natural reserves which have been declared was 19 protected up to the year 2010 and increased to (22) in 2013, as the number of reserves that have been recorded of international importance in the framework of the "Ramsar" of protected areas (2) in 2010 to (5) reserves in 2013.

2. Mohammed bin Zayed Fund for Species Conservation

Fund covering all the continents of the world, many of the projects were represented in during the past four years (2010 - 2013) The following number of programs and activities supported by the Fund on every continent are: Africa (117) - Asia (104) - Europe (11) - North America (48) - South America (44)

3. Protection Center and the propagation of the Arabian Peninsula Endangered Animals Extinction

Action Center for the Protection and propagation of the Arabian Peninsula endangered animal species on the protection of a lot of these animals in the following summary of the protection status report in the period from 2010 to 2013 are: Reptiles: 13 Type,Birds: 114 Type and Mammal: 49 Type.

Two types have been breeding of reptiles are the lizard Arab and Arab cobra endangered and which propagate in captivity is considered the most important achievements of the breeding center in Sharjah and has been breeding birds, including 15 species brown eagle endangered.

From 34 breeding mammals the most important is African cheetah center and Arab Lynx and the cat wild tiger and the Arab wolf in addition to the two types of deer and oryx.

4. Habari (حباري) conservation programs

The program currently holds three breeding centers management are:

"National Avian Research Center" in Sweihan, Abu Dhabi

"The Emirates Center for the Development of Wildlife" in the Kingdom of Morocco

"Sheikh Khalifa Houbara breeding center" in the Republic of Kazakhstan in Central Asia

5. Protect Endangered Sea Turtles

The Emirates Wildlife Society in association with the World Wide Fund for Nature (EWS-WWF) keeps track of turtles hawksbill across the bay to observe the behaviors and movements patterns where you installed the tracking devices via satellite on the number 32 turtle female in pre-spawning stage during 2012, bringing the total the number of turtles that have been followed up to 75 turtle over three years, with the initial results of these programs contribute to the Global Strategy for the Global Fund for Conservation of Nature and related marine turtles and international efforts to keep sea turtles from extinction.

6. Cultivation of Coral Reefs

Coral reefs have been farming by Marine Environmental Research of the Ministry of Environment and Water Management, where he was installed a number of corals and coral reefs total installed with the end of 2013 about 6400 coral Division.

III-Policies, institutions and capacity

The Ministry of Environment and Water and in collaboration with the United Nations Environment Programme / Regional Office for West Asia, as part of the process of the first national strategy for biodiversity state preparation, contracted (3) national workshops on 2013, participated in workshops representatives from various ministries and national institutions and competent authorities, universities, research centers and organizations of public interest, has resulted in the outcome of the consultations conducted by the ministry with various partners for adoption of the national biodiversity targets, taking into account Vision (2021) strategic objectives of the Federal Government, and objectives of the strategy of the Ministry of Environment and Water, has been national goals are handling the threats that have been referred to the drafting of, and contribute to achieving the objectives of the International Aichi directly.

The following mechanisms that promote synergies between the various environmental conventions and between the various actors in the field of environment at the national level:

•Executive board

• Policy and Strategy Council

• Biodiversity and combating desertification team

• Coordinating Council for Municipalities

Participating stakeholders of the three Rio conventions in national discussions on the preparation of which are relevant to the subject of those conventions and national strategies. The National Strategy to Combat Desertification certainly included the strategic objective of the special role of biodiversity and the UN Convention on Climate Change to the reduction of desertification, land degradation and drought

Agreement. It is worth mentioning that the biodiversity strategy has included a special target stressed the importance of strengthening synergies in the implementation of environmental conventions.

Laws and regulations:

A summary of the extent of the integration of biodiversity concepts in some national legislation.

Federal Laws:

Federal Law No. (8) for the year 2013 on the prevention of infectious animal diseases and epidemiology and control.

Law aims to protect animal health through the implementation of animal disease prevention and control programs, the owners of the animals entrusted the responsibility of reporting on animal diseases When observed or suspected of the most serious disease or the need to inform the authorities established by the law, as mandated by law, the ministry in cooperation with the competent authorities to take preventive action on animal diseases. Accordingly, this law contributes to the conservation of animal species and therefore the state of biodiversity conservation.

Federal Law No. (9) for the year 2013, in respect of the Food and Agriculture Plant Genetic Resources,

Law aims at the protection and maintenance of the Food and Agriculture genetic resources and the reduction of depletion and sustainable use them and to ensure the equitable sharing of benefits arising from their use, which contributes so clearly in the implementation of the objectives of the Convention

Amendment to the Federal Law No. (24) of the year 1999

In order to ensure keep up-to-date environmental law

Work on the preparation of a federal law on the organization of possession of dangerous animals

Where the law is aimed at regulating the possession and the possession and handling of dangerous animals and to protect the rights and ensure access to quality care animals

Executive Council Resolution No. (9) for the year 2012 on the prevention of environmental degradation in the wild areas in the Emirate of Sharjah

Save decision necessary for the conservation of biodiversity and wildlife system in wilderness areas in Sharjah environments legal and administrative guarantees in addition to that identified the legal bases and administrative fines that prevent activities and actions that cause negative impact on wild components of the environment and harm the interests of society, and contribute to environmental resources development and exploitation optimized for the benefit of present and future generations.

Ministerial Decrees:

This has been issued following the ministerial decrees related to the protection of biodiversity state:

Fisheries:

Ministerial Decree No. (706) for the year 2013 on the organization of the manufacture, import and use of Gargoors

Ministerial Decree No. (607) for the year 2013 on the identification of fishing areas using nets manner Barber (Hedging).

Ministerial Decree No. (482) for the year 2013 on the organization by fishing nets.

Ministerial Decree No. (372) for the year 2013 on a moratorium on the issuance of new licenses for fishing boats temporarily

Ministerial Decree No. 211 for the year 2013 on the prevention of fishing and marketing of Alibdh fish in Emirate of Abu Dhabi

Ministerial Decree No. (470) for the year 2012 on migratory pelagic fishing in a manner Barber (Hedging).

Ministerial Decree No. (144) for the year 2012 on the organization of Gargoors specifications.

Ministerial Decree No. (416) for the year 2011 on hunting migratory pelagic manner Barber (Hedging).

Ministerial Decree No. (285) for the year 2011 on the organization of coastal fishing

Ministerial Decree No. (217) for the year 2011 amending the Ministerial Decree No. (542) for the year 2008 on the fishing of sharks organization procedures

Livestock and Vegetable:

Ministerial Decree No. (101) for the year 2012 on the organization of import cattle - sheep - goats from countries that record by Hmlnberg virus

Ministerial Decree No. (84) of 2012 concerning the Implementing Regulations of the Federal Law No. (5) for the year 2009 regarding the input and organic products.

Ministerial Decree No. (13) for the year 2012 regarding the use of banned and restricted pesticides.

Environment, Health and Safety

Ministerial Decree No. 152 for the year 2013 concerning the regulation of traffic and export of hazardous waste shipments across the borders of the state.

Ministerial Decree No. 118 of 2013 obliging and suppliers of plastic products manufacturers to register biodegradable plastic products.

Ministerial Decree No. 141 of 2012 on the rationalization of energy and water consumption in government buildings / green applications.

Strategies and Projects :

There was a set of strategies and objectives for biodiversity in some emirates. The following is a review of certain strategic objectives on Biological Diversity in the UAE.

Abu Dhabi

Increase the area of nature reserves by 12% .

Keep the ratio occupied by the forest at the rate of 1.84% .

Increase the number of species in breeding programs outside their natural environments (propagation families) to 25 species

Increase the proportion of the application of the laws of land and sea to 100%

Increase the number of key species of fish that are regular monitoring of the condition to 20 species.

Increase the number of marine systems and the habitat that is regular monitoring of the condition of the current to 6 ecosystems and marine habitats.

Dubai

Strategic Plan for the municipality include strategic prompt regard to ensuring a clean and sustainable environment and falls beneath a strategic goal regard to ensuring the protection of the environment and conservation of natural resources in a sustainable manner.

The concerned party contribute to raising environmental awareness through a variety of seminars and workshops which are organized .

Sharjah

The strategic goals of the Nature Reserves Authority in Sharjah and the environment are as follows:

1. The establishment and the establishment of follow-up and update the system to preserve and manage natural areas and with all its resources in the emirate as well as control sources of pollution of the environment.

2. Establishment and follow-up and update the system to rehabilitate wildlife management of natural reserves.

3. Establishment and follow-up and update the system to spread awareness and environmental education.

Establishment and follow-up and update the program of work for the protection and propagation of the Arabian Peninsula endangered animal species center.

IV- Regional cooperation

Proceeding from the state's conviction of the importance of the participation of the international community efforts to protect biodiversity; the State has joined the biodiversity convention since 1999, it has signed on as many environmental agreements and memorandums of understanding related to biodiversity.

Conventions , Treaties and Memorandums of Understanding:

The most important conventions and treaties , memorandums of understanding related to biodiversity and joined by the United Arab Emirates.

Kuwait Regional Convention for Cooperation in the Protection of the Marine Environment from Pollution in 1978

International Trade in Endangered Species of Animals and Plants Threatened with Extinction Agreement (CITES) in 1990

United Nations Framework Convention on Climatic Change in 1995

United Nations Convention to Combat Desertification in 1998

Convention on Biological Diversity in 2000

World Heritage Convention in 2001

Preservation of wildlife and natural habitats in the Gulf Cooperation Council (GCC) in 2003

Convention on the International Treaty on the Food and Agricultural Plant Genetic Resources in 2004

Memorandum of Understanding concerning the dugongs (dugong) in 2007

Memorandum of Understanding concerning marine turtles in 2007

Convention on the wet lands of International Importance (Ramsar) in 2007

A memorandum of understanding for migrant birds 2008

A memorandum of understanding for protect migratory sharks in 2014

Regional cooperation

The state has numerous regional cooperation programs and bilateral with many countries, as well as with many of the regional and international institutions and organizations, the International Federation for the Protection of Nature (IUCN), the United Nations Environment Programme, the Food and Agriculture Organization (FAO), the International Centre for Agricultural Research in Dry Areas(ICARDA) ,the Arab Organization for Agricultural Development, the International Centre for the bio salinity (ICBA), sub-regional office of the Gulf Cooperation Council (GCC) , Yemen and the International Fund for Animal Welfare (IFAW). and has been hosting the regional offices of many organizations in the country such as Convention on Migratory Species (CMS) and the Food and Agriculture Organization (FAO), the International Center for Agricultural Research in the Dry Areas ICARDA .

One of the most important initiatives that illustrate the extent of regional and international cooperation, the initiative launched by Abu Dhabi initiative of global environmental data with support of the Environment Agency - Abu Dhabi in cooperation with the United Nations Environment Programme, on "Changing Our Environment" - Atlas of the Arab region, which was released at the end of 2013 , where the use of dual imagery via satellite to show the changes in the selected sites in the Arab region through time. And show those images, which deals with the case of sites "before and after", the pace of growth in the Arab region, depending on the number of examples and models about environmental changes on a large scale, including land use, urban growth, degradation of marine and coastal areas, change the hydrological and shrinking water area and quantity, the loss of habitat, and the impact of climatic change.

CHAPTER 1: Introduction to the Country and to the role of biodiversity for food and agriculture

Table 1. Production systems present in the country.

Indicate, for each of the production systems listed in Table 1 below, whether it is found in your country or not, regardless of its importance.

Sector	Code	Production system names (Place pointer on the production system name for a detailed description)	Check if present in the country
Livestock	L1	Livestock grassland-based systems: Tropics	
	L2	Livestock grassland-based systems: Subtropics	**X**
	L3	Livestock grassland-based systems: Temperate	
	L4	Livestock grassland-based systems: Boreal and /or highlands	
	L5	Livestock landless systems: Tropics	
	L6	Livestock landless systems: Subtropics	**X**
	L7	Livestock landless systems: Temperate	
	L8	Livestock landless systems: Boreal and /or highlands	
Forest	F1	Naturally regenerated forests: Tropics	**X**
	F2	Naturally regenerated forests: Subtropics	**X**
	F3	Naturally regenerated forests: Temperate	
	F4	Naturally regenerated forests: Boreal and /or highlands	
	F5	Planted forests: Tropics	**X**
	F6	Planted forests: Subtropics	**X**
	F7	Planted forests: Temperate	**X**
	F8	Planted forests: Boreal and /or highlands	
Aquaculture and Fisheries	A1	Self-recruiting capture fisheries: Tropics	
	A2	Self-recruiting capture fisheries: Subtropics	**X**
	A3	Self-recruiting capture fisheries: Temperate	
	A4	Self-recruiting capture fisheries: Boreal and /or highlands	
	A5	Culture-based fisheries: Tropics	
	A6	Culture-based fisheries: Subtropics	**X**
	A7	Culture-based fisheries: Temperate	
	A8	Culture-based fisheries: Boreal and /or highlands	
	A9	Fed aquaculture: Tropics	
	A10	Fed aquaculture: Subtropics	**X**
	A11	Fed aquaculture: Temperate	
	A12	Fed aquaculture: Boreal and /or highlands	
	A13	Non-fed aquaculture: Tropics	
	A14	Non-fed aquaculture: Subtropics	

	A15	Non-fed aquaculture: Temperate	
	A16	Non-fed aquaculture: Boreal and /or highlands	
Crops	C1	Irrigated crops (rice) : Tropics	
	C2	Irrigated crops (rice) : Subtropics	
	C3	Irrigated crops (rice) : Temperate	
	C4	Irrigated crops (rice) : Boreal and /or highlands	
	C5	Irrigated crops (other) : Tropics	**X**
	C6	Irrigated crops (other) : Subtropics	**X**
	C7	Irrigated crops (other) : Temperate	**X**
	C8	Irrigated crops (other) : Boreal and /or highlands	
	C9	Rainfed crops : Tropics	
	C10	Rainfed crops : Subtropics	
	C11	Rainfed crops : Temperate	
	C12	Rainfed crops : Boreal and /or highlands	
Mixed	M1	Mixed systems (livestock, crop, forest and /or aquatic and fisheries): Tropics	**X**
	M2	Mixed systems (livestock, crop, forest and /or aquatic and fisheries): Subtropics	**X**
	M3	Mixed systems (livestock, crop, forest and /or aquatic and fisheries): Temperate	**X**
	M4	Mixed systems (livestock, crop, forest and /or aquatic and fisheries): Boreal and /or highlands	

Table 2. Description or characterization of production systems within the country
Provide in Table 2 a description for each production system

Production system	Description
Crops	Irrigated fruits and vegetables
Livestock	Feed importation
Aquaculture and Fisheries	Captive fish and aquaculture
Forest	Irrigated forests
Mixed	livestock, irrigated crop, irrigated forest

Table 3. Area under production, production quantity and contribution to the agricultural sector economy of production systems in the country.

For each production system found in your country (refer to Table 1), indicate in Table 3 the area under production (km2, hectares, acres, other). If not applicable, indicate the estimated production quantity (major products aggregated) using the appropriate unit or measure (tonne, head, inventory, cubic metre, etc.) for the production system. If available, indicate the contribution of the production system to the agricultural sector economy in the country (%). Please use the most recent data available and indicate the year of reference for the data or estimates. Specify NK if not known or NA if not applicable

Production systems	Area	Production - quantity in 2015	Contribution to the agricultural sector economy	Reference year
	Value	Unit (enter)	Value	Unit (enter)
Crops	NA	NA	NA	NA
Livestock	NA	NA	NA	NA
Aquaculture and Fisheries	NA	NA	NA	NA
Forest	NA	NA	NA	NA
Mixed	NA	NA	NA	NA

CHAPTER 2: Drivers of change

Table 4. Effect of drivers on sector biodiversity within production systems in the country, by animal (AnGR), plant (PGR), aquatic (AqGR) and forest (FGR) genetic resources

For each production system indicate which drivers have been influencing biodiversity for food and agriculture, disaggregated by sector, during the past 10 years (description of drivers can be found in Annex 3). Drivers may have a strongly positive (2), positive (1), negative (-1), and strongly negative effect (-2), or no effect at all (0) on biodiversity for food and agriculture. If the effect of the driver is unknown or not applicable, please indicate not known (NK) or not applicable (NA).

Production systems	Drivers	Effect of drivers on sector biodiversity for food and agriculture (2, 1, 0,-1, -2, NK, NA)			
Code or name		PGR	FGR	AnGR	AqGR
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Changes in land and water use and management	1		**-1**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Pollution and external inputs	NA		**-1**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Over-exploitation and overharvesting	0		NA	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Climate change	-1		**-1**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Natural disasters	NA		NA	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Pests, diseases, alien invasive species	-1		**-1**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Markets, trade and the private sector	1		**1**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Policies	2		**2**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Population growth and urbanization	2		**2**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Changing economic, socio-political, and cultural factors	1		**0**	
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Advancements and innovations in science and technology	2		**2**	

Table 5. Major drivers and their effect on ecosystem services in production systems.

What have been the main drivers affecting regulating and supporting ecosystem services in the country during the last 10 years? Describe, for each production system, the major driver(s) affecting ecosystem services and indicate the effect on ecosystem services as being strongly positive (2), positive (1), negative (-), strongly negative (-2), no effect (0), not known (NK), or not applicable (NA)

Production systems	Drivers	Effect of drivers on ecosystem services (2, 1, 0,-1, -2, NK, NA) (Place pointer on the ecosystem service name for a detailed description)								
		Pollination	Pest and disease regulation	Water purification and waste treatment	Natural hazard regulation	Nutrient recycling	Soil formation and protection	Water cycling	Habitat provisioning	Production of oxygen/gas regulation
M1,M2,M3,C5,C6, C7,L2,L6, A2,A6,A10	Changes in land and water use and management	1	2	1	1	1	1	1	1	1
	Pollution and external inputs	NK	1	NK	NA	NA	1	1	1	1
	Over-exploitation and overharvesting	0	NA	NA	1	1	1	2	2	1
	Climate change	NK	-1	NA	1	1	1	2	2	1
	Natural disasters	NA	NA	NA						
	Pests, diseases, alien invasive species	NK	1	NK	0	0	0	0	0	0
	Markets, trade and the private sector	2	1	2	1	1	1	2	1	1
	Policies	2	2	2	2	2	2	2	2	2
	Population growth and urbanization	1	1	2	1	1	1	1	1	1
	Changing economic, socio-political, and cultural factors	1	2	1	2	2	2	2	2	2
	Advancements and innovations in science and technology	2	2	2	2	2	2	2	2	2

Table 6. Drivers affecting availability, knowledge and diversity of wild foods.

What were the main drivers affecting the availability, knowledge and diversity of wild foods during the last ten years in the country? In Table 6, indicate the major drivers affecting availability, knowledge and diversity of wild foods, and if the effects are strongly positive (2), positive (1), negative (-1), strongly negative (-2), no effect (0), not known (NK), or not applicable (NA).

Drivers	Effect of drivers (2, 1, 0,-1, -2, NK, NA)		
(Place pointer on the driver name for a detailed description)	Availability of wild foods	Knowledge of wild foods	Diversity of wild food
Changes in land and water use and management	**1**	1	1
Pollution and external inputs	**NK**	**NK**	**NK**
Over-exploitation and overharvesting	**NK**	**NK**	**NK**
Climate change	**-1**	0	-1
Natural disasters	**NK**	**NK**	**NK**
Pests, diseases, alien invasive species	**NA**	**NA**	**NA**
Markets, trade and the private sector	**1**	1	1
Policies	**1**	1	1
Population growth and urbanization	**NK**	**NK**	**NK**
Changing economic, socio-political, and cultural factors	**1**	1	1
Advancements and innovations in science and technology	**1**	1	1
Other [*please specify*]:			

Table 7. Trends in the state of components of associated biodiversity within production systems.

Have any changes been detected in your country for the different production systems over the last 10 years in components of associated biodiversity? If so, indicate if trends are strongly increasing (2), increasing (1), stable (0), decreasing (-1) or strongly decreasing (-2) in Table 7. If no information is available, indicate not known (NK). If not applicable, (NA).

Production systems	Trends in last 10 years (2,1,0,-1,-2, NK, NA) (Place pointer on the component of associated diversity name for a description)			
	Micro-organisms	Invertebrates	Vertebrates	Plants
Crops	2	1	1	NK
Livestock				
Aquaculture and Fisheries				
Forest				
Mixed				

Table 8. Trends in the state of regulating and supporting ecosystem services within production systems

Have any changes been detected in your country for the different production systems over the last 10 years in regulating and supporting ecosystem services? If so, indicate if trends are strongly increasing (2), increasing (1), stable (0), decreasing (-1) or strongly decreasing (-2) in Table 8. If no information is available, indicate not known (NK). If not applicable, (NA).

Production systems	Impact of changes in biodiversity for food and agriculture on ecosystem services (2, 1, 0,-1, -2, NK, NA)								
	Pollination	Pest and disease regulation	Water purification and waste treatment	Natural hazard regulation	Nutrient recycling	Soil formation and protection	Water cycling	Habitat provisioning	Production of oxygen/gas regulation
Crops	2	2	2	2	2	1	2	1	1
Livestock		2	NA	2	NA	NA	NA	NA	NA
Aquaculture and Fisheries		2	1	NK	1	NA	2	NK	NK
Forest		2	1	1	1	1	2	1	1
Mixed									

Table 9. Impact of changes in biodiversity for food and agriculture on ecosystem services.

Is there evidence that changes in biodiversity for food and agriculture have impacted ecosystem services in your country? Indicate if strongly increasing (2), increasing (1), stable (0), decreasing (-1) or strongly decreasing (-2) in Table 9 and provide a description of specific situations and documentation where available. POSITIVE IMPACT

Production systems	Drivers	Impact of changes in biodiversity for food and agriculture on ecosystem services (2, 1, 0,-1, -2, NK, NA) (Place pointer on the ecosystem service name for a detailed description)								
		Pollination	Pest and disease regulation	Water purification and waste treatment	Natural hazard regulation	Nutrient recycling	Soil formation and protection	Water cycling	Habitat provisioning	Production of oxygen/gas regulation
M1,M2,M3,L2,L6, A2,A6,A10	Changes in land and water use and management	NK	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
	Pollution and external inputs	NK	**1**	0	0	0	0	0	0	0
	Over-exploitation and overharvesting	NK	**NA**	0	NK	NK	NK	0	0	0
	Climate change	1	**-1**	1	1	1	1	1	1	1
	Natural disasters	NK	**NA**	NK	NK	NK	NK	NK	NK	NK
	Pests, diseases, alien invasive species	0	**1**	NK	NK	NK	NK	NK	NK	NK
	Markets, trade and the private sector	1	**1**	1	1	1	1	1	1	1
	Policies	1	**1**	1	1	1	1	1	1	1
	Population growth and urbanization		**1**	1	1	1	1	1	1	1
	Changing economic, socio-political, and cultural factors	1	**2**	1	1	1	1	1	1	1
	Advancements and innovations in science and technology	1	**2**	1	1	1	1	1	1	1

Table 10. Associated biodiversity species that are in some way actively managed in your country to help provide regulating or supporting ecosystem services.

List any associated biodiversity species or sub-species (if information is available) that are in some way actively managed in your country to help provide regulating or supporting ecosystem services in Table 10. Indicate in which production systems they occur and indicate if diversity information is available. Provide any available sources of information.

Ecosystem service provided (Place pointer on the ecosystem service name for a detailed description)	Actively managed species (name) and sub-species (where available)	Production systems (code or name)	Availability of diversity information (Y/N)	Source of information
Pollination	Bumble bees	Crops	y	MOCCAE
Pest and disease regulation	Palm red weevil	Crops	Y	MOCCAE
Water purification and waste treatment	NK	NK	NK	NK
Natural hazard regulation	NK	NK	NK	NK
Nutrient cycling	NK	NK	NK	NK
Soil formation and protection	NK	NK	NK	NK
Water cycling	NK	NK	NK	NK
Habitat provisioning	NK	NK	NK	NK
Production of oxygen/ Gas regulation	NK	NK	NK	NK
Other [*please specify*]:	NK	NK	NK	NK

Table 11. Main threats to associated biodiversity identified as at risk.

List in Table 11 any components of associated biodiversity for which there is evidence of a significant threat of extinction or of the loss of a number of important populations in your country. Specify the degree of the threat according to the classification in use in your country or following the IUCN Red List Categories and Criteria. Include a description of the threat and list references or sources of information if available.

Associated biodiversity	**Degree of threat**	**Main threat (indicate)**	**References or sources of information if available**

Table 12. Ex situ conservation or management activities or programmes for associated biodiversity for food and agriculture

Does your country currently have any *ex situ* conservation or management activities or programmes for associated biodiversity for food and agriculture? These may include, for example, culture collections, collections of pollinators, etc. If so, list these in Table 12.

Components of associated biodiversity	Organisms, species and sub- species (where available) conserved	Size of collection	Conservation conditions	Objective(s)	Characterization and evaluation status

Table 13. *In situ* conservation or management activities or programmes for associated biodiversity for food and agriculture

Does your country currently have any *in situ* conservation and management activities or programmes in your country that support the maintenance of associated biodiversity? If so provide any available information on organisms and species managed or conserved, site name and location, production system(s) involved, conservation objective and specific actions that secure associated biodiversity or ecosystem services (if any).

Components of associated biodiversity	Organisms, species and sub- species (where available) conserved	Site name and location	Production system(s) involved (code or name)	Conservation objective(s)	Specific actions that secure associated biodiversity or ecosystem services

Table 14. Wild species used for food in the country.

Provide in Table 14 a list of wild food species known to be harvested, hunted, captured or gathered for food in your country, and that are not already included in a completed or ongoing Country Report on Forest, Aquatic, Animal or Plant Genetic Resources. Indicate in or around which production system the species is present and harvested, and the change in state of the species over the last 10 years (strongly increasing (2), increasing (1), stable (0), decreasing (-1), or strongly decreasing (-2), or not known (NK)). Indicate where differences within species have been identified and characterized.

Species (local name)	Species (scientific name)	Production systems other environments in which present and harvested	Change in state (2,1,0,-1,-2, NK)	Differences within species identified and characterized (Y/N)	Source of information

Table 15. Main threats to wild food species identified as at risk

List in Table 15 any wild food species for which there is evidence of a significant threat of extinction or of the loss of a number of important populations in your country. Specify the degree of threat according to the classification in use in your country or following the IUCN Red List Categories And Criteria. Include a description of the threat and list references or sources of information if available.

Wild food species (scientific name	Degree of threat	Main threat	References or sources of information if available
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

Table 16. *Ex situ* conservation or management activities or programmes for wild food species.

Are any *ex situ* conservation or management activities or programmes established in your country for wild food species? These may include, for example, culture collections, collections of insects, fungi, etc. If so, list these in Table 16.

Wild food species conserved (scientific name)	Size of collection (number of accessions and quantities)	Conservation conditions	Objective(s)	Characterization and evaluation status
NA	NA	NA	NA	NA

Table 17. *In situ* conservation or management activities or programmes for wild food species.

Are any *in situ* conservation and management activities or programmes established in your country that supports maintenance of wild food species? If so list these in Table 17 provide the following information for each activity or program: site name and location, production system(s) involved, conservation objective and specific actions that secure wild food species (if any).

Wild food species conserved (scientific name)	Site name and location	Size and environment	Conservation Objective(s)	Actions taken
NA	NA	NA	NA	NA

Table 18. Natural or human-made disasters that has had a significant effect on biodiversity for food and agriculture in the past 10 years in the country.

Has your country experienced any natural or human-made disaster(s) that has had a significant effect on biodiversity for food and agriculture and/or on ecosystem services in the past 10 years? List in Table 18 those for which any information exists on their effect on biodiversity for food and agriculture and/or ecosystem services. Indicate the effect on different components or services as significant increase (2), increase (1), no change (0), some loss (-1), significant loss (-2), or not known (NK).

Disaster description	Production system(s) affected (code or name)	Effect on overall biodiversity for food and agriculture (2, 1, 0, -1, -2, NK)	Effect on ecosystem services (2, 1, 0, -1, -2, NK)
NA	NA	NA	NA

Table 19. Invasive alien species that have had a significant effect on biodiversity for food and agriculture in the past 10 years.

Are there invasive alien species identified in your country that have had a significant effect on biodiversity for food and agriculture in the past 10 years? List in Table 19 those for which any information exists on their effect on biodiversity for food and agriculture and/or ecosystem services. Indicate the effect on different components or services as strong increase (2), increase (1), no effect (0), some loss (-1), significant loss (-2), or not known (NK).

Invasive alien species (scientific name)	Production system(s) affected (code or name)	Effect on components of biodiversity for food and agriculture (2,1,0,-1,-2, NK)	Effect on ecosystem services (2,1,0,-1,-2, NK)
NA	NA	NA	NA
NA	NA	NA	NA

Gaps and priorities

With respect to the state, trends and conservation of associated biodiversity and ecosystem services:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

d. What actions are required and what would be the priorities?

With respect to the state, trends and conservation of wild resources used for food:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

d. What actions are required and what would be the priorities?

With respect to the impact and response to natural or human-made disasters and biodiversity for food and agriculture:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

d. What actions are required and what would be the priorities?

With respect to the impact of invasive alien species on biodiversity for food and agriculture:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

What actions are required and what would be the priorities

Table 20. Management practices that are considered to favor the maintenance and use of biodiversity for food and agriculture.

For each of the production systems present in your country indicate in Table 20 the extent of use of management practices that are considered to favor the maintenance and use of biodiversity for food and agriculture.

In the table indicate the percent of total production area or quantity under the practice (where known), changes that have occurred over the last 10 years in the production area or quantity under the practice (significant increase (2), some increase (1), no change (0), some decrease (-1), significant decrease (-2), not known (NK), not applicable (NA)),

and any identified change in biodiversity for food and agriculture associated with the practice (strongly increasing (2) increasing (1), stable (0) decreasing (-1), strongly decreasing (-2), not known (NK), not applicable (NA)).

Production systems	Management practices (Place pointer on the management practice name for a description)	Percent of production area or quantity under the practice (%)	Change in production area or quantity under the practice (2,1,0,-1,-2,	Effect on biodiversity for food and agriculture (2,1,0,-1,-2, NK, NA)
Crops	IPM, Organic Farming, Hydroponic, Pollination, Nutrient Management, Irrigation Management, Soil Fertility Management	NK	NK	2
Livestock	Animal Welfare,	NK	NK	1
Aquaculture and Fisheries	NK	NK	NK	NK
Forest	NK	NK	NK	NK
Mixed	NK	NK	NK	NK

Table 21. Diversity based practices that involve the enhanced use of biodiversity for food and agriculture

For each of the production systems present in your country indicate in Table 21 the extent of use of diversity based practices that involve the use of biodiversity for food and agriculture.

In each table indicate the percent of total production area or quantity under the practice (where known), changes in the production area or quantity under the practice that have occurred over the last 10 years (strongly increasing (2), increasing (1), stable (0) decreasing (-1), strongly decreasing (-2), not known (NK)) and any identified change in biodiversity for food and agriculture associated with the diversity based practice (strongly increasing (2) increasing (1), stable (0) decreasing (-1), strongly decreasing (-2), not known (NK)).

Production systems	Diversity based practices (Place pointer on the diversity based practice name for a description)	Percent of production area or quantity under the practice (%)	Change in production area or quantity under the practice (2,1,0,-1,-2, NK, NA)	Effect on biodiversity for food and agriculture (2,1,0,-1,-2, NK, NA)
Crops	Soil conservation, restoration, sustainable cultivation practices	NK	NK	NK
Livestock	Domestication, animal welfare practices	NK	NK	NK
Aquaculture and Fisheries	Aquaponics	NK	NK	NK
Forest	Landscape managements, parks establishment	NK	NK	NK
Mixed		NK	NK	NK

Table 21. Diversity based practices that involve the enhanced use of biodiversity for food and agriculture.

For each of the production systems present in your country indicate in Table 21 the extent of use of diversity based practices that involve the use of biodiversity for food and agriculture.

In each table indicate the percent of total production area or quantity under the practice (where known), changes in the production area or quantity under the practice that have occurred over the last 10 years (strongly increasing (2), increasing (1), stable (0) decreasing (-1), strongly decreasing (-2), not known (NK)) and any identified change in biodiversity for food and agriculture associated with the diversity based practice (strongly increasing (2) increasing (1), stable (0) decreasing (-1), strongly decreasing (-2), not known (NK)).

Types of practices	Major practice (Y/N)	Description	Reference
Over-use of artificial fertilizers or external inputs	N		
Over-use of chemical control mechanisms (e.g. disease control agents, pesticides, herbicides, veterinary drugs, etc.)	N		
Inappropriate water management	N		
Practices leading to soil and water degradation	N		
Over-grazing	N		
Uncontrolled forest clearing	N		
Fishing in protected areas	N		
Overharvesting	N		
Other [please specify):	N		

Table 23. Effect of the lack of biodiversity for food and agriculture on production, food security and nutrition and livelihood.

Provide in Table 23 any information available that lack of biodiversity for food and agriculture is limiting food security and nutrition, and/or rural livelihoods in the different production systems in your country. Indicate the production systems affected together with any information on the extent of problem (significant lack (2), some lack (1)), describe the effects on livelihood, food security and nutrition, and the components of biodiversity for food and agriculture that are limited. No information is available yet

Production system	Biodiversity component for which diversity is lacking	Extent of problem (2,1)	Effect on food security and nutrition	Effect on livelihood	Reference
Crops					
Livestock					
Aquaculture and Fisheries					
Forest					
Mixed					

The adoption of ecosystem approaches

Table 24. Adoption of and importance assigned to ecosystem approaches in production systems in the Country.

Describe in Table 24 the extent to which you consider that ecosystem approaches have been adopted for the different production systems in your country (widely adopted (2), partially adopted (1), not adopted (0), not applicable (NA)) and indicate whether ecosystem approaches are considered of major importance (2), some importance (1), no importance (0), not applicable (NA). You may also want to describe landscape approaches that have been adopted in your country.

Production system	Ecosystem approach adopted (name)	Extent of adoption (2,1,0,NA)	Importance assigned to the ecosystem approach (2,1,0,NA)
Crops	Organic farming, integrated pest management	2	2
Livestock	Animal welfare approach	2	**2**
Aquaculture and Fisheries	Aquaponics	1	1
Forest	Restoration and conservation	1	1
Mixed			

For each production system in which an ecosystem and landscape approach has been widely adopted (as indicated in Table 24) describe:

a. **The specific actions that have been taken to ensure adoption; For the implementation of productions unit permit, an environmental study is requested as well as minimal distances to respect are identified between productions units and human habitations**

b. Any observed results from adoption;

   Yes, in organic farms new organisms observed

c. Plans for adoption or for further adoption in new or existing production areas;
   Climate-smart agriculture

d. Lessons learned.

For each production system in which an ecosystem and landscape approach has been widely adopted (as indicated in Table 24) describe:

a. The specific actions that have been taken to ensure adoption;

b. Any observed results from adoption;

c. Plans for adoption or for further adoption in new or existing production areas;

d. Lessons learned.

Gaps and priorities

With respect to the use of management practices or actions that favor or involve the use of biodiversity for food and agriculture:

a. What are the major gaps in information and knowledge?

NA YET

b. What are the main capacity or resources limitations?

NA YET

c. What are the main policy and institutional constraints?

NA YET

d. What actions are required and what would be the priorities?

NA YET

With respect to the sustainable use of biodiversity for food and agriculture:

a. What are the major gaps in information and knowledge?
   NA YET

b. What are the main capacity or resources limitations?
   NA YET

c. What are the main policy and institutional constraints?
   NA YET

d. What actions are required and what would be the priorities?
   NA YET

With respect to the contribution of biodiversity for food and agriculture to improving productivity, food security and nutrition, livelihoods, ecosystem services, sustainability, resilience and sustainable intensification:

a. What are the major gaps in information and knowledge?
   NA YET

b. What are the main capacity or resources limitations?
   NA YET

c. What are the main policy and institutional constraints?
   NA YET

d. What actions are required and what would be the priorities?

With respect to the adoption of ecosystem approaches:

a. What are the major gaps in information and knowledge?
   NA YET

b. What are the main capacity or resources limitations?
   NA YET

c. What are the main policy and institutional constraints?
   NA YET

d. What actions are required and what would be the priorities? NA YET

CHAPTER 5: The state of interventions on conservation and use of biodiversity for food and agriculture

INFORMATION FOR THIS CHAPTER PROVIDED ALREADY ABOVE (ITRODUCTION PART)

Proposed structure of the chapter and information to be included in the Country Reports

The main objective of this chapter is to provide an assessment and analysis of national and local interventions and activities, along with the state of international collaboration, that support conservation and sustainable use of biodiversity for food and agriculture. The analysis of interventions specific to plant, animal, forest and aquatic genetic resources will be based on the information provided in the respective State of the World Reports.

Information on the following topics should be covered in the Country Report:

- National policies, programmes and enabling frameworks that support or influence conservation and sustainable use of biodiversity for food and agriculture and the provision of ecosystem services;
- Policies, programmes and enabling frameworks governing exchange, access and benefits;
- Information management;
- Local and informal-sector actors and initiatives;
- Availability of capacity and resources;
- Participation in international and regional policies, legal frameworks and collaboration with other countries;
- Knowledge generation and science for the management and sustainable use of biodiversity for food and agriculture.

National policies, programmes and enabling frameworks that support or influence conservation and sustainable use of biodiversity for food and agriculture and the provision of ecosystem services

List up to 10 major policies, programmes and enabling frameworks in your country that enhance the application of an ecosystem approach or a landscape approach and that contain an explicit reference to biodiversity for food and agriculture, associated biodiversity and/or wild foods. Include a brief description of the policies, programmes and enabling frameworks together with any information on the extent of their application (production system and area) and observed effect. Where possible provide examples of best practices or lessons learned.

Briefly describe policies, programmes and enabling frameworks that meet the objectives described in questions 68 and 69. Consider the following discussion points in your responses, where information is available:

e. extent of implementation;
f. production systems involved;
g. the extent of use of biodiversity for agriculture;
h. lessons learned;
i. evidence of indicators of vulnerability that have decreased as a result of these efforts;
j. describe the value added of mainstreaming gender in programmes, policies and enabling frameworks, providing sex- disaggregated data where possible.

Describe up to 10 major policies, programmes and enabling frameworks in your country that embed the use of biodiversity for food and agriculture, including its different components, into disaster management and response.

Describe up to 10 major policies, programmes and enabling frameworks in your country that embed the use of biodiversity for food and agriculture, including its different components, into climate change adaptation and mitigation strategies and plans (NAPAs, NAPs, NAMAs, etc.).

What arrangements are in place or foreseen in your country that help to ensure that the conservation of biodiversity for food and agriculture is taken into account in national planning and policy development of sectors other than agriculture (e.g. NBSAPs or infrastructure development such as transport or energy)?

Table 25. Obstacles to developing and implementing legislation that would protect associated biodiversity identified in the country.

Has your country identified any obstacles to developing and implementing legislation that would protect associated biodiversity? List and describe initiatives in Table 25. NA YET

Component of associated biodiversity	Obstacles to legislation for protection of associated biodiversity

Policies, programmes and enabling frameworks governing exchange, access and benefits

Table 26. Policies and programmes governing the access to its genetic resources of associated biodiversity established in the country.

Has your country taken measures with the aim of ensuring that access to its genetic resources shall be subject to its prior informed consent (PIC) and that benefits arising from their utilization shall be shared in a fair and equitable manner? If yes, identify for which resources and for which uses (e.g. to conduct research and development on the genetic and/ or biochemical composition of the genetic resource) prior informed consent has to be obtained and benefits have to be shared. Indicate in Table 26 for the different categories (and possibly uses) of associated biodiversity, if prior informed consent has to be obtained and benefits have to be shared.

Component of associated biodiversity	Intended use (e.g. any use, research and development, commercial use)	PIC and benefit- sharing required (Y/N)

Has your country taken measures with the aim of ensuring that the prior informed consent or approval and involvement of indigenous and local communities is obtained for access to genetic resources and that benefits arising from the utilization of genetic resources that are held by indigenous and local communities, are shared in a fair and equitable way with the communities concerned, based on mutually agreed terms? If yes, provide a description of the measures and where possible, examples of best practices or lessons learned.

Information management

List and describe any linkages between sector information systems on biodiversity for food and agriculture at national level. Where possible provide examples of best practices or lessons learned.

Table 27. National information systems on associated biodiversity in the Country.

Has your country established national information systems on associated biodiversity? List in Table 27, along with a description of the components of associated biodiversity addressed, and a brief description of information included, use and applications of the information system.

National information system (List)	**Components of associated biodiversity addressed (List)**	**Concise description of information systems**

Has your country established information systems intended to support maintenance of traditional knowledge on biodiversity for food and agriculture, including associated biodiversity? If yes, describe these and include information where available on socio-economic, policy and collective action aspects.

Stakeholder participation and ongoing activities that support maintenance of biodiversity for food and agriculture

List the most important stakeholder groups, including groups or associations of farmers, forest dwellers, fisher folk and pastoralists, NGOs or other civil society organizations active in the conservation of biodiversity for food and agriculture. Briefly summarize their scope, objectives and activities and any outcomes to date. Where possible provide examples of best practices or lessons learned.

Describe any incentives or benefits to support activities for the conservation and sustainable use of biodiversity for food and agriculture or associated biodiversity (such as payments, provision of inputs, subsidies or other forms of incentives/ benefits). Briefly describe how these have been applied, to what extent and the stakeholders involved (including provisions on gender balance if any). Indicate any lessons learned and planned development incentives.

List up to 10 major projects (either in progress or completed in the last five years) that support the conservation and sustainable use of biodiversity for food and agriculture, associated biodiversity and/or wild foods. For each project listed describe the components of biodiversity, the production system and area covered, and the results, outcomes and lessons learned. Projects described in sector reports need not be described here.

Table 28. Landscape based initiatives to protect or recognize areas of land and water in the country with particular significance for biodiversity for food and agriculture.

List in Table 28 up to 10 major landscape based initiatives to protect or recognize areas of land and water in your country of particular significance for biodiversity for food and agriculture.

Landscape based initiatives	Description of sites and their characteristics of relevance to biodiversity for food and agriculture	Extent (area)

Collaboration between institutions and organizations

Describe existing linkages and collaboration between sectors in national programmes and policies governing conservation and sustainable use of biodiversity for food and agriculture. These may include overall strategies and plans developed by your country, committees or other national bodies which oversee or support collaboration, shared actions, facilities or resources and specific activities which involve inter-sector collaboration.

How are ministries working together to meet Aichi Targets as they may apply to the conservation and sustainable use of biodiversity for food and agriculture in your country?

What future actions have been planned to support your country's efforts in addressing Aichi Targets as they may apply to the conservation and sustainable use of biodiversity for food and agriculture in your country?

Table 29. Regional and/or international initiatives targeting the conservation and sustainable use of associated biodiversity.

Is your country involved in the implementation of regional and/or international initiatives targeting the conservation and sustainable use of associated biodiversity? List initiatives in Table 29.

Initiatives	Scope (R: regional, I: international)	Description	References

Capacity development

What training and extension programmes, or elements of programmes, at all levels, exist that target the conservation and sustainable use of associated biodiversity?

What higher education programmes exist that target the conservation and sustainable use of associated biodiversity genetic resources? List in Table 30 the institutions, as well as the programmes and enrolment, disaggregated by sex, if possible.

Table 30. Higher education programmes specifically targeting the conservation and sustainable use of associated biodiversity genetic resources in the country.

Institution	**Programme**	**Level**	Enrolment (total)	**Enrolment** (male)	**Enrolment** (female)

List up to 10 major institutions within your country directly involved in research on the conservation and sustainable use of associated biodiversity. Provide a concise description of the institutions, of their key research programmes and, where possible, provide the number of active researchers.

Knowledge generation and science for the management and sustainable use of biodiversity for food and agriculture

With respect to information management, national policies, programmes and enabling frameworks that support or influence the conservation and sustainable use of biodiversity for food and agriculture and the provision of ecosystem services, and govern exchange, access and benefits:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

d. What actions are required and what would be the priorities?

With respect to stakeholder participation and ongoing activities that support maintenance of biodiversity for food and agriculture and collaboration between institutions and organizations:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

d. What actions are required and what would be the priorities?

With respect to capacity development:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

d. What actions are required and what would be the priorities?

With respect to knowledge generation and science for the management and sustainable use of biodiversity for food and agriculture:

a. What are the major gaps in information and knowledge?

b. What are the main capacity or resources limitations?

c. What are the main policy and institutional constraints?

d. What actions are required and what would be the priorities?

CHAPTER 6: Future agendas for conservation and sustainable use of biodiversity for food and agriculture

INFORMATION FOR THIS CHAPTER PROVIDED ALREADY ABOVE (ITRODUCTION PART)

Proposed structure of the chapter and information to be included in the Country Reports

This chapter provides an opportunity to describe plans and priorities to secure and improve the conservation and sustainable use of biodiversity for food and agriculture. Particular attention should be given to future opportunities to enhance the contribution of biodiversity for food and agriculture to food security and nutrition, as well as the elimination of rural poverty. Planned actions and initiatives should be listed that intend to support the following:

- Strengthening the contribution of biodiversity for food and agriculture to secure the multiple benefits of agriculture, including food security and nutrition, rural development, sustainable intensification, and the enhanced sustainability and resilience of production systems;
- Improving recognition and involvement of farmers, pastoralists, fishers and forest dwellers, addressing gender equality,
  and supporting the roles and contributions of women;
- Contributing to the UN Strategic Plan for Biodiversity and to achieving the Aichi Targets and
  linking to other related processes undertaken through the Convention on Biological Diversity.

Additionally, Chapter 6 allows an assessment of future needs with respect to policies and legal arrangements, economic frameworks, knowledge creation, capacity development and collaboration.

This part of the Country Report should build on the results presented in earlier Chapters and provide an integrated overview with, where possible, clear priorities for national, regional or global actions. This chapter is structured to benefit countries through an overall synthesis of information provided elsewhere in the report. Countries that previously presented or are currently preparing a Country Report on Forest, Aquatic, Animal or Plant Genetic Resources, may wish to take full advantage of their different sectoral reports to identify an overall perspective.

Enhancing the contribution of biodiversity for food and agriculture

This section provides an opportunity for countries to highlight their plans and priorities, and to describe current constraints to achieving them on enhancing the contribution of biodiversity for food and agriculture to human wellbeing, environmental health and sustainable production. Include any information that might be useful in informing future policies to help strengthen the contribution of biodiversity for food and agriculture to the broader sustainability and development objectives listed below.

Describe planned actions and future priorities to improve the conservation and sustainable use of biodiversity for food and agriculture with specific reference to enhancing its contribution to:

a. improving food security and nutrition;

b. improving rural livelihoods;

c. improving productivity;

d. supporting ecosystem function and the provision of ecosystem services;

e. improving the sustainability and resilience of production systems;

f. supporting sustainable intensification.

Refer to the future needs and priorities identified in previous Chapters. The different topics may be dealt with jointly or individually as appropriate to country plans and approaches. Replies should include country perspectives on:

- Ways and means of improving the capacity and operations of the institutions within your country concerned with or affected by the maintenance and use of biodiversity for food and agriculture and particularly of associated biodiversity, including universities, government programmes, NGOs, breeders, private sector entities, organizations and social movements of small-scale producers. Actions to improve collaboration between stakeholders should be included.

- Ways and means of supporting the development of new policies or the implementation of the current policies that support the integrated conservation and sustainable use of biodiversity for food and agriculture, and that also specifically target associated biodiversity.

- The major information and knowledge gaps that remain to be addressed and options that exist to address them.

Countries should indicate the ways in which planned actions will contribute to the UN Strategic Plan for Biodiversity and to achieving the Aichi Targets In particular Targets 6, 7, 13. as well as to how they link to other related processes undertaken through the Convention on Biological Diversity.

Strengthening the conservation and management of associated biodiversity and wild foods

This section provides an opportunity for countries to highlight their plans and priorities, and to describe current constraints to achieving them on the conservation and management of associated biodiversity and of wild foods.

Describe planned actions and future priorities to support conservation and management of the components of associated biodiversity and wild foods including the development of monitoring programmes and of information systems or databases.

Replies should cover country perspectives on:

- Ways and means of improving the capacity and operations of the institutions within your country concerned with or affected by the maintenance and use of biodiversity for food and agriculture and particularly of associated biodiversity, including universities, government programmes, NGOs, breeders, private sector entities, organizations and social movements of small-scale producers. Actions to improve collaboration between stakeholders should be included;

- Ways and means of supporting the development of new policies or the implementation of the current policies that support the integrated conservation and sustainable use of biodiversity for food and agriculture, and that also specifically target associated biodiversity;

- The major information and knowledge gaps that remain to be addressed and options that exist to address them.

Describe planned actions and future priorities with respect to implementing ecosystem approaches for the various components of biodiversity for food and agriculture.

Improving stakeholder involvement and awareness

This section provides an opportunity for countries to highlight their plans and priorities, and to describe current constraints to achieving them with respect to stakeholder involvement in the conservation and sustainable use of biodiversity for food and agriculture with specific reference to the recognition and involvement of farmers, pastoralists, fishers and forest dwellers, addressing gender equality, and supporting the roles and contributions of women.

Describe planned actions and future priorities to improve stakeholder awareness, involvement and collaboration in the conservation and sustainable use of biodiversity for food and agriculture. Include a description of the major challenges that will need to be overcome.

Describe planned actions and future priorities to support the role of farmers, pastoralists, fisher folk, forest dwellers, and other rural men and women dependent on local ecosystems in the conservation and use of biodiversity for food and agriculture. Replies should include information on recognizing and enhancing the role of indigenous peoples. Include a description of the major challenges that will need to be overcome.

Describe planned actions and future priorities to improve recognition of the contribution of women to the conservation and use of the different components of biodiversity for food and agriculture, including associated biodiversity. Include a description of the major challenges that will need to be overcome.