



Republic of Iraq



Ministry of Environment

# National Biodiversity Strategy and Action Plan of Iraq (2015 - 2020)

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**EXECUTIVE SUMMARY (TO BE DEVELOPED)**

## **1 INTRODUCTION**

### **1.1 ENVIRONMENTAL BACKGROUND OF IRAQ (UNDER DEVELOPMENT)**

(Summary of recent history of Iraq concerning the environment)

### **1.2 GEF PROJECT**

(under development)

### **1.3 PROCESS AND RESULTS OBTAINED FOR DEVELOPING THE STRATEGY**

The Strategy has been developed through a broad consultative process that has been framed into 5 main steps:

1. Getting organized and setting the baseline for work
2. Stocktaking and biodiversity baseline (country situation)
3. Consultation process
4. Setting the Iraqi Targets
5. Developing the Strategy and Action Plan

For the most part of the above steps international, national or regional meetings and workshops have been organized in order to achieve the objectives for each working phase. The following Table summarizes main activities and outcomes for each project phase.

The outcomes of the project phases that are essential for building the baseline of the overall strategy are summarized in the following paragraphs and refer mainly to the stocktaking and assessment phase; the results of project phases 3, 4 and 5 provide the bulk of the strategy (chapters 3 and 4).

Project phase	Objectives	Outcomes	Meeting	Place and date
<b>1. Getting organized</b>	<ul style="list-style-type: none"> <li>- draft the work plan of the project</li> <li>- define the responsibilities</li> <li>- define the budgetary arrangements of the project;</li> <li>- define the technical expertise needed for every project phase</li> </ul>	<ul style="list-style-type: none"> <li>- Draft operational Workplan of the project</li> <li>- definition of the draft timeframe of the project</li> <li>- setting the Project Management Unit (PMU)</li> <li>- setting the biodiversity national and international expert group (BEG)</li> <li>- preliminary budget allocation</li> </ul>	Planning Meeting between UNEP-ROWA and MOE	Amman (Jordan) 23-24 June 2012
	<ul style="list-style-type: none"> <li>- inform the National Biodiversity Committee and the National Committee on Protected areas about the project and share with them relevant documents and project related activities;</li> <li>- involve the National Biodiversity Committee and the National Committee on Protected areas in the Strategy development process.</li> </ul>	<ul style="list-style-type: none"> <li>- Participation of members of the two committees into the stocktaking phase meetings and activities.</li> </ul>	Coordination meeting with National Committees	Baghdad, 25 <sup>th</sup> of September 2012
<b>2. Stocktaking and country situation</b>	<ul style="list-style-type: none"> <li>- build the baseline for the Strategy;</li> <li>- stakeholder identification</li> <li>- review the country situation concerning: environmental legislation and policies, biodiversity and main threats to biodiversity, ecosystem services of the country</li> </ul>	<ul style="list-style-type: none"> <li>- Stocktaking and Assessment Report</li> </ul>	<ul style="list-style-type: none"> <li>- Coordination meeting Biodiversity Expert Group (BEG)</li> <li>- National Stocktaking and Assessment Workshop</li> </ul>	<ul style="list-style-type: none"> <li>- Baghdad, 18<sup>th</sup> of December 2012</li> <li>- Baghdad, 19<sup>th</sup> - 20<sup>th</sup> of December 2012</li> </ul>
<b>3. Consultation</b>	<ul style="list-style-type: none"> <li>- define the national priorities concerning biodiversity conservation;</li> <li>- setting the Iraqi Targets and indicators</li> <li>- involve the key stakeholders in the project</li> <li>- start up of the mainstreaming process</li> </ul>	<ul style="list-style-type: none"> <li>- Consultation reports (National, regional, international);</li> <li>- Iraqi Targets and indicators</li> </ul>	<ul style="list-style-type: none"> <li>- National and sub-national (central Iraq) Workshop on setting targets and indicators;</li> <li>- Sub-national Workshop on setting targets and indicators (Northern Iraq);</li> <li>- Sub-national Workshop on setting targets and indicators (Southern Iraq)</li> </ul>	<ul style="list-style-type: none"> <li>- Baghdad, 26<sup>th</sup> - 27<sup>th</sup> of May 2013;</li> <li>- Sulaimaniyah, 19<sup>th</sup> 20<sup>th</sup> of June 2013;</li> <li>- Basra, 26<sup>th</sup> - 27<sup>th</sup> of June, 2013;</li> </ul>

Project phase	Objectives	Outcomes	Meeting	Place and date
<b>4. Target setting</b>	Define the final list of Iraqi targets taking into account the SMART (specific, measurable, achievable, realistic, timebound) principles	- The 23 Iraqi Targets	- International Workshop on Target setting and indicators - Webinar on indicators building (UNEP-WCMC)	- Amman (Jordan), 1 <sup>st</sup> -4 <sup>th</sup> of July 2013 - 10 <sup>th</sup> of October 2013
<b>5. Developing the strategy and Action Plan</b>	- define the strategy to meet the Iraqi Targets by the following: - setting the main (focal) areas of the strategy; - define the vision and the principles that are underlying the strategy - define, for each focal areas, the actions that will allow to meet the country's needs and targets	- Vision and principles of the Strategy - Strategy and Action Plan	- National Workshop on Action planning and biodiversity mainstreaming	- Baghdad, 11 <sup>th</sup> – 13 <sup>th</sup> of March 2014

threats affecting these systems, as summarized in the following.

### **1.3.1 BIODIVERSITY VALUES AND THREATS**

A baseline biodiversity assessment was carried out during the stocktaking phase, using the available information about main biodiversity features of the country, updated whenever possible with new findings and further knowledge acquired and collected concerning the status of natural resources.

The main sources of information at that stage were the 4<sup>th</sup> National Report issued by the MOE in July 2010 and, as most of the information available therein was considered outdated, new researches and studies from various institutions and NGOs were used as the baseline to update mainly the status of knowledge about biodiversity in order to be capable of deriving important trends about the improvement or deterioration of natural resources.

The approach adopted to evaluate the country's biodiversity focused on the main eco-regions and habitat identified, providing for a rough assessment of the values, the services and the

MAIN HABITAT/ECO-REGION	STATUS	THREATENED	MAIN BIODIVERSITY VALUES	MAIN THREATS
<b>Marshlands</b>	Known	Seriously	Most important freshwater system of the region	Large scale ecosystem conversion and drainage
			Migratory birds from Eurasia	Oil and industrial pollution
			Spawning fish from the Gulf	Mine fields
			Endemic species	Illegal activities
			Traditional knowledge	Agricultural threats
<b>Arabian desert</b>	Unknown	Partially	Unique plant species	Change in land management
			Important bird and mammal species	Over grazing
			Endangered species	Post-war pollution
			Traditional knowledge	Oil and industrial pollution
			Medicinal plants	Illegal activities
<b>Mesopotamian shrub desert</b>	Moderately known	Partially	Eurasian migratory birds	Change in land management
			Rare endangered species	Over grazing
			Rangeland value for local livelihoods	Illegal activities
<b>Steppe Habitats of the Middle East</b>	Unknown	Partially	Important migration area	Change in land management
			Presence of endemic species	Over grazing
			Rare endangered species	Illegal activities
			Rangeland value for local livelihoods	
<b>Zagros Mountain Forests</b>	Medium	Partially	Forest ecosystems and rich flora diversity	Deforestation
			Migratory species	Extensive mine fields
			Endemic species	Post-war pollution
			Endangered species	Illegal activities
<b>Coastal marine habitats</b>	Known	Seriously	Support of marine life	Pollution (oil, ship wrecks, war residuals)
			Presence of a recently discovered Coral reef in the territorial waters of Iraq	Overfishing and exploitation of marine resources
			Fishery resource for local livelihoods	Invasive species threats

The rough evaluation of main biodiversity values and threats for the country as reported above, was the starting point for the gap assessment and for the further research of information about biodiversity; this process was resumed through

the recent release of the 5<sup>th</sup> National Report (as of March 2014).



**1.3.2 4<sup>TH</sup> NATIONAL REPORT / 5<sup>TH</sup> NATIONAL REPORT (INDICATORS OF THE 4<sup>TH</sup> NR WILL BE ADDED)**

Iraq had shortly committed itself to the implementation of the Convention on Biological diversity (in 2009) that its first National Report (the 4<sup>th</sup> for the Convention) had been issued as of July 2010.

This Report, though missing information and data has represented a milestone and the essential starting point for building future knowledge about biodiversity and assessing the progress made. The Iraqi national situation is well known and getting a reliable picture especially about the status and trends of natural resources is a continuous challenge.

Nevertheless, with great efforts and with the fundamental commitment of the MOE and other institutional agencies, both nationally and internationally, many steps have been moved and progress achieved in improving the methods and tools to collect and analyze basic biodiversity data. This has been done thanks also to the support of international organizations and partnerships that have greatly contributed to raise the overall level of capacity especially in getting internationally available data and in providing guidance on how to handle and to analyze these data.

The situation of the country's biodiversity depicted by the 4<sup>th</sup> National Report has therefore been overcome with recent and newly collected data that has been fed into the 5<sup>th</sup> National Report, where an effort has been made to show trends in data and build indicators there from.

The overall situation depicted by the 5<sup>th</sup> National report of Iraq highlight first of all the methodic and systematic collection of historical and recent researches and scientific papers that can add up to the overall knowledge about biodiversity and that, through the National Report tool, can be archived and referenced for multiple purposes and users.

Additionally, specific information about the habitats and eco-regions mentioned in paragraph **Error! Reference source not found.** above has been collected and analyzed (as far as possible) to build indicators that have been also graphically represented. In some cases, due to lack of specific data to address a biodiversity component, proxy indicators were used, that could indirectly provide information about the status of the component. The main biodiversity or biodiversity related issues addressed in the Fifth National Report are summarized in the following.

Status Indicators		
Indicator	Interpretation	Impact on biodiversity
1. Number of globally threatened species/terrestrial habitat	Marshland habitats, followed by arable land and dry savanna have the highest numbers of threatened species. These ecosystems are particularly vulnerable and/or they have experienced drastic changes and the typical species are undergoing sharp declines that contribute to their negative conservation status globally.	Negative
2. Occurrence status of Iraqi freshwater fish	57 freshwater fish species have been recorded in Iraq. Among these the highest number is formed by non-native (introduced) species; however on many freshwater species no information was available as about their native/non-native status	Difficult to evaluate
3. Conservation Status of Iraqi freshwater fish	In 1996 the Iraqi freshwater fish species assessed as globally threatened were 11, recently their number appear to have decreased to 5. However it has to be remarked that a high number of species (35) has not been assessed against the conservation status and the recent lower number of globally threatened species might be due to a lack of assessment.	Difficult to evaluate
4. Abundance of sensitive native species in Shatt Al- Arab	Research has shown 11 native species to the Shatt Al-Arab river. Their presence has been assessed in the eighties and in recent years (2007-2008), showing a decrease in the species found (10 in the eighties, 6 in the two thousands)	Negative
5. Threat status of marine fish of Iraq	A list of marine fish of Iraq exists, the conservation status of these species is very poorly known with a total of 23 out of which 1 is near threatened, 4 are least concern and the other 18 are not evaluated.	Difficult to evaluate
6. Breeding birds of Iraq	This indicator is important because it gives the measure of the importance some Iraqi habitats have for granting the good conditions for supporting birds during this important phase of their life cycle. Out of 410 bird species recorded to occur in Iraq, 201 are confirmed breeding birds and 23 unconfirmed but possibly breeding.	Positive
7. Status of Iraqi endemic species	This indicator provides for the number of species endemic to Iraq, among various animal classes. The highest number of endemic species refers to insects; however further research is needed in order to complete the checklist of endemic species of Iraq.	Difficult to evaluate

Change Indicators		
Indicator	Interpretation	Impact on biodiversity
8. Total amount of desertified land and lands under desertification threat of Iraq	According to the figures presented by this indicator, 93% of Iraqi land is either desertified either under desertification threat.	Negative
9. Desertification types that affect Iraqi land	The various types of desertification that affect Iraq are shown by this indicator, with the highest percentage (63,22%) due to soil hardening. This might arise from wrong agricultural practices, unsuitable and unsustainable irrigation schemes and drainage operations that might have played a major role into the emergence of this problem.	Negative
10. Land use of Iraq in 2005	No change of land uses is shown by this indicator because data are available for the sole year 2005, where the desert land' category contributes with the highest amount (31%) followed by 'arable land' (28%). An assessment can be framed with the collection of more recent data for comparison.	Difficult to evaluate
11. Deforestation	The forest coverage area has been analyzed through the period 1990-2011, showing an overall increase from 8040 sqKm to 8250 sqKm. In general terms it can be stated that the increase in forest coverage contributes positively to biodiversity by reducing desertification risk and increasing the total plant diversity. However, considering that also urban parks and plantations are accounted inside this indicator, the problem of planting non-native and even invasive species maybe unsuitable to Iraqi climate, can limit the positive effect of the overall increased forested surface.	Positive / Difficult to evaluate
12. Ecological footprint of Iraq	This indicator evaluates how much area of biologically productive land and water a population/country requires to produce all the resources it consumes and to absorb all the waste it generates. The ecological footprint is matched and compared with the biocapacity, that is the capacity of ecosystems to produce useful biological materials and to absorb waste generated by human activities. The ideal situation would be when a country can reach to have the biocapacity always above the ecological footprint. Unfortunately this is not the case of Iraq, with the ecological footprint being always well above the biocapacity (except for a short period of time during the sixties).	Negative

Threat Indicators		
Indicator	Interpretation	Impact on biodiversity
13. Mine field surface per governorate	This indicator gives an idea of the mined surface of some Iraqi governorates: the total mined area of Basra, Diyala, Maysan, Muthanna and Wasit is estimated at 128,709 sqKm, with 26,211 in Basra, 15,684 in Diyala, 45,33 in Maysan, 37,479 in Muthanna and 4 in Wasit.	Negative
14. Demining surface in some governorates	For Basra, Diyala and Maysan the mine field areas have been cleared, corresponding to the surface of the indicator 13.	Positive
15. Threats identified in KBA areas	<p>Various types of threats have been evaluated for the natural areas where the Key Biodiversity Project has been carried out (2005-2010).</p> <p>Overall high or very high threats have been associated to: Pollution, opening of new transportation corridors, overexploitation of natural resources and residential developments.</p>	Negative

Impact Indicators		
Indicator	Interpretation	Impact on biodiversity
16. Fertilizer consumption (% of produced fertilizers)	This indicator gives the fertilizer consumption of the country expressed as a percentage of the fertilizer production. The comparison is made with the World figure: the averages of world countries are using less fertilizers than they are producing; Iraq on the contrary is using much more than it is producing. This figure <i>per se</i> does not tell us whether or not fertilizers are used efficiently in the country even though there is a suspect that they are not.	Difficult to evaluate
17. Fertilizer consumption (kg/ha of arable land)	This indicator for Iraq shows numbers that are on average well below the “world” figure; this could be a positive signal for the prevention of soil and water contamination from dangerous chemicals; however it has to be considered that into the category “arable land” are comprised also lands that are temporarily not cultivated or orchards and cultivations for which the use of fertilizers is maybe reduced or absent; this would therefore increase the pressure of fertilizers on the remaining cultivated land, meaning that the use of these products might still be excessive and not responsible.	Difficult to evaluate
18. Use of pesticides and herbicides (liters)	<p>Pesticides also pose a risk, not only to non-target animal and plant species, but to humans as well; depending on their chemical properties they can enter the organism, bio accumulate in food chains and consequently influence also human health. Overall, intensive pesticide application results in several negative effects in the environment that cannot be ignored.</p> <p>This indicator shows that high amounts of pesticides have been and are used in Iraq, especially brushwood pesticides, which have been recorded in the enormous amount of 92.963.909 litre in 2010</p>	Negative
19. Annual fish catch of freshwater and marine resources	<p>The indicator shows a steady increase of freshwater fish catch through the years. This can be attributed to many reasons, such as the increasing population or an increasing fish demand from local and international markets. This figure can also indicate that the fish catch has been brought to higher levels due to artificial introduction into freshwater rivers of non-native and highly productive species that are thus replacing the native and local species.</p> <p>On the other hand the marine fish catch is much lower in Iraq, and this is to be expected since Iraq is not a country that benefits so much of the coastal resources, except for the southern province (Basra).</p>	Negative
20. Iraq livestock estimate 2006-2009	This indicator is meant to indirectly show the possible impacts that are generated by livestock breeding both in terms of exceeding use of pastures (rangelands) and natural resources and also in terms of generating waste (e.g. from intensive breeding).	Difficult to evaluate

	<p>The figure that emerges shows that the species present in the higher numbers are sheep followed by goats. These species are usually bred in extensive ways so the intensive breeding pollutants are avoided, on the other hand the grazing impact of these two species if not adequately planned and balanced can quite negatively affect the natural pastures.</p>	
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**1.3.3 VALUES OF BIODIVERSITY AND ECOSYSTEM SERVICES FOR HUMAN WELLBEING**

One of the most important issues related with biodiversity and its importance is the clear and strong link it has with human well being. Human well being depends on many often complex factors, the major ones that relate to biodiversity being the following:

1. Availability of basic (raw) materials for construction, food and domesticated animals;
2. Fair and equitable access to natural or nature-derived resources;

3. Human health and the right to a healthy/safe environment;
4. Safety from natural disasters;
5. Spiritual, aesthetic and cultural values;
6. Natural components conservation for maintaining a healthy environment and for future generations benefits

The main topics cross-cutting biodiversity and ecosystem services and human well being, as above listed, have been analyzed and evaluated according to the habitat/eco-region approach, the results of this assessment are presented in the following.

ECOSYSTEM SERVICE	Marshland	Arabian Desert	Mesopotamian Shrub Desert	Steppe Habitat of the Middle East	Zagros Mountain Forests	Coastal Marine Habitats	HUMAN WELL BEING COMPONENT
<b>PROVISIONING (FOOD, FRESH WATER, FUEL, WOOD AND FIBER)</b>							<b>1 &amp; 2</b>
<b>1.Food production</b>	Fish, vegetables rice, cattle and dairy products	Pasture for livestock, orchards	Agricultural products, forage for livestock	Agricultural products, forage for livestock	Agricultural products, vines, nuts	Fish and sea food	
<b>2.Water for domestic needs</b>	Plentiful source of surface freshwater	Ground sources	River catchment area, storage reservoirs	River, catchment area, lakes	Catchment area, mountain rivers and streams	Nearby marshes and Shatt-al-Arab	
<b>3.Fisheries</b>	Large freshwater fish stocks	-	Fish stock and Aquaculture	Fish stock and Aquaculture	-	Diverse marine fish fauna	
<b>4.Water for irrigation</b>	Plentiful source	Ground sources	Rain and storage reservoirs	Plentiful source	Rain and storage reservoirs	Nearby marshes and Shatt-al-Arab	
<b>7.Source for raw industrial material</b>	Various plants and animal products	Desert plants	Industrial crops and animal products	Industrial crops and animal products	Plants and animal products	Material for industrial production	
<b>8.Genetic resources</b>	Plant and animal native species	Plant and animal native species	Plant and animal native species	Plant and animal native species	Plant and animal native species	Plant and animal native species	
<b>9.Biochemicals</b>	From natural plants	From natural plants	Natural & medicinal plants	Natural & medicinal plants	Natural & medicinal plants	Natural & medicinal plants	

ECOSYSTEM SERVICE	Marshland	Arabian Desert	Mesopotamian Shrub Desert	Steppe Habitat of the Middle East	Zagros Mountain Forests	Coastal Marine Habitats	HUMAN WELL BEING COMPONENT
	<b>REGULATING (CLIMATE, FLOOD, DISEASE AND CONTROL, WATER PURIFICATION)</b>						
<b>1.Regulate the water cycle and maintaining long-term water cycling</b>	Large reserves of fresh and ground water	Large reserves of ground water	Large reserves of fresh and ground water	Large reserves of fresh and ground water	Large reserves of fresh and ground water	Large water volume reserve	
<b>2.Regulate floods</b>	Managed wetlands to absorb floods	Man-made small dams	Reservoirs with high storage capacity	Reservoirs with high storage capacity	Reservoirs with high storage capacity	Natural tidal wetlands to regulate flooding events	
<b>3.Reduce climate change impacts</b>	Hydrological cycle, freshwater reservoir, flood absorption, carbon storage	-	-	-	Hydrological cycle, carbon storage	Coastal wetlands protect from storms and sea-level rise and erosion	
<b>4.Regulation of soil leaching</b>	Effective role	-	Effective role	Effective role	Effective role	Effective role	<b>3 &amp; 4</b>
<b>5.Filtering and water purification</b>	Surface water	Ground water	-	-	Surface water	Surface water	
<b>6.Capturing carbon dioxide from the atmosphere</b>	Effective	-	Moderate	Moderate	Effective	Effective	
<b>7. Fisheries</b>	Large natural stocks	-	Large stocks	Large stocks	Large stocks	Large stocks	
<b>8.Invasion Resistance</b>	Diverse habitat but highly vulnerable	Harsh environment less vulnerable to alien species	Vulnerable to alien species	Vulnerable to alien species	Vulnerable to alien species	Vulnerable to alien species	



ECOSYSTEM SERVICE	Marshland	Arabian Desert	Mesopotamian Shrub Desert	Steppe Habitat of the Middle East	Zagros Mountain Forests	Coastal Marine Habitats	HUMAN WELL BEING COMPONENT
	3. CULTURAL (AESTHETIC, SPIRITUAL, EDUCATIONAL, RECREATIONAL)						
1.Natural surrounding	Unique	High quality	High quality	High quality	High quality	High quality	5
2.Scenic values	Very high value	High value	High value	High value	Very High value	High value	
3.Tranquility	High	High	High	High	High	Tranquil	
4.Religious values	Various shrine sites	Various shrine sites	Various shrine sites	Various shrine sites	Various shrine sites	-	
5.Recreation sites	Potentially high quality	Ecotourism and game birds and mammals	Ecotourism and game birds	Ecotourism and game birds	Ecotourism and game birds and mammals	Ecotourism and fishing	
SERVICE	SUPPORTING (NUTRIENT CYCLING, SOIL FORMATION, PRIMARY PRODUCTION)						HUMAN WELL BEING COMPONENT
1.Nutrient cycling	High	Low	Medium	Medium	Medium	High	6
2.Production of atmospheric oxygen	High	Low	Low	Medium	High	Medium	
3.Soil forming	Fast	Slow	Normal	Normal	Fast	Fast	
4.Primary production	High	Low	Medium	Medium	High	High	

**1.3.4 CONSEQUENCES OF BIODIVERSITY LOSS IN IRAQ**

Due to the many anthropogenic activities and pressures on biodiversity and natural resources, it is a matter of priority to evaluate the main occurrences of biodiversity loss, the factors driving it and the consequences and the effects of this loss for the natural balance and human kind.

Below, are the most serious biodiversity losses occurrences evaluated for various eco-regions/habitats, the identified drivers for these losses and finally the consequences of these losses if they are not adequately and timely addressed.

Driver of Biodiversity loss	Biodiversity loss	Consequence of biodiversity loss
Lack of water and precipitation. Dam construction. Water and soil salinization due to drainage and irrigation schemes. Water pollution due to absence of sewage and industrial treatment plants.	Reduction in freshwater resources	No freshwater available for human needs.

<p>Lack of water and precipitation. Over exploitation of pastures and rangelands. Clear cutting activities for various purposes (residential and industrial development, military activities, plant collection for cooking fuel)</p>	<p><b>Plant cover reduction</b></p>	<p>Increase in desertified lands Absence of sufficient forage for livestock Habitat fragmentation and species extinction Decrease in genetic diversity</p>
<p>Poor implementation and enforcement of wildlife regulations. Poverty. Lack of awareness</p>	<p><b>Wildlife stocks reduction</b></p>	<p>Species extinction. Decrease or absence of wild food. Ecosystem collapse and absence of products and services.</p>
<p>Unplanned agricultural and residential expansion. Application of agricultural schemes centered on intensive methods with large use of chemicals and genetically modified organisms.</p>	<p><b>Loss of traditional agriculture and local races</b></p>	<p>Decrease in soil fertility and crop productivity. Loss of genetic diversity. Major vulnerability to pests and disease.</p>
<p>Introduction of non-native competitors to various purposes (trade, ornamental, production). Pollution. Overexploitation (hunting, fishing). Trade.</p>	<p><b>Loss of native endemic species</b></p>	<p>Decrease in genetic diversity. Species extinction. Ecosystem collapse and absence of products and services. Loss of unique values.</p>
<p>Unsustainable modernization of the society. Gap between rural communities and decision makers. Isolation and distrust of some rural communities Lack of interest towards rural traditions and components</p>	<p><b>Loss of cultural and heritage values</b></p>	<p>Loss of unique values. Loss of people's identity. Loss of membership feeling. Vulnerability to external influences. Neglecting the home country and its resources/values</p>

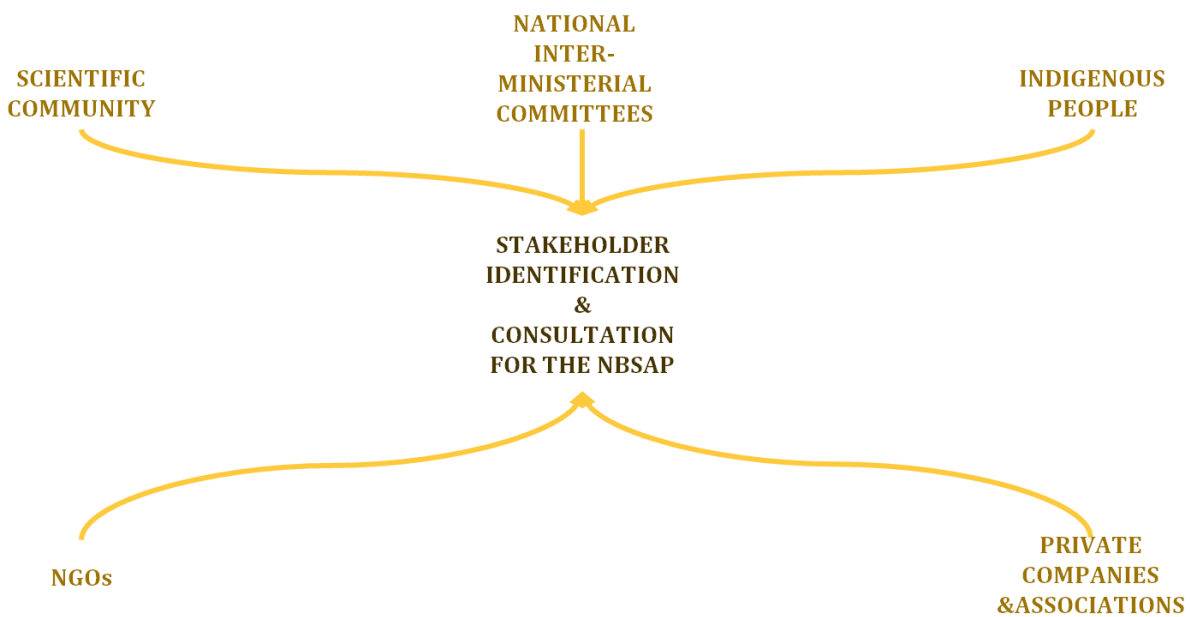
**1.3.5 STAKEHOLDER IDENTIFICATION AND ANALYSIS**

The stocktaking phase also aimed at providing a full and comprehensive list of the various actors that could be involved in the Strategy drafting and implementation, depending also on their power, roles and responsibilities.

First of all the main stakeholder groups relevant for the NBSAP process have been identified in the following (see Figure below):

1. national institutions/bodies
2. scientific community
3. indigenous people
4. NGOs
5. Private companies and associations

As a second step a number of stakeholders have been selected to the purposes of participating in the NBSAP process, as reported in the below Table.



**STAKEHOLDER SELECTED FOR THE CONSULTATION PROCESS**

STAKEHOLDER	ROLE IN THE STRATEGY
Ministry of Municipalities and Public Works	Consulting
Ministry of Health	Informing and Consulting
Ministry of Industry	Informing and Engagement
Ministry of Defense	Informing and Engagement
Ministry of Labor and social affair	Informing
Ministry of higher education and scientific research	Engagement and consulting
Ministry of Human Right	Informing
The State Ministry for Women's Affairs	Informing
Ministry of Justice	Consulting
Ministry of Oil	Collaboration and Engagement
Ministry of Foreign Affairs	Consulting
Ministry of Agriculture	Engagement and consulting
Ministry of Water Resources	Engagement and consulting
Ministry of science and technology	Engagement and consulting
Ministry of Planning	Engagement and consulting
Ministry of Culture	Informing
Iraqi Parliament	Consulting
Provincial Councils	Informing
Kurdistan Regional Government	Engagement and consulting
Intergovernmental Organizations	Consulting
Media and Communications Agencies	Informing
The Scientific Community	Consulting
Non-governmental organization (NGOs)	Engagement
Tourist companies	Informing
Private companies and multinational Agencies and Financial mechanisms	Informing and Engagement Consulting and Engagement
The private sector	Informing and Engagement
The general public	Informing
Celebrities	Informing
Citizens of urban centers	Informing
International experts	Consulting
Indigenous and local communities	Informing and Engagement
Religion leaders	Informing
Professors, teachers and the teaching staff	Engagement
Professional hunters	Engagement



Among the selected stakeholders also the specific departments, institutions, agencies, companies have been listed in detail, in order to have a clearer indication on who to contact and on the type of balance that could be reached in the consultation process.

The combination of the level of stake for the identified stakeholders and of the potential impacts or benefits they can generate to biodiversity in general and to the NBSAP, can be summarized in the Stakeholder matrix.

NBSAP STAKEHOLDER MATRIX	LEVEL OF STAKE (HIGH MEDIUM LOW)	IMPACT ON BIODIVERSITY (+) (-)	CAN BE DIRECTLY OR INDIRECTLY AFFECTED BY BD CHOICES (YES) (NO)
Ministry of Municipalities and Public Works	HIGH	+	YES (I)
Ministry of Health	HIGH	+	YES (I)
Ministry of Industry	HIGH	-	YES (I)
Ministry of Defense	HIGH	+	YES (I)
Ministry of Labor and social affair	MEDIUM	+	YES (I)
Ministry of higher education and scientific research	HIGH	+	YES (I)
Ministry of Human Right	MEDIUM	+	YES (I)
The State Ministry for Women's Affairs	MEDIUM	+	YES (I)
Ministry of Justice	HIGH	+/-	NO
Ministry of Oil	HIGH	-/+	YES (I)
Ministry of Foreign Affairs	HIGH	+	NO
Ministry of Agriculture	HIGH	+/-	YES (I)
Ministry of Water Resources	HIGH	+/-	YES (I)
Ministry of science and technology	HIGH	+/-	NO
Ministry of Planning	HIGH	+/-	NO
Ministry of Culture	MEDIUM	+	YES (I)
Iraqi Parliament	HIGH	+/-	NO
Provincial Councils	HIGH	+/-	YES (I)
Kurdistan Regional Government	HIGH	+/-	NO
Intergovernmental Organizations	HIGH	+	YES (I)
Media and Communications Agencies	MEDIUM	+/-	NO
The Scientific Community	HIGH	+	YES (I)
Non-governmental organization (NGOs)	HIGH	+	YES (I)
Tourist companies	MEDIUM	+/-	YES (I)
Private companies and multinational	HIGH	-	YES (D)
Agencies and Financial mechanisms	HIGH	+	NO
The private sector	HIGH	+/-	YES (I)
The general public	LOW	+/-	YES (I)
Citizens of urban centers	LOW	+/-	YES (D)
Indigenous and local communities	HIGH	+/-	YES (D)
Religion leaders	LOW	+/-	YES (I)
Professors, teachers and the teaching staff	LOW	+	YES (I)
Professional hunters	MEDIUM	+/-	YES (D)

## **2 CONSTITUTIONAL, LEGAL AND INSTITUTIONAL FRAMEWORK**

### **2.1 CONSTITUTIONAL AND LEGAL FRAMEWORK**

*2.1.1 CONSTITUTION OF IRAQ 2005*

*2.1.2 ENVIRONMENT LAW*

*2.1.3 ESTABLISHMENT OF MOE*

*2.1.4 ACCESSION OF IRAQ TO THE CBD*

**(UNDER DEVELOPMENT)**

### 3 OUR CHALLENGE AND A VISION FOR THE FUTURE

- The conservation of biodiversity is an important issue both globally and nationally. On biodiversity conservation and maintenance of the ecosystems’ balance depends the delivering of essential services to human kind.
- The rural communities and those people living and depending on natural resources will be particularly affected by the changes in environmental components that in turn affect the quantity and quality of ecosystem services available to them. Biodiversity is also an essential component of human well-being in Iraq with a particular reference to the tribal communities where biodiversity plays a role in the ethical, religious and social values.
- The bulk of the services provided by natural resources in Iraq are coming from the highly diverse and sometimes unique habitats and species. Biodiversity provides many important services to the nation. Foremost provision is that of food resources, materials for rural buildings, and also raw materials for industrial activities and pharmaceutical products. Other important services provided by biodiversity for national as well as global benefits are climate change and desertification mitigation and carbon sequestration.
- Despite its importance, however, the flora and fauna of Iraq, as components of the more complex set of ecosystems and habitats, are experiencing sharp decline from the levels that existed even a few decades ago because of a number reasons, among which a broadly recognized lack of environmental awareness and knowledge at all levels; poverty and unmet basic needs; political instability, wars and conflicts.
- Great challenges are placed in the Iraqi way to development. Iraq is a highly diversified country in terms of ecosystems, climate, ethnic groups and traditions: these diversities shall be maintained and harmonized to provide richness for the country and heritage for the future generations. The economic potentialities of the country are huge due to the presence of oil and, with a view to sustainable development; they must account for improving wealth and life quality for all society components as well as take care of the environment.
- The main concepts underlying the Iraqi biodiversity strategy can therefore be summarized in the country’s strive to achieve a better living condition for its population, by using and valuing biodiversity in a sustainable way and following a widespread increase of knowledge and awareness about biodiversity values.

MAIN CONCEPTS	VISION	MISSION
<p>HUMAN LIFE AWARENESS SUSTAINABILITY KNOWLEDGE</p>	<p>THE ENVIRONMENT GIVES US LIFE: LET US TAKE CARE OF IT. By 2050 IRAQ HAS SPREAD THE KNOWLEDGE AND THE AWARENESS ABOUT BIODIVERSITY IMPORTANCE AND USES ITS NATURAL RESOURCES SUSTAINABLY, FOR A BETTER LIFE FOR PRESENT AND FUTURE GENERATIONS</p>	<p>THE COUNTRY STRIVES TO ACHIEVE A BETTER LIVING CONDITION FOR ITS POPULATION, BY USING AND VALUING BIODIVERSITY IN A SUSTAINABLE WAY AND FOLLOWING A WIDESPREAD INCREASE OF KNOWLEDGE AND AWARENESS ABOUT BIODIVERSITY VALUES.</p>

- The main concepts, the values and the objectives that are defined and set out in the present Strategy are aligned and consistent with the Strategic Framework of the Biodiversity Convention and in particular with its Strategic Plan 2011-2020 and the Aichi Biodiversity Targets,

in particular as concerns the core issues of **‘conserve biodiversity’, ‘valuing biodiversity’, ‘delivering services essential for all people’** and **‘contribute to human wellbeing and poverty eradication’**.

#### **Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets**

At the Nagoya UN Biodiversity Summit in October 2010, 192 countries agreed to an ambitious conservation plan to protect global biodiversity. This new ‘Strategic Plan’ provides a flexible framework for all 193 Parties to the Convention of Biological Diversity to drive action on biodiversity by all Parties. It established a new global vision for biodiversity – a world of “living in harmony with nature” where:

- ‘By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.’

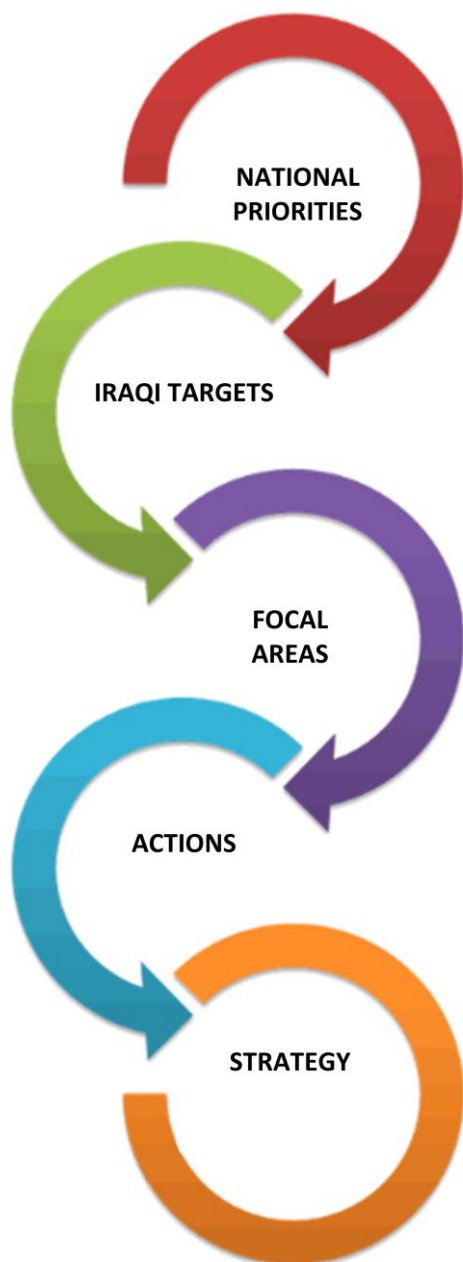
Parties also agreed a shorter term ambition to:

- ‘Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet’s variety of life, and contributing to human wellbeing, and poverty eradication..’

To deliver this ambition, Parties agreed on a set of strategic goals and targets (the ‘Aichi’ targets) to drive action on biodiversity.



## 4 THE STEPS OF THE STRATEGY



- Within the framework of the Strategic Plan of the Convention and with a view to its main concepts and values, the Iraqi national priorities are set, taking into account the particular national context and the country's needs.
- 23 ambitious Iraqi Targets (often phrased as real instructions and action plans) are set, covering main areas of interest for stakeholders and policy

makers, as well as responding to the most urgent needs of the country.

- The numerous national Targets have identified focal areas where action will be prioritized in the time horizon of the Strategy.
- The Government will play a leading role in delivering the main messages and the vision that support the Iraqi NBSAP. It will also play a crucial role in following up the implementation steps and the policy mechanism to achieve the intended outcomes.

### 4.1 PILLARS OF THE STRATEGY: PRINCIPLES AND PRIORITIES

- In Iraq an important lack of awareness about biodiversity and its benefits has been recognized from many sources and stakeholders; huge data and methodological gaps for relevant assessments and continuous monitoring of environmental parameters have also been addressed many times by the stakeholders as a fundamental step to inform and plan conservation actions.
- Policy measures and legislative reviews have also been recognized as a basis to renew and address emerging environmental concerns, as well as their implementation and enforcement.
- The main message the Strategy wants to deliver is that IRAQ NEEDS TO CONSERVE ITS BIODIVERSITY BOTH THROUGH DIRECT CONSERVATION ACTIONS AND THROUGH IMPROVING SUPPORTING SECTORS FUNCTIONAL TO CONSERVATION, such as:
  - IMPLEMENTING AND ENFORCING RELEVANT **POLICY AND LEGISLATION** CONCERNING THE ENVIRONMENT;
  - **ASSESSMENT, MONITORING AND RESEARCH** OF BIODIVERSITY AND ENVIRONMENTAL DATA.
  - THE **AWARENESS AT ALL LEVELS** ABOUT BIODIVERSITY VALUES; THE SERVICES IT PROVIDES TO HUMAN KIND AND THE PRIORITY OF

ENVIRONMENTAL ISSUES ARE RECOGNIZED AS THE BUILDING BRICKS OF THE STRATEGY AND PROVIDE

THE ESSENTIAL BACKGROUND TO CARRY ON ALL STRATEGY'S ACTIVITIES.



## 5 THE IRAQI TARGETS

As an output of a broad consultative process with relevant stakeholders, Iraq has set its national targets, within the framework of the CBD Strategic Plan 2011-2020<sup>1</sup> and of the Aichi Biodiversity Targets. In particular, the Aichi targets that Iraq has addressed as most important for the country's needs are referring to:

- Awareness
- Habitat loss
- Pollution
- Invasive and alien species
- Protected areas
- Species extinction
- Ecosystem services
- Traditional knowledge and
- Financial resources

Among these 9 themes, Iraq has developed 23 targets, as shown in the following table.

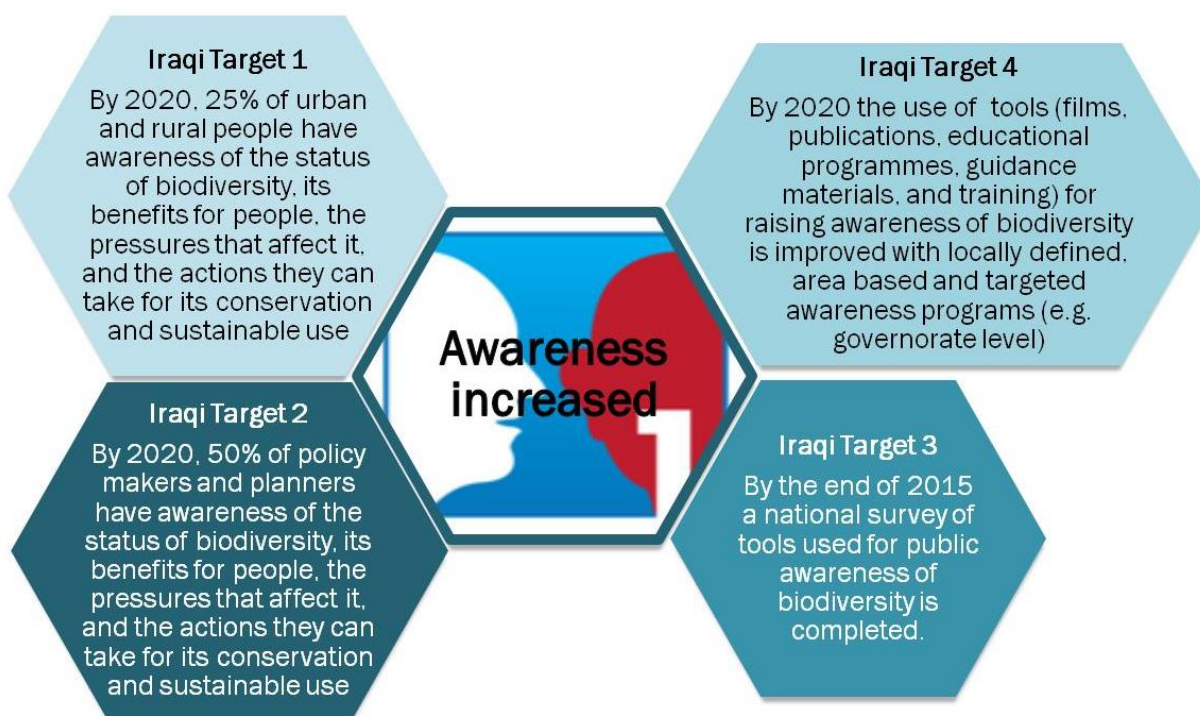
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<sup>1</sup> Annexed to the document

CBD Strategic Goal	Aichi Target	Iraqi Target
A	<i>Target 1 - Awareness increased</i>	<p>1. By 2020, 25% of urban and rural people have awareness of the status of biodiversity, its benefits for people, the pressures that affect it, and the actions they can take for its conservation and sustainable use</p> <p>2. By 2020, 50% of policy makers and planners have awareness of the status of biodiversity, its benefits for people, the pressures that affect it, and the actions they can take for its conservation and sustainable use</p> <p>3. By the end of 2015 a national survey of tools used for public awareness of biodiversity is completed.</p> <p>4. By 2020 the use of tools (films, publications, educational programmes, guidance materials, and training) for raising awareness of biodiversity is improved with locally defined, area based and targeted awareness programs (e.g. governorate level)</p>
B	<i>Target 5 - Habitat loss</i>	<p>5. By the end of 2020 a GIS database of the extent, condition (i.e. healthy or degraded) and protection status of the natural (not altered by human intervention), semi-natural and human modified habitats of Iraq has been developed.</p> <p>6. By the end of 2020 the reasons for loss and degradation (i.e. the species that used to be present in that habitat are not there anymore, and the services that the people expected or used are reduced or absent) of each of the natural (not altered by human intervention), semi-natural and human modified habitats of Iraq have been identified to inform conservation actions.</p> <p>7. By the end of 2015 the main pressures on forest ecosystems are identified and studied</p> <p>8. By the end of 2020 legislation to address the main pressures on forest ecosystems and native forest species is issued, promoting sustainable management, restoration and conservation.</p> <p>9. By the end of 2020, about 1,000 square km of desertified shrubland grassland is restored</p>
	<i>Target 8 - Pollution reduced</i>	<p>10. By end of 2016 a national monitoring programme is established for identification of the main sources and diffusion paths of chemical and physical pollutants in the natural ecosystems and the effects of pollution on natural ecosystems</p> <p>11. By the end of 2018 environmental standards are issued and enforced for prevention and control of priority pollutants in the natural ecosystems (not altered by human intervention).</p>
	<i>Target 9 - Invasive and alien species</i>	<p>18. By the end of 2016 legislation is enacted to control the introduction and diffusion of non-native species into the natural environment</p> <p>19. By the end of 2020 the list of invasive species of Iraq and their impacts and invasion pathways has been published.</p>
C	<i>Target 11 - Protected Areas</i>	<p>12. By the end of 2014 a decree is issued for the establishment of protected areas in Iraq</p> <p>13. By the end of 2014 at least three training workshops on PA management have been conducted</p> <p>14. By the end of 2015 a study and GIS maps of the most sensitive habitats (i.e. under high level of threats and containing high numbers of globally threatened species) have been developed.</p> <p>15. By the end of 2020 ten new Protected Areas have been gazetted and established</p>
	<i>Target 12 - Threatened species</i>	<p>20. By the end of 2020 the list of threatened species of Iraq has been published and an action plan for the conservation of priority species</p>

CBD Strategic Goal	Aichi Target	Iraqi Target
		is produced 21. By 2020 legislation for the conservation of threatened species is issued and enforced
<b>D</b>	<i>Target 14 - Ecosystem services</i>	16. By the end of 2016 a national assessment is published of the state of provisioning, regulating and cultural services supplied by natural ecosystems and their importance for rural and urban people and on management options to be developed for the sustainable supply of ecosystem services 17. By the end of 2018 a national strategy/sub-national strategies are established for the sustainable management of ecosystems to supply important ecosystem services for rural and urban people
<b>E</b>	<i>Target 18 - Traditional knowledge</i>	22. By the end of 2020 a survey of indigenous and local communities' traditional knowledge, use and practices relevant for the conservation and sustainable use of biodiversity is published.
	<i>Target 20 - Financial resources for implementation</i>	23. By 2016 a Resource Mobilization Plan for implementation of the NBSAP is established and implemented

FIGURE 1: AICHI TARGET 1 WITH THE RELATED IRAQI TARGETS (1, 2, 3, 4)



### 5.1.1 IRAQI TARGET 1

**By 2020, 25% of urban and rural people have awareness of the status of biodiversity, its benefits for people, the pressures that affect it, and the actions they can take for its conservation and sustainable use**

This target aims to achieve a better knowledge about biodiversity and its importance for the well-being of people in a relatively short time, by setting a threshold of the 25% of urban and rural population. The awareness about biodiversity in a sample of urban and rural population has to be tested with statistical tools in order to assess the 25% threshold that will allow meeting the target.

#### **5.1.2 IRAQI TARGET 2**

**By 2020, 50% of policy makers and planners have awareness of the status of biodiversity, its benefits for people, the pressures that affect it, and the actions they can take for its conservation and sustainable use**

This target aims to achieve a better knowledge about biodiversity and its importance for the well-being of people for policy makers, planners and managers. The threshold of 50% (higher than for the common people) has been set in order to signify that the level of awareness on biodiversity issues, of those people influencing the choices and future economic development of the country has to reach much higher standards because they will have the responsibility of taking care of the environment in a responsible way.

#### **5.1.3 IRAQI TARGET 3**

**By the end of 2015 a national survey of tools used for public awareness of biodiversity is completed.**

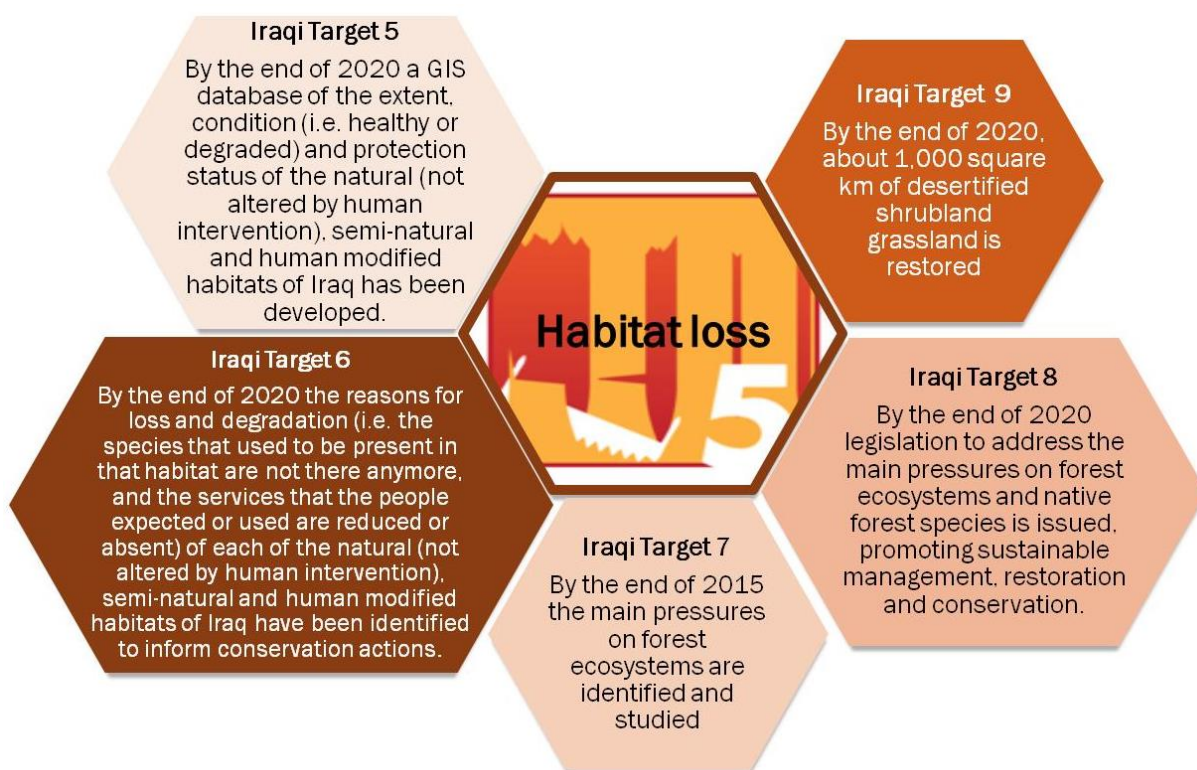
The awareness about biodiversity at all levels can be spread in many different ways: through education institutions, through the media, through organizing target events etc.. In order to plan for a gap filling program and to produce tools and communication materials that are effective and target oriented, a comprehensive review needs to be carried out about the existing tools that are currently available and used in Iraq to the purpose of spreading information about biodiversity.

#### **5.1.4 IRAQI TARGET 4**

**By 2020 the use of tools (films, publications, educational programmes, guidance materials, and training) for raising awareness of biodiversity is improved with locally defined, area based and targeted awareness programs (e.g. governorate level).**

In order to develop an effective gap filling program concerning the production and use of awareness tools, the awareness raising programs have to be specifically tailored to the needs and particular situations of the various governorates, target people, needs and priorities of specific areas of the country, that means providing different tools depending on the specific local situations and needs.

FIGURE 2: AICHI TARGET 5 WITH THE RELATED IRAQI TARGETS (5, 6, 7, 8, 9)



### 5.1.5 IRAQI TARGET 5

**By the end of 2020 a GIS database of the extent, condition (i.e. healthy or degraded) and protection status of the natural (not altered by human intervention), semi-natural and human modified habitats of Iraq has been developed.**

In order to assess the rate of loss and the degradation of the habitats in Iraq many steps have to be taken. First of all the habitats of Iraq are not all 'natural' meaning that most of them have been partially or totally modified by human intervention; nevertheless they are providing essential services to people, for this reason all the habitats need to be included in the assessment foreseen by this target. Their extent is relatively easy to be assessed, when relying on GIS layers and tools. Determining their condition is more complex and will possibly involve the use of key species or ecological indicators to perform an evaluation of their status. This target is very ambitious and involves also the acquirement of technological skills to build and maintain the GIS database.

### 5.1.6 IRAQI TARGET 6

**By the end of 2020 the reasons for loss and degradation (i.e. the species that used to be present in that habitat are not there anymore, and the services that the people expected or used are reduced or absent) of each of the natural (not altered by human intervention), semi-natural and human modified habitats of Iraq have been identified to inform conservation actions.**

The knowledge about the loss and degradation of the habitats is a pre-requisite for achieving this target; also some examples on how to assess loss and degradation are provided inside the target itself and other information on these two factors should be obtained in parallel with the work in progress for target 5 above. The causes and reasons that have determined and are determining the loss and degradation of the habitats need to be investigated and known as a main outcome of this target in order to plan for the appropriate conservation and remediation actions.

#### **5.1.7 IRAQI TARGET 7**

**By the end of 2015 the main pressures on forest ecosystems are identified and studied.**

This target aims at a short term review of the main threats and pressures that the few forest ecosystems of Iraq are suffering. As a first step all the forest ecosystems have to be identified and possibly mapped, then through both, field surveys and office surveys at relevant departments, the pressures and threats that are affecting them will be identified, listed and studied (meaning that the drivers of these pressures and the possibilities to remove them will be also suggested).

#### **5.1.8 IRAQI TARGET 8**

**By the end of 2020 legislation to address the main pressures on forest ecosystems and native forest species is issued, promoting sustainable management, restoration and conservation.**

This target is truly an action that requires the commitment and the cooperation of the competent institutional bodies in order to issue the most appropriate and effective legislation act to the purpose of protecting and conserving forest ecosystems. The achievement of the target will only involve the issuance of the legislation; however it is essential that every new legislation act issued or any review of existing legislation is closely followed up as concerns its implementation and enforcement.

#### **5.1.9 IRAQI TARGET 9**

**By the end of 2020, about 1,000 square km of desertified shrubland grassland is restored.**

Despite being very short in wording this target is very complex. The main issue here is to define and assess in the field the 'desertified shrubland grassland' habitat type. The first step is to compare the current land uses and habitats with historical information (possibly by using GIS tools and maps) in order to identify the desertified lands of Iraq. Among the total amount of desertified lands found, about 1,000 Km<sup>2</sup> have to be chosen to be restored with the most advanced technologies and by carefully planning for their subsequent long-term maintenance.



FIGURE 3: AICHI TARGET 8 WITH THE RELATED IRAQI TARGETS (10, 11)



**5.1.10 IRAQI TARGET 10**

**By end of 2016 a national monitoring programme is established for identification of the main sources and diffusion paths of chemical and physical pollutants in the natural ecosystems and the effects of pollution on natural ecosystems**

This target has a very short term deadline for being accomplished; the issue here is to draft the monitoring programme that means a plan with all the requirements and timeline for identify the sources and the diffusion paths of chemical (e.g. dangerous compounds or elements affecting the water quality because of their dangerous effects when entering into living organisms) or physical pollutants (e.g. colour change, suspended solids, foaming, temperature).

**5.1.11 IRAQI TARGET 11**

**By the end of 2018 environmental standards are issued and enforced for prevention and control of priority pollutants in the natural ecosystems (not altered by human intervention).**

This target has a short term deadline due to the fact that it represents already an action to be carried out in a relatively easy way. International environmental standards about the thresholds of pollutants allowed in the natural environment are present from many sources: the reference could be international with the necessary national adjustments, as needed.

FIGURE 4: AICHI TARGET 11 WITH THE RELATED IRAQI TARGETS (12, 13, 14, 15)



**5.1.12 IRAQI TARGET 12**

**By the end of 2014 a decree is issued for the establishment of protected areas in Iraq.**

This Target is actually already accomplished since the protected areas law has been issued as of March 2014 (Law n.2/2014).

**5.1.13 IRAQI TARGET 13**

**By the end of 2014 at least three training workshops on PA management have been conducted.**

This target is an action and it involves the commitment and organizational skills of institutional bodies and also a financial allocation in order to be fully achieved.

**5.1.14 IRAQI TARGET 14**

**By the end of 2015 a study and GIS maps of the most sensitive habitats (i.e. under high level of threats and containing high numbers of globally threatened species) have been developed.**

This target implies the identification of the ‘most sensitive habitats of Iraq’; a suggestion is given inside the wording of the target itself identifying for instance the sensitive habitats as those habitats being subject to high levels of threats or as being home of high numbers of globally threatened species. In general terms sensitive habitats can be identified with those natural or semi-natural environments where due to a number of reasons, it is more likely that a changed balance between the ecosystem components will result in an irreversible damage event (such as species extinction or failed delivery of essential services like clean water).the identification of such habitats nationally and the creation of a database and a research on this issue will be the output of this target. The deadline for accomplishment is very ambitious and implies the use of GIS knowledge and skills, besides relying on a certain degree of generalization in assessing the ‘sensitive habitats’.

**5.1.15 IRAQI TARGET 15**

**By the end of 2020 ten new Protected Areas have been gazetted and established.**

This target is an action: the process of assessing and declaring a number of protected areas is on-going, under the lead of the Ministry of Environment, the institutional body responsible for Protected Areas.

FIGURE 5: AICHI TARGET 14 WITH THE RELATED IRAQI TARGETS (16, 17)



**5.1.16 IRAQI TARGET 16**

**By the end of 2016 a national assessment is published of the state of provisioning, regulating and cultural services supplied by natural ecosystems and their importance for rural and urban people and on management options to be developed for the sustainable supply of ecosystem services**

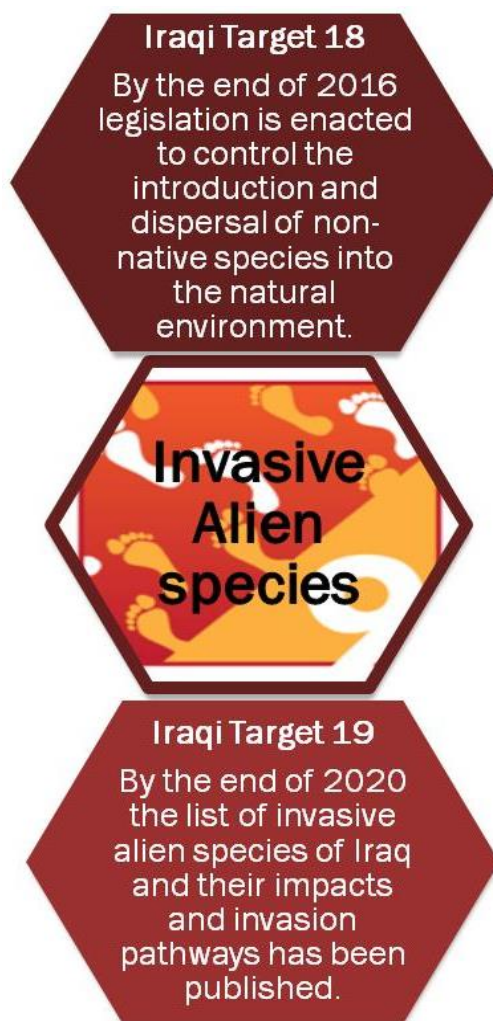
The ecosystems are not only important for their own sake, but since they provide important services to human people such as clean air and water and food. These services are usually categorized into provisioning services such as the fish that is obtained from a marsh or from the sea, regulating, such as the flood prevention function of coastal marshes and cultural such as the aesthetical and heritage values. The objective of this target is to list and assess, according to this categorization, all the services provided by Iraqi natural systems, together with suggesting possible options for their sustainable utilization.

**5.1.17 IRAQI TARGET 17**

**By the end of 2018 a national strategy/sub-national strategies are established for the sustainable management of ecosystems to supply important ecosystem services for rural and urban people.**

After the main ecosystem services and the natural habitats that supply them have been identified nationally, a national strategy and local strategies for their conservation need to be set in place. This target calls for the drafting of national and local strategies/action plans by 2018.

FIGURE 6: AICHI TARGET 9 WITH THE RELATED IRAQI TARGETS (18, 19)



**5.1.18 IRAQI TARGET 18**

**By the end of 2016 legislation is enacted to control the introduction and diffusion of non-native species into the natural environment**

This target is an action that involves the issuance of legislation; the preparation and issuance of the law can be relatively easy and can be accomplished in the short term. The effectiveness of the legislative provision depends on the commitment of the involved institutional bodies and on the capacity of the institutional power to implement and enforce the provisions.

**5.1.19 IRAQI TARGET 19**

**By the end of 2020 the list of invasive species of Iraq and their impacts and invasion pathways has been published.**

A good progress in achieving this target has already been achieved by compiling a national list of non-native or invasive species with the support of ISSG (Invasive Species Specialist Group) of IUCN within the framework of the Iraqi 5<sup>th</sup> National Report to the CBD. This list needs to be further refined and completed, especially as concerns the invasiveness status of many non-native species. The research of invasion pathways needs also to be discovered in order to enact the appropriate measures of control.

FIGURE 7: AICHI TARGET 12 WITH THE RELATED IRAQI TARGETS (20, 21)



**5.1.20 IRAQI TARGET 20**

**By the end of 2020 the list of threatened species of Iraq has been published and an action plan for the conservation of priority species is produced**

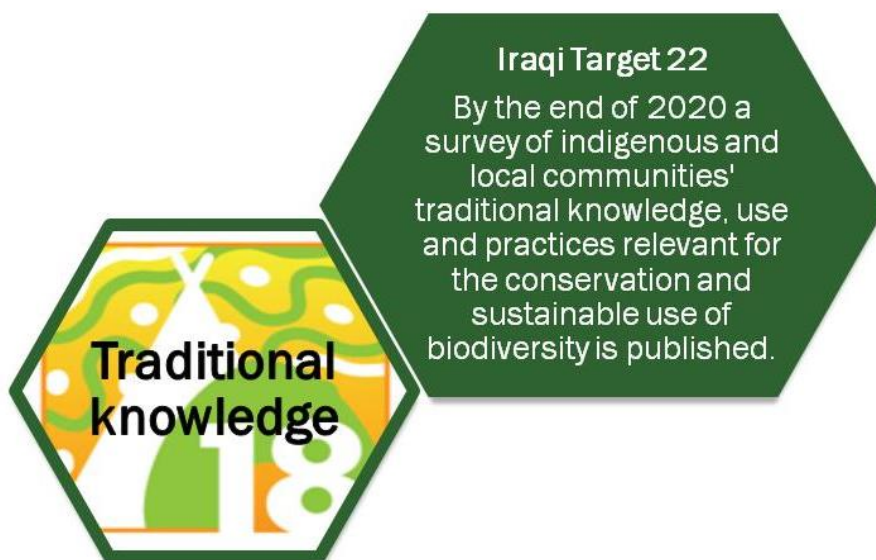
This target is very ambitious since it requires the collection of all research and information about Iraqi (animal) species as well as an update and analysis of this information with recent assessments and surveys, in order to evaluate the conservation status of species whose status is recognized as critical nationally due to a number of reasons and pressures. Also an action plan for their conservation must be drafted, maybe starting from the ones that are recognized (also at the international level) as being most threatened with extinction.

**5.1.21 IRAQI TARGET 21**

**By 2020 legislation for the conservation of threatened species is issued and enforced.**

Once the threatened species of Iraq have been identified a specific legislation for their conservation must be created with a new legislative act or by using and adapting the framework of an already existing provision. The important issue for this type of legislation as for all the others that are mentioned in the Iraqi targets is that they are implemented and enforced.

FIGURE 8: AICHI TARGET 18 WITH THE RELATED IRAQI TARGET (22)



**5.1.22 IRAQI TARGET 22**

**By the end of 2020 a survey of indigenous and local communities' traditional knowledge, use and practices relevant for the conservation and sustainable use of biodiversity is published.**

This target involves broadly the participation and cooperation of the local authorities and institutions besides local conservation groups and NGOs. The first step is to carry out a locally oriented survey that will cover the whole country as much as possible and feasible. Target questionnaires can be used in order to collect the relevant information about the way in which the local communities are using and benefitting of the services provided by ecosystems and also on their traditional ways to conserve and improve the environment.

FIGURE 9: AICHI TARGET 20 WITH THE RELATED IRAQI TARGET (23)



**5.1.23**      *IRAQI TARGET 23*

**By 2016 a Resource Mobilization Plan for implementation of the NBSAP is established and implemented**

This target is essential to achieve all the other Iraqi targets and to implement the NBSAP. The relatively short term that is set for the resource mobilization plan, responds to the need of avail as soon as possible the necessary resources to start up with the actions and activities that will allow meeting the strategy's objectives.



## 5.2 THE ACTIONS

Focal Area	Action	Iraqi Target
<b>Focal Area 1: Awareness &amp; traditional knowledge</b>	<p><b>A.1.a</b> By the end of 2015 a national survey is completed to know how many awareness tools (films, documentaries, publications, educational programs, guidance materials and trainings) on environment and biodiversity exist.</p>	<p><b>Target 3</b> Survey the tools for awareness</p>
	<p><b>A.1.b</b> Starting from the Strategy approval (2015), each ministry organizes two annual workshop for their employees and manager in order to raise awareness and update about biodiversity issues.</p>	<p><b>Target 2</b> Awareness of policy makers <b>Target 4</b> Tools for awareness increased</p>
	<p><b>A.1.c</b> By 2016 groups, local associations and NGOs have been established to raise awareness among the local and public; also schools, universities and the media are used to raise awareness among the locals and the public.</p>	<p><b>Target 1</b> Awareness of people <b>Target 4</b> Tools for awareness increased</p>
	<p><b>A.1.d</b> By 2018 develop, research, and distribute the knowledge about the most important plants traditionally used as medicine (drugs).</p>	<p><b>Target 4</b> Tools for awareness increased <b>Target 22</b> Survey on traditional knowledge</p>
	<p><b>A.1.e</b> By 2018 develop, research and distribute at all levels (from locals to policy makers) knowledge about the meaning, the importance and the sustainable use and management of ecosystem services.</p>	<p><b>Target 1</b> Awareness of people <b>Target 2</b> Awareness of policy makers <b>Target 16</b> Assessment on state of ecosystem services</p>
	<p><b>A.1.f</b> By the end of 2020, estimation has been made to know the percentage of people and policy makers /governmental employees who know about biodiversity by using questionnaires (specific and simple questions to reflect the general knowledge on biodiversity).</p>	<p><b>Target 1</b> Awareness of people <b>Target 2</b> Awareness of policy makers</p>
	<p><b>A.1.g</b> By 2020 a national survey about the various ethnic groups of Iraq, their specific traditions and practices and their linkage with the conservation and sustainable use of biodiversity is published.</p>	<p><b>Target 4</b> Tools for awareness increased <b>Target 22</b> Survey on traditional knowledge</p>
	<p><b>A.1.h</b> By 2020, every governorate to produce a report about the traditional knowledge of their province local communities (such as the traditional crafts and any other traditional manifestation); to support economically initiatives for the launching and spreading of traditional components and to support the establishment of local NGOs of the traditional communities.</p>	<p><b>Target 4</b> Tools for awareness increased <b>Target 22</b> Survey on traditional knowledge</p>

Focal Area	Action	Iraqi Target
<b>Focal Area 2: Policy</b>	<b>A.2.a</b> By the end of 2014 a decree is issued for the establishment of protected areas in Iraq.	<b>Target 12</b> Decree issued on protected areas
	<b>A.2.b</b> By end of 2015 assess the forestry legislations currently in force and identify the gaps.	<b>Target 8</b> Legislation on forestry
	<b>A.2.c</b> By end of 2015 identify all the governmental bodies concerned with the control and management of invasive alien species.	<b>Target 18</b> Legislation on non-native species <b>Target 19</b> List of invasive species
	<b>A.2.d</b> By 2016 assessing current environmental standards and identify gaps that need to be addressed. By 2020 environmental standards and limitations are issued to address the identified gaps.	<b>Target 11</b> Environmental standards
	<b>A.2.e</b> By 2016 Issuance of a Legislation to control the introduction and dispersal of non-native species.	<b>Target 18</b> Legislation on non-native species
	<b>A.2.f</b> By 2016 an evaluation of the effectiveness of the legislations currently in force about threatened species is carried out and by 2020 legislation for the conservation of threatened species is issued and enforced.	<b>Target 21</b> Legislation on threatened species
	<b>A.2.g</b> By 2016 determine the services provided by natural ecosystems that are used by rural and urban people and by 2018 a strategy should be developed and in place to use sustainably the ecosystems that supply important services to urban and rural people.	<b>Target 16</b> Assessment on state of ecosystem services <b>Target 17</b> Strategy on ecosystem services management
	<b>A.2.h</b> By 2018 Amend existing legislation or develop a new regulation for the protection of lands from desertification risk and restoration of desertified lands, thereby providing special measures to protect restored lands.	<b>Target 6</b> Habitat loss and degradation <b>Target 9</b> Desertification
	<b>A.2.i</b> By 2018 amend the old forestry legislation and enforce the new provisions.	<b>Target 8</b> Legislation on forestry
	<b>A.2.j</b> By 2018 cross-sectoral Guidelines for sustainable use (of natural resources) and sustainable production and consumption methods are drafted to be integrated into relevant sectoral policies.	<b>Target 16</b> Assessment on state of ecosystem services <b>Target 17</b> Strategy on ecosystem services management

Focal Area	Action	Iraqi Target
<p><u>Focal Area 3: Protected Areas and Conservation</u></p>	<p><b>A.3.a</b> By 2016 the purposes and values of the ten proposed PAs have been identified and by the end of 2020 ten new protected areas have been gazetted and established, by detailed planning over the years. Within one year from the PAs establishment the management plan is defined (in accordance with the National legislation on PAs and with international guidelines, including identification of values and criteria, the management authority, the funds, the staff, the social aspects etc.).</p>	<p><b>Target 15</b> Establish ten new protected areas</p>
	<p><b>A.3.b</b> By 2017 the list of threatened species of Iraq is published and the collection of data on their abundance and the main threats affecting them is started in order to inform conservation actions and to draft an Action Plan (about conservation of threatened species). By 2020 the Action Plan is completed, published and on-going.</p>	<p><b>Target 20</b> List of threatened species</p>
	<p><b>A.3.c</b> By 2017 identify the desertified areas of Iraq, by comparison with historical data and evaluate the total surface of these lands and select among all the inventoried desertified lands 1000 sqKm of ecologically valuable shrubland-grassland to be restored. By 2018 draft an action plan for restoration of the selected lands; by 2020 the action plan is on-going.</p>	<p><b>Target 9</b> Desertification</p>

Focal Area	Action	Iraqi Target
<b>Focal Area 4: Monitoring and assessment</b>	<p><b>A.4.a</b> By 2015, using the existing available data on habitats under high level of threats or with high number of threatened species, develop a GIS map on the most sensitive habitats of Iraq. T14</p> <p><b>A.4.b</b> By 2016 designing a gap-filling program based on the available data for building the GIS database for the identification, extent, condition and protection status of the natural, semi-natural and human modified habitats, to be followed up by a inter-ministerial team.</p> <p><b>A.4.c</b> By 2016 design and carry out a Field work scheme in order to detect loss and degradation of main natural, semi-natural and human modified habitats of Iraq and their reasons, by making a comparison with the natural (old) status – based on the references and literatures and using indicators such as, species, habitat size, ecosystem services provided, etc.. By 2020 summarize and store in a complete database the obtained information.</p> <p><b>A.4.d</b> By 2016 perform an inventory of the main forested areas of Iraq and their type. By 2018 identify and evaluate, through comparison with historical data, the forest loss and the main pressures that have caused the loss and that still exist.</p> <p><b>A.4.e</b> By 2016 a national monitoring programme is established for identification of the types of pollutants, the sources and diffusion paths.</p> <p><b>A.4.f</b> By 2016 assessments at Region level are carried out about the state of ecosystem services with reference to their provisioning, regulating and cultural functions and their importance for urban and rural people. By 2018 management options are developed nationally in order to use them sustainably. By 2020 the regional assessments and the management options are summarized, published and spread.</p> <p><b>A.4.g</b> By 2018 fill the data gaps about identification, extent, condition and protection status of the natural, semi-natural and human modified habitats by collecting the missing information and store these data in a GIS database and by 2020 deliver and share the complete GIS database containing the information on the natural, semi-natural and human modified habitats.</p> <p><b>A.4.h</b> By 2018 the existing list of invasive species of Iraq (published in the 5NR) is reviewed and updated. By 2020 research is completed and published to ascertain the invasive status, the impact and invasion pathways of the 30 most dangerous/problematic (known or assumed) alien species of the list.</p>	<p><b>Target 14</b> Mapping sensitive habitats</p> <p><b>Target 5</b> Database on habitat status</p> <p><b>Target 6</b> Habitat loss and degradation</p> <p><b>Target 7</b> Identify pressures on ecosystems</p> <p><b>Target 10</b> Monitoring pollution</p> <p><b>Target 16</b> Assessment on state of ecosystem services</p> <p><b>Target 5</b> Database on habitat status</p> <p><b>Target 19</b> List of invasive species</p>

Focal Area	Action	Iraqi Target
<b>Focal area 5: Trainings</b>	<p><b>A.5.a</b> By the end of 2014 at least one training workshop on PAs management has been completed and other two workshops are planned. T13</p>	<p><b>Target 13</b> Trainings on PAs</p>
	<p><b>A.5.b</b> By 2016, at least one training has been organized for the Governorate employees to raise their awareness about the importance of traditional knowledge and biodiversity conservation.</p>	<p><b>Target 2</b> Awareness of policy makers <b>Target 22</b> Survey on traditional knowledge</p>
	<p><b>A.5.c</b> By 2020 a set of inter-ministerial conferences addressing crucial biodiversity issues are organized, referring in particular to:</p> <ul style="list-style-type: none"> <li>- Ecosystem services and human well-being</li> <li>- Invasive alien species</li> <li>- Protected areas management</li> <li>- Habitat loss</li> <li>- Pollution</li> <li>- Sustainable development</li> </ul>	<p><b>Target 2</b> Awareness of policy makers</p>
	<p><b>A.5.d</b> By 2020 a set of trainings are organized targeting the academics, researchers, field teams, local organizations of volunteer or conservation groups, technical employees from governmental bodies, focusing in particular on the following:</p> <ul style="list-style-type: none"> <li>- Ecosystem services and human well-being</li> <li>- Invasive alien species</li> <li>- Protected areas management</li> <li>- Habitat loss</li> <li>- Assessment methodologies for field work and data collection</li> <li>- Analysis techniques and trend estimations</li> <li>- Building indicators</li> <li>- Environmental standards</li> <li>- Sustainable development</li> </ul>	<p style="text-align: center;">-</p>
	<p><b>A.5.e</b> By 2020 a set of inter-ministerial trainings are carried out about the international guidelines and policies concerning the environment, their relevance and implementation in the Iraqi context.</p>	<p style="text-align: center;">-</p>

### 5.3 NBS ACTION PLAN AND MILESTONES

The definition of actions within the framework of a Strategy always requires adequate and punctual planning for its success.

For each action of the Strategy one or more responsible body is mentioned and addressed as a reference for that action. This means that the action can be implemented in different ways with the cooperation and contribution of one or more of the indicated bodies or maybe even with the cooperative contribution of all of them.

The way in which the responsibility of implementing the action will be dispatched will depend on the involved actors/bodies. It might be that various bodies will each play a different role: such as managing the practical issue, providing financial support, feeding in relevant data and research; or also the various bodies, on base of cooperation agreements will all equally contribute to the action implementation in terms of financing, skills and technical advice.

#### 5.3.1 TIMEFRAME AND RESPONSIBILITY

Focal Area 1: Awareness and Traditional Knowledge		
Action	Timeframe	Responsibility
A.1.a Awareness tools	2015	Ministry of Culture, Ministry of Higher Education
A.1.b Institutional awareness	2020	All the Ministries
A.1.c Public awareness	2016	Governorate Councils. Governorates Directorates: Environment, Agriculture, Water Resources. NGOs
A.1.d Research on traditional uses of medicinal plants	2018	Universities, NGOs
A.1.e Ecosystem services knowledge spread at all levels	2018	Universities and research institution, NGOs, Ministries: Environment, Agriculture, Water Resources
A.1.f Estimation of institutional and public awareness	2020	Ministries: Environment, Planning
A.1.g Ethnic groups of Iraq and their linkage with biodiversity	2020	Ministry of Culture, NGOs
A.1.h Support local traditional communities	2020	Governorate Councils

**Focal Area 2: Policy**

Action	Timeframe	Responsibility
<b>A.2.a</b> Protected area legislation	2014	Ministry of Environment
<b>A.2.b</b> Forestry legislations review	2015	Ministry of Agriculture
<b>A.2.c</b> Responsible bodies for the control of invasive alien species.	2015	Ministries: Environment, Agriculture, Trade
<b>A.2.d</b> Environmental standards review	2016-2020	Ministry of Environment
<b>A.2.e</b> Invasive alien species legislation	2016	Ministries: Environment, Agriculture, Trade
<b>A.2.f</b> Reviewing and updating threatened species legislation	2016-2020	Ministries: Environment, Agriculture
<b>A.2.g</b> Strategy for the sustainable use of ecosystem services	2016-2018	Universities and research institution, NGOs, Ministries: Environment, Agriculture, Water Resources, planning
<b>A.2.h</b> Legislation to prevent desertification	2018	Ministries: Environment, Agriculture
<b>A.2.i</b> Enforce the reviewed forestry legislation	2018	Ministry of Agriculture
<b>A.2.j</b> Cross-sectoral Guidelines for sustainability	2018	Ministry of Environment

**Focal Area 3: Protected Areas and conservation**

Action	Timeframe	Responsibility
<b>A.3.a</b> Establishment and management of ten new protected areas	2016	Ministries: Environment, Agriculture, Water Resources The National Committee for Protected Areas Universities and research institution NGOs
<b>A.3.b</b> List of threatened species of Iraq published and Action Plan for conservation actions.	2017-2020	Ministry of Environment, Universities and research institution NGOs
<b>A.3.c</b> Identify and restore desertified lands.	2017-2020	Ministries: Environment, Agriculture, Water Resources, Planning. Universities and research institution.



**Focal Area 4: Monitoring and Assessment**

Action	Timeframe	Responsibility
<b>A.4.a</b> GIS map of most sensitive habitats of Iraq	2015	Ministry of Environment
<b>A.4.b</b> Planning a GIS database for habitat assessment	2016	Universities and research institution, NGOs, Ministries: Environment, Agriculture, Water Resources
<b>A.4.c</b> Database on habitat loss	2016-2020	Universities and research institution, NGOs
<b>A.4.d</b> Inventory of forests of Iraq, forest loss and pressures	2016-2018	Ministries: Agriculture, planning
<b>A.4.e</b> Monitoring pollutants	2016	Ministries: Environment, Agriculture, Oil, Industry, Municipalities, Water Resources, Science and Technology Universities and research institution,
<b>A.4.f</b> Regional assessments and management on ecosystem services	2016-2020	Governorate Councils. Governorates Directorates: Environment, Agriculture, Water Resources. NGOs. Universities and research institution
<b>A.4.g</b> Completing a GIS database for habitat assessment	2018-2020	Universities and research institution, NGOs, Ministries: Environment, Agriculture, Water Resources
<b>A.4.h</b> List of invasive species of Iraq reviewed and published and research on dangerous species completed	2018-2020	Ministry of Environment Universities and research institutions, NGOs

**Focal Area 5: Training**

Action	Timeframe	Responsibility
<b>A.5.a</b> Training Workshops on Protected Areas	2014	Ministry of Environment
<b>A.5.b</b> Trainings for local institutional bodies on biodiversity and traditional knowledge	2016	Governorate Councils Local Universities and research institution, Local NGOs
<b>A.5.c</b> Governmental conferences on biodiversity issues	2020	All the Ministries Universities and research institution, NGOs
<b>A.5.d</b> Trainings for technical staff	2020	All the concerned Ministries Universities and research institution, NGOs
<b>A.5.e</b> Trainings on international policy concerning the environment	2020	All the Ministries

**5.3.2 MAINSTREAMING THE ACTIONS**

- In the Table below each of the actions of the Strategy is tested against the existing national strategies, policies and plans that can be present nationally, in order to avoid duplication of efforts and resources and, where possible, to harmonize the implementation.
- The Table reports only those strategies where clear goals, objectives or projects are mentioned and that can in an evenly clear way, be associated with corresponding or partially corresponding actions of the NBSAP. In particular the Table refers to the Iraqi National Development Plan 2013-2017, to the National Environmental Strategy and Action Plan, to the Poverty eradication Strategy, to the Higher Education Strategy 2011-2020, to the Iraqi Energy Strategy (INES).
- The SWLRI (Strategy for Water and Land Resources of Iraq) has not been released yet, for this reason the detailed analysis of its objectives and the cross-matching with the NBSAP actions cannot be carried out at the moment. However the SWLRI Strategy will be essential for the NBSAP

and the implementation of the two strategies shall be surely mainstreamed.

- The objective of the SWRLI project is to define the strategy and the related investment plan that will guide the sustainable management and development of the water and land resources of Iraq for the next twenty-five years. The activities to be performed include data collection, archiving, and analysis, as well as performing all the planning activities required for the development of the Strategy. The planning horizon of the SWLRI comprises the time span from 2010 to 2035, with greater detail for the first five years. The planning process shall be designed to be periodically updated every five years.
- In addition to the above, at ministerial level, plans, policies and strategies might be available that will also cross-cut biodiversity and environmental issues in general and the actions of the NBSAP in particular; in that case each Ministry is therefore urged to review its internal plans and policies and search the possible sectoral actions that can be mainstreamed and harmonized with the NBSAP actions.

Action	Mainstreamed with (strategy)	
<b>A.1.a</b> Awareness tools		
<b>A.1.b</b> Institutional awareness	<u>NESAP</u>	Project 1.1.4, environmental awareness about damage of burning waste. Project 3.1.3, Raising awareness about urban expansion to agricultural lands and orchards. Project 3.3.6, Environmental awareness in the fight against desertification. Project 3.3.11, Raising awareness to decision-maker level on implementing green belts in Baghdad and governorates.
<b>A.1.c</b> Public awareness	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 5</u> , point 5. <u>Goal 10</u> , point 7
	<u>NESAP</u>	Project 1.1.4, Environmental awareness about damage of burning waste. Project 3.1.3, Raising awareness about urban expansion to

Action	Mainstreamed with (strategy)	
		<p>agricultural lands and orchards.</p> <p>Project 3.3.6, Environmental awareness in the fight against desertification.</p> <p>Project 5.4.1, Integration of biodiversity in the curricula of research, education and training.</p> <p>Project 10.4.1, Raising environmental awareness among students in schools, institutes and universities</p> <p>Project 10.4.3 Environmental awareness and education among communities women and youth</p> <p>Project 10.4.4, Environmental awareness in the most vulnerable areas.</p>
	<p><u>Poverty Strategy 2010-2014</u></p>	<p>Outcome 3.6, Improve the curricula of the technical education schools and match them with the needs of labor market, especially for rural and agricultural sectors.</p> <p>Outcome 4, action 4.3.6, awareness of rural people about the surrounding environment.</p>
	<p><u>Higher Education Strategy 2011-2020</u></p>	<p>Program 4, Update the curricula with current scientific developments</p> <p>Program 6, Raising capacities in line with the sustainable development needs</p>
<p><b>A.1.d</b> Research on traditional uses of medicinal plants</p>		
<p><b>A.1.e</b> Ecosystem services knowledge spread at all levels</p>	<p><u>NESAP</u></p>	<p>Project 10.4.2, Environmental awareness and education among parliamentarians, decision makers, religious leaders and opinion leaders.</p> <p>Project 10.4.3 Environmental awareness and education among communities women and youth</p>
<p><b>A.1.f</b> Estimation of institutional and public awareness</p>	<p><u>NESAP</u></p>	<p>Project 10.4.2, Action 10.4.3, Action 10.4.4</p>
<p><b>A.1.g</b> Ethnic groups of Iraq and their linkage with biodiversity</p>	<p><u>NESAP</u></p>	<p>Project 5.7.1, Outreach and inventory of cultural environmental heritage</p>
<p><b>A.1.h</b> Support local traditional communities</p>	<p><u>NESAP</u></p>	<p>Project 1.9.1, Building a database on craft industries in Iraq</p> <p>Project 5.7.1, Outreach and inventory of cultural environmental heritage.</p>
<p><b>A.2.a</b> Protected area legislation</p>	<p><u>National Development Plan (NDP) 2013-2017</u></p>	<p>Chapter 7, <u>Goal 10</u>, point 2</p>
	<p><u>NESAP</u></p>	<p>Project 10.1.1, Modernizing legal framework for environment</p>
<p><b>A.2.b</b> Forestry legislations review</p>	<p><u>National Development Plan (NDP) 2013-2017</u></p>	<p>Chapter 7, <u>Goal 10</u>, point 2</p>
	<p><u>NESAP</u></p>	<p>Project 10.1.1, Modernizing legal framework for environment</p>

Action	Mainstreamed with (strategy)	
<b>A.2.c</b> Responsible bodies for the control of invasive alien species.		
<b>A.2.d</b> Environmental standards review	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 10</u> , point 2
	<u>NESAP</u>	Projects 1.4.1, 1.7.3, 1.11.1, 1.13.1, Identifying the national air pollutants. Project 10.1.1, Modernizing legal framework for environment
<b>A.2.e</b> Invasive alien species legislation	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 10</u> , point 2
	<u>NESAP</u>	Project 10.1.1, Modernizing legal framework for environment
<b>A.2.f</b> Reviewing and updating threatened species legislation	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 10</u> , point 2
	<u>NESAP</u>	Project 5.6.2, Monitoring and activation of compliance with laws Project 10.1.1, Modernizing legal framework for environment
<b>A.2.g</b> Strategy for the sustainable use of ecosystem services	<u>NESAP</u>	Project 5.6.1, Developing the institutional framework for biodiversity management.
<b>A.2.h</b> Legislation to prevent desertification	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 3</u> , point 5. <u>Goal 10</u> , point 2
	<u>NESAP</u>	Project 10.1.1, Modernizing legal framework for environment
<b>A.2.i</b> Enforce the reviewed forestry legislation	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 10</u> , point 2
	<u>NESAP</u>	Project 5.6.2, Monitoring and activation of compliance with laws Project 10.1.1, Modernizing legal framework for environment
<b>A.2.j</b> Cross-sectoral Guidelines for sustainability	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 10</u> , point 3. <u>Goal 3</u> , point 5
<b>A.3.a</b> Establishment and management of ten new protected areas	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 5</u> , point 2.
	<u>NESAP</u>	Project 4.4.1, Preservation of biodiversity in the marine environment. Project 4.5.1, Integrated management of Iraqi coast

Action	Mainstreamed with (strategy)	
		Project 5.1.1, Establishment of national protected areas network.
<b>A.3.b</b> List of threatened species of Iraq published and Action Plan for conservation actions.	<u>NESAP</u>	Project 5.1.6, Inventory of biodiversity and lists of endemic and endangered species.
<b>A.3.c</b> Identify and restore desertified lands.	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 3</u> , point 1.
	<u>NESAP</u>	Project 3.3.3 (1.1.3), Monitoring and assessing deserts, draught and rainfall. Project 3.1.1, Management and use of soil and land and mapping of degraded soils.
<b>A.4.a</b> GIS map of most sensitive habitats of Iraq	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 5</u> , point 4.
<b>A.4.b</b> Planning a GIS database for habitat assessment		
<b>A.4.c</b> Database on habitat loss	<u>Iraqi National Energy Strategy (INES)</u>	Strategic Objective 5, Environmental sustainability
	<u>NESAP</u>	Project 2.5.3, Development of national environmental database and atlases Project 2.7.2, Using remote sensing techniques and GIS for the marshlands (monitoring and evaluation) Project 3.1.1, Management and use of soil and land and mapping of degraded soils. Project 9.1.2, Impact of agricultural pesticides on marshland environment.
<b>A.4.d</b> Inventory of forests of Iraq, forest loss and pressures	<u>NESAP</u>	Project 2.5.3, Development of national environmental database and atlases Project 2.7.2, Using remote sensing techniques and GIS for the marshlands (monitoring and evaluation)
<b>A.4.e</b> Monitoring pollutants	<u>National Development Plan (NDP) 2013-2017</u>	Chapter 7, <u>Goal 2</u> , point 4. <u>Goal 4</u> . <u>Goal 9</u> , point 2, 3.
	<u>NESAP</u>	Project 1.13.2, Establishing a air quality monitoring network Project 1.13.3, Conducting studies and research on air quality monitoring Project 1.13.5, Establishing air quality control system in Baghdad and governorates

Action	Mainstreamed with (strategy)	
		<p>Project 2.4.1, Developing a program for monitoring and control of different water resources and sources of pollution</p> <p>Project 2.4.4, Remote sensing project to monitor the water quality of Euphrates, Habbaniya lake and discharges flowing into them</p> <p>Project 2.4.6, Development of environmental monitoring and early warning systems</p> <p>Project 2.4.7, Improvement of quality of water resources in northern governorates through developing monitoring and install remote sensing systems</p> <p>Project 2.9.3, Establishing a program to monitor and locate sewage disposal in rivers (to be included within the sewage system development plan).</p> <p>Project 2.10.8, Monitoring and control of water quality in the downstream estuary.</p> <p>Project 4.1.1, National plan to study marine pollution sources (including land based sources etc.)</p>
	<p><u>Iraqi National Energy Strategy (INES)</u></p>	<p>Strategic Objective 5, Environmental sustainability</p>
<p><b>A.4.f</b> Regional assessments and management on ecosystem services</p>		
<p><b>A.4.g</b> Completing a GIS database for habitat assessment</p>	<p><u>NESAP</u></p>	<p>Project 2.5.3, Development of national environmental database and atlases</p> <p>Project 2.7.2, Using remote sensing techniques and GIS for the marshlands (monitoring and evaluation)</p> <p>Project 3.1.1, Management and use of soil and land and mapping of degraded soils.</p> <p>Project 5.1.5, Mapping of important areas of biodiversity and birds.</p>
<p><b>A.4.h</b> List of invasive species of Iraq reviewed and published and research on dangerous species completed</p>		
<p><b>A.5.a</b> Training Workshops on Protected Areas</p>	<p><u>NESAP</u></p>	<p>Project 5.6.3, Capacity building for the biodiversity-related staff</p>
<p><b>A.5.b</b> Trainings for local institutional bodies on biodiversity and traditional knowledge</p>	<p><u>NESAP</u></p>	<p>Project 5.6.3, Capacity building for the biodiversity-related staff</p>
<p><b>A.5.c</b> Governmental conferences on biodiversity issues</p>	<p><u>NESAP</u></p>	<p>Project 5.6.3, Capacity building for the biodiversity-related staff</p>

<b>Action</b>	<b>Mainstreamed with (strategy)</b>	
<b>A.5.d</b> Trainings for technical staff	<u>NESAP</u>	Project 5.6.3, Capacity building for the biodiversity-related staff
	<u>Higher Education Strategy 2011-2020</u>	Program 6, Raising capacities in line with the sustainable development needs
<b>A.5.e</b> Trainings on international policy concerning the environment	<u>NESAP</u>	Project 5.6.3, Capacity building for the biodiversity-related staff



### **5.3.3 SUGGESTED STEPS FOR IMPLEMENTING THE ACTIONS**

Once the actions have been identified together with the possible responsible bodies for implementing, promoting and sponsoring them, their practical implementation has to be launched as well.

For this reason a number of steps (or sub-actions) are proposed in the following for starting up the Strategy, with a step by step approach.

Not all of the actions have been split into implementation steps because some of them are very clear and short and already incorporate in their wording the clear steps that will bring to their accomplishment.

All the suggested actions as addressed below must be mainstreamed according to the Strategies and policies and across the identified bodies/institutions mentioned under paragraph 5.3.2 above.

The steps for implementation related to the Focal area 5 (Trainings) are considered as supporting steps/actions for implementing all the other focal areas' actions. The timing and organization of the trainings and capacity buildings shall be suited to the implementation needs of the other focal areas' actions.

- **A.1.a** Awareness tools

Step 1: prepare a list of all possible bodies that might have produced awareness tools (about biodiversity)

Step 2: verify the existence of the tool and its availability and effectiveness

Step 3: draft the final inventory of awareness tools and their reference/description

- **A.1.b** Institutional awareness

Step 1: allocate yearly budget for the two workshops;

Step2: draft a plan of priority themes to be addressed by targeting the specific working areas of every Ministry;

Step 3: recruit national/international experts to address the various subjects, as needed

- **A.1.c** Public awareness

Step 1: each governorate authority identifies the existing groups, associations, NGOs, schools, universities and media present locally;

Step2: the identified bodies/organizations are informed by governorates authorities about their role in the NBSAP and they are called to contribute raising the awareness for the public;

Step 3: the governorate authorities follow up and support these activities.

- **A.1.d** Research on traditional uses of medicinal plants

Step 1: at governorate level each authority, with the support of local communities, universities, experts, research institutes, to identify (if existing) the local traditions and knowledge about medicinal plant;

Step 2: the governorate authorities liaise with universities and research institutions locally to develop the research about the medicinal plants and their traditional uses;

Step 3: use the awareness tools available to spread the research results.

- **A.1.e** Ecosystem services knowledge spread at all levels

Step 1: at ministerial level (Environment, Agriculture, Water Resources), with the support of universities, NGOs and research institutes develop research and tools about the meaning, importance and sustainable use of ecosystem services.

Step 2: use the awareness tools available to spread at all levels the research results.

- **A.1.f** Estimation of institutional and public awareness

Step 1: collect relevant population and socio-economic data from the Ministry of Planning;

Step 2: select a representative sample;

Step 3: prepare a questionnaire with suitable questions for each target group;

Step4: decide a suitable method/channel for delivering the questionnaire;

Step5: collect the answers

Step 6: analyze the data

- **A.1.g** Ethnic groups of Iraq and their linkage with biodiversity

Step 1: the responsible body, with the support of sectoral NGOs, collects and assesses the existing information about ethnic groups of Iraq, their traditions and practices (linkage with biodiversity);

Step 2: a national survey to fill the identified gaps, in cooperation and with support of the local authorities, is carried on;

Step 3: the national survey is developed and published

- **A.1.h** Support local traditional communities

Step 1: at governorate level each authority, with the support of local communities, collect and summarize in a report the information about the traditional knowledge;

Step 2: allocate funds to support the traditional activities of the local communities (e.g. traditional buildings, tools for handicrafts and marketing places, music instruments, traditional clothes);

Step 3: encourage and support the local group association by using other examples of NGOs and local groups that might be present in the territory.

- **A.2.b** Forestry legislations review and **A.2.i** Enforce the reviewed forestry legislation

Step 1: comprehensively collect and review existing and in force forestry legislation;

Step 2: set the important baseline requirements for assessing, restoring and sustainably managing Iraqi forest resources;

Step 3: identify and report the gaps of the existing forestry legislation in order to assess, restore and sustainably manage Iraqi forest resources.

Step 4: amend the old forestry legislation and enforce the new provisions.

- **A.2.c** Responsible bodies for the control of invasive alien species and **A.2.e** Invasive alien species legislation

Step 1: identify all the governmental bodies concerned with the control and management of invasive alien species;

Step 2: draft the legislation for controlling the introduction of the invasive alien species into the natural environment.

Step 3: deliver the legislation for issuance.

- **A.2.d** Environmental standards review

Step 1: comprehensively collect and review existing environmental standards in force;

Step 2: set the current parameters (of the environmental standards), in accordance with current developments and international reference;

Step 3: identify and report the gaps of the existing legislation in order to assess the quantity and the limitation of the pollutants in the environment and to harmonize them in accordance with current developments and international reference;

Step 4: update and complete the environmental standards and deliver them for issuance.

- **A.2.f** Reviewing and updating threatened species legislation

Step 1: comprehensively collect and review existing and in force legislation about threatened species;

Step 2: set the important baseline requirements for assessing, conserving and sustainably managing Iraqi threatened species;

Step 3: identify and report the gaps for assessing, conserving and sustainably managing Iraqi threatened species;

Step 4: update and complete the reviewed legislation and deliver for issuance;

Step 5: set in place a mechanism for controlling and reviewing progress in the implementation and enforcement of the legislation.

- **A.2.g** Strategy for the sustainable use of ecosystem services

Step 1: survey and list all the ecosystem services of the main ecosystems of Iraq;

Step 2: identify the uses of the ecosystems by urban and rural people;

Step 3: set the targets and develop a Strategy for a sustainable use of the identified ecosystem services;

Step 4: implement the strategy.

- **A.2.h** Legislation to prevent desertification

Step 1: comprehensively collect and review existing and in force legislation dealing with degraded dry lands and lands desertified or under desertification threat;

Step 2: set the important baseline requirements for protection of lands from desertification risk and restoration of desertified lands;

Step 3: identify and report the gaps with reference to Step 2;

Step 4: draft legislation with reference to Step 2, including special measures for the protection of restored lands.

- **A.2.j** Cross-sectoral Guidelines for sustainability

Step 1: develop guidelines for sustainable use of natural resources (and sustainable production and consumption methods), taking into account the international context and reference;

Step 2: identify the relevant institutional bodies to which the guidelines have to be mainstreamed and adopted;

Step 3: through the Council for protection and improvement of the environment, a joint agreement is reached among the relevant institutional bodies for the adoption of the guidelines.

- **A.4.a** GIS map of most sensitive habitats of Iraq

Step 1: develop a GIS map of Iraqi habitats by using existing land cover data and international habitat classification (e.g. IUCN)

Step 2: evaluate the threats to major Iraqi habitats by using available data;

Step 3: carry out a vulnerability analysis to identify the most sensitive habitats.

Step 4: produce a GIS map and dataset of the analysis.

- **A.4.b** Planning a GIS database for habitat assessment and **A.4.g** Completing a GIS database for habitat assessment

Step 1: set up an inter-ministerial team concerned with habitat assessment;

Step 2: By using the database developed within action **A.4.a** and other data, identify the available information about the current extent, condition and protection status of the natural, semi-natural and human modified habitats of Iraq;

Step 3: design the gap-filling program for building the GIS database, based on Step 2 results;

Step 4: fill the data gaps by collecting the missing information and storing them in the final GIS database.

Step 5: deliver and share the complete GIS database.

- **A.4.c** Database on habitat loss

Step 1: By using the database developed within action **A.4.b**, compare the current habitat status with the previous (based on the literature reference);

Step 2: identify the components (e.g. species, habitat size, ecosystem services provided ...etc) to be used in the habitat loss assessment; and draft and carry out a field work scheme for detecting the loss and degradation of natural, semi-natural and human modified habitats;

Step 3: summarize and develop a complete database with the obtained information.

- **A.4.d** Inventory of forests of Iraq, forest loss and pressures

Step 1: map the forested area of Iraq and their types;

Step 2: compare the data of step 1 with historical figures, to identify the forest loss;

Step 3: review and identify the past and present pressures on forest areas

- **A.4.f** Regional assessments and management on ecosystem services

Step 1: by using the information collected under action A.2.g on the services provided by natural ecosystems to urban and rural people; carry on regional assessments to evaluate the state of the ecosystem services with reference to their provisioning, regulating and cultural services;

Step 2: identify management options nationally for their sustainable use;

Step 3: summarize the regional assessments and management options for publication.

- **A.4.h** List of invasive species of Iraq reviewed and published and research on dangerous species completed

Step 1: Review the existing list of invasive species

Step 2: select the 30 most dangerous or problematic species (e.g. from national and international sources or from literature)

Step 3: draft a work plan to ascertain the invasive status the impact and invasion pathways of the 30 selected species

Step 4: complete and publish the research results.

#### 5.4 NBSAP IMPLEMENTATION STRATEGY

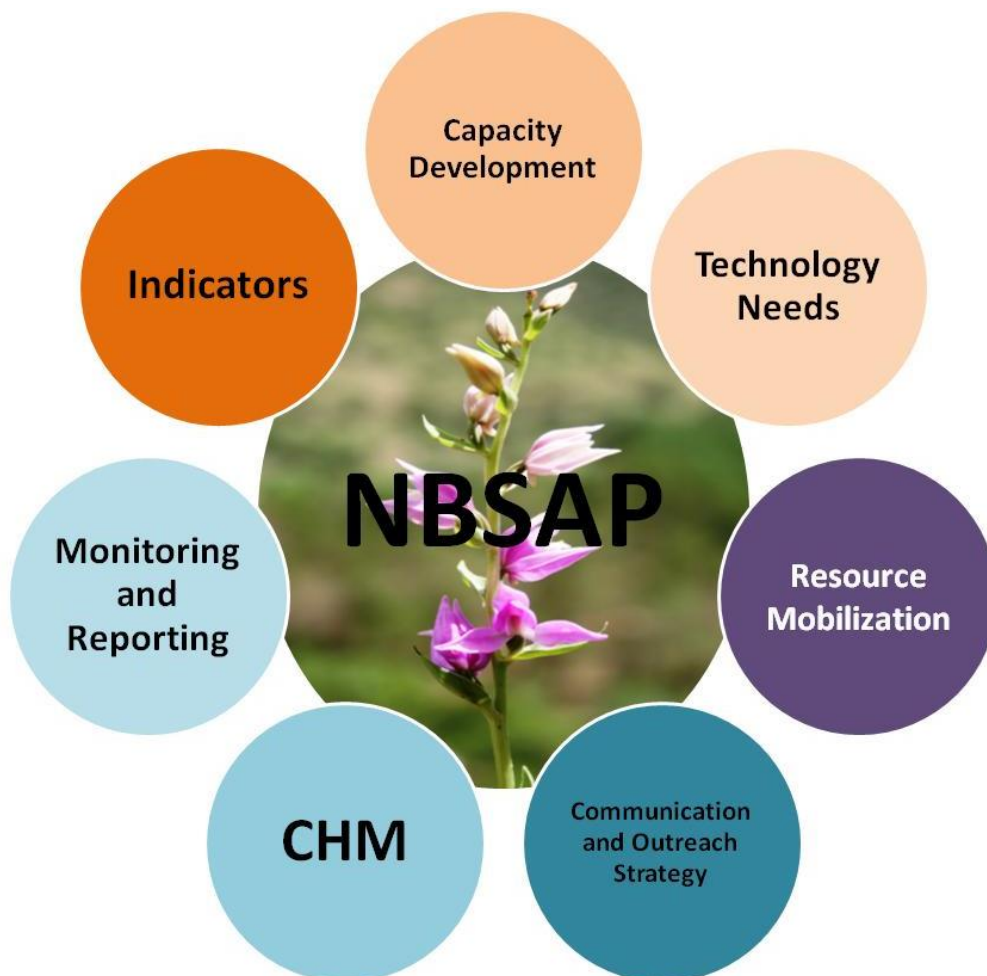
For the implementation process of NBSAP, many other supporting systems will be necessary, as shown in the following chart.

Essential components that contribute and support the whole NBSAP success relate with three main groups:

1. The necessary **capacity** and **technological needs** to perform research and biodiversity conservation/evaluation; as well as the necessary skills and abilities to calculate and refine **indicators**;
2. The ability and commitment to spread the NBSAP message and results through **communication and outreach tools**, the design and implementation of a good

**Clearing house mechanism (CHM)** and the paramount need to evaluate progress in achieving results, thereby developing a sound **monitoring and reporting system**.

3. The essential supporting component is the **financial resource mobilization strategy/plan**; without a budgetary allocation no one or very few of the previous activities would hardly be realized.



## 6 MEASURING SUCCESS

### 6.1 MONITORING AND EVALUATION OF NBSAP IMPLEMENTATION AND RESULTS

This is the first NBSAP for Iraq. The implementation of the chosen actions as a contribution to the overall Strategy will be a great challenge, especially considering the national context and situation. However we will try to set in place a mechanism (basically tailored on the development and use of sound indicators), that will allow to assess the delivery of the Strategy. It is important that these indicators will be limited in number so that they are easily understood and

easy to use. It is also very important to propose indicators for which data are either completely or partially available or anyway easy to be found within reasonable time and costs, and well in advance the deadlines for monitoring and evaluation purposes.

The 5 focal areas of the Strategy are addressed with a number of ‘possible elements to measure’ in order to assess the progress towards the Strategy implementation and the Iraqi Targets accomplishment.

The table also summarizes the availability of data to build the indicators and the development needs for building the indicators, in case these are complex and need a certain degree of analysis and elaboration.

#### MEASURING PROGRESS AGAINST FOCAL AREAS AND ACTIONS

FOCAL AREA	POSSIBLE ELEMENTS TO MEASURE	AVAILABILITY OF DATA AND INDICATORS	CONTRIBUTES TO ACHIEVE IRAQI TARGET
FOCAL AREA 1: AWARENESS AND TRADITIONAL KNOWLEDGE	<ol style="list-style-type: none"> <li>1. Awareness tools developed</li> <li>2. Number of awareness initiatives organized</li> <li>3. Number of local groups and NGOs established</li> <li>4. % of people and policy makers aware about biodiversity issues</li> </ol>	Data available, some development needed for the indicators	Targets: 1, 2, 3, 4, 16, 22
FOCAL AREA 2: POLICY	<ol style="list-style-type: none"> <li>5. Number of reviewed amended, updated and officially enforced legislation concerning biodiversity and its conservation</li> <li>6. Number of policies action plans and strategies in place and implemented</li> <li>7. legislation and management plans to control and prevent spread of invasive alien species</li> </ol>	Data and indicators available	Targets: 6, 8, 9, 11, 12, 16, 17,18, 19, 21
FOCAL AREA 3: PROTECTED AREAS AND	<ol style="list-style-type: none"> <li>8. Number of action plans or management plans for conserving target</li> </ol>	Data available, some development needed for the indicators	Targets: 9,15, 20

FOCAL AREA	POSSIBLE ELEMENTS TO MEASURE	AVAILABILITY OF DATA AND INDICATORS	CONTRIBUTES TO ACHIEVE IRAQI TARGET
CONSERVATION	areas/ecosystems/species 9. Number of protected areas established 10. Area (Km2) of desertified land all over Iraq 11. Number and types of restoration measures adopted 12. Coverage (Km2) of restored areas 13. Number of threatened species of Iraq		
FOCAL AREA 4: MONITORING AND ASSESSMENT	14. Surface (or percentage) of sensitive habitats of Iraq 15. Number, extent and condition of natural, semi-natural and human modified habitats of Iraq 16. Number and extent of natural habitats lost 17. Number of species that have decreased or disappeared from a target ecosystem 18. Health and well being of communities directly dependant on ecosystem goods and services 19. Trends in number of invasive alien species;	Most data available, some development needed for the indicators	Targets: 5, 6, 7, 10, 14, 16, 19
FOCAL AREA 5: TRAININGS	20. Number of trainings and capacity building activities about biodiversity and environmental aspects	Data and indicators available	Targets: 13

## 6.2 EVALUATION OF OUTCOMES FOR REVIEW

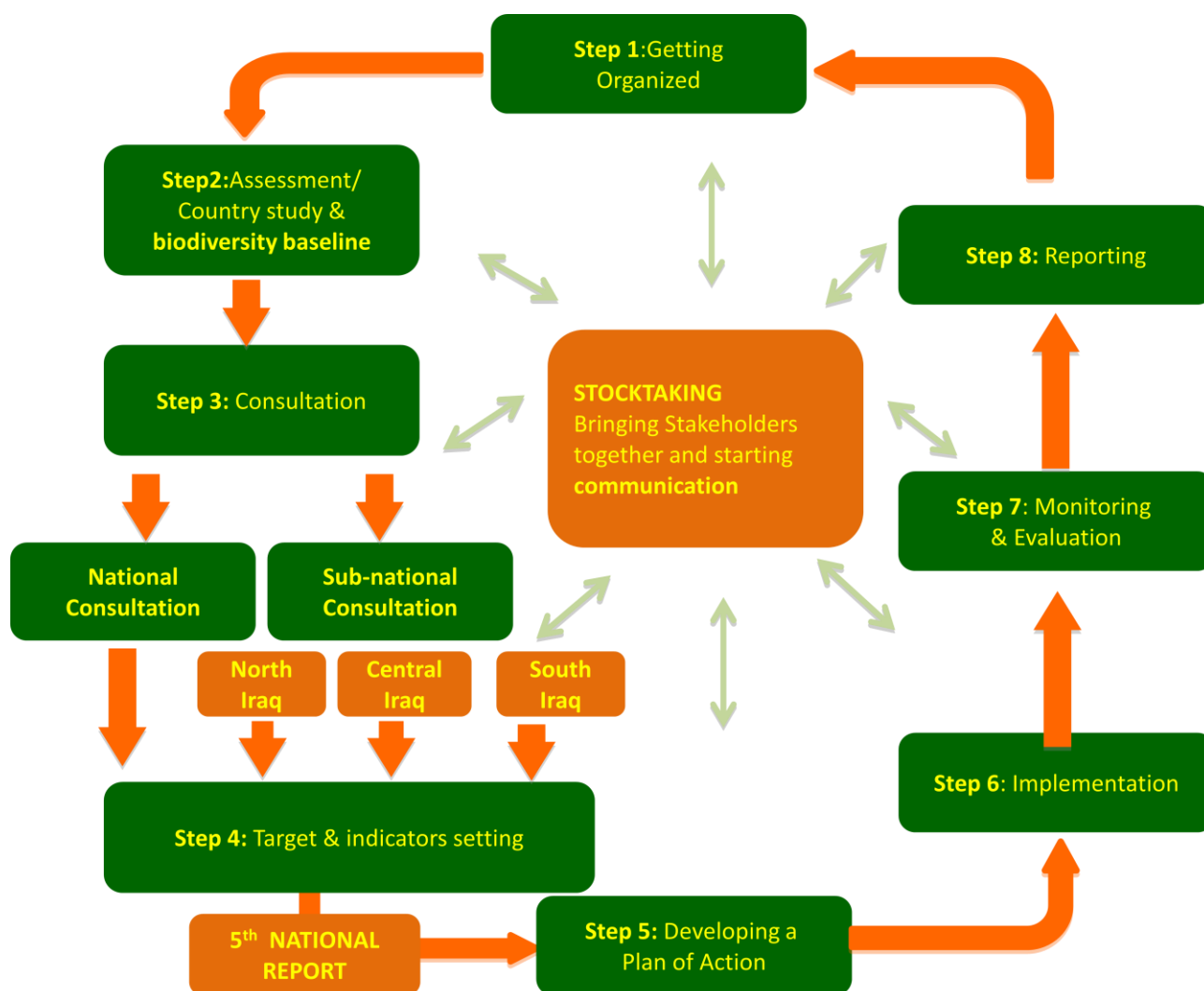
According to the guidance given by The Conference of the Parties of the CBD, every Party should report about its achievements and implementation of the Convention at four-yearly intervals. Given this link between preparation of the national report and identification of the need to revise the NBSAP, it will be logical and cost-effective for countries to operate a similar four-year cycle for updating the NBSAP.

The following diagram represents and proposes a cyclical process for evaluating the outcomes and assessing progress in implementing the Strategy of Iraq.

According to the guidance given by The Conference of the Parties of the CBD, every Party should report about its achievements and implementation of the Convention at four-yearly intervals. Given this link between preparation of the national report and identification of the need to revise the NBSAP, it will be logical and cost-effective for countries to operate a similar four-year cycle for updating the NBSAP.

The following diagrams represent the cyclical process of the NBSAP and a detail of the proposed cyclical process for evaluating the outcomes and assessing progress in implementing the Strategy of Iraq.

THE CYCLICAL PROCESS OF THE FIRST IRAQI NBSAP





THE FOUR-YEAR CYCLE TO ASSESS PROGRESS IN IMPLEMENTING THE IRAQI NBSAP

