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# **Summary of Hamoun International Wetlands Integrated Management Plan**

**Department of Environment  
Deputy of Natural Environment  
Sistan and Baluchestan Department of Environment Provincial Bureau**

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## **Summary of Hamoun Wetlands Integrated Management Plan**

The Hamoun International Wetlands are among globally important wetlands, with an area of about 5700 square kilometers and depth range of 1 to 5 meters, located in the desert region of eastern Iran in the Sistan region and are considered the largest freshwater lake in the Iranian Plateau. The Lake consists of three parts called Hamoon-e Puzak in the northeast, Hamoon-e Saberi in the north and Hamoon-e Hirmand in the west and southwest. Large parts of Hamoun-e Puzak and Hamoun-e Saberi are located in Afghanistan and the remaining parts in Iran. The water level in each of the Hamouns varies depending on the volume of incoming water, rainy seasons, dry years and wet years, and is a function of the water flowing in the Hirmand River, of the outflows of dams, and of other seasonal rivers. In wet years and in spring following flooding of Hirmand River and its tributaries, the three Hamouns join together and take the shape of a horseshoe.

In 1990, the southern end of Hamoun-e Puzak, Hamoun-e Saberi, and Hamoun-e Hirmand were put on the Red List of the Ramsar Convention due to the various threats they faced (construction of hydraulic structures in Afghanistan, supplying drinking water and allocating water to the agriculture sector in Iran and Afghanistan). At present, these wetlands are faced with various problems despite the existing international environmental treaties. In this regard, the Department of Environment put the development of a Comprehensive Environmental Management Program for these wetlands on the agenda. It will be developed with the cooperation of Conservation of Iranian Wetlands Project (CIWP) in the form of a joint project with the UNDP/GEF and with the cooperation of all related institutions, local communities, non-governmental organizations and a group of technical consultants.

### **The 25-year vision for Hamoun International Wetlands**

In the next 25 years, Hamoun Wetlands will have enough healthy and continuous water supply and rich biodiversity, a sustainable ecosystem with right utilization of resources, and lively people who will divide the succulence and generosity derived from the wetlands between all those living in the areas surrounding the wetlands on both sides of the border.

Application of the ecological approach in the sustainable protection, management, and utilization of land resources, especially of wetlands, is the strategy of the Iranian Department of Environment for the efficient management and better protection of these Wetlands with the participation of all the stakeholders, especially the governmental and non-governmental institutions effective in this ecosystem. Application of this approach will lead to a comprehensive management program for these valuable wetlands, the summary of which is hereby presented. This is a comprehensive and holistic program and all the predicted measures in it have been decided under the direct supervision and participation of all stakeholders, especially representatives of local communities and related governmental organizations in the province during four workshops held for consultation and collection of ideas and opinions of the participants. Therefore, the implementation of this program in the region will hopefully result in important and fundamental changes in the measures taken for the revival of the Hamoun Wetlands with the support of all those involved in this program and it will contribute to the development of Sistan and the country.

### **Goal of the Plan**

The goal of this plan is the application of the ecosystem management approach for the sustainable revival, protection, and use of the Hamoun International Wetlands with the effective participation of all stakeholders and all authorities at local, national and international levels.

## Summary of Hamoun Wetlands Integrated Management Plan

### Main Stakeholders for the Hamoun International Wetlands (Local, Provincial, National, and International Levels)

| Stakeholders/<br>Responsible<br>authorities                 | Influences of the stakeholders  | Stakeholders/R<br>esponsible<br>authorities           | Influences of the stakeholders   |
|---|---|---|--|
| International<br>organizations<br>(of Foreign<br>Affairs)   | <ul style="list-style-type: none"> <li>-Transfer of international experiences and building international cooperation of institutes such as the GEF, UNEP, and UNDP</li> <li>-The management and cooperation pillar regarding the Wetland ( water provision) and the related negotiations will be the pillar of consultation with the neighboring and regional countries</li> <li>-Requiring the related countries to comply with the treaties</li> <li>-Signing the required complementary contracts and agreements</li> </ul>  | Department of<br>Environment                          | <ul style="list-style-type: none"> <li>-Development, execution, and supervision over the ecological management program for the Wetlands</li> <li>-Study of and supervision over the ecological effects and functions of the Wetlands (ecosystem functions)</li> <li>-Measures taken to preserve biodiversity in the Wetlands</li> <li>-Confirmation of economic and social functions of the Wetlands ( ecotourism development, utilization of cultural diversity)</li> <li>-Spatial and temporal control to protect the populations and habitats and plant and animal species</li> </ul> |
| Regional Water<br>authorities                               | <ul style="list-style-type: none"> <li>-Carrying out studies related to water resources</li> <li>-Water management in the region and allocation of water to the Wetlands</li> <li>-Dredging ditches and implementing water supply projects for the Wetlands</li> </ul>  | Natural<br>Resources                                  | <ul style="list-style-type: none"> <li>-Controlling wind erosion and stabilizing shifting sand</li> <li>-Auditing and controlling pastureland surrounding the Wetlands to strike a balance between livestock and pastureland</li> <li>-Preventing usurpation of public land and land use changes in areas around the Wetlands</li> </ul>   |
| Jihad-e-<br>Agriculture                                     | <ul style="list-style-type: none"> <li>-Improving irrigation management and efficiency to release more water to the Wetlands</li> <li>-Organizing water users in the agriculture sector</li> <li>-Managing and controlling use of pesticides, fertilizers, waste, and drainage water in lands around the Wetlands</li> <li>-Managing and controlling farming in the Wetlands and on their bed</li> </ul>  | Soil and Water<br>Development<br>Company of<br>Sistan | <ul style="list-style-type: none"> <li>-Study and implementation of land and water resources development in Sistan Plain (to provide water resources)</li> <li>-Study and execution of projects for stabilizing shifting sand</li> <li>-Following up on Iranian water rights through legal channels ( at the Ministry of Energy)</li> <li>-Planning the management of joint water resources in the Sistan region</li> </ul>  |
| Universities and<br>Research Centers                        | <ul style="list-style-type: none"> <li>-Conducting educational and research activities to protect the wetlands</li> <li>-Developing management programs and scenarios for low rainfall years, drought, and wet years in the region and in the Wetlands</li> </ul>   | Fisheries   | <ul style="list-style-type: none"> <li>-Provision of services to fishermen</li> <li>-Implementation of management programs for aquatic organisms</li> </ul>  |
| Nomadic Affairs   | <ul style="list-style-type: none"> <li>-providing services for the nomads</li> <li>-Organizing nomads and grazing areas for livestock</li> </ul>  | Local<br>cooperatives                                 | <ul style="list-style-type: none"> <li>-Organizing users of the Wetlands</li> <li>-Coordinating with the related offices and organizations</li> </ul>  |
| Veterinary<br>Administration                                | <ul style="list-style-type: none"> <li>-Studying and controlling diseases common between humans and wildlife</li> <li>-Controlling and supervision livestock in the Wetlands and imported across the border</li> </ul>  | Urban and<br>Rural Councils                           | <ul style="list-style-type: none"> <li>-creating an atmosphere of participation and encouraging public participation</li> <li>-Demanding government accountability over fulfilling its commitments</li> </ul>  |
| Political<br>authorities                                    | <ul style="list-style-type: none"> <li>-enforcement guarantees for enforcing the laws related to protecting the Wetlands</li> <li>- Coordinating people and government offices and establishing relationships between them</li> <li>-Following up on the question of water rights and internal and external commitments</li> <li>-Coordinating organizations related to the Wetlands</li> </ul>   | Non-<br>governmental<br>organizations<br>(NGOs)       | <ul style="list-style-type: none"> <li>-Development of the culture and education of local communities for the sustainable utilization of the Wetlands' functions</li> <li>- Facilitating people's participation and creating social solidarity for the protection and revival of the Wetlands</li> </ul>   |
| Hamoun<br>International<br>Wetland<br>Research<br>Institute | <ul style="list-style-type: none"> <li>-Conducting the required studies and research</li> <li>-Collecting and presenting statistics and information required for the management of the Wetlands</li> <li>-Scientific monitoring and updating information related to changes in the Wetlands and giving the necessary warnings to the related authorities</li> <li>-Holding exhibitions and scientific conferences related to the Wetlands</li> <li>Building cooperation with international scientific communities to find solutions for the problems of the Wetlands</li> </ul> | Local<br>communities                                  | <ul style="list-style-type: none"> <li>Cooperation in executing the management programs for the wetlands</li> <li>-Utilization of the services offered by the wetlands with the purpose of sustainable utilization</li> </ul>  |
|   |   | Cultural<br>Heritage and<br>Tourism<br>(handicrafts)  | <ul style="list-style-type: none"> <li>-Study of the potentials and their actualization to expand tourism</li> <li>-Restoration of the historical sites at Khajeh Mountain</li> <li>-Supporting handicrafts and providing facilities and creating alternative livelihood</li> </ul>  |
| Culture and<br>Islamic<br>Guidance                          | <ul style="list-style-type: none"> <li>-Revival of forgotten subcultures, mores, customs, traditions, and habits forgotten by migration of local residents of the Wetlands</li> </ul>   | Mass media  | <ul style="list-style-type: none"> <li>-Making people and officials aware of the Wetlands' problems</li> <li>-Making people and officials sensitive to the Wetlands' problems and to the required measures</li> <li>-Mobilization of public opinion and informing people of actions taken</li> </ul>   |

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### The main values of the international Hamoun wetlands

| Value                          | Description  | Wildlife Refuge and Location of the Hamoun International Wetlands |
|--------------------------------|--|---|
| International value            | As the largest freshwater lake in the eastern Iranian Plateau, and as one of the registered sites in the Ramsar Convention, the Hamoun Wetlands are of special international value, and can be a common ground for the activities of the related international organizations and attract the interest of people throughout the world   |   |
| Security value                 | Hamoun Wetlands form a part of Iran-Afghanistan border and thus increase cross-border relationships and national and regional security. Moreover, the extensive regions upstream of the residential areas in Sistan can be locations for possible physical insecurity and bioterrorism.  |   |
| Spiritual value                | Sistan is associated with the Hamouns which are living and rich in water, and the religious, historical, and traditional importance of the vivacious Hamouns gives identity to the population of Sistan, increases emotional relationship between people and preserves the morale of cooperation, peace of mind and soul, vivacity and exhilaration of people, improves life expectancy, strengthens the spirit of thankfulness and servitude, and influences the behavior and actions of the local people.  |   |
| Economic value                 | Job creation with the expansion of tourism, especially nature tourism, agricultural development, handicrafts (mat weaving), fishing, balanced bird hunting, livestock rearing and provision of feed and of some medicinal plants take a considerable economic load off the government's shoulders and the country's economy. Since the Hamoun Wetlands lie on the border between Sistan and South Khorasan Province, the distance to summer pastures is shortened for livestock keepers and the Wetlands can be a water transportation route when the water level in them is high. |   |
| Social value                   | Water permanence in the Hamoun Wetlands prevents migration of the large number of its users, reduces social tensions, increases cooperation, understanding, and stability of family foundations, and prevents social abnormalities caused by pseudo-jobs   |   |
| Ecological value               | Preserving genetic resources and biodiversity (of flora and fauna), recharge of groundwater (possibility of utilization by digging shallow wells), provision of drinking water for livestock and wildlife and winter habitats for migratory birds, for fish and other aquatic organisms, and for wildlife. The Wetlands are of a high ecological value.  |   |
| Protective value               | The Hamoun Wetlands freshen up the air (the microclimate) by receiving upstream floodwater, stabilizing soil, preventing fires, reducing dust, and by absorbing contaminants. They also decrease digestive and eye diseases and damage to biological resources and economic facilities   |   |
| Scientific and research value  | These wetland ecosystems in an arid region are an important source for education and research by the various research centers, universities and research institutes.   |   |
| Managerial and executive value | The Hamoun Wetlands with their diverse applications and stakeholders are the common ground for the activities of political and executive officials including the general governors, district governors, and mayors of the five counties in Sistan, the Regional Water Company, the Jihad-e Agriculture, Natural Resources, Nomadic Affairs, Cultural Heritage and Tourism, etc.. Agreement among these organizations and execution of joint programs by them can actualize comprehensive management of these wetlands.   |   |

Map legend = راهنمای نقشه City = شهر; Village = روستا و آبادی; Road and causeway = جاده و گذرگاه; International border = مرز بین المللی;  
 The boundary of the wildlife reserve of wildlife in the Hamouns = مرز پناهگاه حیات وحش هامون

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## Classification of Problems Related to the Hamoun International Wetlands

| Problem  | Description   | Problem   | Description   |
|--|---|---|---|
| Insufficient information   | <ul style="list-style-type: none"> <li>-Lack of comprehensive studies on water resources of the Hamoun Watershed</li> <li>-Lack of common databases at national and international levels</li> <li>-Lack of applied research on questions related to the Wetlands and their utilization</li> <li>-Lack of a database for predicting and monitoring conditions in the Wetlands</li> </ul>   | International problems and issues   | <ul style="list-style-type: none"> <li>-Lack of sufficient information regarding the water resources in the Hamoun Watershed</li> <li>-Lack of clarity on Hamoun water rights in the 1992 Agreement and on water resources of the Watershed</li> <li>-Lack of compliance with the agreement on water rights between Iran and Afghanistan</li> <li>-Lack of political coordination between the Iranian and Afghan governments and local governors and lack of formal following up on the diplomacy of Hamoun revival</li> </ul>  |
| Weak systems of information, awareness, and public participation for reaching understanding and becoming determined in reviving the Wetlands | <ul style="list-style-type: none"> <li>-Insufficient notification and cultural activities ---</li> <li>-Lack of strong NGOs in the region and across the border</li> <li>-Poor coordination among and participation by the stakeholders in the management of the Wetlands</li> <li>-A purely governmental approach to managing the Wetlands</li> <li>-ignoring knowledge and experience of local people and of their trustees</li> <li>-lack of formal relationships between people on the two sides of the border</li> </ul>   | Problems related to the environment and biodiversity  | <ul style="list-style-type: none"> <li>-Unclear boundaries of the Wetlands</li> <li>-Lack of a system and calendar for suitable utilization</li> <li>-Weak supervision by the government and people</li> <li>-The real users and stakeholders of the Wetlands are not identified</li> <li>-Past measures taken without carrying out the necessary studies such as the introduction of the grass carp (that has led to the destruction of the reedbeds)</li> </ul>   |
| Problems related to management and intersectoral coordination  | <ul style="list-style-type: none"> <li>-insufficient attention to international capabilities in the realm of cultural heritage in Sistan</li> <li>-Insufficient attention by the responsible national authorities to the Wetlands</li> <li>-Ignoring the available potential in the region such as the MENARID International Project through which international relationships can be established.</li> <li>-Sectoral outlook and lack of suitable coordination among organizations responsible for protecting the Wetlands</li> <li>-Interventions of organizations in the Wetlands without carrying out the required studies</li> </ul> | Problems related to water and soil management at the level of the Sistan Plain especially in the wetlands   | <ul style="list-style-type: none"> <li>-Lack of integrated management and policy-making for water and soil resources</li> <li>-Poor water management at regional level (Iran), especially at farm level</li> <li>-Transfer of some water from the Wetlands to Zahedan</li> <li>-Disruption of the land utilization system</li> <li>-Traditional farming with low irrigation efficiency</li> <li>-Ignoring the economic value of water</li> <li>- Imbalance between the number of livestock and the forage in the Wetlands</li> <li>-Unsuitable management of the water in the Lake and the water resources in the watershed (Chah Nimehs)</li> <li>-Lack of information on water inflow points and model, flow distribution, and outflow from the Wetlands</li> <li>-Filling up of the chongs (deep parts capable of holding water longer) by water- and wind- transported sediments</li> </ul> |
| Economic and cultural problems   | <ul style="list-style-type: none"> <li>-All-encompassing poverty among Sistan residents</li> <li>-Excessive dependence of people's livelihood on water and water resources</li> <li>-Reduced levels of income especially due to drought</li> <li>-Work stoppages caused by problems resulting from dust storms</li> <li>-Increased incidence of illnesses and threat to the residents' health</li> <li>-Ignored opportunities the border provides</li> <li>-Increased migration of people in the region and social conflicts</li> </ul>   | Problems related to drought and dust storms   | <ul style="list-style-type: none"> <li>-Drought as a factor threatening biodiversity and survival of the Wetlands</li> <li>-Conversion of parts of the Wetlands into crisis centers for wind erosion and sources of dust storms</li> <li>-Using the bed of the Wetlands as a road for vehicles and destruction of the land area</li> </ul>  |
| Problems related to the border dyke  |   | The unsuitable design of the dyke and construction of a border embankment inside the Wetlands, prevention of water flow into the Iranian section of the Wetlands, and sediment accumulation |   |

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### Strengths, Weaknesses, Opportunities, and Threats (SWOT) for the Hamoun International Wetlands

| Strengths  | Weaknesses  | Opportunities  | Threats  |
|--|---|--|--|
| <ul style="list-style-type: none"> <li>-Presence of freshwater in the Wetlands</li> <li>-High diversity in plant and animal species</li> <li>-Possible winter habitats for migratory birds</li> <li>-Easy access to the Wetlands</li> <li>-Human residence on Takhtaks (islands) in the Wetlands</li> <li>-Place for farming and utilizing fish and other aquatic organisms</li> <li>-Possibility of sailing boats in the Wetlands</li> <li>-Possibility of tourism in the Wetlands—</li> <li>-Possibility of water sports in the wetlands</li> <li>-Possibility of watching birds</li> <li>-Possibility of hunting birds</li> <li>-Possibility of livestock grazing</li> <li>-Possibility of harvesting forages from the Wetlands</li> <li>-Possibility of harvesting firewood (for fuel)</li> <li>-Possibility of rearing honey bees</li> <li>-Possibility of water transportation between Iran and Afghanistan</li> <li>-Possibility of utilizing products of the handicraft industry</li> <li>-Floodwater control( considering the capacity of the Wetlands)</li> <li>-Increased humidity in the environment</li> <li>-Modification of the regional weather</li> <li>-Prevention of dust and dust storms from reaching residential areas</li> <li>-wildlife habitat</li> <li>-Provision of water for livestock and agriculture</li> <li>-Possibility of farming in the Wetlands</li> <li>-Utilization for research and educational purposes</li> <li>-Water storage</li> <li>-Harvesting medicinal plants</li> </ul> | <ul style="list-style-type: none"> <li>-Uniform and flat bed morphology in the Wetlands</li> <li>-Shallow depth and wide expanse of the Wetlands</li> <li>- Located on the border between Iran and Afghanistan</li> <li>-Located in an arid region</li> <li>-Located downstream of agricultural lands</li> <li>-Many users depend on the Wetlands</li> <li>-Conflicting interests of the users</li> <li>-Lack of a system for utilizing the Wetlands</li> <li>-Harvesting forage at the wrong time</li> <li>-Presence of stranded livestock in the Lake</li> <li>-Agricultural use of the bed of the Wetlands</li> <li>-Excessive number of large livestock compared to small ones (more stamping)</li> <li>-Passage of livestock on the bed of the Wetlands</li> <li>-Proximity to villages and agricultural lands</li> <li>-Dust movement from the bed of the Wetlands</li> <li>-Imbalance between the number of livestock and the existing pastures</li> <li>-Lack of audit and clarity regarding pasture allotments in the Wetlands</li> <li>-Presence of camels in the Wetlands</li> <li>-Unclear boundaries of the Wetlands</li> <li>-Unclear volumes of water the Wetlands require</li> <li>-Insufficient number of environment guards for the Wetlands</li> </ul> | <ul style="list-style-type: none"> <li>-Registration and membership of the Hamoun Wetlands in the Ramsar Convention</li> <li>-Registration of the Wetlands and their surroundings as a wildlife reserve</li> <li>-Influences of the wetlands on Iran, Afghanistan, and Pakistan</li> <li>-Firm determination of the representatives, people, and authorities for reviving the Wetlands</li> <li>-Ratification of article 159 in the Fifth Development Plan requiring integrated management of the watersheds ending in the Wetlands</li> <li>-Special attention of the government to wetlands in Iran according to article 67 of the Law for the Fourth Development Plan and article 117 of the Law for the Fifth Development Plan</li> <li>-The new government approach aimed at considering environmental problems in development projects</li> <li>-Presence of numerous universities and institutes specifically for the Wetlands</li> <li>-Presence of the Sistan Natural Resources Research Center</li> <li>-Presence of native authorities familiar with the problems of the region</li> <li>-The all-encompassing security in the region</li> <li>-Long history of fishing and mat weaving</li> <li>-Possibility of heavy rainfalls upstream of the Hirmand Watershed</li> <li>-Implementing the projects to supply water to agricultural lands by pipes</li> <li>-Presence of numerous ditches leading to the Wetlands</li> <li>-follow up and attracting public attention to the Wetlands</li> <li>-Religious and traditional sanctity of the Wetlands in the region</li> <li>-Low number of users of the Wetlands in Afghanistan</li> </ul> | <ul style="list-style-type: none"> <li>-Unclear water rights for the Wetlands in the bilateral agreement between Iran and Afghanistan</li> <li>-Unaccountability of the Afghan government regarding the bilateral agreements on border water resources</li> <li>-Dependence of the Wetlands to water resources outside of the country</li> <li>-Presence and development of diversion weirs and digging deep wells upstream of the Watershed ( in Afghanistan)</li> <li>-Unclearity of the amount and the manner of allocating environmental water rights from the water resources present in Sistan</li> <li>-Priority of agriculture and drinking water over environmental water needs in water management in Sistan</li> <li>-Transfer of water to outside the Sistan region</li> <li>- Repeated droughts</li> <li>-Strong and erosive winds</li> <li>-Entry of salty sediments into the Wetlands through wind erosion</li> <li>-Concurrence of water entry into the region and growing season of crops</li> <li>-Low water use efficiency in agriculture considering soil problems and poor farm management</li> <li>-Monocropping and lack of diversity in planting time and planted crops</li> <li>-The large number and acute poverty of users of the Wetlands and of the residents in the region</li> <li>-Unconventional equipment for utilization of resources in the Wetlands</li> <li>-Sending forage from the Wetlands outside of the region</li> <li>-Annual entry of sediments through floodwaters from rivers pouring into the Wetlands</li> <li>-Entry of waters with limited use from some rivers into the wetlands</li> <li>-Large number of sunshine hours and warm days that lead to excessive evaporation</li> <li>-Severe cold and occurrence of frost in the Wetlands in some years</li> <li>-Movement of vehicles on the bed of the Wetlands</li> <li>-Movement and transportation of livestock on the bed of the Wetlands</li> <li>-Introduction of grass carp in the Wetlands</li> <li>-Construction of border embankments in the Wetlands</li> </ul> |

## Summary of Hamoun Wetlands Integrated Management Plan

### Objective 1: RestorationImprovement and Protection of Biodiversity in the Wetlands

| Main topics  | Target   | Priority actions   | Responsible agency                       | Cooperating agencies   |
|--|--|--|--|--|
| Identification and restoration of the habitats       | Five Year: Restoration of at least 30 percent of the habitats of indicator species in the Wetlands<br><br>25-year: Revival of at least 70 percent of the indicator species in the Wetlands | Preparing an environmental databank for the wetlands   | The Provincial Department of Environment | University, Research Institute   |
|  |  | Identifying and zoning the habitats and prioritizing their restoration   | The Provincial Department of Environment | NGOs, fishermen and nomads, Natural Resources and Fisheries  |
|  |  | Determining the ecological boundaries of the Wetlands by establishing control points (benchmark)   | The Provincial department of Environment | Regional Water Company, Natural Resources, Research Centers, Organization for Registration of Deeds and Properties, and the Judiciary    |
|  |  | Organizing and solving real and legal conflicts over lands located on the margins of the Wetlands  | Natural Resources                        | NGOs, local people, Organization for Registration of Deeds and Properties, and the Judiciary   |
|  |  | Preparing, developing, and executing programs for restoration of the international habitats in the Wetlands  | The Provincial Department of Environment | NGOs, people's representatives, fishermen and nomads and Natural Resources   |
|  |  | Building artificial water troughs at habitat locations in the Wetlands   | The Provincial Department of Environment | Local communities, fishermen and nomads  |
| Protection of the habitats                           | Five-year: Execution of at least 50 percent of the programs<br><br>25-year: Execution of 100 percent of the programs   | Restoring game reserve areas and protecting the ecosystem in the Wetlands  | The Provincial Department of Environment | Local communities, NGOs  |
|  |  | Preventing passage of unauthorized boats when there is water in the Wetlands   | The Law Enforcement Force                | The Provincial Department of Environment, Natural Resources  |
|  |  | Preventing introduction of non-native aquatic organisms and feasibility study on eliminating grass carp  | Fisheries                                | The Provincial Department of Environment   |
|  |  | Preventing uncontrolled harvest and grazing of vegetation in the Wetlands  | The Provincial Department of Environment | Nomads, the Law Enforcement Force, Nomadic Affairs, Natural Resources  |
|  |  | Preventing entry of camels into the Wetlands   | The Provincial department of Environment | The Judiciary, representatives of people and of nomads, the Law Enforcement Force, Nomadic Affairs, Natural Resources, and the Governors |
|  |  | Creating firebreaks in the tamarisk growing areas of the Wetlands  | Natural Resources                        | The Provincial Department of Environment   |
| Supplying the ecological water needs of the Wetlands | 5-year: Allocation of at least 35% of the water needs of the Wetlands  | Establishing fire extinguisher stations close to the Wetlands  | Natural Resources                        | The Provincial Department of Environment   |
|  |  | Studying and satisfying water needs of the habitats in the Hamoun International Wetlands   | The Provincial Department of Environment | Universities, Research Centers, the Regional Water Company, Natural Resources and Fisheries  |
|  | 25-year: Allocation of at least 70% of the water needs of the Wetlands   | Studying and simulating the incoming flow and the bed of the Hamoun Wetlands to investigate the possibility of increasing water retention and decreasing evaporation | The Ministry of Energy                   | Universities, Research Centers, , and the Department of Environment  |
|  |  | Determining the suitable method, scheduling and guiding of water flow based on the estimated water needs for restoring the habitats                                  |  | Research Centers, the Regional Water Company, Natural Resources, and Fisheries   |
|  |  | Studying climate change and developing scenarios for future water management   | Universities                             | The Department of Environment, Research Centers, and the Regional water Company  |

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### Objective 2: Achieving Desirable Soil and Water Conditions and Control of Dust Storms

| Main topics                                       | Goals of the program   | Priority measures   | Responsible institution                  | Cooperating institution  |
|---|--|---|--|--|
| Reduced soil erosion from the bed of the Wetlands | 5-year: Soil erosion and removal control in 30 percent of the critical areas in the Iranian section of the Wetlands<br><br>25-year: Complete control of the origins of dust storms in the Iranian section of the Wetlands                        | Developing a comprehensive project for studying the mechanism of dust storm events from the Wetlands and presentation of intermediate- and long-term management and implementation strategies for controlling them including: <ul style="list-style-type: none"> <li>Identifying and scrutinizing the origins of sand and dust storms</li> <li>Determining the mechanism and model of wind blows and occurrence of dust storms</li> <li>Determining control and revival methods for the regions in critical conditions with respect to wind erosion</li> <li>Implementing pilot protection projects to study the effectiveness of projects the effectiveness of which have not been documented</li> </ul> Study of previous environment and climate changes in the Hamoun Lake for predicting and evaluating the future | The Department of Environment            | Research and University Centers, Natural Resources, the Soil and Water Research Institute of the Jihad-e Agriculture Ministry  |
|   |  | Implementing the approved protection projects on the bed of the Wetlands  | The Provincial Department of Environment | Natural Resources  |
|   |  | Implementing the approved protection projects in the margins and surrounding areas of the bed of the Wetlands   | Natural Resources                        | The Provincial Jihad-e Agriculture and Natural Resources   |
|   |  | Developing and implementing a program to balance the number of livestock in the pastures and reed beds with allotments inside the Wetlands  | Natural Resources                        | The Provincial Jihad-e Agriculture and Natural resources   |
|   |  | Preventing movement of vehicles on the bed of the Wetlands  | The Law Enforcement Force                | The Provincial Department of Environment, Natural Resources  |
|   |  |   |  |  |
| Increased water flow into the wetlands            | 5-year: Minimum increase of 30% in the volume of water entering the wetlands based on the 50-year average<br><br>25-year: Allocation of at least 60 percent of the flows entering Iran from the Hirmand River to the water needs of the wetlands | Reopening and correcting the course of the Farah Rood inside the Wetlands   | The Provincial Department of Environment | The Regional Water Company   |
|   |  | Continuous dredging, correction of the courses of the ditches and rivers with priority given to rivers entering into the Wetlands and especially where the water enters the Wetlands  | The Regional Water Company               | the Governor General's Office, the Jihad-e Agriculture and the Provincial Department of Environment  |
|   |  | Organizing the hydraulic structures in the courses of the rivers  | The Regional Water Company               | The Water and Soil Development Company of Sistan   |
|   |  | Restoring internal ditches such as the Parian and other blocked ditches ending in the Wetlands  | The Regional Water Company               | The Water and Soil Development Company of Sistan   |
|   |  | Revising the way the internal water entering the Wetlands is managed  | The Regional Water Company               | The Provincial Department of Environment, Natural Resources, and Fisheries   |
|   |  | Studying and revising the functions of the Fourth Chah Nimeh with special attention to the environment  | The Regional Water Company               | The Water and Soil Development Company of Sistan   |
|   |  | Studying the amount of available water in the internal watersheds and the quantity of groundwater in the areas surrounding the Hamoun Wetlands  | The Regional Water Company               | The Jihad-e Agriculture and the Provincial Department of Environment   |
|   |  | Performing a feasibility study on transferring water from the Chah Nimehs to the Wetlands by pipes or through a direct canal  | The Regional Water company               | The Provincial Department of Environment and Jihad-e Agriculture   |
|   |  | Revising water rights of the Wetlands from the Chah Nimehs based on the qualitative and quantitative needs of the Wetlands  | The Ministry of Energy                   | The Provincial Department of Environment, the Regional Water Company, the Natural Resources Research Center of Sistan, Natural Resources, Nomadic Affairs, Fisheries |



## Summary of Hamoun Wetlands Integrated Management Plan

### Continuation of Strategic Goal Number 2: Achieving Desirable Soil and Water Conditions and Control of Dust storms

| Main topics   | Goals of the program  | Priority measures  | Responsible institution                                | Cooperating institution   |
|---|---|--|--|---|
| Management of the regional water and soil resources (outside of the Wetlands) | Five-year: Minimum of 10 percent increase in water use efficiency<br><br>25-year: Minimum of 30 percent increase in water use efficiency and allocating the saved water to the Wetlands                             | Studying and Determining the strategy and level of agricultural development in the region while considering long-term needs  | Jihad-e Agriculture                                    | The Governor General's Office, the Water and Soil Development Company of Sistan   |
|   |   | Transferring water to fields by pipes and increasing water use efficiency through establishing new irrigation systems  | Jihad-e Agriculture                                    | The Ministry of Energy, the Department of Environment, the Governor General's Office  |
|   |   | Changing and optimizing crop pattern in Sistan   | Jihad-e Agriculture                                    | Research Centers, the IRIB  |
|   |   | Supporting the implementing deficit irrigation in the region   | the Department of Environment                          | Jihad-e Agriculture, Natural Resources  |
|   |   | Creating and granting financial incentives for those who hand over their water rights to the Wetlands  | Jihad-e Agriculture                                    | The Regional Water Company  |
|   |   | Managing soil and water at field level   | Jihad-e Agriculture                                    | The local communities   |
|   |   | Planning reduction of evaporation from reservoirs  | The Regional Water Company                             | Universities  |
|   |   | Completing the wastewater treatment plant and utilizing the treated effluents  | The Water and Wastewater Company of Sistan-Baluchestan | The Regional Water Company, Jihad-e Agriculture, the Provincial Department of Environment, the University of Medical Sciences |
|   |   | Preventing increased allocation of water from the Chah Nimehs to outside the Sistan region   | The Regional Water Company                             | The Governor General's Office   |
|   |   | Studying and selecting scientific and practical alternatives for supplying water needs of the other regions in the Province that receive their water from the Chah Nimehs at present   | The Ministry of Energy                                 | The Regional Water Company  |
|   |   | Actualizing the economic value of water in planning the development of Sistan region   | The Ministry of Energy                                 | The Regional Water Company, Universities  |
|   |   | Using a percentage of water charges paid by its users for the biological revival of the region   | The Ministry of Energy                                 | Research, Universities, the Department of Environment,  |
| Water management inside the Wetlands  | Five- year: Minimum of 30 percent of the water management projects in the Wetlands should become operational<br><br>25-year: 100 percent of the water management projects in the Wetlands should become operational | Identifying the hydrologic cycle and reopening the routes for water movement in the Wetlands   | The Provincial Department of Environment               | The Regional Water Company, the Border Guard, local communities   |
|   |   | Prioritizing regions to which waster must be transferred   | The Provincial Department of Environment               | Local communities, the Regional Water Company, Natural Resources, Fisheries   |
|   |   | Studying and implementing methods for water transfer and distribution on the bed of the Wetlands   | The Provincial Department of Environment               | The Regional Water Company, Natural Resources, Nomadic Affairs, Research and Nomadic Affairs, local communities               |
|   |   | Equipping and strengthening the secretariat of the ecosystem management in the Hamoun Wetlands by purchasing monitoring and protective equipment and tools for protecting the Wetlands | The Provincial Department of Environment               | The Governor General's Office, Hamoun International Wetland Research Institute  |
|   |   | Installing measuring devices based on zonation of the Wetlands to make optimal and desirable use of the incoming water   | The Provincial Department of Environment               | the Natural Resources Research Center of Sistan, Universities   |
|   |   | conducting feasibility studies for modifying and organizing the physical facilities  | The Provincial Department of Environment               | Natural Resources, the Regional water Company, the Nomadic Affairs, the Roads and Urban Development                           |
|   |   | Conducting feasibility studies for using groundwater and sub-surface water in the Wetlands   | The Regional Water Company                             | The Provincial Department of Environment  |
| Border dyke management  | Five year: Elimination of physical obstacles<br>25-year: Correction and modification of the structure of factors and control and management of the border commensurate with the environmental structure             | Removing the border dyke at the entrance points of water flowing into the Wetlands from outside the border   | IRI Border Guard Command                               | The Ministry of Interior, the Governor General's Office , the Regional Water Company, the Department of Environment           |
|   |   | Carrying out studies and implementing new methods developed by experts for providing security and for managing disciplinary security on the border                                     | IRI Border Guard Command                               | The Interior Ministry, the Governor General's Office , the Regional Water Company   |

## Summary of Hamoun Wetlands Integrated Management Plan

### Strategic Goal Number 3: Increased General Awareness and Participation, Improved Livelihood, and Sustainable Utilization of the Resources in the Wetlands

| Main topics                     | Goals of the program  | Priority measures  | Responsible institution                                     | Cooperating institution   |
|---------------------------------|---|--|---|---|
| Upgrading public awareness      | Five-year: Preparing and implementing 70 percent of the program for public information and awareness<br><br>25-year: Carrying out 100 percent of the projects   | Identifying the target groups and developing programs for informing and educating the stakeholders and officials involved  | The Provincial Department of Environment                    | Universities, Education, Nomadic Affairs, Fisheries, Natural Resources                                      |
|                                 |   | Offering required education to people, NGOs, users, and experts based on a drawn up plan   | The Provincial Department of Environment                    | Universities, Education, NGOs   |
|                                 |   | Preparing and distributing educational material suitable for the users   | The Provincial Department of Environment                    | Universities, Education   |
|                                 |   | Notifying through local and national media, audiovisual materials, documentaries, etc.   | The Provincial Department of Environment                    | The IRIB and other media, Universities, Councils, NGOs  |
|                                 |   | Notifying the higher levels of decision makers in the country and the representatives in the Islamic Consultative Assembly   | The Department of environment                               | The Governor General's Office, the Provincial Department of Environment, Natural Resources, Nomadic Affairs |
|                                 |   | Holding local, national, and international exhibitions   | The Provincial Department of Environment                    | The Islamic Guidance, Universities, NGOs  |
|                                 |   | Holding national and international scientific conferences  | Universities  | The Natural Resources Research Center of Sistan, the Islamic Guidance, the Governor General's Office        |
|                                 |   | Designating a day as the National Hamoun day   | The Department of Environment                               | The Islamic Guidance, NGOs  |
|                                 |   | Planning periodic visits for university students, elementary and high school students, and people accompanied by the responsible authorities   | Education   | Universities, the Provincial Department of Environment, Natural Resources, Cultural Heritage and Tourism    |
|                                 |   | Posting placards for notification and awareness  | The Provincial Department of Environment                    | Natural Resources, Nomadic Affairs  |
|                                 |   | Designing and running a website for the Wetlands   | The Provincial Department of Environment                    | Universities  |
| Increasing public participation | Five-year: Effective public participation in 50 percent of the management programs for the Wetlands (the decision-making, decision support system, and decision implementation processes)<br><br>25-year: Effective public participation in 100 percent of the management programs for the Wetlands (the decision-making, decision support system, and decision implementation processes) | Forming an association of trustees and of representatives of the stakeholders  | The Governor General's Office/the County Governors' Offices | The Provincial Department of Environment,   |
|                                 |   | Supporting formation of environmental NGOs specifically for the Wetlands   | The Governor General's Office                               | The Provincial Department of Environment,   |
|                                 |   | Forming a network for conveying information to the local trustees and government organizations   | The County Governors' Offices                               | The Provincial Department of Environment,   |
|                                 |   | Modification of agreements on studying and implementing projects to attract public participation in their execution  | The Governor General's Office                               | The Provincial Department of Environment, Natural Resources, Nomadic Affairs, and Jihad-e Agriculture       |
|                                 |   | Building trust through allowing public participation in decision making and program development  | The Provincial Department of Environment                    | Universities and Research Centers   |
|                                 |   | Taking periodic opinion polls of people and receiving their strategies and views regarding the implementation of the program for revival, protection, and management of the Wetlands | The Provincial Department of Environment                    | Universities and Research Centers   |

## Summary of Hamoun Wetlands Integrated Management Plan

### Continuation of Strategic Goal Number 3: Increased Public Awareness and Participation, Improved Livelihood, and Sustainable Utilization of the Resources in the Wetlands

| Main topics   | Goals of the program   | Priority programs  | Responsible institution  | Cooperating institution  |
|---|--|--|--|--|
| Reducing dependence of the people in the region on water and resources of the Wetlands for their livelihood | Five-year: Program of sustainable livelihood should be prepared and 15 percent of it implemented<br><br>5-year: Program of sustainable livelihood should be implemented throughout the Sistan region | Development of a livelihood strategy for the local rural and nomadic communities in the region   | Jihad-e Agriculture  | The Governor General's Office, Cultural Heritage and Tourism, Nomadic Affairs                                |
|   |  | Provision of fossil fuel and accelerated gas transfer to Sistan through the nationwide gas line to reduce the pressure on the biological resources in the Wetlands   | Ministry of Petroleum  | The Governor General's Office  |
|   |  | Utilization of the opportunity offered by the border and establishing border markets   | The Governor General's Office                                  | The County Governors' Offices  |
|   |  | Utilization of the opportunity the Free Commercial and Industrial Zone in Sistan offers for participation of local stakeholders and for introducing alternative livelihoods  | The Supreme Council for Iranian Free Zones                     | The Governor General's Office  |
|   |  | Identification, education, and implementation of modern methods in agriculture, industries and services  | Universities, the Governor General's Office                    | The Interior Ministry, the Jihad-e Agriculture, Research Centers, the Industry, Mine, and Trade              |
|   |  | Planning for attracting investments in tourism by the private and public sectors and for employment of local people  | Cultural Heritage and Tourism                                  | The Governor General's Office, NGOs  |
|   |  | Support for local communities and self-support groups to expand tourism, handicraft industry, and rural micro jobs   | The Cultural Heritage and Tourism Organization                 | The Governor General's Office, Jihad-e Agriculture, the Law Enforcement Force                                |
|   |  | Establishment of and support for rural production cooperatives   | Jihad-e Agriculture  | The Governor General's Office  |
|   |  | Participation of local communities in implementing programs for reviving native non-crop vegetation  | The Provincial Department of Environment                       | Natural Resources, NGOs  |
|   |  | Implementation of a pilot rural project compatible with the environment  | Jihad-e Agriculture  | The Provincial Department of Environment   |
| Empowering the users of the Wetlands  | Five-year: Implementation of 30 percent of the programs<br><br>25-year: Implementation of 100 percent of the programs  | Support for the local fishing cooperatives and carrying out feasibility studies on farming native fish   | Fisheries  | The Provincial Department of Environment, Jihad-e Agriculture  |
|   |  | Provision of technical and vocational training for people living on the margins of the Wetlands  | Technical and Vocational Training                              | Nomadic Affairs, Fisheries, Jihad-e Agriculture  |
|   |  | Provision of fossil fuels and renewable energy for stock keepers and people living on the margins of the Wetlands  | The National Iranian Oil Company /the County Governor's Office | The Ministry of Energy   |
|   |  | Development and implementation of programs in support of local and nomadic stock keepers to reduce the pressure on the resources of the Wetlands such as support for the cooperatives, granting of low-interest loans, provision of feed for livestock, etc. | Nomadic Affairs  | The Governor General's Office, Jihad-e Agriculture   |
|   |  | Development and implementation of a system for the wise and sustainable utilization of the resources in the Wetlands   | The Provincial Department of Environment                       | Nomadic Affairs, Fisheries, Natural Resources, Jihad-e Agriculture   |
|   |  | Study and development of instructions for jobs compatible with the ecosystem of the Wetlands   | The Provincial Department of Environment                       | Nomadic Affairs, Fisheries, Natural Resources, Jihad-e Agriculture   |
|   |  | Economic valuation of the various functions of the wetlands and establishment of a payment system for services provided by the Wetlands (Payment for Ecosystem Services)   | The Provincial General Office of Environment                   | The Natural Resources Research Center of Sistan, Universities, the Provincial Department of Environment,     |
|   |  | Identification of users of the Wetlands  | Natural Resources  | Fisheries, Jihad-e Agriculture Nomadic Affairs   |
|   |  | Determining allotments of the lands and the area that is allotted to each group of users   | Natural Resources  | Fisheries, Jihad-e Agriculture, Natural Resources, Nomadic Affairs   |
|   |  | Determining and notifying the scheduling and permissible levels of pasture utilization on the margin of the wetlands based on environmental conditions and phenological characteristics  | The Natural Resources Research Center of Sistan                | Nomadic Affairs, Natural Resources, Fisheries, Jihad-e Agriculture, the Provincial Department of Environment |

## Summary of Hamoun Wetlands Integrated Management Plan

### Strategic Goal Number 4: Upgrading International Cooperation on Protection and Management of the Hamoun International Wetlands

| Main topics   | Goals of the program  | Priority measures   | Responsible institution  | Cooperating institution  |
|---|---|---|--|--|
| Improving and strengthening local relationships across the border     | Five year: At least one international NGO is formed that includes local people<br>25 year: Joint statements, programs, and projects are prepared, presented, and implemented                      | Developing and implementing sustainable development projects in the Sistan Plain on both sides of the border  | The Ministry of Foreign Affairs                                | The Ministry of Interior, the Ministry of Energy, the Governor General's Office, the Provincial Department of Environment/, NGOs |
|   |   | Establishing relationships between local groups and NGOs on both sides of the border and facilitating these relationships   | The Ministry of Interior                                       | The Governor General's Office, Universities, the Department of Environment   |
|   |   | Implementing reforestation projects and rural development on both sides of the border   | The Governor General's Office                                  | The Afghan Government, UNEP, UNDP, and other international organizations   |
| Following up on the joint revival of the Wetlands                     | Five year: Joint letter of understanding is signed and the program for the joint revival of the Wetlands is approved<br>25-year: The program for the joint revival of the Wetlands is implemented | Forming a joint management committee for the Wetlands between Iran and Afghanistan and holding meetings to develop and implement the program for the revival of the Hamoun Wetlands and following up on the measures that are taken | The Department of Environment/ the Ministry of Foreign Affairs | The Ministry of Energy, the Afghan Government, UNEP, UNDP, and other international organizations                                 |
|   |   | Joint determination of the biological water rights of the Hamoun Wetlands   | The Department of Environment/ the Ministry of Foreign Affairs | The Ministry of Energy, the Afghan Government, UNEP, UNDP, and other international organizations                                 |
|   |   | Following up on registration and revival of the Hamoun Wetlands through various international organizations and authorities including the Ramsar Convention, the International Union for Conservation of Nature, etc.               | The Department of Environment                                  | The Ministry of Foreign Affairs, the Ministry of Energy, the Governor General's Office   |
|   |   | Making consultations and signing agreements with Afghanistan for joint revival of the international Hamoun Wetlands   | The Ministry of Foreign Affairs                                | The Afghan Government, UNEP, UNDP, and other international organizations, the Department of Environment                          |
| Establishing and strengthening economic relationships                 | Five year: At least one joint economic activity is undertaken<br>25 year: Joint investments in the energy, Customs, transportation etc. are made  | Creating a joint border market  | The Governor General's Office                                  | The Afghan Government  |
|   |   | Making joint investment in energy generation (electricity and renewable energy)   | The Ministry of Energy   | The Afghan Government, the Governor General's Office   |
|   |   | Supporting the development of infrastructure to facilitate cross-border services  | The Governor General's Office                                  | The Ministry of Roads and Urban Development, the Customs, the Afghan Government, the Governor General's Office                   |
| Achieving a comprehensive management project for the Hamoun Watershed | Five year: At least one joint study or implementation project is undertaken<br>25 year: The comprehensive management program for the Watershed is developed                                       | Developing a joint project for the protection and management of the Hamoun International Wetlands   | The Department of Environment                                  | The Governor General's Office, the Afghan Government, UNEP, UNDP, and other international organizations                          |
|   |   | Implementing short- and long-term projects in the region to reduce vulnerability caused by climate change   | The Department of Environment                                  | The Afghan Government, the Governor General's Office, Universities   |
|   |   | Establishing a common climate monitoring station for the Hamoun Watershed   | The Ministry of Energy   | The Afghan Government, the Governor General's Office, Universities   |
|   |   | Implementing the environmental monitoring and supervision program on both sides of the border   | The Department of Environment                                  | IUCN, the Afghan Government, UNEP, UNDP  |
|   |   | Supporting joint scientific research in the Hamoun Watershed  | The Department of Environment                                  | The Afghan Government, UNEP, UNDP, and other international organizations   |
|   |   | Holding and arranging for joint educational courses and visits  | Universities   | The Governor General's Office, the Afghan Government, UNEP, UNDP, and other international organizations                          |
|   |   | Holding joint scientific conferences  | Universities   | The Governor General's Office, the Afghan Government, UNEP, UNDP, and other international organizations                          |

## Summary of Hamoun Wetlands Integrated Management Plan

### The Proposed Structure for integrated Management of the Hamoun International Wetlands at the Provincial and National levels

| Level      | Title   | Members   | Terms of reference ( functions)  | Notes  |
|------------|---|---|--|--|
| National   | The National Headquarters for the Revival and Management of the Hamoun Wetlands (based on the decision of the Council of Ministers) | <ul style="list-style-type: none"> <li>-First Vice President (Chairman of the Headquarters)</li> <li>- Head of the Department of Environment (Secretary of the Headquarters)</li> <li>-Minister of Jihad-e Agriculture</li> <li>- Minister of Energy</li> <li>- Head of the Meteorological Organization</li> <li>- Deputy Foreign Minister</li> <li>- Deputy Interior Minister</li> <li>- Governor General of the Province</li> </ul>   | <ul style="list-style-type: none"> <li>-High level supervision over the implementation of the ecosystem management program</li> <li>-Following up on the question of water rights of the Wetlands from the neighboring country</li> <li>-Study of water provision from other resources</li> <li>-Provision of the required macro funds</li> <li>-Approval of possible interventions in the Wetlands</li> <li>-Possible employment of international consultants</li> <li>-Coordination of correspondence and of international visits</li> <li>-Raising the issues related to the Wetlands at national and international levels</li> </ul>   | Organizations affiliated to the Ministry of Jihad-e agriculture including the Research Organization, the Iranian Fisheries Organization, The Forests, Range , and Watershed Management Organization, etc. are also members of this Headquarters  |
| Provincial | The Provincial Work Group for the revival and management of the Hamoun Wetlands   | <ul style="list-style-type: none"> <li>-General Governor of the Province ( Head of the work group)</li> <li>- Head of the Provincial Management and Planning Organization</li> <li>-Special Governor of Zabol and Head of the County Work Group</li> <li>-Director General of the Provincial Department of Environment ( Secretary of the Work Group)</li> <li>-Head of the Provincial Jihad-e Agriculture Organization</li> <li>-General Director of the Provincial Natural Resources Organization</li> <li>-General Director of the Provincial Nomadic Affairs Organization</li> <li>-General Director of the Department of Fisheries in Sistan</li> <li>-General Director of the Regional Water Company in the Province</li> <li>-General Director of Crisis Management in the Province</li> <li>-Two representatives of the local communities</li> <li>-Two experts from Universities and Research Centers</li> </ul> <p>Moreover, the following members are divided to attend the meetings ( if needed)</p> <ul style="list-style-type: none"> <li>-Commander of the Border Guard</li> <li>-General Director of the Provincial IRIB</li> <li>-general Director of Water and Soil Resources Development in Sistan</li> <li>-General Director of the Provincial Industry, Mine, and Trade</li> <li>-General Director of the Provincial Technical and Vocational Training</li> <li>-Director General of the Provincial Cultural Heritage, Handicrafts, and Tourism</li> </ul> | <ul style="list-style-type: none"> <li>-Study of the capacities and priorities of development in the region and development of the draft perspective and policy-making approach to macro management in the region and presenting proposals to the national level</li> <li>-Prediction of national funds and provision of Provincial funds required for the programs</li> <li>-Supervision over the implementation of the programs and expenditure of the funds</li> <li>-Revision of the program for the ecosystem management of the wetlands after periodical evaluations</li> <li>-Helping to integrate the management program in the Provincial Organizations</li> <li>-Evaluating progress made and obstacles in the way of program implementation and intersectoral coordination</li> <li>-Approving the annual programs suggested for implementation at the county level</li> <li>-Establishing communications with local Afghan authorities</li> <li>-Communicating the programs approved by the Provincial Work Group to the Counties</li> <li>-Presenting supervisory reports to the National level management</li> </ul> | <p>In addition to the mentioned authorities, others will also be invited to participate in the meetings, if necessary.</p> <p>The secretariat of the ecosystem management of the Hamoun international Wetlands stationed at the General Office of the Provincial Department of Environment or the Office of the Department of Environment in Zabol will have the following responsibilities:</p> <ul style="list-style-type: none"> <li>-Following up on the mechanisms required to have the management project for the Wetlands approved</li> <li>-Preparing and following up on the approval of the annual work plans by the related authorities – Coordinating the provision of the funds required for the various sections</li> <li>-Multisectoral Coordination for integrating the activities in the project</li> <li>-Following up on making possible changes in the management project of the Wetlands and of the presented programs</li> <li>-Presenting reports on the progress made</li> <li>-Presenting monitoring and evaluating reports to the various levels of management</li> <li>-Making the five-year evaluation on the way the management project for the Wetlands is carried out</li> <li>-Following up on convening the related meetings</li> </ul> |

## Summary of Hamoun Wetlands Integrated Management Plan

### The Proposed Structure of the Comprehensive Ecosystem Management for the Hamoun International Wetlands at the County Level in the Sistan Region

| Level                            | Title   | Members   | Duties  | Notes  |
|----------------------------------|---|---|---|--|
| The Sistan Region (County Level) | The Work Group for the Integrated Management of the Hamoun Wetlands | <ul style="list-style-type: none"> <li>-The Special Governor of Zabol ( Head of the Work Group)</li> <li>-Governors of other Counties in Sistan</li> <li>-The Plenipotentiary Representative of the General Office of Environment in Sistan (Secretary of the Work group)</li> <li>-The Plenipotentiary Representative of the Jihad-e Agriculture Organization in Sistan</li> <li>-The Plenipotentiary Representative of the Natural Resources Organization in Sistan</li> <li>-The Plenipotentiary Representative of the Border Regiment in Sistan</li> <li>-The Plenipotentiary Representative of the Nomadic Affairs Organization in Sistan</li> <li>-The Plenipotentiary Representative of the General office of Fisheries in Sistan</li> <li>-The Plenipotentiary Representative of the Regional Water Company in Sistan</li> <li>-The General Director of Crisis Management in the Province</li> <li>-Three representatives of the local communities</li> <li>-Three representatives of experts from Universities and Research Centers</li> </ul> | <ul style="list-style-type: none"> <li>-Policy-making and planning for the Wetlands</li> <li>-Supervision over all activities influencing the Wetlands' ecosystem according to the developed management program for them</li> <li>-Coordinating the implementing organizations regarding the activities related to the management plan for the Wetlands</li> <li>-Implementing the comprehensive plan for ecosystem management</li> <li>-Presenting suggestions to the Provincial management level</li> <li>-Presenting reports to the Provincial management level</li> </ul> | <p>This work Group is formed in Sistan with the participation of the five counties in this region. It has the duty of integrated management of the Hamoun Wetlands in Sistan and is given full power to perform this duty. The environmental body is strengthened by the following triple committees:</p> <ul style="list-style-type: none"> <li>-The supervisory and monitoring committee</li> <li>-The economic, social, and cultural committee</li> <li>-the agriculture, natural resources, land affairs, and environmental committee</li> </ul> |
| The local level                  | The Association of Trustees and Stakeholders of the Hamoun Wetlands | <ul style="list-style-type: none"> <li>-The nomads</li> <li>-The fishermen</li> <li>-The farmers</li> <li>-Other users</li> <li>-The Islamic Councils of the villages on the margins of the Wetlands</li> <li>-The NGOs</li> <li>-Social and political activists</li> <li>- Leaders of the clans and local trustees</li> </ul>  | <ul style="list-style-type: none"> <li>-Presenting consultative opinions to the decision-making team</li> <li>-Cooperating in attracting participation of local people in implementing the programs for the management of the Wetlands</li> <li>-Introducing a representative to participate in the meetings of the Work Group suggested for the county level (in the Sistan region)</li> <li>-Cooperating in supervision over and evaluation of the management projects for the Wetlands and of the implemented projects</li> </ul>  |  |

## Summary of Hamoun Wetlands Integrated Management Plan

### Flowchart of the Suggested Structure for the Management of the Comprehensive Ecosystem Program for the Hamoun International wetlands

| Level      | Title  | Function   | Members  |
|------------|--|--|--|
| National   | <p>The Headquarters for Restoration and Management of the Hamoun Wetlands ( based on the decision of the Council of Ministers)</p> <p>↓</p>  | <ul style="list-style-type: none"> <li>-High-level supervision over the implementation of the program for ecosystem management</li> <li>-Follow up on the question of water rights of the Wetlands from the neighboring country</li> <li>-Study of water provision from other resources</li> <li>-Provision of the required macro funds</li> <li>-Approval of the possible interventions in the Wetlands</li> <li>-Possible selection of foreign advisors</li> <li>-Coordination of correspondence and international visits</li> <li>-Raising the questions related to the Wetlands at national and international levels</li> </ul>  | <ul style="list-style-type: none"> <li>-First Vice-President ( Head of the Headquarters)</li> <li>-Head of the Department of Environment ( Secretary of the Headquarters)</li> <li>-Minister of Jihad-e Agriculture</li> <li>-Minister of Energy</li> <li>-Head of the Iran Meteorological Organization</li> <li>-Deputy Foreign Minister</li> <li>-Deputy Interior Minister</li> <li>-The Governor general of the province</li> </ul>   |
| Provincial | <p>Provincial Work Group for the Revival and Comprehensive Management of the Hamoun Wetlands</p> <p>↓</p> <p>The Secretariat of the Ecosystem Management of the Hamoun International Wetlands</p> <p>↓</p> <ul style="list-style-type: none"> <li>-Following up on the mechanisms required to have the management project for the Wetland approved</li> <li>-preparing and following up on the approval of the annual work plans by the related authorities</li> <li>-coordinating the provision of the funds required for the various sections</li> <li>-Multisectoral Coordination for integrating the activities in the project</li> <li>-Following up on making possible changes in the management project of the Wetlands and of the presented programs</li> <li>-Presenting reports on the progress made</li> <li>-Presenting monitoring and evaluating reports to the various levels of management</li> <li>-Making the five-year evaluation on the way the management project for the Wetlands is carried out</li> <li>-Following up on convening the related meetings</li> </ul> <p>↓</p> | <ul style="list-style-type: none"> <li>-Study of the capacities and priorities of development in the region and development of the draft perspective and policy-making approach to macro management in the region and presenting proposals to the national level</li> <li>-Prediction of national funds and provision of Provincial funds required for the programs</li> <li>-Supervision over the implementation of the programs and expenditure of the funds</li> <li>-Revision of the program for the ecosystem management of the wetlands after periodical evaluations</li> <li>-Helping to integrate the management program in the Provincial Organizations</li> <li>-Evaluation of progress made and of obstacles in the way of program implementation and intersectoral coordination</li> <li>-Approving the annual programs suggested for implementation at the county level</li> <li>-Establishing communications with the local Afghan authorities</li> <li>-Communicating the programs approved by the Provincial Work Group to the Counties</li> <li>-Presenting supervisory reports to the National level management</li> </ul> | <ul style="list-style-type: none"> <li>-Governor General of the Province ( Head (Head of the Work Group)</li> <li>- Head of the Provincial Management and Planning Organization</li> <li>-Special Governor of Zabol and Head of the County Work Group</li> <li>-General Director of the Provincial Department of Environment (Secretary of the Work Group)</li> <li>-Head of the Provincial Jihad-e Agriculture Organization</li> <li>-General Director of the Provincial Natural Resources Organization</li> <li>-General Director of the Provincial Nomadic Affairs Organization</li> <li>-General Director of the Provincial Department of Fisheries in Sistan</li> <li>-General Director of the Regional Water Company</li> <li>-General Director of Crisis Management in the Province</li> <li>-Two representatives of the local communities</li> <li>-Two experts from Universities and Research Centers</li> </ul> <p>Moreover, the following members are divided to attend the meetings ( if needed)</p> <ul style="list-style-type: none"> <li>-Commander of the Border Guard</li> <li>-General Director of the Provincial IRIB</li> <li>-General Director of the Water and Soil Development</li> <li>-General Director of the Industry, Mine, and trade Organization in the Province</li> <li>-General Director of the Technical and Vocational Training Organization in the Province</li> <li>-General director of the Provincial Cultural Heritage, Handicrafts, and Tourism Organization</li> </ul> |
| County     | <p>Work Group for the integrated management of the Hamoun Wetland</p> <p>↓</p> <ul style="list-style-type: none"> <li>-The economic, social, and cultural committee</li> <li>-The agricultural, natural resources, land affairs, and environmental committee</li> <li>-The evaluation and monitoring committee</li> </ul> <p>↓</p> <p>Assembly of the trustees and stakeholders of the Hamoun Wetland</p> <p>↓</p>   | <ul style="list-style-type: none"> <li>-Policy-making and planning for the Wetlands</li> <li>-Supervision over all activities influencing the Wetlands' ecosystem according to the developed management program for the Wetland</li> <li>-Coordinating the implementing organizations regarding the activities related to the management plan for the Wetlands</li> <li>-Implementing the comprehensive plan for ecosystem management</li> <li>-Presenting suggestions to the Provincial management level</li> <li>-Presenting reports to the Provincial management level</li> </ul>   | <ul style="list-style-type: none"> <li>-The Special Governor of Zabol ( Head of the Work Group)</li> <li>-Governors of other Counties in Sistan</li> <li>-The Plenipotentiary Representative of the General Office of the Department of Environment in Sistan ( secretary of the Work group)</li> <li>-The Plenipotentiary Representative of the Jihad-e Agriculture Organization in Sistan</li> <li>-The Plenipotentiary Representative of the General Office of Natural Resources in Sistan</li> <li>-The Plenipotentiary Representative of the Border Regiment in Sistan</li> <li>-The Plenipotentiary Representative of the General Office of Nomadic Affairs in Sistan</li> <li>-The Plenipotentiary Representative of the General Office of Fisheries in Sistan</li> <li>-The Plenipotentiary Representative of the Regional water Company in Sistan</li> <li>-The General Manager of Crisis Management in the Province</li> <li>-Three representatives of the local communities</li> <li>-Three representatives of experts from Universities and Research</li> </ul>  |
| Local      | <p>The association of the trustees and stakeholders of the Hamoun Wetland</p>  | <ul style="list-style-type: none"> <li>-Presenting consultative opinions to the decision-making team</li> <li>-Cooperating in attracting participation of local people in implementing the programs for the management of the Wetlands</li> <li>-Introducing a representative to participate in the meetings of the Work Group suggested for the county level (in the Sistan region)</li> <li>-Cooperating in supervision over and evaluation of the management projects for the Wetlands and of the implemented projects</li> </ul>   | <p>Representatives of the</p> <ul style="list-style-type: none"> <li>-The nomads</li> <li>-The fishermen</li> <li>-The farmers</li> <li>-Other users</li> <li>-The Islamic Councils of the villages on the margins of the Wetland</li> <li>-The NGOs</li> <li>-The social and political activists</li> <li>- The leaders of the clans and local trustees</li> </ul>  |

## Summary of Hamoun Wetlands Integrated Management Plan

### Components of the Monitoring Protocol include:

- Goals of monitoring
- The indicator
- Monitoring method

These include items that must be measured, their measurement methods, measurement locations, map or sketch, time of measurement, and the person in charge of monitoring and the basic required equipment

### The measures that follow include:

The person responsible for reporting, the frequency of reporting, the persons to whom the reports are sent, and the storage place for information

### The required training courses include:

Determining the required capacity together with the educational needs and their levels

### The limitations include:

Implementation limitations and strategies for reducing them

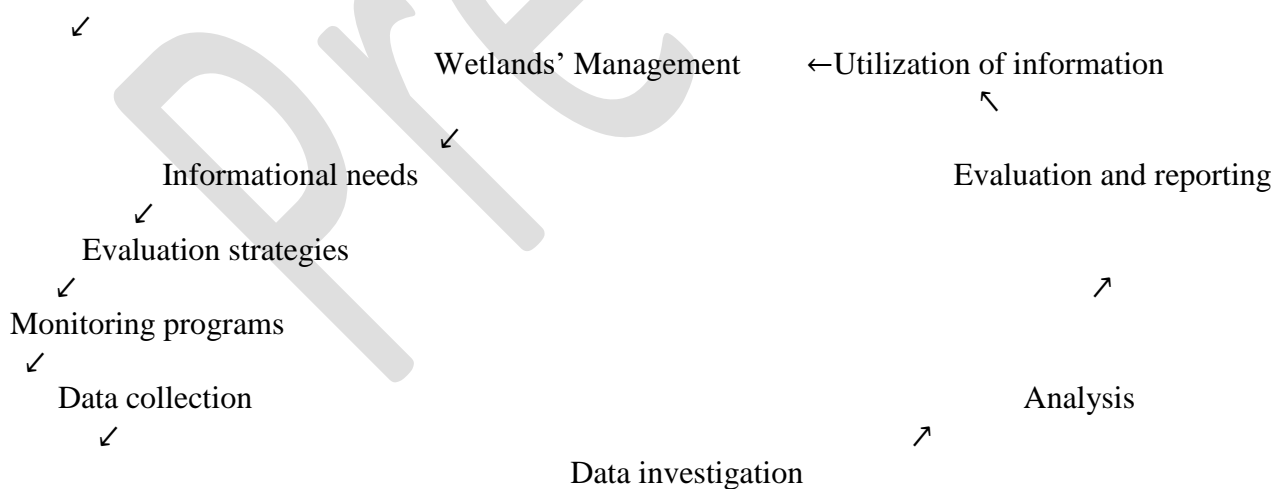
### Budget and Provision of Financial Resources including:

The monitoring budget and determination of the Mechanisms for providing it

### The monitoring plan

designing the monitoring program by forming work groups and summing up the view presented at the general meeting. The major pillars of monitoring include:

- Monitoring biodiversity
- Monitoring water and soil resources
- Monitoring of economic and social conditions





**Biodiversity features for monitoring in the Management Plan for the Hamoun International wetlands**

| Monitored factor |                    | Measured parameter  | Sampling sites   | Sampling time  | Responsible institution                   | Cooperating institution  | Reporting time | Data storage                                     |
|------------------|--------------------|---|--|--|---|--|----------------|--|
| Vegetation       | Reeds              | Area it is found-growth, health, and production per unit area | Takht-e Edalat Hirmand.Saberi Adimi, Mount Khajeh Sangol, Ali Akbar Shahrak (Hamoun) | Second month of the year   | Provincial Natural Resources Organization | Provincial Department of Environment+ NGOs + local communities                 | Annual         | Secretariat of the Hamoun International Wetlands |
|                  | Cattail            | Area it is found-growth, health, production per unit area     | Takht--e Edalat Hirmand, Saboori Nimrooz, Sangol, Ali Akbar Shahrak (Hamoun)         | Third month of the year  |   |  |                |  |
|                  | Sedge              | Area it is found-growth, health, and production per unit area | Saboori Nimrooz, Sangol behind Mount Khajeh  | Third month of the year  |   |  |                |  |
|                  | Mangrove grass     | Area it is found-growth, health                               | Saboori Nimrooz, Mount Khajeh Sangol, Maleki, Niank                                  | Third month of the year  |   |  |                |  |
|                  | Tamarisk           | Area it is found-growth, health                               | Mount Khajeh Sangol, Saboori Nimrooz   | Third month of the year  |   |  |                |  |
| Animals          | Partridge          | Census Station (quantity and quality)                         | Edimi, Mount Khajeh, Nianak, Rigab, Sarkani  | Second to third month of the year (habitat) and last month of autumn | Provincial Department of Environment      | NGOs + local communities   | Annual         | Secretariat of the Hamoun International Wetlands |
|                  | Coot               |   | Takht-e Edalat, Sangol, Saberi   |  |   |  |                |  |
|                  | White-headed duck  |   | Takht-e Edalat, Sangol, Saberi   |  |   |  |                |  |
|                  | Green-headed duck  |   | Takht-e Edalat, Sangol, Saberi   |  |   |  |                |  |
|                  | Dalmatian pelican  |   | Takht-e Edalat, Sangol, Saberi   |  |   |  |                |  |
|                  | Goose              |   | Takht-e Edalat, Sangol, Saberi   |  |   |  |                |  |
|                  | White-headed duck  |   | Takht-e Edalat, Sangol, Saberi   |  |   |  |                |  |
|                  | Schizothorax fish. | Evaluation of stocks (number per unit area)                   | Surface of the Hamoun International Wetlands, Chah Nimehs                            | Spring   | Provincial Fisheries Organization         | The Fishing Union + the Department of Environment + the Regional Water Company |                |  |

## Summary of Hamoun Wetlands Integrated Management Plan

### Water and Soil Resources features for monitoring in the management plan of Hamoun International Wetlands

| Monitored factor |                           | Measured parameter  | Monitoring measures   | Sampling time                           | Responsible institution              | Coppering institution  | Reporting time | Data storage                                 |
|------------------|---------------------------|---|---|---|--------------------------------------|--|----------------|--|
| Soil resources   | Erosion and sedimentation | Soil surface vegetation, moisture, erodibility  | Measuring the specified parameters  | Seasonal                                | Zabol University                     | Research, Centers+ Natural Resources Organization+ Department of Environment, Hamoun International wetland Research Institute    | Six- monthly   | Secretariat of Hamoun International Wetlands |
|                  |                           | Sedimentation volume  | Determining size and type of sediments  | Biennial                                |                                      |  |                |  |
|                  |                           | Centers of dust production  | Determining area of dust formation and determining dust size and type   | Annual                                  |                                      |  |                |  |
| Water resources  | Water quality             | Amount of precipitation in the Hamoun Watershed   | Estimating volume of precipitation in the watersheds leading to the wetlands                                  | Monthly                                 | Meteorological Organization          | Regional water Company   | Monthly        | Secretariat of Hamoun International Wetlands |
|                  |                           | Amount of water inflow from abroad  | Recording the data of the Stations  | Daily                                   | Regional Water Company               |  | Monthly        |  |
|                  |                           | Amount of use and storage of water inflow from abroad   | Establishing hydrometric stations at places where water flows into the Lake                                   | Daily                                   | Regional Water Company               |  | Monthly        |  |
|                  |                           | Amount of water entering the Wetlands   | Using satellite images and carrying out field visits  | Daily (after establishing the stations) | Provincial Department of Environment | Regional water Company   | Seasonal       |  |
|                  |                           | Surface covered by and volume of water in the Wetlands  | Measuring sediments at hydrometric stations   | Weekly                                  | Provincial Department of Environment | Regional water Company   | Seasonal       |  |
|                  | Water quality             | Amount and type of sediments  | Measuring   | Daily at flood events                   | Regional Water Company               | Provincial Department of Environment   | Monthly        |  |
|                  |                           | SAR, BO, BOD, TDS, EC, pH, ammonia, nitrate, carbonate, bicarbonate, phosphorous, heavy metals, turbidity | Making measurements at stations outside and inside the wetlands (Red Chong, Rabbit Chong, Long Chung, Sangol) | Monthly (when needed)                   | Provincial Department of Environment | Regional water Company, Water and Wastewater Organization, Iranian Association of Environmental Health, University Centers, NGOs | Monthly        |  |

## Summary of Hamoun Wetlands Integrated Management Plan

### Monitoring of Economic and Social Conditions in the Management of Hamoun International Wetlands

| Monitored factor   |   | Measured parameter  | Sampling sites                               | Sampling time                      | Responsible institution              | Cooperating institution  | Reporting frequency                       | Data storage |
|--|---|---|--|------------------------------------|--------------------------------------|--|---|--------------|
| Economic, social, cultural, and security Development of Sistan | Economic development                                  | Economic investment   | The whole Sistan region                      | Annual                             | Governor General                     | General Office of Cooperatives, Labor, and Social welfare + General Office of Industry, Mine, and Trade + NGOs + local communities | Annual                                    |              |
|  |   | Migration rate  | The whole Sistan region                      |                                    |                                      |  |   |              |
|  |   | Unemployment rate   | The whole Sistan region                      |                                    |                                      |  |   |              |
|  |   | Number of households under poverty line                                   | The whole Sistan region                      |                                    |                                      |  |   |              |
|  | Health improvement                                    | Life expectancy   | The whole Sistan region                      | Annual                             | Zabol university of Medical Sciences | General Office of Education + the Governor General's Office  | Annual                                    |              |
|  |   | Visits to hospitals for respiratory and eye diseases                      | Hospital, health, and treatment centers      | Six-monthly                        |                                      |  |   |              |
|  |   | Level of malnutrition   | The whole Sistan region                      | Annual                             |                                      |  |   |              |
|  | Increased knowledge and public information activities | Hours of programs performed in national and local media and in newspapers | Media and national and local newspapers      | Annual in summer                   | Provincial Department of environment | The Governor General's Office  | Annual                                    |              |
|  |   | Number of workshops held in relation to the Wetlands (at various levels)  | At local, national, and international levels | When held                          | Provincial Department of environment | The Governor General's Office +Natural Resources + Ministry of energy + Education + NGOs   | Local (annual) and National (six-monthly) |              |
|  | Improved tourism                                      | Tourism infrastructure  | The Sistan region                            | Annual                             | Cultural Heritage and Tourism        | Municipalities + the Private sector + The Department of Environment  | Annual                                    |              |
|  |   | Number of tourists  | The Sistan region                            | Annual in spring                   | Cultural Heritage and Tourism        | The Guidance Office + the Municipality + the Red Crescent + the Department of Environment  | Annual                                    |              |
|  |   | Income levels of local communities  | The Sistan region                            | Annual in the last month of summer | Cultural Heritage and Tourism        | NGOs + Fishing Unions + Nomadic Cooperatives   | Annual                                    |              |

## Summary of Hamoun Wetlands Integrated Management Plan

### Monitoring of the Economic and Social Conditions in the Management Program for Hamoun International Wetlands

|   | Features   | Measured parameter   | Sampling sites   | Sampling frequency  | Responsible institution                 | Cooperating institution   | Reporting frequency | Data storage              |
|---|--|--|--|---|---|---|---------------------|---------------------------|
| Economic, social, cultural and security development of Sistan | Improvement of livelihood of the users of and stakeholders in the Wetlands | Stock keepers' income  | Nomadic regions around the Wetland                         | Six-monthly (Second month of summer and last month of winter) | Organization of Nomadic Affairs         | Provincial Department of Environment  | Annual              |                           |
|   |  | Fishers' income  | Takht-e Edalat-Posht-e Adimi, Mount Khajeh                 | Annually  | General Office of Fisheries             | Provincial Department of Environment  | Annual              |                           |
|   |  | Balancing number of stock and pastures   | Nomadic regions around the Wetlands                        | Six-monthly (last months of summer and winter)                | Natural Resources                       | Organization of Nomadic Affairs   | Annual              |                           |
|   |  | Users' composition (reducing the number of illegal users)                                  | Nomadic regions around the Wetlands                        | Six-monthly (last months of summer and winter)                | Natural Resources                       | Organization of Nomadic Affairs   | Annual              |                           |
|   |  | Amount of meat produced by Sistani stock   | Zabol Industrial slaughterhouse                            | Annually  | Jihad-e Agriculture (Livestock Affairs) | Veterinary Administration   | Annual              |                           |
|   |  | Reduced dependence of users' livelihood on the Wetlands (increased alternative employment) | Nomadic regions around the Wetlands                        | Annually  | Organization of Nomadic Affairs         | General Office of Fisheries, Natural Resources, Fishing Unions, Nomadic Cooperatives          | Annual              |                           |
|   |  | Income from jobs that depend on the Wetlands   | Takht-e Edalat, Kamshad, Adimi, Mount Khajeh               | Annually  | General Office of Fisheries             | Fishing Unions, Nomadic Cooperatives, Nomadic Affairs, Natural Resources, Jihad-e Agriculture | Annual              | Department of Environment |
|   | Improved social security   | Rate of social crimes  | Law enforcement and judiciary centers in the Sistan Region | Annually  | Law Enforcement Force                   | Judiciary   | Annual              |                           |