BULLETIN

CONSERVATION OF IRANIAN WETLANDS

DECEMBER 2021

Department of Environment

Conservation of Iranian Wetlands Project

From the People of Japan

UNDP

www.wetlandsproject.ir

INTRODUCTION

Wetlands are valuable ecosystems and dynamic habitats that play an important role in the development of human communities. The climatic and geological diversity of Iran have caused that out of 42 types of wetlands identified in the world, 41 types exist in Iran.

The Conservation of Iranian wetland Project commenced in cooperation between the Government of Iran (Department of Environment), the Global Environment Facility (GEF), and the United Nations Development Program (UNDP) since 2005 with the aim of reducing or permanently eliminating threats and conservation of wetland ecosystems in Iran. CIWP started its work in selected and important wetlands as the pilot sites.

The project started with the slogan of “Saving Wetlands, for people, for nature” and with the general goal of permanently reducing or eliminating threats and the sustainability and survival of wetland ecosystems. Currently, the CIWP, in line with its five-year document (2020 to 2025), seeks to expand the experience gained in establishing the ecosystem approach and balancing, conservation, and wise use in pilot wetlands in other wetlands all over the country.

This bulletin presents a report on the most important activities, achievements, and outputs of the CIWP in the first six months of 2021.

Informing and Awareness Raising to Reduce Local Conflicts with the Protected Species of Gando

The crocodile (Gando) or short snout with the English name "Mugger" and the scientific name *Crocodylus Palustris* is a unique species that belongs to the Indian subcontinent and its distribution in Iran mainly is in the southeast. Due to the importance of this species as the only present species of crocodiles in the country, this species has been put on the national "endangered reptile" list and categorized as a nationally protected animal species. As in other parts of the world, where there is a species of crocodile, conflicts of this species with local people have caused problems in the form of attacks on humans and livestock of villagers. This underscores the importance of managing this issue, which is directly related to Gando's protection.

In this regard, training sessions were held for selected target groups such as students and local people in selected villages, which according to surveys, had the highest level of conflict in recent years (Dargas, Hoot Kat Bala, Hoot kat Payeen, Kahirborz, Kahnani Kash and Bahukalat).

After conducting the necessary training, distributing educational items, and reviewing the results of the relevant questionnaires, we saw an increase in the awareness of trained people about recognizing this species and reducing the conflict between humans and Gandos. By reviewing the existing problems and obtaining solutions, development of infrastructure facilities and also lack of educational programs for different age groups, have been found as the most important existing problems in this area and solving them by providing facilities and ways to access water supply for drinking and other daily uses on one hand, and resident facilitators for continuous training on the other hand, were identified as the most important ways to reduce Gando conflicts.

With the implementation of these plans, it is expected that the conflict cases will be reduced to a minimum in these areas and this experience can be used as a model in crocodile habitats as well as other endangered species in Iran.

Conservation of Gando Species in Bahu Estuary International Wetland and Gwater bay

The overall objectives of this project were to lay the groundwork and empower local communities to achieve examples of wise use of facilities, especially when it comes to helping protect Gando in the area of Bahu Estuary International Wetland and Gwater Bay. The project also sought to:

- Reduce habitat degradation and increase conservation measures,
- Raise awareness at all national, regional, and local levels to protect regionally important species such as Gando, and provide some of the capabilities needed to develop responsible tourism based on Gando and its surrounding environment,
- Providing opportunities for the exchange of information about Gando and its habitat,
- Developing the necessary capabilities and skills of stakeholders (individual and groups) to motivate them to participate in the protection of endangered Gando species,
- Reducing pressure on wetland biological resources, developing new strategies to make sustainable use of the wetland resources and an ecosystem approach to the conservation of the wetland

The implementation stages of this project were planned based on people's cooperation. Summary of the implementation steps included a needs assessment and basic studies, holding meetings on how to form an executive team, forming a planning and monitoring group, and stakeholders' analysis based on the integrated wetland management plan and the characteristics of the area. Following the activities such as holding a training workshop for stakeholders to get acquainted with the ecosystem services of Gando and its habitat, setting up a joint workshop with stakeholders on receiving and aggregating of ideas, holding a face-to-face workshop, and publishing educational content in the form of clips and PowerPoint presentations, supplying equipment and construction of information boards and ecotourism pavilion and information center in Bahukalat village as a tourism target village based on Gando ecological services were pursued.

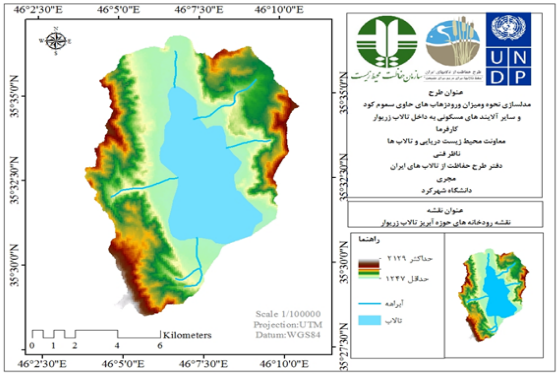
Also marketing and connecting local ecotourism to the market to attract tourists and sell products, run a one-day program "with Gando" and pay a visit to the research station, visit the ecotourism house and handicraft exhibition, exchange experience of living near Gando habitat and local and indigenous games were performed.


مرکز بازدیدکنندگان و اقامتگاه بوم گردی
گاندو باهوکلات
Gando Bahukalat ecolodge and visitor center

Investigating and Determining the Amount of Agricultural and Domestic Sewage and Effluents Discharge to Zarivar Wetland

Zarivar wetland is one of the important national and international aquatic ecosystems located in Kurdistan province, which is registered as the twenty-fifth Iranian Ramsar site in the Ramsar Convention. Due to intense human activities around the wetland, the life of this aquatic ecosystem is in serious danger. The general purpose of this study is to investigate the eutrophication status and water quality of the Zarivar wetland and estimate the amount of agricultural and domestic sewage and effluents to it. The results of the present study showed the acute mesotrophic status of Zarivar wetland in July with a mean value of 52.2 Carlson index and two acute mesotrophic and eutrophic status in September 2021 with an average value of Carlson index equal to 60.17. According to the zoning map of the nutritional index, it can be said that the reason for the greater amount of nutrition in the southeast is the residential sewage of Marivan city. Main causes of Eutrophication in the northeast and east of the wetland include the drainage of irrigated agricultural lands and gardens and household sewage of the villages around the wetland. The most important sources of pollutants in which reduce the water quality and increase the eutrophication of the wetland include the development and excessive use of chemical fertilizers in agricultural lands around the wetland, the Ghezelchehsu diversion dam, a canal that passes through the village of Darreh Tafi and the effluent of villages without sewage network including Koolan, Mohammadeh, and Seif Sofla.

According to the questionnaires and interviews with farmers around the wetland, the amount of chemical fertilizer used by farmers per year is 100 kg per hectare and annual animal manure is an average of 4.5 tons per hectare. Determining suitable places for accumulation of livestock waste, observing the privacy of the wetland and gradually preventing the land use changes, use of animal compost in agricultural lands, use of green fertilizer in the lands around the wetland, in particular, sloping lands, the use of bio-fertilizers, the use of organic fertilizers, improvement of fertilization methods and the use of biochar are among the proposed solutions to reduce the discharge of sewage into the Zarivar wetland.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کارفرما
معاونت محیط زیست دریایی و تالاب ها
ناظر فنی
دفتر طرح حفاظت از تالاب های ایران
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دانشگاه شهرکرد
عنوان نقشه
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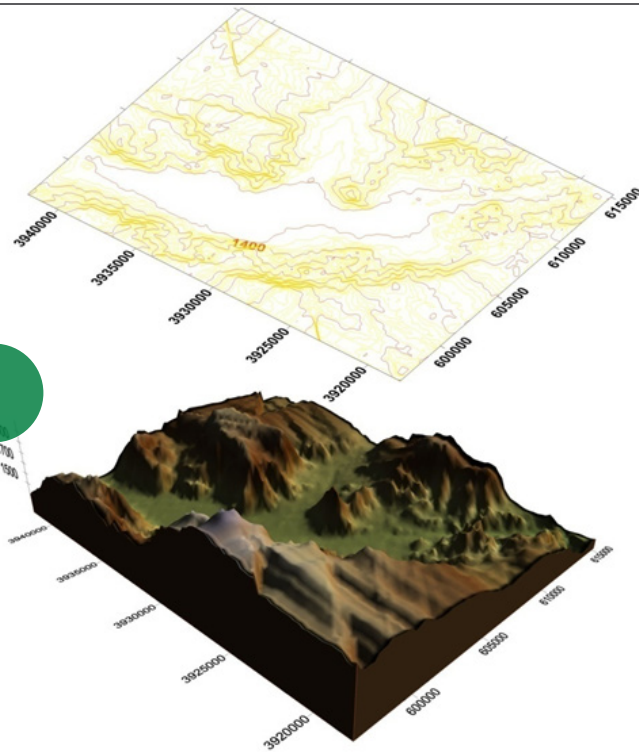
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Turning Wetlands to a Tourist Destination for the Enthusiasts and Nature Lovers

With the aim of using the tourism potentials of the wetlands in order to use the wetland resources wisely, a series of measures have been taken in the satellite wetlands of the Lake Urmia Basin. In addition to the involvement and participation of local communities around the wetland in these measures, tourism industry activists and experts visited the area, reviewed strategies to attract tourists to the wetlands and suggested future steps.

The actions taken in the form of various projects are as follows:

- Design, construction, and installation of seven signposts along the roads of West Azerbaijan province in the area of Kanibarazan, Soldoz, and Dargah Sangi wetlands
- Preparation and installation of waste bins in tourist destinations around Kanibarazan wetland.
- Design and publish posters and short clips introducing Kanibarazan wetland for those interested in visiting the wetland
- Holding a visit and meetings for attracting tourists to wetland ecosystems with emphasis on Kani-Barazan wetland with the cooperation of nature tourism experts
- Design and launch five bilingual websites for Soldoz (www.solduzwetland.ir), Kani Barazan (www.kanibrazan.ir) Nowruzlu (www.nowruzlu.ir), Qarah Gheshlagh (www.qareqeshlaq.ir), and Ghorigol (www.ghoorigol.ir) wetlands

Payment for Ecosystem Services in the Bakhtegan Wetland to Reduce the Conflicts between the Common Crane and the Local Communities

Every year, with the beginning of the cold season, thousands of waterfowl and shorebirds, including common cranes, enter Iran from Kazakhstan and Russia. Significant populations of these migratory birds migrate to the shores of Bakhtegan Lake. Migratory common cranes usually visit around Bakhtegan Lake from early October to early December and stay in this area until the end of March. Due to the vastness of agricultural lands, the accumulation of common cranes is more in the northern area of the wetland and near these agricultural lands around the wetland. As a result, the conflict between the farmers and the common cranes is more prominent; although knowledge of local farmers about the importance of this species prevents damage to them this conflict between stakeholders and the bird is always visible.

Given the importance of protecting migratory birds in the region, it was necessary to explain the importance of wildlife, especially the role and characteristics of waterfowl, including common cranes, and the need for better protection for the target communities.

Given the importance of protecting migratory birds in the region, it was necessary to explain the importance of wildlife, especially the role and characteristics of waterfowl, including common cranes, and the need for better protection for the target communities. Based on this, farmers in the areas that have been exposed to common cranes damage for years have been identified and then invited to attend training and capacity-building workshops. The purpose of this project was to use the payment for ecosystem services to reduce conflicts between local farmers on the outskirts of Bakhtegan Wetland in four villages (Tashk, Jazin, Dehzir, and Abadeh Tashk) with the bird. In the continuation of this process, after several meetings with farmers and stakeholders, volunteers were identified technical meetings were held for them then, the situation of agricultural lands and validation regarding crop cultivation and presence of species in farms were assessed by field visits. Finally, according to the information provided in this step, payment for ecosystem services will be operational to reduce these conflicts.

Studies by the IPCC[1] (Intergovernmental Panel on Climate Change) show a warming trend over the past century that has been rising in most parts of the world due to the phenomenon of climate change. This is known as Global Warming. According to comprehensive reports by the IPCC on a continental scale, the phenomenon of climate change has not only affected global warming but also caused changes in the properties of systems that interact with the Earth's atmosphere. According to IPCC studies, the phenomenon of climate change in recent periods has had far-reaching effects on the planet's climate systems. These effects impact the atmosphere, hydrosphere, ice, and biosphere. Undoubtedly, human activities will increase in the coming periods, in conclusion, the amount of greenhouse gas emissions in the atmosphere will increase. This increase will intensify changes in the planet's climate variables. It should be noted that even if all greenhouse gas emissions were stopped now, due to the long shelf life of these gases that have already been released into the Earth's atmosphere, in the 21st century, human would face changes in climate variables. Therefore, due to the destructive effects of this phenomenon can have on different systems in future periods, it is necessary to know the negative effects of this phenomenon on the system before occurrence and strategies to deal with its negative effects in projects.

1. Intergovernmental Panel on Climate Change

The main purpose of this study is to develop a framework for providing solutions to adapt to the negative effects of climate change on the ecosystem services of wetlands. The first part of this study deals with the detection of the region climate change in the past and its relation to greenhouse gases. The second part produces climate change scenarios in future periods and the third part presents the prediction of the effects of climate change on wetland ecosystem services in future periods as well as this, prioritizes adaptation strategies for the regional ecosystem services.

Once the effects of climate change on the region's ecosystem, services are identified in future periods, it will be discussed in consultation meetings with decision-makers and local communities, and the proposed solutions will be agreed upon. In the continuation of these solutions, the dynamics model of the wetland system should be included and the effectiveness of each solution should be quantified. After that, the quantitative solution should be prioritized by common and appropriate methods, and a project should be designed for the high-priority solution. Finally, the monitoring and evaluation system of the implementation affects which solution should be properly implemented in the wetland.


the Effects of
Climate Change
on Wetland
Ecosystem
Services

Four Provinces Host Sustainable Agricultural Techniques at the Farm Level

The establishment of sustainable agricultural techniques is one of the important activities of the CIWP, which has been considered since 2014. Through this activity, which is shaped by the participation of the CIWP, the Agriculture Organization, agricultural technology, and engineering companies, the NGOs, and the monitoring team; the process of promoting innovations and technologies in order to improve the use of basic resources (water and soil) in rural areas of the provinces of West and East Azerbaijan, Fars and Khuzestan have been followed. Since the agricultural sector has, a significant share in agricultural water consumption and irrigation efficiency in this sector is much lower than desired (less than 35%) CIWP in cooperation with the Agriculture Organization of West and East Azerbaijan provinces and technical companies, local agricultural engineering established sustainable agriculture techniques in 202 villages around the Urmia Lake in West Azerbaijan (Urmia, Miandoab, Mahabad, Naqadeh, and Salmas), East Azerbaijan (Azarshahr, Osko, Sarab, Bostanabad, Shabestar, Bonab, Ajabshir, and Malekan) as well as in 12 villages around the Shadegan wetland (6 villages in Shadegan, Behbahan, Ramshir, and Omidieh) and the Bakhtegan Lake (6 villages in Bakhtegan, Arsanjan, and Estahban). Various techniques, including furrow irrigation system, strip irrigation, whole fertilization, plant feeding based on soil test, etc. have been used at the field level. By implementing these techniques at the field level, reducing the consumption of inputs and biological control instead of chemicals, increasing soil fertility and optimal water consumption at the field level have been achieved. The model used, which is based on the TOR of establishing sustainable agriculture, is an achievement of the executive method for Agricultural Jihad Organizations, local implementing partners, and the CIWP.

The Effectiveness of Sustainable Farming Techniques is Monitored Based on Irrigation Rate Index

The implementation of techniques with the aim of reducing water consumption at the farm level is one of the CIWP's important actions. The comprehensive water monitoring team monitors the effectiveness of techniques implemented at the field level and evaluates the amount of irrigation water consumption and chemical inputs. Therefore, evaluating the effectiveness and usefulness of some techniques at the farm level is confirmed and they are promoted by the Agricultural Organization in the four provinces including West and East Azerbaijan, Fars, and Khuzestan. According to water monitoring data in West and East Azerbaijan provinces, reduction of irrigation water consumption at the field level is 27.1%, and faced water productivity improvement in pilot farms between 55 to 98%, reduction of irrigation depth between 20 to 50%, and water use efficiency between 10 to 55%.

Supporting Livelihoods Diversification Compatible with Wetland Resources

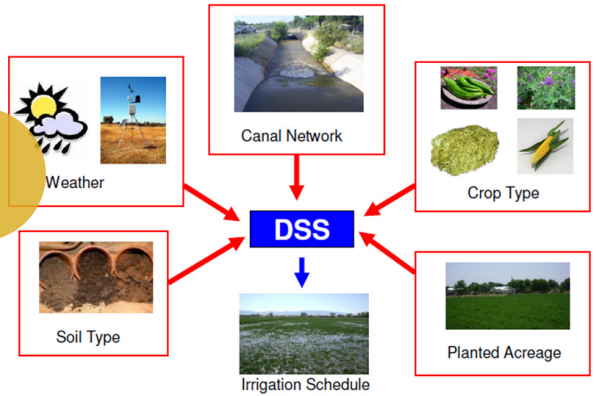
Activities of livelihoods diversification compatible with wetland resources aim to capacity develop and empower rural communities, especially rural women. The first measure of this goal has been an assessment of the usual routine of livelihood and identifying and feasibility and implementation of compatible livelihood options which is done in a participatory way in the village stage. Then, in the areas where Women Micro-Credit Funds were needed, would be established with the participation of the local community.

Considering the essential role of local communities around wetlands in the protection of wetlands and also with attention to the dependence of livelihood of these communities on wetlands resources (including water and other products), attention to improving the livelihood of local communities is always the priority plan of CIWP. Diversification livelihoods compatible with wetland resources in West Azerbaijan (country: Urmia, Miandoab, Naghade, and Mahabad), East Azerbaijan (country: Azarshahr, Bostanabad, Oskou, Ajabshir, Bonab, and Malekan) and also in Khuzestan (country: Shadegan) and Fars (country: Bakhtegan, Arsanjan, Estahban, and Nairiz) has been done by the cooperation of implemented companies. DL. Livelihood activities have been carried out in 59 villages. In these villages, 29 co-workers have been active. 700 rural women have also participated in the project and 39 rural women microcredit funds have been established. According to the latest data of the project in 1400 (2021), more than 88 livelihoods have been created in different livelihood groups, including tailoring, kilim weaving, dairy production, pickles, etc. In the target villages of the West and East Azerbaijan provinces. These activities have provided a situation to reduce inequality and poverty in rural communities, and efforts have been made pressure reduction on water and other sources of wetlands.

Application of a Decision Support System (DSS') for Enhancing Irrigation Water Management

Overuse of water in the agriculture section is depended on irrigation water management. Enhancing irrigation water management is a crucial issue in Iran since this country is located in an arid and semi-arid area. Using a Decision Support System (DSS) for irrigation decision-making consulting has been known to improve and enhance irrigation water management in different countries. Establishing a Decision Support System (DSS) for enhancing irrigation water management project, an innovative idea has been implemented since 2021 in four villages of the irrigation network of Mahabad (West Azerbaijan) by the collaboration of the Conservation of Iranian Wetlands Project (CIWP) and Agricultural Engineering Research Institute (AERI). Eighty beneficiaries (farmers) have been supported during the implementation of DSS in four pilot villages. This system provides the farmers required information about irrigation needs for each production In real time of each pilot according to soil tyoe, the stage of production development, weather condition as well as weather forecast and different kinds of irrigation in order to be able for making decision .

1. Decision Support System (DSS)



Implementation of Participatory Technology Development (PTD[1]) in the Provinces of West and East Azerbaijan

Participatory Technology Development (PTD) seeks to develop participatory practices and approaches at the local community level. Local experts, researchers, and farmers learn from each other during the implementation of PTD activities, and during the implementation of this method, participatory behaviors and morale increase at the village level. The activities of PTD provide valuable lessons for participatory development in rural areas. In this method, the activities of the change agent (implement partner) are not predetermined and the project starts from entering the local community and trust building. After examining the conditions and challenges and connecting with the local community, the PTD process has begun and farmers are the main actors. Conservation of Iranian Wetlands Project had implemented the PTD to activate and support the innovated practices from 2017 to 2021 in 11 pilots (in Urmia, Miandoab, Malekan, Bostanabad, and Sarab). One of the most important outputs of this project is the practice of participatory methods for social learning. Findings indicate that in some villages, including Shabanloo village of Miandoab, farmers are more dynamic and interact with outside actors to solve their problems at the farm level. The farmers participating in the PTD project have learned how to deal with agricultural issues in a spirit of inquiry, research, and participation, and have practiced learning participatory problem-solving techniques.

1. Participatory Technology Development (PTD)

Implementation of Integrated Projects in Bonab, Ajabshir, Urmia, and Miandoab Pilots

Wetlands are one of the most important earth ecosystems. The existence of wetlands has a major role in enriching the life cycle of living organisms around them and the livelihood of local communities. CIWP is trying to promote the relationship between local communities and the environment of wetlands towards sustainable development from a scientific and practical point of view.

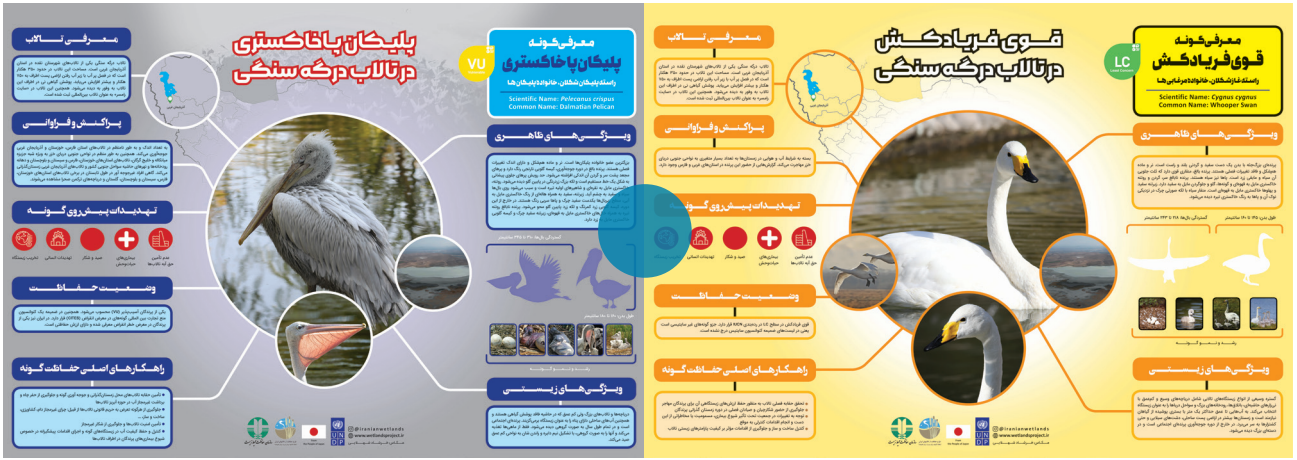
The modeling local community participation in Lake Urmia restoration has different activities on protecting water sources, developing sustainable agriculture, and diversification of livelihoods. After implementation of the above activities, based on the suggestion of CIWP consultants, integrated agriculture with an innovative approach to the simultaneous use of activities in three axes water, livelihood, and sustainable agriculture for linkage coherence between them was implemented. In 1397 (2018), four villages in west and east Azerbaijan (2 pilots in each province) were piloted and then was planned and implemented by the guidance of national consultants of CIWP and cooperation by implementing companies. This project not only seeks to implement a series of measures, but also consultants research-oriented researchers who seek to develop a model for rural development with an emphasis on the conservation of wetland resources.

Wetland Technical Meeting with Journalists in the Field of Water, Environment, and Agriculture

Today, using the fairly broad range of media is an undeniable part of people's daily activities and has been accepted as a source of news, information, and social awareness. the need of journalists and media activists for being more aware of wetlands, the importance of their conservation and having wise use with the aim of increasing their capacity to prepare more wetlands news has made CIWP to hold a specific webinar for this influential group in the following of its previous seminars. A series of webinars were held for this influential group. The meeting was held to present the achievements of the Department of Environmental in the section of the country's wetlands, acquainting the audience with advanced technologies in environmental monitoring and familiarity with the economy of the wetland with the presence of active journalists in the field of water and wetlands.

Production of Three Short Clips of Wetland Species

Visual media plays an irreplaceable and effective role on conveying the message to the audience therefore, to increase the level of public awareness about the importance of protecting the biodiversity of wetlands and wetland species, three short clips have been produced to introduce wetland birds (Flamingo, Dalmatian Pelican, and Whooper Swan in the Dorge Sangi wetland). The enthusiasts can visit this video clip on: https://www.aparat.com/iranwetland



A Documentary on the Facilitation Story «The Lasting Footprint»

The documentary series “The Lasting Footprint” is based on a book with the same title, the story of local and young facilitators who, using their knowledge and learning that have been trained and assisted during the years of the project of “Modeling Local Community Participation in the Lake Urmia Restoration”, to persuade local farmers to reduce water consumption and rehabilitate the Lake Urmia.

Sub-Campaign of Pahlavan Talab

In recent years, many of the country's wetlands have faced serious challenges. In addition to the problems of water scarcity and drought, people and local communities also play an important role in restoring the wetlands. The National Campaign "My Share for Wetlands" with a series of promotional and information activities, has attracted participation to recognize and increase public awareness for 26 wetlands in the country. In addition, this movement has tried to raise the awareness of the large group of the Public Sports Federation about the importance of protecting the valuable ecosystems of the wetland by launching a sub-campaign called Pahlavan Talab.

Implementation of Three Programs in the Field of Communication, Education, Participation and Awareness Raising (CEPA)

The Ramsar Convention CEPA program was discussed in 2016 at the 12th General Assembly of the Convention and is once again recommended to the States Parties to the Convention to put the development, implementation, and oversight of the Communication, Education, Participation and Awareness-raising (CEPA) program on their agenda. Its overall purpose was in follows: “People taking action for the conservation and wise use of wetlands.”

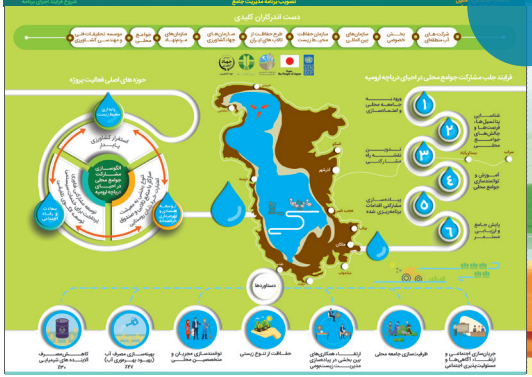
Among the measures taken by the CIWP in the field of CEPA in the last six months, the following can be mentioned:

1. Implementation of a CEPA program in Urmia: Holding two online webinars for 110 high school teachers in West Azerbaijan to acquaint them with the basic concepts of the ecosystem approach, CEPA, and sustainable livelihood.
2. Implementation of CEPA program in Bakhtegan wetland: 30 agricultural promoters of the Ministry of Jihad Agriculture from all over Fars province visit the area upstream and downstream of Bakhtegan Lake
3. Implementation of CEPA program in Khuran Estuary wetland: including equipping Khuran Estuary CEPA center, holding capacity building workshops for a total of 50 women, including familiarity with the functions of the wetland, mat weaving workshop with palm leaves, and spice production workshops


بازدید آموزشی مروجان کشاورزی شهرستان های فارس
از حوضه تالاب بختگان
تالاب خورخوران
Khuran Straits Wetland
مساحت تالاب بیش از ۱۰۰۰۰۰ هکتار و بزرگترین تالاب دریایی خاورمیانه می باشد.
درختان حرا را می توان یکی از عجیب ترین و منحصر بفرد ترین جاذبه های تالاب
نامید. وجود این درختان ، اکوسیستم فوق العاده ، پرندگان مهاجر،آبزیان نادر این
تالاب را در زمره ی پربارترین تالاب های دنیا قرار داده است.

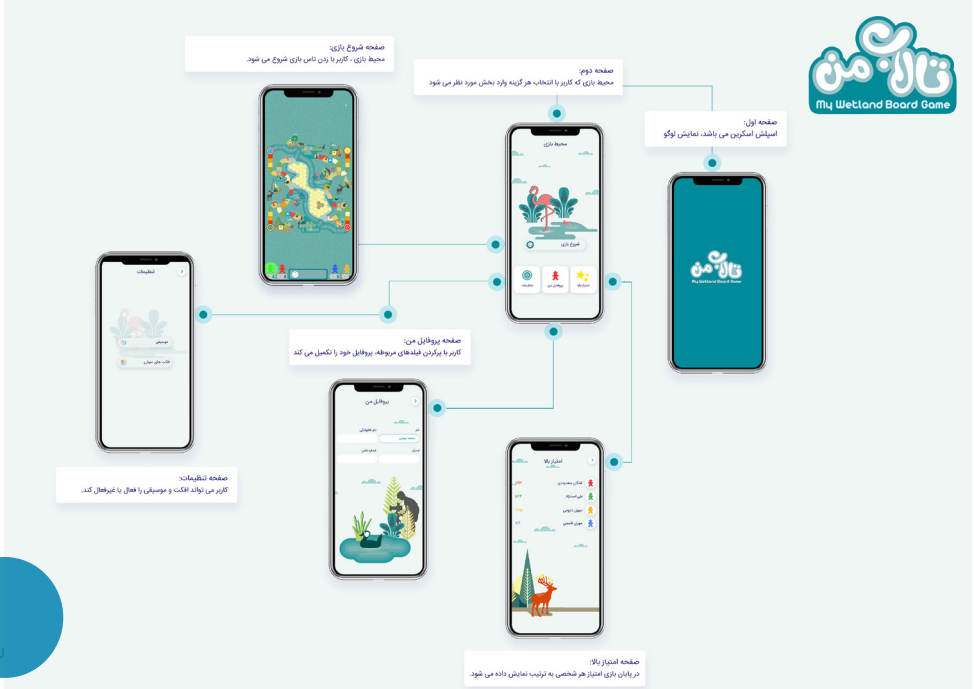
Publication of Experiences and Achievements of the CIWP

Production and publication of technical and general books to raise awareness and education, as well as reflecting and documenting the activities and achievements of CIWP have been among the activities of the project's communications section in the past six months.



Offline and Online Mobile Game of “My Wetland”

Due to the importance of paying attention to children’s education as one of the main and fundamental audience groups on one hand and the role of media and online tools in the daily lives of young people and kids, on the other hand, the CIWP was created offline and online mobile applications of a participatory and competitive game of “My Wetland”.



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"Saving Wetlands: for People, for Nature"

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سازمان حفاظت محیط زیست

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