IT-HR cross border priorities for the protection of coastal wetlands

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Executive Summary

This document aims to define a set of cross border priorities to be shared among project partners through the CREW Observatory.

An assessment of the Italian and Croatian coastal protected wetlands specificities has been conducted with an EU macro-regional strategic vision in order to highlight common characteristics, problems and challenges and share common criteria and objectives to be pursued in Wetland Contracts implementation

This document has been structured into four main parts:

- An outlook on wetlands (by UNICAM)
- A cross-border focus on IT-HR coastal wetlands characteristics, problems and challenges (by NATURA HISTRICA)
- Policies and legal framework for the protection and management of wetlands (by UNICAM)
- Common criteria and objectives to be pursued in IT-HR wetland contracts (by UNICAM)

The CREW OBSERVATORY (all partners) filled a knowledge questionnaire, discussed CRITICALITIES AND RECOMMENDATIONS FOR WETLAND CONTRACTS IMPLEMENTATION PROCESS during the online meeting on 20th July 2020 and validated the final version.

1. AN OUTLOOK ON WETLANDS

1.1. Wetlands' definition

Wetlands include a wide variety of habitats such as marshes, deltas, lagoons, peatlands, floodplains, rivers and lakes, and coastal areas such as saltmarshes, mangroves, and seagrass beds, but also coral reefs and other marine areas no deeper than six metres at low tide, as well as human-made wetlands such as waste-water treatment ponds and reservoirs. Wetlands are land areas that are flooded with water either all the time, or seasonally. Coastal wetlands include saltwater and freshwater wetlands located within coastal watersheds. Coastal wetlands are influenced by fluctuating water levels – such as rocky shores, coastal lagoons – and provide a habitat for a vast array of organisms including many endangered species.

1.2. Wetlands' ecosystem functions and services

Wetlands are vital for human survival. They include some of the world's most productive ecosystems and provide ecosystem services leading to countless benefits. Wetlands include permanently or seasonally inundated freshwater habitats ranging from lakes and rivers to marshes, along with coastal and marine areas such as estuaries, lagoons, mangroves and reefs. The global water cycle underpins primary production and nutrient recycling and provides fresh water and food for people. Wetlands are used for transport and hydropower. They provide raw materials and genetic resources, including medicines. They also help to mitigate floods, protect coastlines and store and sequester carbon. Many are important for culture, spiritual values, recreation and inspiration.

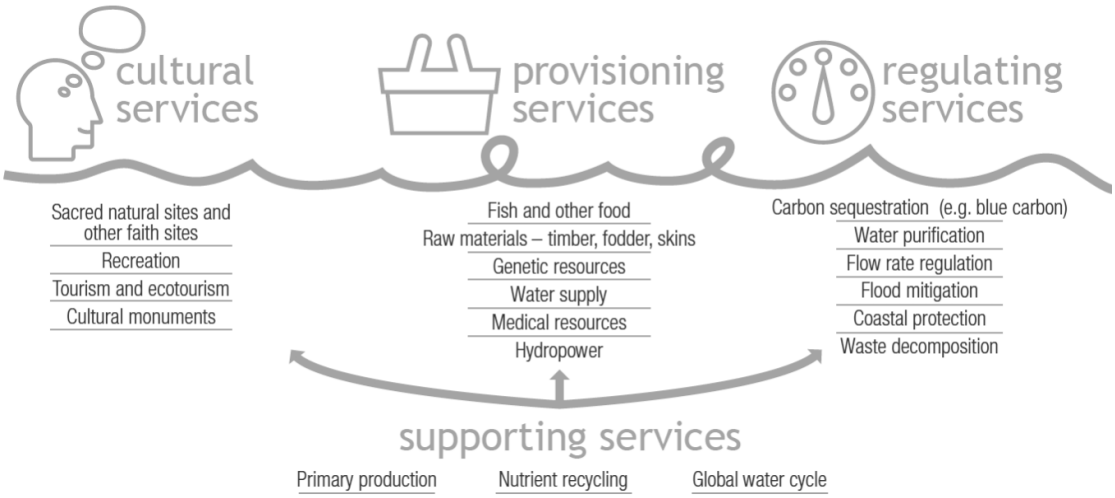

Figure 1 - Wetlands' ecosystem services

2. A FOCUS ON IT-HR COASTAL WETLANDS CHARACTERISTICS, PROBLEMS AND CHALLENGES

2.1. IT-HR Coastal wetlands' natural features and ecological behaviour

Although varying quite a lot in the size all pilot areas are characterized primarily by high biodiversity. Due to specific hydrological and hydrogeological features, all areas have very high diversity of habitats. As a consequence, there is also high diversity of species.

All pilot areas are very important places for birds. Their role of being a resting place for birds during spring and/or autumn migration is especially stressed. Also, they provide shelter and rest for wintering birds, and serve as an important nesting sites for some bird species.

Other features common to all areas is that they all have:

- At least some proportion of brackish water;
- High variation of ecological factors (salinity, water depth, water temperature etc.);
- Halophile vegetation of some kind - at least fragmentary, but in some cases very extensive;
- Vegetation of sand dunes (characteristic more for the Italian sites and Neretva Delta in Croatia);
- Numerous plant and animal species (other than birds); fishes and amphibians being stressed;
- Variable degree of human influence, both historically and contemporary, which resulted also in having different types of anthropogenic habitats within the pilot areas.

Another common thing shared by all pilot areas is that their natural values have been already recognized, nationally or internationally, or both. Some of them have the status of natural reserve, some are on the Ramsar list of important wetlands or else. As a rule, they are all, partly or totally, part of the Natura 2000 network, being Sites of community importance (SCIs), and/or Special protection areas (SPAs).

2.2. IT-HR Coastal wetlands' common problems and challenges

By analysing the problems and challenges that pilot areas are facing, it can be concluded that the biggest threat that all pilot areas are facing is the loss of overall biodiversity. Causes of that can be divided into several large groups. Consequences are multiple, and usually produced by interaction of several causes. All these factors combined pose a potential threat of reducing the quality and/or altering the habitat conditions thus leading to the loss of biodiversity.

Several groups of activities causing problems for wetland areas have been identified:

<u>Agriculture and industry</u>

Most of the pilot areas and their catchment areas are surrounded by very industrialized and urbanized areas, which is especially true for Italian pilot areas. The negative effects can be summarized as follows:

- Increased demand for water for industry and intensive agriculture – the water is usually taken form the river/wetland system itself, altering its hydrological regime,

- Production of industrial and communal waste have a negative impact for soil, water and water/sea bed,
- Chemicals and fertilizers used on the agricultural land are being washed away to the water system,
- Conversion of natural and semi-natural ecosystems to large patches of agricultural land and planting of monocultures causes the alteration of plant and animal communities and significantly reduces the landscape diversity and biodiversity, especially when no attention is paid to leaving some patches of hedges, trees etc.
- Large infrastructural interventions such as building dams, basins and irrigation systems significantly change the hydrological conditions in a larger area and may cause increased salinity, lower sediment deposition at the river mouth, river incision etc.

Tourism

In all pilot areas, interest for tourism is increasing, which doesn't necessarily have to have a negative connotation, but in some of them it puts a considerable pressure on the ecosystem functioning. The adverse impacts of the tourism are as follows:

- Increased demand for water causes the increased uptake of water from the system,
- Increased amount of all kind of waste produced by tourists - some of that waste, especially when combined with inadequate sewage system ends up in the wetland ecosystem,
- Increased disturbance of the nesting or resting birds and other animals (noise, scaring animals away…),
- Increased trampling effect upon fragile vegetation communities (e.g. on the sand dunes),
- Increased local transport, especially by boats – increases the possibility of spills and influences the sediment dynamics in shallow lagoons.

Another point worth mentioning connected to tourism is that it often exerts very high pressure over the limited time (peaks), usually during the most sensitive periods in the wetland annual cycle (i.e. during summer vacations there is usually less water in the wetland ecosystems, and at the same time it is the breeding time for many species).

Climate change

Climate change was pointed out as a cause of future problems, creating extremes and different environmental conditions which could be detrimental to a number of species present today.

It will be expressed through:

- Increased water levels and water temperature,
- Changed/increased salinity,
- Changed patterns of sediment deposition and sea bed dynamics,
- Increased soil erosion,
- Increased chance for appearance of allochthonous and invasive species of fish, plants, insects etc., well adapted to newly created conditions.

Other direct anthropogenic impacts

Fishing, hunting and extensive agriculture were in many pilot areas traditional for centuries. In some areas though, there is increased pressure on natural resources, due to non-traditional hunting or fishing.

There are also some other direct influences such as:

- poaching, especially on water birds and fish,
- land abandonment – causes natural eutrophication processes in smaller water bodies,
- increased golden jackal and wild boar presence, mainly due to bad hunting practices – these species can feed on flora and fauna, including young chicks and thus directly influence the biodiversity.

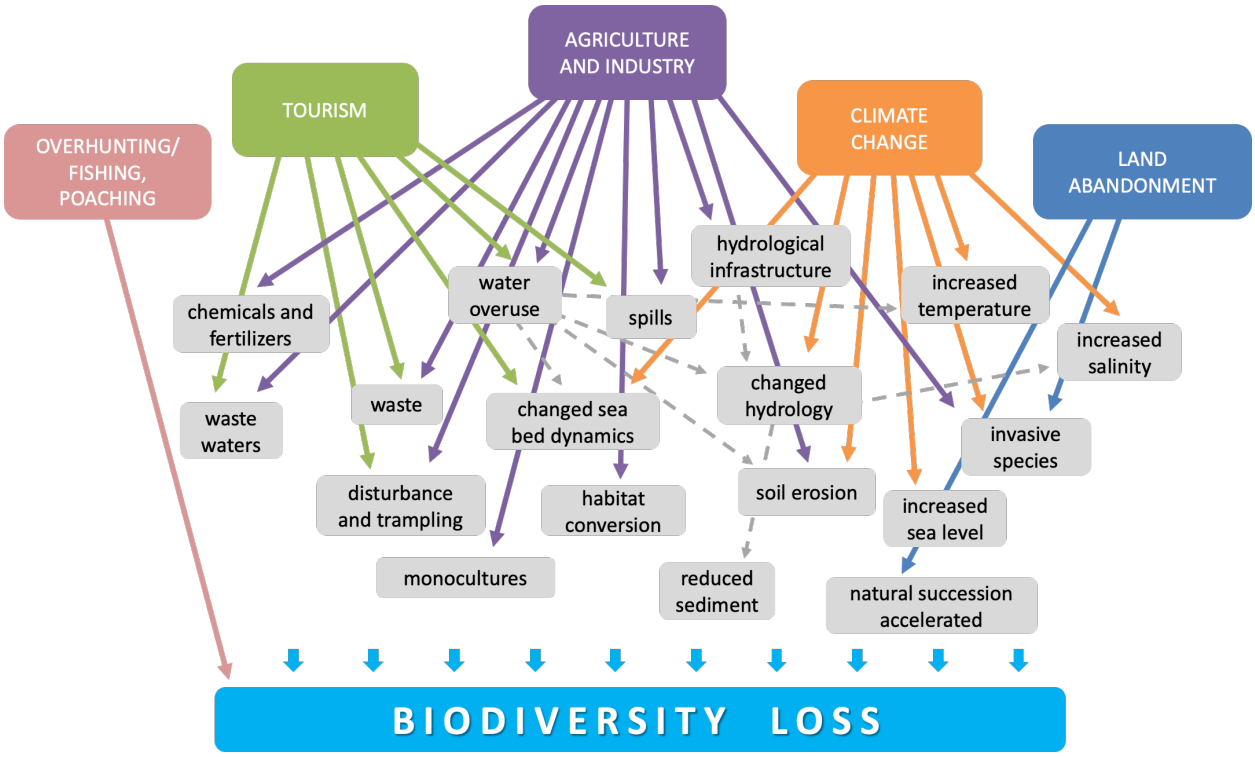

Figure 2 – Main causes of biodiversity loss.

Obviously, the challenges in all pilot areas are huge, the biggest being to balance economic development, including tourism, with the need of assuring the viability and diversity of wetland ecosystems. Dependence on local politics, especially in smaller communities, can pose a big problem, as well as the split jurisdiction of different management levels. Modification of agricultural practices such as switching to sustainable agriculture and using purified water for irrigation are certainly amongst the biggest challenges. Permanent education at all levels and continuous coordination of all stakeholders will have a great role in the process.

3. POLICIES AND LEGAL FRAMEWORK FOR THE PROTECTION AND MANAGEMENT OF WETLANDS

3.1. International references

- The **Convention on Wetlands** (Ramsar, Iran, 1971) is an intergovernmental treaty whose mission is "the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". The wise use framework developed by the Convention provides a mechanism for ensuring that wetlands are incorporated into the global agenda for sustainable development, supporting initiatives relating to biodiversity, climate change, disaster risk reduction and land degradation.
- The **Convention on Biological Diversity** (1992) is the second most relevant international mechanism for the protection of wetland areas, adopting an action plan on ecosystem restoration, intended to be a flexible framework to promote the restoration of degraded natural and semi-natural ecosystems.
- **UN Sustainable Development Goals** (2015): Wetlands are central to meeting many of the United Nation's 17 Sustainable Development Goals (SDGs) and 169 associated targets. SDG 15 specifically calls for conservation and sustainable use of "inland freshwater ecosystems and their services". SDG 14 encourages protection of coastal and marine areas. SDG 6 focuses on water and sanitation with a target relating to trends in water-related ecosystems, which will draw on data from Ramsar. Several SDGs are modelled on Aichi targets (see below) and like them will be revised after 2020.
- The **Aichi Biodiversity Targets** are part of the Strategic Plan for Biodiversity 2011-2020, from the Convention on Biological Diversity. Target 5 aims to at least halve, and ideally eliminate, loss of natural habitats by 2020, and Target 11 aims to conserve at least 17% of terrestrial and inland water, and 10% of coastal and marine areas by 2020 in "effectively and equitably managed, ecological representative and well connected systems of protected areas and other effective area-based conservation measures". Target 10 focuses on conservation of coral reefs, Target 6 on sustainable use of aquatic species and Target 7 on management of aquaculture.
- The **UN Convention to Combat Desertification** (1996) set a target for land degradation neutrality to halt the slide towards further degradation.
- The **Paris Agreement** (2015). This calls on States to develop Nationally Determined Contributions (NDCs) to address climate change, with nature-based solutions as a key component, including from wetlands. These have a critical role in both adaptation and mitigation; in the latter through carbon storage and sequestration, particularly in peat soils and blue carbon in coastal waters. Encouraging countries to include wetland conservation and management in NDCs is a major priority.

3.2. European references

- The **new EU Biodiversity Strategy for 2030** "Bringing nature back into our lives" is one of the main pillars of the European Green Deal. The new Strategy aims to establish protected areas for at least 30% of land and 30% of sea in Europe, to restore degraded ecosystems at land and sea across the whole of Europe by increasing sustainable agriculture, halting the decline of pollinators, restoring at least 25 000 km of EU

rivers to a free-flowing state, reducing the use and risk of pesticides by 50% and planting 3 billion trees by 2030.

- Both the **EU Birds Directive** (2009/147/EC) and **Habitats Directive** (92/43/CEE) prescribe actions that support the conservation and restoration of wetlands. The Birds Directive requires EU Member States to preserve, maintain and re-establish sufficient extent and diversity of habitats for all wild birds (Article 3), whilst the Habitats Directive requires Member States to report on compensation measures taken for projects having a negative impact on Natura 2000 sites or on derogations they may have applied to the strict protection measures (Article 6.4). For the Habitats Directive, 47 of the 233 habitat types listed in its Annex I (20%) are wetland habitats, and about 290 species are linked to wetland ecosystems. Hence, measures to meet the goal of ensuring favorable conservation status of these species and habitats are urgent and will improve the extent and ecological condition of wetlands across Europe, including areas within the Natura 2000 network.
- The **EU Water Framework Directive** (2000/60/CE) aims at the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater. Its overall goal is the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater. It seeks to ensure that all aquatic ecosystems and, regarding their water needs, terrestrial ecosystems and wetlands, attain 'good status', initially by 2015. A WFD cyclical management planning process then involves a characterization and assessment of impacts on the districts, environmental monitoring, the setting of environmental objectives, and the design and implementation of protection and restoration measures. It promotes the active participation of all interested parties in the implementation of the directive itself, particularly in the elaboration, review and updating of river basin management plans.
- The **EU Flood Directive** (2007/60/CE) is related to the assessment and management of flood risks and in particular art. 13, paragraph 5, which provides that river basin management plans can be supplemented by more detailed programs and management plans for sub-basins, sectors, problems or water categories in order to address particular aspects of water management.
- The **EU Green Infrastructure Strategy** (a strategically planned network of natural and semi-natural areas) highlights the importance of maintaining and restoring functional ecosystems as a foundation for a sustainable Europe. The strategy promotes spatial land use planning and territorial development and nature-based solutions. With the Natura 2000 protected areas as its backbone, the strategy seeks to ensure the presence of patches of representative vegetation types, thus establishing ecological networks and flows that underpin the ecological integrity of the wider landscape.
- The **Marine Strategy Framework Directive** aims to achieve Good Environmental Status (GES) of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. It is the first EU legislative instrument related to the protection of marine biodiversity, as it contains the explicit regulatory objective that "biodiversity is maintained by 2020", as the cornerstone for achieving GES. The Directive enshrines in a legislative framework the ecosystem approach to the management of human activities having an impact on the marine environment, integrating the concepts of environmental protection and sustainable use.

- The **EU Strategy for the Adriatic-Ionian Region** is a macro-regional strategy adopted by the European Commission and endorsed by the European Council in 2014. The Strategy aims at creating synergies and fostering coordination among all territories in the Adriatic-Ionian Region (Italy, Croatia, Slovenia, Greece, Albania, Montenegro, Bosnia Herzegovina and Serbia). The general objective of the EUSAIR is to promote economic and social prosperity and growth in the region by improving its attractiveness, competitiveness and connectivity. The Strategy is founded on four thematic priorities/pillars representing key challenges as well as key opportunities in the region: 1) sustainable tourism, 2) environmental quality, 3) connecting the Region, 4) Blue Growth. The specific objectives for the third pillar are: 1) To ensure a good environmental and ecological status of the marine and coastal environment by 2020 in line with the relevant EU acquis and the ecosystem approach of the Barcelona Convention. 2) To contribute to the goal of the EU Biodiversity Strategy to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restore them in so far as feasible, by addressing threats to marine and terrestrial biodiversity. 3) To improve waste management by reducing waste flows to the sea and, to reduce nutrient flows and other pollutants to the rivers and the sea.

3.3. Italian and Croatian references

In **Italy**, the reference regulatory framework for the environmental sector is mainly represented by Legislative Decree No. 152 of 2006, also called the **Environmental Code**. The Italian Environmental Code contains rules on soil protection, combating desertification, protection of water from pollution and management of water resources. The defence of the soil and the fight against desertification, the protection of water from pollution and the management of water resources, is reported in part III of the Environmental Code. In particular, article 24 establishes that for each project, the direct and indirect effects of its realization that concern humans, flora, fauna, soil, surface and groundwater, air, must be considered. The climate, the landscape, the material goods, the cultural and environmental heritage and the interaction between the factors mentioned above. This code is complemented by hydrographical district planning at the catchment and sub-catchment level, by regional and provincial strategic planning instruments, by spatial planning instruments and by regional documents containing guidelines and base level requirements of river contracts.

In **Croatia** the reference regulatory framework for the environmental sector are mainly:

- **Environmental Protection Act** defines basic concepts related to sustainable development and defines state institutions, their powers and obligations in drafting relevant policy documents related to natural resources. It provides a general framework for various instruments aim of which is to prevent damage to the environment from human intervention.
- **Nature Protection Act** (80/2013, 15/2018, 14/2019, 127/2019) regulates the whole system of nature protection in an integral way – biodiversity, geodiversity and landscape diversity. It covers issues such as protected areas and other natural values, management of protected areas, management of ecological network (Natura 2000), and so on.
- **Water Act** (66/2019) regulates the legal status of waters, the water estate and water management facilities, management of water quantity and quality, protection from adverse effects of water,

detailed amelioration drainage and irrigation, special activities for the purposes of water management, institutional organisation of performing these activities, and other issues related to waters and the water estate. Wetland areas are mentioned in Article 40 related to the water protection where besides others, aims to "prevent further deterioration, to protect and improve the status of water ecosystems and, in view of the need for water, land ecosystems and wetland areas directly dependent on water ecosystems" and "to prevent further deterioration and to protect and improve the status of water ecosystems and, in view of the need for water, land ecosystems and wetland areas directly dependent on water ecosystems".

4. COMMON CRITERIA AND OBJECTIVES TO BE PURSUED IN IT-HR WETLAND CONTRACTS

4.1. Common themes to be addressed during the Wetland Contracts participatory process (Territorial labs)

- HYDROGEOLOGICAL RISK AND HYDROMORPHOLOGICAL DYNAMICS
- COASTAL EROSION
- TOURISM (pressures, impacts, sustainability)
- LOCAL DEVELOPMENT AND GREEN ECONOMY
- SOCIO AND CULTURAL DEVELOPMENT (local communities, cultural heritage, traditional activities)
- AGRICULTURE (fertilization, pesticides, irrigation, intensive patterns) AND ECOSYSTEM SERVICES
- NATURE AND BIODIVERSITY (habitats quality, species, protected areas, alien species, ecological network)
- CLIMATE CHANGE RESILIENCE AND ADAPTATION
- WATER (use, quantity, quality, salinization, salt water intrusion, pollution)
- HUNTING
- FISHING AND AQUACULTURE
- ILLEGAL ACTIVITIES (illegal hunting, fishing, touristic activities, discharges, fires)
- INFRASTRUCTURES AND MOBILITY
- GOVERNANCE
- EDUCATION AND AWARENESS RAISING

4.2. Common objectives to be included in the strategic vision of the Wetland Contracts:

The activation of a Wetland Contract is particularly significant in order to activate shared risk prevention strategies and policies, protection of the lagoon system, enhancement of environmental resources and local development, through integrated strategic planning and programming.

NATURE AND BIODIVERSITY	▪ to increase the conservation status of key animal and plant species; ▪ to protect the aquatic environment and the ecosystems connected to it;

	▪ to reduce fragmentation and vulnerability of natural habitats taking into account the movement of fauna in the context of climate change; ▪ to take into account the biology of wild species and facilitate the genetic exchanges necessary for the survival of species of wild fauna and flora; ▪ to oppose salt water intrusion without obstructing fish migration; ▪ to reduce and prevent hydraulic risk/coastal erosion; ▪ to implement effective monitoring of habitats and species; ▪ to prevent fire; ▪ to raise awareness on illegal activities in order to change incorrect behaviours (fires, illegal hunting, illegal fishing)
WATER	▪ to promote a sustainable use of water resources; ▪ to reduce water pollution; ▪ to increase the water quality; ▪ to implement effective monitoring (e.g. water quality, water balance and hydraulic dynamics at the scale of the entire wetlands catchment area, minimum vital outflow and sediment management).
GOVERNANCE	▪ to actively involve stakeholders in the process of decision making and/or management of the area building a new community linkage amongst local stakeholders; ▪ to foster closer co-operation of the public and private stakeholders; ▪ to activate and guarantee a process of participation and public sharing on issues related to the lagoon and landscape in order to share choices and strategies.
SOCIO-ECONOMIC DEVELOPMENT	▪ to enhance the economic potential of the wetlands and integrate the maintenance and prosperity of economic activities in equilibrium with the wetlands fragile balance (balancing the need for further development of local communities and the need to protect natural resources); ▪ to promote sustainable forms of tourism compatible with environmental dynamics; ▪ to contribute to greater coordination and homogeneity in the promotion of the wetland territory, also in terms of landscape, use, economic development and slow tourism; ▪ to support multifunctional activities, integrating environmental protection with economic activities; ▪ to guarantee the existence and conservation of traditional activities; ▪ to raise awareness on wider public (inhabitants of the area and tourists) the importance of the wetlands, possible threats and sharing of information and disseminate water culture; ▪ Re-acquisition of the wetland and the territory by the local community as a usable element both from a recreational, naturalistic and cultural point of view.

4.3. Criticalities related to the Wetland Contract process

- lack of up-to-date scientific data;
- difficulties in the involvement of key stakeholders (1. lack of tangibility of participatory processes; 2. overlapping of existing processes / overstress of the stakeholders; 3. difficulty of transferring the potentiality of the processes; 4. risk of losing interest in the process implementation with time);
- difficulties in communicating with locals who perform illegal activities damaging the wetland (fires, hunting, fishing);
- participation has (hidden) costs. Some of the private stakeholder are concerned by the amount of time and resources that are required by a participatory process, that are a real cost for them; this affects the "quality of the stakeholders" because some relevant stakeholders may choose to self-exclude themselves, especially those small stakeholders that cannot afford to participate, while other that have spare time will be participating even with a low level of involvement;
- lack of guarantees of sound financial management in the future.

RECOMMENDATIONS

→ In choosing and analysing the target area borders, consider it at both local and catchment/hydrographic district level by identifying the core area and the influence area;
→ Use an integrated approach mixing economic and environmental objectives considering the interrelationships between ecological dynamics and economic flows;
→ Be aware of the previous participatory experiences and local initiatives developed in the target area, and build the participatory and communication strategies on their results in order to not make the same mistakes and overstress the stakeholders;
→ Make sure to engage all relevant stakeholders and interest groups: (i) keep encouraging them to participate in an active way in the process building a trusted relationship, (ii) schedule the Territorial Labs in order to guarantee their availability and participation and (iii) keep constant communication with stakeholders, giving them feedbacks on all stages of the process;
→ Carefully identify the conflicts among the selected stakeholders and be inclusive;
→ Involve both private and public local stakeholders;
→ Involve stakeholders representing different sectors (e.g. agriculture, biodiversity, culture, fisheries, local development, recreation, tourism);
→ Involve stakeholders representing different levels (from national public bodies with wider territorial scope to local farmers);
→ Keep monitoring the level and quality of the Wetland Contract implementation by collecting feedbacks on the level of efficiency, effectiveness and performance of the Wetland Contract in order to identify critical issues and unexpected factors, and indicate any need for reorientation in case of challenging circumstances;
→ Clarify, starting from the beginning of the process, that the activities foreseen by the Wetland Contract have to be really possible to realize in the medium-short term in order to prevent the stakeholders to

consider the Wetland Contract just as another “wish list” and to risk a decrease of their involvement. Carefully identify the financial resources for the actions foreseen by the Action Plan.