

Thymio Papayannis

# Action for culture in Mediterranean wetlands



Med-INA





Action for culture  
in Mediterranean wetlands



CONVENTION ON WETLANDS  
CONVENTION SUR LES ZONES HUMIDES  
CONVENCIÓN SOBRE LOS HUMEDALES  
(Ramsar, Iran, 1971)



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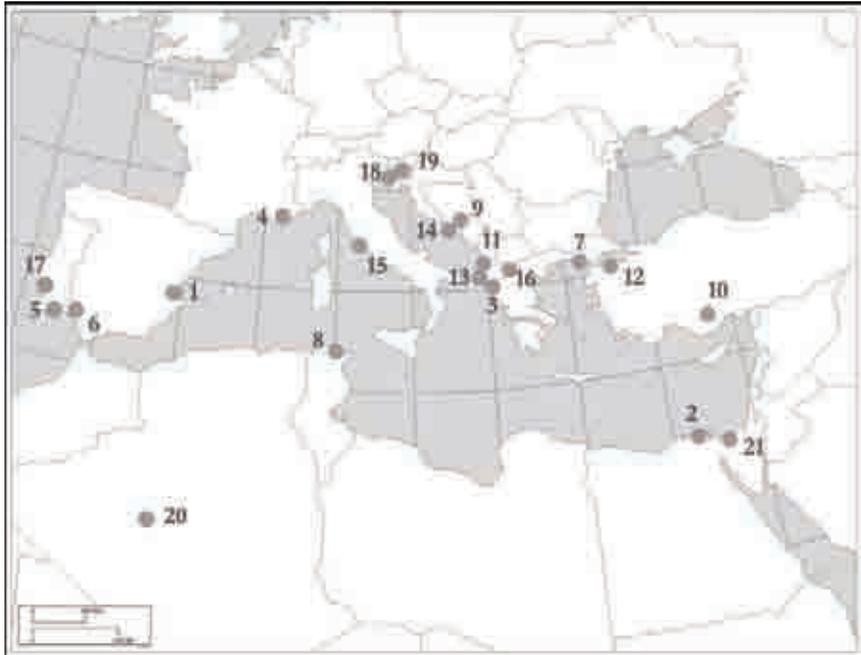
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Med-INA

Athens 2008

## Characteristic Mediterranean wetlands of cultural interest



- |                                |                                  |
|--------------------------------|----------------------------------|
| 01. Albufera de Valencia       | 12. Kuş (Manyas) Lake            |
| 02. Burullus Lake              | 13. Narta Lagoon                 |
| 03. Butrint                    | 14. Neretva Delta                |
| 04. The Camargue               | 15. Orbetello Lagoon             |
| 05. Castro Marim and Vila Real | 16. Prespa Lakes                 |
| 06. Doñana                     | 17. Santo André Lagoon           |
| 07. Evros Delta                | 18. Sečovlje Salina              |
| 08. Ghar el Melh               | 19. Škocjan Caves                |
| 09. Hutovo Blato               | 20. Tamentit and Sid Ahmed Timmi |
| 10. Kizoren Obrugu             | 21. Zaranik Lake                 |
| 11. Kune-Vain Lagoon           |                                  |

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## Abbreviations and acronyms

CAP	Common Agricultural Policy of the European Union
CBD	Convention on Biological Diversity
COP	Meeting of the Conference of the Contracting Parties
cu m	cubic meter(s)
ha	hectare(s)
ICOMOS	International Council on Monuments and Sites
km	kilometres
lt	litre
m	meter(s)
MaB	Man and the Biosphere Programme, UNESCO
Med-INA	Mediterranean Institute for Nature and Anthropos, Athens (Greece)
MedWet	Mediterranean Wetlands Initiative, Convention on Wet- lands
MedWet/Com	Mediterranean Wetlands Committee, Convention on Wetlands
MW/CWG	MedWet Culture Working Group
NGO	Non-governmental organisation
Ramsar	Convention on Wetlands (Ramsar, 1971)
RIS	Ramsar Information Sheets for Sites of International Importance
SEHUMED	<i>Sede para el estudio de los humedales mediterráneos</i> , University of Valencia (Spain)
SPP	Society for the Protection of Prespa
sq m	square meter(s)
tn	ton(s)
Tour du Valat	<i>Station biologique de la Tour du Valat, Le Sambuc</i> , Arles (France)
UNESCO	United Nations Environment, Science and Culture Organisation
WHS	World Heritage Site



*Roman antiquites, Butrint*

## Preface

### *A strategic approach to the cultural values of wetlands*

In 1995 Peres de Cuéllar chaired a UNESCO Commission on Culture and Development, and in the Commission's report *Our Creative Diversity* he states;

*Humanity's relation to the natural environment has so far been seen predominantly in biophysical terms; but there is now a growing recognition that societies themselves have created elaborate procedures to protect and manage their resources. These procedures are rooted in cultural values that have to be taken into account if sustainable and equitable human development is to become a reality.*

And again:

*Non-physical remains such as place names or local traditions are also part of the cultural heritage. Particularly significant are the interactions between these and nature: the collective cultural landscape. Only the preservation of these enables us to see indigenous cultures in a historical perspective. The cultural landscape forms a historical and cultural frame for many indigenous peoples.*

In fact, all landscapes consist of both a natural and a cultural dimension. The perceived division between nature and culture is quite artificial, and, in the case of landscapes, this divide is counter-productive as all landscapes are multidimensional and multifunctional. So, essentially all landscapes are cultural, and subject to cultural influences, and a source of cultural knowledge. And as such, sustainability of ecological systems is achievable only within the context of cultural landscapes.

In the same vein, we cannot understand and manage the 'natural' environment unless we understand the human culture that shaped it.

Our management itself becomes thus an expression of that culture. In the past, wetlands have often been seen as wastelands. For example, in the Farsi language in Iran, previous generations used the word Mourdab for wetlands, meaning literally deadland... Nowadays the word Talaab is used, indicating water. This is a powerful allusion to the way people and their world views, shaped through culture and language, can influence, as well as be influenced by, the natural environment.

We must, of course, understand also the environment to comprehend how it, in turn, reshapes that culture through feedback processes. Equal emphasis should, therefore be given to the cultural aspects of ecosystems in their management – a concept I have written about as biocultural landscapes.

Clearly, landscapes are a mosaic of ecological systems; forests, meadows, drylands, and, of course, wetlands. The impact of culture on wetlands, and vice-versa, has been especially significant in the Mediterranean, due to its strongly bi-seasonal, summer dry climate. And the Mediterranean region, embracing two great continents and grazing a third, is one of the most significant in the world for demonstrating and understanding the impact of cultural values on wetlands; not least because of the long association of people and wetlands in the Mediterranean.

This book assembles a great deal of valuable information on cultural values and wetlands – it will be a source of information and wisdom for many years to come, and will help inform our thinking on developing wise use and management of our ever diminishing wetlands resources. The Med-INA team are to be congratulated in assembling and promulgating this valuable compendium.

Peter Bridgewater

*We must not forget that biodiversity is central to many of the world's cultures, the source of legend and myth, the inspiration for art and music\**

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\* From a declaration on the Millennium Development Goals by the Heads of CBD, CITES CMS, Ramsar and the World Heritage Centre (WHC) in September 2005.



*Traditional building, Škocjanske jame*

## Introduction

### *0.1 Ramsar and cultural values*

In the preamble to the Convention on Wetlands<sup>1</sup>, signed in Ramsar, Iran in 1971, cultural values were mentioned as one of the important aspects of these significant sites. More specifically, the following statements were agreed at that time by the Contracting Parties:

*..RECOGNIZING the interdependence of Man and his environment...*

*...BEING CONVINCED that wetlands constitute a resource of great economic, cultural, scientific, and recreational value, the loss of which would be irreparable...*

In the decades that followed, while the scope of the Convention was broadening to include various other aspects of wetlands, little or no effort was made to take into account cultural values in the work of the Convention until the late 1990s. Perhaps a catalyst event for change was the Technical Session on the Cultural Values of Wetlands, held in the framework of MedWet/Com3<sup>2</sup> in 2000. During this event a draft resolution on cultural values was proposed by SEHUMED and was positively received by the participants.

Starting in 2001, on the initiative of the Ramsar Secretary General, Delmar Blasco, the Bureau instigated systematic work in order to introduce cultural values in the work of the Convention, through background research, internal consultation, building of alliances with

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<sup>1</sup> Known then as 'Convention on Wetlands of International Importance especially as Waterfowl Habitat'.

<sup>2</sup> Third Meeting of the Mediterranean Wetlands Committee, Djerba, Tunisia, 1-5 April 2000.

potential partners from many sectors of the human sciences, and preparation of the necessary documents<sup>3</sup>. As a result, and with the approval of the Standing Committee, a draft resolution and a background information document were presented to the Ramsar COP8<sup>4</sup>. After lengthy and at times acrimonious discussions among interested states, chaired by Spain<sup>5</sup>, a consensus was reached with some difficulty, and Resolution VIII.19 was finally approved unanimously with the title '*Guiding principles for taking into account the cultural values of wetlands for the effective management of sites*' (in Appendix 3).

In the framework of this event, the Spanish Ministry of Environment with the MedWet Initiative and the Ramsar Convention presented the book *Wetland Cultural Heritage*, written by SEHUMED and *Universidad Politécnica de Valencia*, where a classification of the different elements of wetland cultural heritage was presented. The various categories were illustrated with wetland examples from many parts of the world.

Through the discussions at COP8, it became clear that the main purpose of the effort initiated by the Convention through Resolution VIII.19 was to identify and understand the complex relations between the cultural and natural heritage, between human beings and nature in order to strengthen –or re-establish– the links between people and wetlands, thus contributing to their conservation and the wide use of their resources.

In many parts of the world, significant activities concerning cultural heritage related to wetlands and other protected natural areas have been carried out in the past. What is not yet fully established is a joint, integrated and multi-disciplinary approach to both natural and cultural aspects. This was the goal of Resolution VIII.19 and of the process it has initiated.

In this spirit, during the period that followed, the new Secretary General, Peter Bridgewater, made the strategic choice of encouraging

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<sup>3</sup> Work led by Thymio Papayannis, at that time Special Advisor to the Secretary General.

<sup>4</sup> Eighth Conference of the Contracting Parties to the Convention on Wetlands, held in Valencia, Spain in November 2002. COP8 had as its theme 'Wetlands: water, life and culture'.

<sup>5</sup> Represented by Professor María José Viñals.

Contracting Parties to implement Resolution VIII.19 in their own territories, so that lessons could be learned from the field, and a methodology gradually developed from actual experience, in a 'bottom-up' approach, with the results to be presented during Ramsar COP9<sup>6</sup>. This was also in accordance with article 17 of the Resolution<sup>7</sup>.

For COP9, MedWet was requested to organise a technical session on culture held on 12 November 2005. This consisted of presentations from various parts of the world on efforts to incorporate cultural values in wetland management. SEHUMED prepared an exhibition and a booklet on this theme, and Med-INA presented a CD-ROM on 'Action for culture in Mediterranean wetlands'. The draft of a second resolution on culture submitted by Oceania was debated at length –in a contact group and in plenary– and finally approved as Resolution IX.21 '*Taking into account cultural values*' [in Appendix 3].

To further the implementation of these two resolutions, in August 2006 the Secretary General of the Ramsar Convention established a working group on culture, consisting of representatives of the five regions and of the Mediterranean, of UNESCO and of BirdLife (for the IOPs.). The tasks of this working group were to update and complete the detailed guidance presented during COP8, on incorporating cultural values in the management of wetlands and to prepare a third draft resolution for COP10 (to be held in South Korea in late 2008).

## *0.2 The MedWet Culture Working Group*

On the Mediterranean level, a working group on the cultural values of wetlands was established within the MedWet Initiative in March 2004. Its mission was:

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<sup>6</sup> Kampala, Uganda, 7-16 November 2005.

<sup>7</sup> Which states: [The Conference of the Contracting parties] 'Requests that the Ramsar Bureau seek inputs from Contracting Parties, experts and practitioners, and local communities and indigenous peoples from around the world to enhance the information paper on cultural aspects of wetlands (COP8 DOC. 15) and the detailed guidance prepared for consideration by this meeting of the Conference of the Parties, with a view to publishing it as a background document, and to inform COP9 of the progress made'.

*...to encourage the incorporation of cultural values in the management of wetlands in the Mediterranean Region, in accordance with the guidelines of Resolution VIII.19<sup>8</sup>*

Thus the primary objective of the MedWet Culture Working Group (MW/CWG) was to facilitate and encourage the implementation of Resolution VIII.19 around the Mediterranean Basin, and to monitor the results of related actions undertaken at the local, the national and the regional levels. Through such monitoring, conclusions for further improvements of the Resolution would be derived, while the completion and elaboration of guidelines mentioned in the Resolution and the sharing of the experience gained with other regions would be advanced. Of course, the MW/CWG co-ordinated and aligned its work with the parallel activities of the Ramsar Bureau on cultural values. In addition, it prepared proposals for strengthening the scope and implementation of Resolution VIII.19, which were presented during Ramsar COP9.

This Working Group consisted of representatives of the MedWet



*Fishermen, Prespa Lakes*

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<sup>8</sup> From the Terms of Reference of the Working Group, dated April 2004.

Co-ordination Unit, SEHUMED, Med-INA and the Ramsar Bureau.

In March 2004, just as the MW/CWG was formed, SEHUMED organised in Valencia a cultural expertise workshop. At this event, in addition to the MW/CWG members, many experts from different scientific realms participated actively. The main goals of the workshop were to discuss and clarify ideas about cultural heritage concepts and categories, and to identify tools for enhancing the values and managing the cultural elements of wetlands. The conclusions of the workshop have been very useful for the further development of tools, such as the 'inventory and assessment of the cultural values of wetlands'.

During the second meeting of the MW/CWG, held in Athens on 30 July 2004, the work plan was discussed and agreed. For two main events preparations were needed; namely MedWet/Com6 (Tipaza, Algeria, December 2004) and Ramsar COP9 (Kampala, Uganda, November 2005).

For MedWet/Com6 these preparations included a short report on progress made by the Working Group Chair, followed by the preliminary review by Med-INA of Mediterranean sites with particular cultural interest, and a discussion of these (and other additional) sites during a side event, which was organised by the MW/CWG.

As agreed, the selection of appropriate Mediterranean sites would be based on a number of combined criteria, including the existence of important cultural values related to water and wetlands, initiation or planning of concrete measures to implement Resolution VIII.19, and proper conditions for collaboration (interest and willingness at both the local and the national level).

During the Tipaza side event, SEHUMED also presented its work on the inventory of cultural heritage.

For Ramsar COP9, as already mentioned, the activities planned included the further analysis of the sites selected and extraction of lessons from them, the preparation of an exhibition, a CD-ROM and draft publication on the cultural values of Mediterranean wetlands with material from these sites and the organisation, by MedWet, of a technical event with global scope for promoting the implementation of Resolution VIII.19, in which Contracting Parties were invited to present their experience on this matter<sup>9</sup>.

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<sup>9</sup> This event has been incorporated in the Technical Session on the Wise Use of Wetlands, on 12 November 2005.

Unfortunately, since 2006 the MedWet Culture Working Group has remained inactive, for various reasons.

In a parallel activity, the MedWet Project INTERREG SUDOE (2003-04), carried out by Portugal and Spain, among other actions has included the preparation of the data forms for inventorying and assessing the cultural heritage of wetlands, accompanied by an appropriate technical module. The first cultural database records are being assembled at present.

### *0.3 Preparation of the present publication*

As noted, the purpose of this publication is to encourage the incorporation of cultural values in the management of wetlands, in accordance with Ramsar Resolutions VIII.19 and IX.21, thus creating better conditions for their conservation and the sustainable use of their resources. In addition, the publication intends to document the inextricable and diachronic links of Mediterranean people to wetlands and water, and to demonstrate how these links can be strengthened and remain pertinent in our times.

Fully realising the fact that culture and cultural values are related to specific societies, the author adopted a 'bottom-up' approach, with deep respect to local specificities. He also tried to obtain and understand the point of view of local scientists, decision-makers and practitioners. This approach is fully within the spirit of Resolution VIII.19, which seeks consultation with a wide spectrum of stakeholders in improving the guidelines related to cultural values<sup>10</sup>.

Basic input for the book has been the knowledge obtained from a number of Mediterranean sites, with very different characteristics

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<sup>10</sup> Article 17 of the Resolution states: [The COP] 'REQUESTS that the Ramsar Bureau seek inputs from Contracting Parties, experts and practitioners, and local communities and indigenous peoples from around the world to enhance the information paper on cultural aspects of wetlands (COP8 DOC. 15) and the detailed guidance prepared for consideration by this meeting of the Conference of the Parties, with a view to publishing it as a background document, and to inform COP9 of the progress made'.



*Traditional mill, Škocjan Caves*

and background. Their common element is the existence of a very significant cultural and natural wealth and the need of its joint management. In some, efforts for the integrated approach to both culture and nature have already started, in the spirit of Ramsar Resolution VIII.19. In several, concrete actions are either at the planning stage or being carried out. The monitoring of their results will provide further useful lessons.

The material was collected mainly from local managers and scientists, as well as members of MedWet/Com and other experts, on a voluntary basis; the book would not have been possible without their invaluable contribution. Thus it should be considered as a collective effort within the broader MedWet 'family' and networks.

In addition, comparisons were made between sites facing similar situations, in an effort to draw conclusions that could be of broader use.

A first draft of the book was incorporated in the CD-ROM distributed in 2005 on the occasion of Ramsar COP9. The draft was also sent to all contributors and important feedback was received and incorporated, thus strengthening the collective nature of this publication.

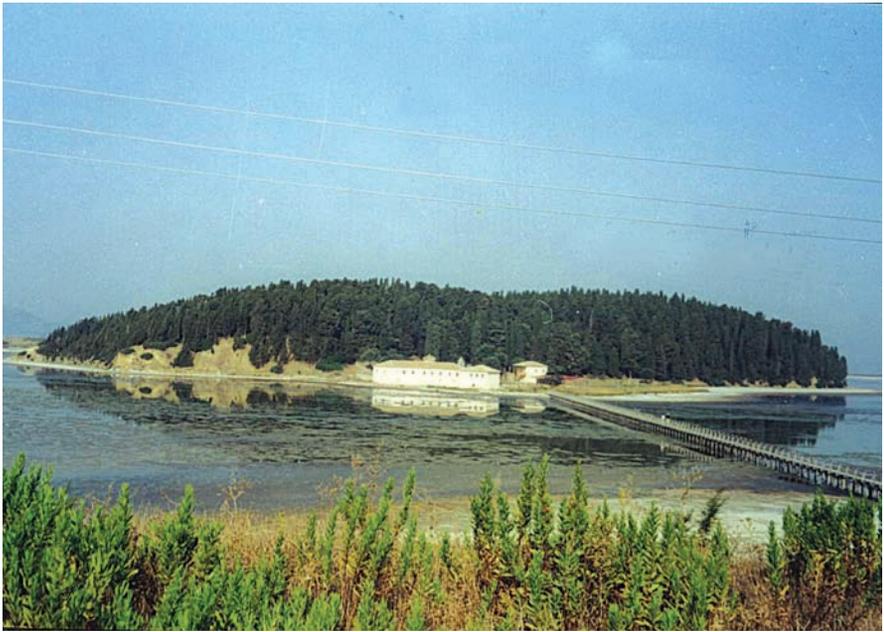
#### *0.4 Expression of gratitude*

The author wishes to express his gratitude to all those who have contributed information and visual material for the preparation of the book, as well as advice and assistance. These include (by alphabetical order of the country): Taulant Bino, Zamir Dedej, Auron Tare, Violeta Zuna (Albania); Ammar Boumezbeur (Algeria); Jaroslav Vego (Bosnia and Herzegovina); Eugen Draganović (Croatia); Magda Ghonem (Egypt); Sylvie Goyet, Raphaël Mathevet, Christian Perennou (France); Andreas Athanassiadis, Irini Lyratzaki, Myrsini Malacou, Aphrodite Sorotou, Fotini Vakitsidou (Greece); Mario Cenni (Italy); João Manuel Martins Madeira, Paula Emilia Silva (Portugal); Vanja Debevec Gerjevič, Andrej Sovinč (Slovenia); Pau Alonso, María José Viñals, Maryland Morant, Jordi

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Falgarona i Bosch and Josep-Maria Mallarach (Spain); Faouzi Maamouri (Tunisia); Selim Erdogan (Turkey).

Profound thanks are due to Peter Bridgewater, Secretary General of the Ramsar Convention (until July 2007) for writing the preface of the book, as well as to Sylvie Goyet, Facilitator of the MedWetCoast Project, for her contribution and to Dr. Christian Perennou (Tour du Valat), whose significant report on the Tamentit Oases (included as Appendix 2) provided invaluable insights on that most particular site. Finally, this publication would not have been possible without the financial and moral support of the MAVA Foundation and in particular Dr. Luc Hoffmann.



*Zverec Island, Narta*

## Chapter 1

# Cultural landscapes: water and wetlands

### *1.1 A theoretical approach*

Landscapes are the product of the dynamic interaction between the forces of nature and human activities. They constitute the lived context as experienced by human beings. Thus, landscape gains its structure from human projects that are carried out within a given environment. In this sense, all landscapes are cultural. Cultural landscapes, more specifically, are the result of successive reorganization and remodelling of the land in order better to adapt its use and spatial structure to the changing demands of society.

In the Mediterranean particularly, history has recorded many consecutive and even dramatic landscape changes<sup>11</sup>, which have left traces of the past. Today, most changes are seen as threats, as negative developments, as they usually result in loss of diversity, coherence and identity; these aspects have been characteristic of the traditional cultural landscapes for centuries, now rapidly vanishing. However, there are cases of human intervention working in harmony with nature, leading to a sustainable use of resources and resulting in landscapes of unique beauty.

Landscapes in the Mediterranean vary from seashores to high mountains, from dense forests to agricultural lands and pastures, from dry lands to rich wetlands. The latter are those to which emphasis is

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<sup>11</sup> The combined effect of major driving forces such as increased accessibility, urbanization and globalization and the impact of threats have been different in each period and have affected the nature and pace of changes, as well as the perception people have had about landscapes.

given in this publication. The obvious characteristic of wetlands is water, and water is the most important element for the existence of most living beings.

Water has movement that provides wetland landscapes with a visually dynamic aspect, while becoming a variable factor forming the landscape around it, i.e. by flooding, shore erosion, riverbed modification etc. The changing forms of water, turning for example into snow and ice, may have a powerful impact on visual landscapes. Furthermore, water affects the functions of ecosystems developing around it and consequently has an indirect impact on surrounding landscapes.

Wetlands are also shaped by human beings, who settle in areas around them and who for centuries have been trying to manage and utilize water by means of diverse constructions such as irrigation canals, jetties and harbours, water mills and dams. Excessive water extraction on the other hand has led –intentionally or unintentionally– to radical landscape changes.

In many ways, water and wetlands have a determining influence



*Drana, Evros Delta*

on societies and their culture. The interaction between them has often resulted in a wide spectrum of wetland landscapes significant in defining the character and identity of a place or region. Their landmarks and symbols have ancestral roots, which may contain many forgotten lessons. Thus, the wetland landscape structure is crucial for the maintenance of diversity, both biological and cultural. These landscapes are a source of fundamental, barely studied knowledge about sustainable management techniques, as in traditional agricultural, pastoral, fishing and construction techniques. They encapsulate unexplored wisdom and inspiration for improving future landscapes and may provide a concrete base for conservation.

## *1.2 Characteristic landscapes in Mediterranean wetlands*

The range of cultural landscapes of wetland areas, particularly in the Mediterranean, is great because of diverse geo-morphological and climatic conditions in the region and an extensive variety in human activities and their consequences. A few characteristic examples in this chapter include a river delta in the Adriatic, transformed by specialized agricultural activities, two inland freshwater lakes in the South Western Balkans, in which high biodiversity has been related to traditional activities, and an oasis in North Africa that constitutes an entirely man-made landscape with well-established and integrated natural and cultural values.

### *1.2.1 An agricultural landscape of special beauty<sup>12</sup>*

The *Neretva Delta*<sup>13</sup> in Croatia is characterized by its unique agricultural landscapes, formed in the course of centuries. By digging into parts of the wetland, opening canals and using the soil removed to build platforms above water level, suitable for cultivation, the local inhabitants have created a very distinct cultural landscape form. The resulting 'mosaic' aspect, consisting of water in open areas and canals,

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<sup>12</sup> Information provided by Eugen Draganović.

<sup>13</sup> For a short description of this site, see Appendix 1, section A14, p. 206.



*Characteristic landscape, Neretva Delta*

linear agricultural fields and intact sections of the wetland, is not to be found anywhere else in the Mediterranean. This landscape is threatened today by the intensification of agriculture.

After the last Ice Age the sea level rose, covering the entire region of the Neretva Delta and reaching as far as Hutovo Blato. The Neretva River had already carried gravel covering the karst relief of the valley. The wetland was formed upon withdrawal of the waters. Ground level emerged where sediment was abundant. On low accumulation of sediment, marshes and lakes were formed, and the site acquired its present characteristic natural structure.

The favourable conditions of the valley soil, in contrast to the sparse soil conditions of the karst areas further inland, encouraged the local inhabitants to cultivate the land. People made repeated efforts to overcome the natural obstacles posed by wetland habitats. The first step towards this direction was the *jendecenje*, or land reclamations.

The oldest written information about *jendecenje* dates back to the end of the 17<sup>th</sup> century, although it is believed that this practice is centuries older. Canals were dug perpendicular to the course of the river. The soil removed was piled up on the residual earth, raising it above water level. In this way they created an expanse of fertile soil unaffected by tides. Farmers used this technique also on the lower parts of the Neretva Delta, where the marsh and the clay soils obliged them to dig deeper and wider canals. The procedure was repeated yearly, so that sediments carried by the river flow could be used as natural fertilizer of the land cultivated. The dense network of ditches and canals was used also for navigation, as practically all agricultural activities were serviced by local boats.

The entire cycle of life was adapted to the water cycle and its peculiarities. Hunting, fishing and moderate cattle breeding were all traditional occupations of the local population. The scant soil was suitable for vine-growing and other light cultivations.

In the 1880s, the first major regulation works were carried out, when the old estuary in the Bay of Ploče was abandoned and the main course of the river was directed into the branch of Velike Lisne, making the Neretva navigable from Metković to the sea.

By 1948, only 2500 ha of land were cultivable, which was about 25% of the delta area. Viniculture of red grape cultivars –mostly *plavka* and *kadarum*– constituted the traditional form of agriculture, planted in low-lying soil that was inundated during winter. It was habitual to harvest the grapes directly from the Neretva boats. Fruit trees were also cultivated, not as independent plantations but planted mostly as hedgerows.

Large parts of the marshes and lagoons were reclaimed during the 1960s; agriculture was intensified and new crops were introduced. Approximately 5500 ha gradually became arable land, with mandarin orchards mainly. In addition, five hydroelectric plants were constructed in the territory of Bosnia and Herzegovina. Their dams retain both water and sediments and cause frequent and rapid water level fluctuations, even leading to water shortage in the summer.

Marshland reclamation –continuing until recent times– the regulating operations in the delta and the construction of major hydroelectric plants led to improvement of the standard of living of the local

population, at the same time, however, to serious environmental degradation. Arable land was illegally reclaimed and there was uncontrolled use of chemical pesticides and fertilisers. As a result, the formerly abundant marsh habitats have substantially decreased in surface, with negative impact on wintering of birds and fish spawning. Yet the diversity of the landscape, which includes reedbeds, open water marshes, the river itself, canals and agricultural 'islands' and the surrounding hills, still remains reasonably intact. It merits concerted efforts for integrated management of the natural and cultural resources, which may now be intensified through the collaboration of the two neighbouring countries (Bosnia and Herzegovina, Croatia) on the Lower Neretva<sup>14</sup>. Unfortunately, although nominated as a Ramsar Site, the Neretva Delta does not yet benefit from an appropriate national protection status.

### *1.2.2 The interaction of anthropos and nature*<sup>15</sup>

In the area of *Prespa Lakes*<sup>16</sup>, in the course of the ages traditional human activities (extensive agriculture, animal grazing, reed management and fishing) have transformed landscapes and increased their variety and biodiversity. In addition, the many Byzantine and Ottoman monuments and examples of traditional architecture blend harmoniously with nature, creating a rich and pleasing environment.

Lakes Micro and Macro Prespa are shared by Greece, Albania and the FYR of Macedonia. Lake Micro Prespa is 47 sq km in area with an average water level at about 850 m above sea level. It collects water from a mostly granitic and calcitic hydrological basin of 189 sq km, which includes snowy mountains (Varnoundas, Triklario, Vrondero) rising to over 2300 m. Micro Prespa is separated from the much larger Macro Prespa by a sandy strip of land of about 4 km in length. Due to the altitude difference between the two lakes, a thin channel (at Koula) allows the former to drain into the latter through a recently

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<sup>14</sup> Initiated in 2004, through the efforts of the MedWet Co-ordination Unit, with the establishment of a joint Co-ordination Committee, which unfortunately does not seem to operate regularly.

<sup>15</sup> Information provided by Myrsini Malacou.

<sup>16</sup> See Appendix 1, section A16, p. 210.



*View of Micro Prespa*

rebuilt sluice<sup>17</sup>. The climate of the area belongs to the Humid Mediterranean Type<sup>18</sup>.

The area of Prespa has been a vibrant region over the centuries and has been shaped both by nature and people, resulting in a rich natural environment and an invaluable cultural heritage. Natural beauty and biodiversity exist there, but human involvement constitutes a key element. Prespa has been an environment offering plant, animal and mineral resources, as well as shelter to a succession of human societies, providing them with the opportunities for a wide spectrum of activities – political, economic, artistic, spiritual.

The two lakes are among the oldest in Europe and this is the reason why they host many endemic life forms, as well as species with a very narrow geographic range in the Balkans. The vegetation varies from submerged aquatic formations and reedbeds to shrublands of junipers and oaks, to forests of oak, beech, mixed broadleaves, to alpine grassland. In total, there are 1326 plant species in Prespa, 23

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<sup>17</sup> Constructed by the Society for the Protection of Prespa in the framework of a LIFE Nature project.

<sup>18</sup> According to Emberger's bioclimatic classification.



*Agios Achillios Basilica, Prespa Lakes*

freshwater fish species, 11 amphibian and 21 reptile species, more than 42 mammal species, which include brown bears, wolves, otters and chamois, and over 260 bird species.

Prespa is also an area rich in cultural elements dating back to the Neolithic (in the FYR of Macedonia and Albania) and Bronze Ages<sup>19</sup>. Biologist Giorgos Catsadorakis in his book *Prespa, a story of man and nature* wrote that *...time has rolled over Prespa*. Prespa is not simply a natural space, it is complex and always subject to sudden or unpredictable change in the political and social order, shaped by events, by war and peace, by creativity and abandonment.

The area has been a passage between Europe, Greece and the

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<sup>19</sup> The earliest known settlements, in the lake Micro Prespa (Greece), probably belong to the Bronze Age. The absence of Neolithic habitation may either be due to possible loss of sites as a result of lake level rise, or to the geographical isolation of the area itself, which would not have attracted occupation at that date.

Eastern Mediterranean. Diverse peoples during the great migrations of prehistory in the Aegean (c. 1200 BC) probably crossed the area, while much later and during the Roman period (140 BC-300 AD), Prespa lakes were close to and connected with the *Via Egnatia*<sup>20</sup>. Because of the great economic and military importance of this road during the Roman and Byzantine periods, Prespa could not have been culturally unaffected. This is demonstrated by the Byzantine monuments which are still evident throughout the region.

At the same time local natural resources have been a decisive factor in causing and perpetuating changes in the landscape, through their impact on human activities. Freshwater in particular is the main asset of the area, on which all species including human beings depend, while the land is constantly shaped by the force of its movement. All the above had a great impact on Prespa and its different landscapes ranging from lakeshore to high mountains, from agricultural fields to stock-farming areas, from dense forests to wet meadows.

### 1.2.3 *A created cultural landscape*<sup>21</sup>

The *Oases of Tamentit* and *Sid Ahmed Timmi*<sup>22</sup>, in southern Algeria, constitute cultural landscapes created solely by human actions over thousands of years, in the middle of the inhospitable terrain of the Sahara. Due to their particular cultural character, such as the magnificent architecture of the *ksars* and the fortified towns in the area, they have been listed as a World Heritage Site. Nowhere else perhaps are human works and nature so intimately related, resulting in a totally integrated environment.

The Saharan deserts, harsh and beautiful, are dry and arid. The unfavourable weather conditions render subsistence almost impossible. Still, small patches of fertile land are scattered in the desert. How can life be sustained and furthermore flourish under such rigorous conditions? Although created by complex and laborious processes, oases are

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<sup>20</sup> It started from Dyrrachium, passed from Ohrid, continued to modern Resen and then to Thessaloniki and Constantinople.

<sup>21</sup> Information provided by Ammar Boumezbeur.

<sup>22</sup> See Appendix 1, section A20, p. 219.



*Date palms, Tamentit Oasis*

the living proof that life may exist under difficult circumstances.

Extremely high temperatures, rising by the exposure of unprotected land to the sun, pull towards the surface all the humidity from underground. When water evaporates, salt is released on the surface, resulting in sterility of the soil. These adverse conditions can however sometimes be altered, by chance or human will. Somewhere, a hole collects water, a rock makes shade, a seed takes root and the circle of life begins. The plant creates its own protection from the sun, water vapour is gathered, insects are attracted and a biotope is gradually formed. Human beings take advantage of such favourable circumstances and create oases.

Oases are unique environments, magnificent landscapes, comparable to islands in a vast ocean. In the second driest continent on earth, they constitute a model of wise water use, when elsewhere wetlands and rivers continue to be destroyed making water more scarce. Gardens of Eden, they perpetuate life and sustain thousands of people, animals and plants where formerly no life could exist. People have

invented or adopted several techniques that make oases a reality. Using the underground desert water cycle, they have developed extensive channel networks, the *foggaras*<sup>23</sup>, shafts dug several metres below surface, carrying and distributing water to oases villages. In 1962, there were 572 *foggaras* in the region, covering 1377 km.

The villages, amidst the palm trees that surround them, are also



*Ksour, Tamentit Oasis*

characterized by their unique architecture. The *ksour* are traditional structures that resemble fortresses, in an attempt to keep out the eternal enemy of the oases, sand. A *ksar* is a pre-Saharan habitat, a group of earthen buildings constructed closely together, within protecting walls. Locals use clay bricks and palm trunks to build their houses, a characteristic sight in the middle of the desert.

Oases are endangered on a daily basis by the movement of sand dunes threatening to swallow what people have created. In an attempt to stop their destructive force, date palm trunks are used to stabilize sand dunes in the vicinity of the sites.

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<sup>23</sup> For more details on the *foggaras*, see section 3.4.1, p. 69.

Fruit plantations are a sight to be admired and an achievement of human will. More than 100 varieties of dates grow in the Tamentit and Sid Ahmed Timmi Oases, providing a substantial income for people living in such isolation. The revenue cannot be compared to that of petrol extraction, but, as locals say, people cannot drink petrol, while on the other hand wetlands are a precious source of water. Apart from the date-palm cultivation, almond, lemon, grape, fig, orange, olive, pomegranate and apricot trees are grown, as well as cereals and vegetables.

Oases host a large number of flora and fauna and are home to several endemic species. Furthermore, they give shelter to numerous birds migrating from Europe to Africa. They find in the oases an ideal stop-over after a wearying migration across the Mediterranean Sea.

The traditional knowledge, the heritage of all the techniques and procedures for the preservation of the oases is a socially transmitted process from the elder to the younger generation through rituals. Rules and behaviour are charged with symbolic content, while sites and their environs are sanctified, indicating their importance. In the oases, all products are valued, from the buildings and the cultivated products to the smallest items manufactured (among which are hand-made artefacts, greatly appreciated by tourists). Everything is uninterruptedly connected to the microcosm of the oasis.

## Chapter 2

### Archaeological and historic building heritage

The proliferation of archaeological sites and of historic buildings in and around most Mediterranean wetlands, dating from periods as distant as the Palaeolithic<sup>24</sup>, indicates the intimacy of people in the region



*Roman theatre, Butrint*

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<sup>24</sup> Such as the remains of the Dispilio lacustrine settlement in Lake Castoria (North-western Greece).

with wetlands and water. Besides purely scientific interests, the integration of archaeological work and the study and restoration of historic buildings with the management of wetland sites seems highly justified in the attempts to reconnect contemporary people with the wetlands around them. In addition, the archaeological and historic building heritage can contribute significantly to visitor attraction and to the generation of additional income for local communities. Besides such economic benefits, visitors to wetlands –if properly managed within the carrying capacity of each site– can encourage civic pride and indirectly strengthen wetland conservation.

### *2.1 Archaeological aspects*

The archaeological heritage in Mediterranean wetlands is representative of most periods of human history and prehistory. A characteristic example is the *Evros* Ramsar site<sup>25</sup> (Greece), at the delta of the transboundary river also known as *Maritsa* (Bulgaria) or *Meriç* (Turkey). The region encircling the wetland testifies to human presence since ancient times. From *Doriskos* hill<sup>26</sup>, to the Roman city of *Traianoupolis*, with its bathhouses in the proximity of the wetland and the remains of *Via Egnatia*, to the Byzantine church of *Kosmosoteira* in *Feres* (said to be connected underground with the wetland), all sites were directly related to life and activities of the *Evros Delta* region and continue to play a significant role in the area.

Although archaeologists try to develop environmentally-friendly methods in their work, the excavation, study and conservation of archaeological sites may at times have divergent goals and priorities, and thus be incompatible with wetland management objectives, requiring mutual understanding and an integrated approach in arriving at a common approach.

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<sup>25</sup> See Appendix 1, section A07, p. 194.

<sup>26</sup> Where *Xerxes*, the Persian king, is said to have counted his army that was lined up across the *Deltaic* plain during his campaign in Greece in the early 5<sup>th</sup> century BC.

### 2.1.1 Archaeological remains in MedWetCoast sites<sup>27</sup>

Almost all of the MedWetCoast<sup>28</sup> sites contain archaeological remains, a sign that their areas have been used and valued for many centuries. In particular, one would point out the Roman ruins found in the *Burullus*, *Zaranik*<sup>29</sup> and *Omayed* sites (Egypt), the historic buildings and remains in the *Narta*<sup>30</sup> and *Orikumi* lagoons (Albania), and the ruins of Roman private baths linked to a salting factory at *Henchir Békir* (Tunisia).

In the *Tyre Coast* Nature Reserve (Lebanon), important archaeological remains include the walls of the artesian wells built by the Phoenicians, the aqueducts from Ras el Ain to the Hippodrome, and a maritime city built by the Romans; the relation to water is quite clear. The archaeological artefacts found in Tyre are a strong indication of past civilizations that have played major roles in building the history of the coastal city of Tyre, land of the Murex (declared a World Heritage Site in 1984).

In the Palestinian territories, the area bordering the *Wadi* to the north was the original Gaza City, one of the richest parts of the Gaza Strip historically. Numerous archaeological sites adjacent to the Wadi Gaza on its northern flank have been found. However, most are in a state of dereliction with no or minimal protection. Some are cultivated without any consideration for the importance of the site (Tall Ajjoul Ancient Site), threatened with total destruction as a large housing project has been launched (Tell Sakan) or not maintained and preserved, as in the case of Tal Umamer, site of many excavations, exhibiting structures and mosaics of a Byzantine church. Thus, the loss of both natural and cultural heritage is severe.

Within the framework of the project certain modest activities have been launched for the conservation of elements of the cultural heritage<sup>31</sup>. However, these cannot be maintained in the face of the serious political problems faced by the area.

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<sup>27</sup> Information provided by Sylvie Goyet.

<sup>28</sup> The MedWetCoast project concerns a number of wetland and coastal sites in six Mediterranean countries (see section 5.2, p. 126).

<sup>29</sup> For these two sites, see Appendix 1, sections A02, p. 184 and A21, p. 220.

<sup>30</sup> See Appendix 1, section A13, p. 205.

<sup>31</sup> See section: 5.5, p. 144.

### *2.1.2 A major archaeological wetland site<sup>32</sup>*

As the area has been inhabited since the late Bronze Age, *Butrint*<sup>33</sup> in Albania contains a great archaeological heritage<sup>34</sup>, intimately related with the Ramsar wetland. Its strategic position made it one of the most important ports of the Adriatic coast. In 167 BC, during the 3rd Mace-



*Triangular fortress, Butrint*

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<sup>32</sup> Information provided by Auron Tare.

<sup>33</sup> See Appendix 1, section A03, p. 186.

<sup>34</sup> Revealed after the excavations by Luigi Maria Ugolini during the Mussolini-initiated Italian occupation of Albania in the 1930s.

donian War, it fell into the hands of the Romans. They reclaimed several plots of land and divided them among their veterans. Since that time, the region had faced both poor and prosperous periods before it fell under Venetian occupation in 1084. Then, it changed hands amongst local despots and the Angevins, the Byzantine forces, the Venetians again and finally the Ottomans who ruled until 1912, when Albania became an independent state. By that time, it had diminished to a small fishing village, encircling the Venetian castle.

During recent years, the work of the Butrint Foundation has been instrumental in continuing archaeological work. Thus, the Greek theatre (3<sup>rd</sup>-2<sup>nd</sup> century BC) has been restored and is today in use for cultural events, and other important sites have been brought to light. The interaction between the management body of the Butrint National Park and the archaeologists working in the area has already provided useful lessons.

In spite of the complex character of this wetland site, in general there seems to be no major conflict between the different cultural activities developed in the area, such as archaeological excavation, research and enhancement, and nature conservation. However there have been times when archaeological requirements have created some minor difficulties to conservation efforts, but they were usually amicably resolved.

The reason for this is that the Butrint National Park is under management by a team comprising experts specialised in archaeology, monument restoration, tourism development and nature conservation. Every project, either cultural or environmental, undergoes careful review by the respective specialists, who give their opinion regarding potential conflicts and their resolution. Furthermore, projects respect the actual zoning system of the National Park, divided in biodiversity core areas (A), areas of special cultural interest (B1) and nature resource zones (C).

In addition, project implementation requires the prior approval of the Butrint Management Board whose composition enables trans-sectoral decision-making. The Management Board is headed by the Minister of Culture, Youth and Sports and its members represent the Ministries of Environment, Territorial Adjustment and Regulation, and the Institutes of Monuments and of Archaeology. Decisions are taken by

consensus among all the bodies represented, thus avoiding conflicts between different interests.

The inclusion of Butrint in the list of Ramsar Sites gave further momentum to the conservation initiatives related to the unique co-existence of the cultural and natural heritage in this major Adriatic wetland.

As Albania is at present in the process of finalizing a National Wetland Strategy, it is certain that the lessons learned in Butrint will prove to be invaluable.

## *2.2 Historic buildings and structures*

The conservation of buildings and other historic structures associated with wetlands presents major problems, as frequently the traditional activities for which they were constructed are abandoned today. Consequently, restoration efforts must be related to the re-establishment of such activities, which might not be feasible in a contemporary context. In such cases, other uses must be found, compatible with their initial functional purpose. Thus, in traditional Salinas, abandoned buildings have been turned into salt museums or visitor centres, as in the case of *Sečovlje Salina* (Slovenia)

### *2.2.1 Weaknesses and prospects in an Albanian context<sup>35</sup>*

The area surrounding the *Kune-Vain Lagoon*<sup>36</sup> in Albania is rich in historical constructions, including the medieval fort in Lezha. Their restoration and enhancement may be opportune in the effort to attract visitors and to provide alternative means of income for local inhabitants. Hitherto however, restoration of traditional architecture has not been considered as a priority either at the local or regional level. In the surrounding villages, restoration of buildings has been undertaken by private proprietors with mixed results. The lack of effective territorial and urban planning has undermined other initiatives (mainly from the NGO sector) for the restoration of historic buildings in accordance

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<sup>35</sup> Information provided by Zamir Dedej.

<sup>36</sup> See Appendix 1, section A11, p. 201.

with traditional occupations.

In the master plan of Drini Bay, in the vicinity of Kune-Vain, two areas have been defined for the construction of two-storey residential tourist facilities, in keeping with the local architectural tradition, but without success. The Hunting Lodge, constructed by Count Ciano and preserved as a facility until today, incorporates some elements of the local architectural tradition.

The fortress of Lezha and the walls of the old city of Lissus date to the years 390 and 284 BC respectively, founded by Dionysus of Syracuse. The area surrounding this medieval fortress has recently been subjected to pressures from uncontrolled urban development, with damages reported to the fortress itself. The fortress has suffered degradation from natural causes, and considerable restoration work has been carried out, but it has not been sufficient; nevertheless, the fortress is reasonably well preserved and attractive. The main problem for visitors is the road leading to it, which is in a bad state and almost unusable.

In spite of the above-mentioned problems, some efforts have recently been initiated, either for archaeological research (by the Institute of Archaeology), for monument conservation (by the Ministry of Culture, Youth and Sports) or for preventing [the] uncontrolled urban development (by the Lezha Municipality). Thus, outside the surrounding walls of the castle, in the old city of Lezha (Lissus), some illegal constructions of recent date were marked for demolition in 2005.

The archaeological and historic building heritage has been recognised as the main potential for tourist development in the region. Yearly, almost 14,000 tourists visit the burial place of the national Albanian hero Scanderbeg, a popular site close to the centre of the city of Lezha, north of the Prefecture<sup>37</sup>.

Akrolisi<sup>38</sup> is a castle, part of the Lissus defence system. This ancient fort is situated at the top of Shelbun hill, altitude 410 m; very few traces of the inner walls can be seen within the fortified area. This dominating peak can be reached by climbing from the north-east of Lezha's old quarter of Varosh, continuing further up on the north scarp of the

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<sup>37</sup> An exact reproduction of the helmet and the sword of this national hero are displayed here; the original sword is found in the Vienna Museum of Medieval Weaponry.

<sup>38</sup> *Akro* is the Greek word for upper, thus Akrolisi means the upper Lissus.

hill of Shelbun towards the peak; this high point offers attractive views on all sides, especially of the coastal scenery.

The traces of the old city of Lissus, extending to the north of the contemporary city of Lezha and west of the fortified hill, are a major tourist attraction. Eighteen of the twenty three defence and reinforcing towers have been excavated. The faceted volume and the stone constructions are magnificent. The height of the walls varies from six to eight m, of the towers from ten to twelve m. The eleven gates that have been excavated lead to different parts of the old city, and are well preserved (two in the upper section, six in the middle section and three in the lower one). Ancient Lissus was functionally divided into distinct sections (the upper section, most strongly fortified, inhabited by the ruling class and civic institutions; the middle by the main population; the lower section housing handicraft and storage areas, and the river bank with the city's port).

According to specialists in the field of cultural and historic heritage, further restoration efforts are needed in the area, focusing on the medieval fortress of Lezha. Funding could be obtained from the Ministry of Culture, Youth and Sports, Regional Directorate of Monuments as well as potential agencies and donors already involved in the region (including UNDP, World Bank, EU, UNESCO, and others). Funding could also be used to encourage joint restoration plans, involving other stakeholders in co-operation with respective authorities in the field of cultural heritage.

In this respect, the competent authorities have decided to introduce the conservation of the natural and cultural heritage in the regional development schemes of the area. Today, Kune-Vain attracts a considerable number of visitors whose focus has been hunting, fishing or recreation. But this typical orientation leaves out another sizeable group of potential visitors who would prefer to have a broader view of the area, including its cultural heritage. Such visitors are gaining increased consideration in the efforts for the sustainable development of Albania and can become a very positive factor in the management and development of Kune-Vain and the Lezha area.

### *2.2.2 Historic buildings constitute a visitor attraction element*<sup>39</sup>

The town of *Orbetello*<sup>40</sup>, situated on the Tyrrhenian coast of Italy, is built within the limits of the hydrological basin of the lagoon and bears the same name. Many historical structures remain, including a Roman villa, extensive fortifications and an ancient prison. Their maintenance and contemporary use present a significant challenge for the town, in its efforts to attract visitors and to safeguard a high quality of life for its inhabitants.

On the top of the hill of Ansedonia, which dominates the south-eastern part of the basin of Levante Lagoon, lie the remains of the Roman city of Cosa. The city was founded in 273 AD, seven years after the conquest of the Etruscan city of Vulci, capital of the area that stretched from the valley of Albegna to the valley of Fiora and beyond. The city's name derives from the ancient name of Cusi or Cusia, a small Etruscan centre that was situated where Orbetello now stands.



*Orbetello town*

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<sup>39</sup> Information provided by Franco Agostini.

<sup>40</sup> See Appendix 1, section A15, p. 209.

One of the most remarkable buildings of the town is the Cathedral –said to be built on the ruins of an Etruscan temple– renovated in 1375. It is complemented by *La Rocca*, built in the 12<sup>th</sup> century by Pietro Farnese. In recent years, the civil administration of Orbetello, in collaboration with the archaeological service of Tuscany, has restored a representative portion of the fortified city walls. The city of Orbetello is still encircled by the original Etruscan wall, which is in perfect alignment and adjacent to the water of the lagoon, a unique historic monument.

The Community of Orbetello has also undertaken restoration of the Guzman building. The edifice, constructed by the Spaniards in 1692, is situated in the historic centre of the town, towards the side of the Levante Lagoon and its characteristic rectangular shape is occupied by facilities once used to store ammunition. The lower level of the building will be used as the first section of the Municipal Archaeological Museum. Restoration works have also taken place on the Palazzo Communale, situated at the Piazza del Plebiscito, a remarkably interesting historic structure of the first decades of the 19<sup>th</sup> century.

In 1994, in the Piazza della Repubblica in the historic centre of the



*City walls, Orbetello*

town, in the interior of a municipal building (formerly Caserma Umberto I), which was originally the convent of the Clarisse fraternity, the Municipality of Orbetello –in collaboration with the Archaeological Service of Tuscany– has prepared a space for the exhibition of artefacts from the Etruscan temple of Talamone, situated on the Talamonaccio hill, in the proximity of Fonteblanda. The terracotta pediment, with relief

representations from the myth of the *Seven against Thebes*, is a unique example of late Etruscan pediment art.

Another intervention of major interest is the restoration of the Spanish fortified walls of the city, erected during the 16<sup>th</sup>-17<sup>th</sup> centuries, and of a number of buildings inside the bulwarks, as well as the transformation of Orbetello after the destruction of the Royal Canal that

separated the 'terra firma' and the 'fortified island' on which the historic centre of the city is built.

Concerning ecclesiastic architecture, there is a remarkable relief in the Cathedral of Santa Maria Assunta, constructed most likely on the ruins of a pagan temple, later reconstructed by the Orsini between 1370 and 1376. Its façade of late-gothic style is ornamented with interesting sculptural decorations and a rose window, a characteristic feature reminiscent of the similar window of the Cathedral of Orvieto (Maitani). The altar of the Cathedral is also decorated with a precious marble slab, discovered recently, ornate with carved reliefs, paired with a rectangular wicket decorated with Romanesque-style motifs.

The panorama of the lagoons is complemented by a cylindrical windmill, topped by an elegant conical roof. Its form and setting convey links to the Iberian tradition.

Of a completely different period, a paradigm of the Italian history of architecture, and in particular of structural engineering was developed in the hangars built on the banks of the Levante lagoon. The two large hangars, a magnificent feat of engineering, were designed and constructed before WW2 by Pier Luigi Nervi and made Orbetello famous. Sadly, they were bombed and destroyed by the German Air Force during the summer of 1944.

### *2.2.3 Restoring and re-using a historical building in Turkey<sup>41</sup>*

A very important prehistoric site lies in the vicinity of the *Kizoren Obrugu*<sup>42</sup> wetland, in the region of Konya –*Çatalhöyük*– believed to be where agriculture was first practised, as well as one of the oldest cities of the world, built more than 9500 years ago.

In the same area are found the remains of a magnificent historic structure, which was used as a caravanserai. According to a recent archaeological report, there is not enough evidence to date the edifice precisely. However, architectural elements indicate that the caravanserai was built in Seljuk times. Some notches on the building masonry indicate that the construction was completed rapidly and hastily.

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<sup>41</sup> Information provided by Selim Erdogan.

<sup>42</sup> See Appendix 1, section A10, p. 199.



*Caravanserai, Kizoren Obrugu*

It seems that this caravanserai was used also by the Byzantines, who made additions to the complex. It remained in use as a caravanserai during Ottoman times. It is obvious that this use was ended before the establishment of the Turkish Republic. In 1996, the Ministry of Culture initiated a research and excavation programme at the site, as yet incomplete.

The other dominant element of the building complex is a mosque, also dating to the Seljuk era; conveniently located, it is still being used by the local inhabitants.

The total surface area of the complex is 12,016 sq m, while that of the caravanserai 2506 sq m. The restoration of the caravanserai and its use as a visitors' centre for the wetland is at present only an idea. Following the designation of the Kizoren Obrugu as a Ramsar Site, this project will be discussed in the Turkish National Wetlands Committee. As a first step, at its first meeting in 2004, the Committee accepted the inclusion of this caravanserai within the boundaries of the Ramsar site, and noted the need for its restoration and future use as a visitors' or

cultural centre. In ensuing meetings, financial and institutional issues are to be decided upon.

Financing of the project is not yet secured. There is a suggestion for establishing a fund under the co-ordination of Konya Municipality. As there are 20 wetlands of international importance in this region –most of them to be designated Ramsar Sites before 2010– the fund will however have a very substantial mandate and its priorities may not include the caravanserai. This option is therefore not dominant. An alternative is to submit a proposal for EU funding.

Once the caravanserai is restored and converted into a visitors' centre (which would also include a small museum, shop, meeting area and sanitary facilities), it will become the key element for making the site better known to the wider public. Infrastructure for visitors will also be installed (such as banners, direction signs, information material). Finally, the site will be included in the programmes of major tourism agencies, while a TV documentary on it will be prepared.



*Kasria, Tamentit Oasis*

## Chapter 3

### Traditional resource uses and future prospects

Traditional practices in the use of natural resources are at the origin of the most significant cultural values of wetlands. Such practices have shaped landscapes, have been recorded in buildings and other constructions, have created a wide variety of artefacts –from boats to tools, from fishing gear to carts– and have provided inspiration for events, music and songs, tales and various forms of art. Even today, they continue to constitute an unlimited source of information, education and entertainment for visitors. In addition, they provide invaluable lessons for the sustainable management of resources in the contemporary context.

Unfortunately, industrialization and globalization, magnified by demographic changes, are leading towards the decline or total disappearance of such traditional practices, which are now replaced by contemporary methods. Whether these new methods will establish new cultural values remains to be judged by future generations. Meanwhile, it is imperative to record and understand the cultural patrimony associated with traditional resource uses, before it is irreversibly lost.

#### *3.1 Biomass: grazing and construction*

Wetlands are abundant producers of biomass, which has many uses for human beings, from animal fodder to construction material. Human activities on the other hand are essential in managing vegetation, which in turn may prove an asset for biodiversity. Traditional methods of reed management, often associated with animal husbandry and grazing, constituted part of the local culture. They are maintained in



*Cattle grazing, Prespa Lakes*

some parts of the Mediterranean, while in others they are being re-established.

Besides animal feed, the use of reeds in construction and thatching is well known in the Mediterranean and in other parts of the world. In fact, reeds from certain wetlands in the region are collected and exported to Northern European countries for this purpose.

A characteristic example of reed use is the traditional fishermen's huts built on the shore of the *Santo André Lagoons*. Their construction was based on materials extant in the area: pine branches and reeds. Some of them were used for habitation and others as store rooms. They were constructed in places protected from encroaching dunes and from the dominant north wind. Each family built its own habitation, collecting the materials nearby, with the permission of local farmers, who were the owners of the lands, while neighbours helped whenever necessary. Some individuals who possess the traditional building skills are still alive, but the practice has been abandoned.

### 3.1.1 Managing reeds in an Egyptian site<sup>43</sup>

Reedbeds have been growing in excess in the MedWetCoast site of *Burullus*, due to decreased salinity of the waters of the lake. Efforts to control this growth by the traditional method of buffalo grazing have been unsuccessful, and have been replaced by reed cutting, with cut reeds being widely used.

The common reed *Phragmites australis* is a widespread species in Lake Burullus; it forms large beds that interrupt the flow of water and create internal channels within the lake. Although its over-exploitation is negative, nature conservation benefits from reed-cropping can be positive. This practice limits the rate of reed expansion into new, open areas of the lake; and within a planned programme of rotation can produce a mosaic of reedbeds of different age and structure, which enhances the diversity of the ecosystem.

Consequently, reed management was deemed as one of the top priorities of the Burullus Management Committee. Its members include local representatives of relevant ministries, the Peoples' Assembly and local communities. The Committee, chaired by the Governor, has the role of prioritizing management actions, setting policies, assigning responsibilities and monitoring progress.

Removal of the reeds, in accordance to specifications outlined by MedWetCoast experts, entails two actions; the first is cutting reeds manually below the water surface, for those reeds in the middle of the lake, and is currently implemented through local NGOs; and the second is the total extraction of reeds, including their roots, from about 200 acres of the lake shores. This has to be done mechanically, and is beyond the capacity of local NGOs.

The representative of the Ministry of Irrigation and Water Resources in the Committee expressed the readiness of the Ministry to undertake this challenging task. However, since the lake falls under the jurisdiction of the Fisheries Department of the Ministry of Agriculture, a working protocol was required. In a demonstration of their commitment to the welfare and future of Lake Burullus, four local representatives of the legislative body presented their case to the Peoples' Assembly, and

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<sup>43</sup> Information provided by Magda Ghonem.

succeeded in finalizing a protocol under which the Ministry of Irrigation can start actual work.

Today, substantial amounts of *Phragmites australis* reeds are cut and used for a variety of purposes. Green shoots provide fodder for livestock. The sun-dried stems (2-3 m long) are sold for LE 0.2-0.6 per bundle to be used in the demarcation of the cultivated fields on the sand bar or as building materials. Some of these reeds are woven into mats and used as wind breaks, fishing nets and in bird catching. Other uses include thatching and biomass for fuel. Although a recent study on the standing crop of reeds in Lake Burullus has been carried out [Shaltout et al., 2002], the ecological impact and the economic magnitude of this activity are yet to be investigated.

### 3.1.2 Wet meadow restoration in Prespa<sup>44</sup>

On the contrary, in Micro *Prespa Lake*, buffaloes have been re-introduced and are being used successfully –in conjunction with other measures– to control reed beds and increase the area of wet meadows, which is important for both fish spawning and bird nesting. An interesting *Project on the Restoration and Management of Wet Meadows at Lake Micro Prespa*<sup>45</sup> has been carried out on the possible uses of biomass from cut reeds and the best conservation practices for the protection of biodiversity. One of the most significant aspects of this study is that the protection of biodiversity proved to be interlinked with traditional activities.

Wet meadows in Prespa (and elsewhere) play an important role in the lake ecosystem, because they are used as spawning grounds for *phytophilous* and *lithophyto-philous* fish species and as feeding and nesting areas for water birds; they support large numbers of invertebrate organisms and are vital to amphibians, reptiles and mammals. In the past, however, a great loss of extensive areas of wet meadows at Lake Micro Prespa occurred with a serious negative impact on the biodiversity of the area. The main cause was the diversion in the 1930s of

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<sup>44</sup> Information provided by Myrsini Malacou.

<sup>45</sup> Through the EC LIFE Nature programme; more information can be obtained from the Society for the Protection of Prespa at <http://www.spp.gr>.



*Buffaloes in wet meadows, Prespa Lakes*

the stream of Aghios Germanos from Micro to Macro Prespa. The construction of the irrigation network since 1965 allowed the conversion of significant wet meadow areas to agricultural land. The prohibition of reed burning and/or cutting since 1976 increased reed beds at the expense of wet meadows. This was compounded by changes in the traditional activities that used to take place in the wet meadows zone and indirectly affected their management.

In Prespa, many traditional practices of the past were closely connected with the wet meadows and the reed beds. Reeds were used as a building and insulation material, as a resource for making household objects, but also as animal feed during winter. Until the beginning of the 1980s, large herds of a local breed of cattle grazed the wet meadows. Sheep and cattle-farming close to the lake has played a significant part in the richness of Prespa. Grazing maintained the diverse and low-height vegetation of the wet meadows. Without it there would not have been the abundance of pelicans<sup>46</sup>, cormorants and other rare water birds that are now found in Prespa. For centuries, by grazing on the

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<sup>46</sup> Last year more than 1100 couples of Dalmatian Pelicans nested in Micro Prespa, making it the largest such colony worldwide.

reeds, animal herds have prevented the spread of the reed beds, leaving plenty of space for wet meadows.

Fishermen also kept the shallows of the lakeshore clear of high emergent plants in order to be able to fish. Obviously, the relationship of the people of Prespa with reed was not merely one of exploiting the material; it was a very close relationship involving management of the reed beds as a valuable resource and as a place in which to live and work.

### *3.2 Fish and fisheries*

Traditional fishing practices still exist in many Mediterranean wetlands and fishing continues to constitute a source of protein and a significant economic activity in some of them. It is menaced both by illegal activities and by the degradation of water bodies due to pollution, drainage and urbanization. In addition, as coastal wetlands constitute important spawning grounds for fish, their degradation has a negative impact on marine fisheries.

Thus, there is a strong need to learn more about the feasibility of



*Fishermen, Santo André*

wetland fisheries in the Mediterranean, of their contribution to local subsistence and income, and their sustainable management. One of the main points that requires further study is looking for ways to increase the financial viability of wetland fisheries by capitalizing on their potential cultural aspects, through gastronomy and ecotourism. In addition, the various issues presented by freshwater fish aquaculture –both environmental and financial– must be dealt with in a balanced manner.

### *3.2.1 A kaleidoscope of fishing practices*

In *Burullus Lake* (Egypt), fishing has been practised since antiquity. Traditional boats (*markebs* and *faloukas* or *feluccas*) are still in use since they are light and inexpensive to build, as well as traditional methods of fishing, using various kinds of nets and reeds which can be found in abundance around the lake. Today water pollution, changes in salinity and illegal practices (*hosha*, explosives, trawl nets and fish-hook nets) are depleting fish stocks and menacing the future of this activity. There is an imperative need for implementing sustainable practices.



*Fishing in Evros Delta*

The eastern part of *Cap-Bon* (Tunisia), with the lagoons of Maâmoura and Kélibia, still maintains considerable fish resources, characterized by a diversity of species. It represents a low, linear area, protected from extreme weather conditions, thus favouring coastal fisheries. This activity originated in ancient times and reached its peak with the arrival of the Romans, when it developed into a real industry, with salting plants all along the coast of Korba and Kélibia.

Two well-equipped fishing harbours are found today at the north and south extremities of this area, Kélibia and Béni Khlar. The first comprises 50% of the fishing boats of Cap-Bon and accounts for 85% of fish catches.

A rather limited number of locals, spread along the entire coast, practise coastal fishing using small boats without motors; but their catches are small and this activity remains uneconomical, forcing fishermen to seek farming work during peak agricultural periods.

Fishing in the *Evros* River and Delta (Greece) is an important wetland activity, where a variety of traditional techniques and equipment is still used. A characteristic example is the hand-made *plava*, a boat without a keel. Another navigable means of transport is *kazaki*, its use now almost abandoned. Two traditional fishing methods used in the Evros Delta is *kalamota* (for grey mullet-fishing) and *daoulia* (for fishing of eel and other species).

*Manyas (Kuş) Lake* (Turkey) presents a particular interest in the fishing methods practised, as they have resulted from a fusion of cultures of various peoples that have settled on its shores during different periods and have shared age-old experience. There are two methods used in the lake by fishermen today, both of which have historical origins. In the first case, a traditional net is used, with different net openings (according to seasonal fishing regulations). The materials used for the fabrication of such nets have changed, but their form and structure has been identical since Roman times. The second method –called *pinter*– is just like a trap. It is still a net, but not entirely open like the first one. Made of netting, it has a tubular shape, with one end closed and the other open in one direction, allowing the entrance of fish, which cannot escape.

Unique fishing methods were used in the past in *Prespa Lakes*, with *pelaizia* being the most interesting; most of which have now been

abandoned. Still, the knowledge exists and a project for their re-establishment, including the building of traditional boats, is being promoted.

### 3.2.2 Fisheries and fish farms in an Italian lagoon<sup>47</sup>

In *Orbetello*, in a basin of 2700 ha, divided in two wide lagoons (Levante and Ponente) separated by a strip of land that connects Diga Leopoldina to Mount Argentario, lies an ideal fish habitat of incomparable value: bass, sea bream, sole, eel, mullet (*cefali*), acquire in these waters special features, as well as characteristic vivid colours, consistency and taste.

Traditional fishing techniques are still in use such as *vagantiva* (rambling), with the use of *cinte* (belt), *tesi*, *martavelli* and others. The Orbetello fishermen exploit the abundance of fish of the lakes, favoured by the flow of the tide and the constant exchange between the lagoons and the sea, which are connected through three canals. Using wise techniques, which ensure a healthy equilibrium in fish numbers, they catch approximately 3000 q.li of product of various species.

Carefully studying the weather conditions (temperature, wind, rainfall) and the lunar phases, with a profound knowledge of the environment that surrounds them, the local fishermen choose the most effective fishing method for each fish species and for the location where it will be applied. This traditional knowledge is passed on from father to son and ensures a guaranteed quality of product over time, for commercial use or home consumption.

The larger fish quantities are found in the canals of Nassa, Fibbia and Ansedonia, which connect the lagoon to the sea, where the currents drive the fish towards a wicket, where they are trapped and collected. This distinctive method uses the sea current flow caused by tides towards both directions: when the sea water enters the lagoon, fish are caught while trying to swim against the stream, while when the lagoon water flows towards the sea, fish are caught once more while swimming against the current. Although of smaller size, fish of the latter category help to preserve the production equilibrium at the appropriate levels.

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<sup>47</sup> Information provided by Franco Agostini.

In the open lagoon, fish are caught using the methods of *tesi* made of *тели* and *martavelli* or *cinta*. *Teso* is actually a barrier formed by a line of long poles of wood connected at their far ends tightly by a vertical net, called *telo*. Floaters are arranged on this net and lead weights are placed at the bottom. Fish swim against the net and in their efforts to overcome the obstacle they are driven towards the end of the *telo*, where the *martavelli* are placed. *Martavello* is a conical net, where cylindrical parts of wicker or similar material are used to help retain the shape of the net. These nets do not let the fish escape from the fish trap.

*Cinta* (belt) is a fishing method where individual schools of fish are surrounded from all sides and driven around gill nets. During the final part of the capture loud noise is made, scaring the fish and making them tangle in the gills in their efforts to escape.

In addition to such fishing practices, aquaculture installations are built in the proximity of the lagoon, in basins excavated from the ground or constructed out of concrete. Water is pumped either from aquifers or from the lake and, in order to avoid illnesses, it is constantly oxygenated. Bass and gilthead are mostly cultivated, but *saraghi*



*Fishing nets, Orbetello Lagoon*

(white breams) and *ombrine* (umbrines) as well. Orbetello carries on a very old fish farming tradition and its products are of high quality. Its production reaches up to 1500 tn each year and represents 1.5% of the entire Italian fish market. The Orbetello fish production arrives at fish-markets in less than 24 hours, guaranteeing its freshness.

### 3.2.3 Maintaining traditional fishing boats

Traditional Mediterranean boats are magnificent cultural artefacts. Made from local materials by skilled craftsmen, well adapted to local conditions, they have served the population through long centuries with few changes. Today, however, they are being rapidly replaced by industrially produced plastic boats with various forms of motors (which add to noise and pollution). Ecotourism needs, though, have generated a moderate demand for traditional boats.

In the *Neretva Delta* (Croatia), for example, the local *ladza* and *tru-pa* boats are used commonly and have been converted to serve the needs of visitors.

In *Orbetello*, *barchino* (sailing boats until the first half of the 20<sup>th</sup>



*Traditional boats, Neretva Delta*

century, today motorised) are vessels approximately 6 m long and 1 m wide. Until only a few years ago they were made of wood; today, sometimes fibreglass is used, but the common *barchino* is made of wood. The form of the boats, however, has not been altered, giving a different perspective to the conservation of traditional boats. For shorter rides people use rowing boats or sometimes the *struzza*, a four-meter boat that manoeuvres easily in shallow waters.

The construction of traditional boats for fishing in the lagoon of *Santo André* (Portugal) is no longer an activity in this area. However, elderly skilled workers, both fishermen and carpenters, still preserve the knowledge and the memory of the traditional methods, but use it mainly to repair older boats. The possibility of organizing training courses and workshops on these traditional techniques for lagoon boats is being considered. In addition, it would also be interesting to assess the revival feasibility in relation to traditional fishing boats (*xavega*), which had a particular adaptation in this area, becoming



*Fishermen, Ghar el Melb*

smaller than those existing in the north and centre of the country whence they originated. The demand for lagoon boats is limited, but it could increase if fishing activities are related to ecotourism needs.

*Ghar el Melb Lagoon* on the northern Tunisian coast is in a critical phase of still maintaining traditional practices, rapidly being replaced by modern fishing methods, including tools and boats. Numerous traditional craftsmen still remain, but the demand for their products is limited, mainly for financial reasons, as industrially produced boats are cheaper than the traditional wooden ones. The possibility of preserving the cultural aspects of traditional practices, possibly by using the element of visitor attraction, needs to be considered.

### 3.3 Food resources and gastronomy

Culinary traditions are listed by UNESCO as an element of cultural heritage and more specifically of what is termed *Intangible Cultural Heritage*. Food processing and production based on wetland products



*Dates, Tamentit Oasis*

are fundamental parts of the everyday life of wetland societies. Recording and studying culinary traditions is like obtaining access to family habits, the festive events, the technology and the economy of a given region. They are bequeathed from generation to generation. They are constantly re-created by communities and groups in response to their environment, their interaction with nature, and their historic conditions of existence. They are part of a society's identity and continuity. The safeguarding of gastronomy and other culinary traditions promotes, sustains, and develops cultural diversity and human creativity.

### 3.3.1 Traditional products from an Italian lagoon<sup>48</sup>

In *Orbetello* (Italy) strong local traditions focus on gastronomy related to the abundant fish species in the area. Some of the dishes prepared have their origins in the long history of the town of Orbetello and its region.

*Scavecciata* (marinated) eel dates from the time of the Spanish occupation. Spaniards used to prepare fish using a spicy sauce (*escabese*), a practice adopted by the Orbetello population. In the South of Italy, particularly in Naples, the marinating process is still known as *in scapece*. The eels are gutted and skinned and then cut in portions. They are then marinated in vinegar that has been previously boiled with salt, garlic, red peppers, black pepper and rosemary and stored in refrigeration. Afterwards, they are preserved in jars. The *scavecciata* eel owes its characteristic flavour to this particular process of preparation and to the special nutrition of eels in the waters of the Orbetello Lagoon. The combination of ingredients and the food process give the product a particular quality: sour-sweet taste, yellow colour, compact consistency.

*Sfumata* (smoked) eel also dates from the Spanish occupation of Orbetello, when local inhabitants began to be familiar with processing eels. The food preparation is completed in two days. On the first day, the eel is cut in portions and marinated in vinegar and salt; then it is set to dry. Next day, tomato and peppers are added and the fish is smoked. Traditionally, it is cut in slices and fried in a pan with extra-virgin olive oil.

*Bottarga* is a product obtained from the ovary sacks of fish, mainly mullet (*cefalo*); only very fresh fish must be used. The ovarian sack must be carefully removed, coated in salt and then dried in the sun. *Bottarga* is strongly related with the traditions of Orbetello since the time of the *Comuni*, when it was used as a compensation for the use of the lagoon waters. *Bottarga* has been a hand-made product for centuries, of very high quality and price<sup>49</sup>. It is used in pasta dishes (grated) and as an appetizer with toasted bread.

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<sup>48</sup> Information provided by Mario Cenni.

<sup>49</sup> Good quality *bottarga* is also produced at the Messolonghi / Etolicon Ramsar Site in Western Greece.

*Femminelle* (female crabs) are used for the preparation of several typical dishes of the area. Belonging to the *Portunidae*, species of *Carcinus mediterraneus*, they are heart-shaped and have the colour of green olives. They are usually cooked during the winter months, after the first storms of November, when the female crabs are rich in eggs. This traditional food has strong links with the Orbetello area and is used in many typical Orbetello dishes (*femminelle* caviar, vegetable soups, *femminelle* soups and *risotto*).

As noted, the technique of smoking fish products has been in use since Spanish times as a way to preserve them for longer periods and to be used especially when travelling. In Orbetello, mainly mullet (*cefalo*) is smoked. After heads and tails are removed, the fish are skinned and filleted, and their surface smoothed. Salt is added and they are smoked and dressed with several spices. This process was carried out in a traditional way, however today it has been industrialized to a large extent. Smoked *cefali* are consumed sliced as an appetiser and also used to enhance the taste of spaghetti.

### 3.3.2 A variety of wetland dishes in Portugal<sup>50</sup>

In *Santo André* lagoon (Portugal), the simplest and most popular dish among fishermen is 'lagoon stew'. The best fish caught are placed in a pot with water from the lagoon. When boiled, often on an open fire, the fish are spiced with salt.

Eels are a staple of the local cuisine. They are often grilled with pimentos, or cooked in a stew with garlic, olive oil, coriander, bay leaf and salt. At times, they are cleaned, salted and dried in the sun for a few days; they are then soaked in water and cooked with rice.

A typical local dish is *pataniscas*. In a large bowl, flour is mixed with water and a couple of pinches of salt. A codfish slice, soaked in water from the previous evening, is cut in small pieces. Each piece is coated with the flour and water mixture and deep-fried in olive oil.

*Negríta* rice makes good use of birds (similar to wild duck) caught in the fishermen's nets. They are cleaned and cooked with rice, using their own blood.

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<sup>50</sup> Information provided by Emilia Paula Silva.

### *Cooking with wetland products: Three characteristic recipes*

#### Carp and onion soup (Prespa, Greece)

This dish is usually prepared on Easter day and other important feasts. The recipe was provided by Vera Pavaskevopoulou and Polytimi Diakopoulou (from the Aghios Achillios and Lemos villages respectively).

Ingredients (for 5 persons):

- 1 carp of approximately 4-5<sup>51</sup> kilos (*Cyprius carpio*)
- 12-15 medium-sized onions
- ½ cup olive oil
- 4 medium-sized tomatoes or sauce<sup>52</sup>
- 4 bay leaves
- 5 peppers<sup>53</sup> (red or green)
- Salt, peppercorns, flour

Clean and scale the fish and cut it in thick slices. Coat the slices in salt and leave them for one hour. Then coat them in flour. Slice the onions into rounds. Heat the oil in a deep pan and fry them until golden-brown.

Add the tomatoes and the peppers (medium cut) and roast them together. When ready, place them all in a deep baking pan and add the salt, peppercorns and bay leaves and stir. Add the carp slices and place the pan in a medium-heated stove (or oven). In about 15-20 minutes, when the fish is golden brown, turn the slices over and add some water, so that the dish will remain juicy. As soon as the second side of the fish is also browned, the dish is ready.

Cooking time is approximately 45 minutes, when cooked on a wood-burning stove.

<sup>51</sup> A smaller carp is considered inappropriate for the particular recipe, although it can be used, as well. Larger fish are fattier.

<sup>52</sup> The tomato sauce is made by the women of Prespa during the summer season and preserved in jars. It is practically the same as fresh tomato sauce.

<sup>53</sup> Peppers can be slightly hot.

Potato salad with pickled water-lily leaf, flower and root (Neretva Delta, Croatia)<sup>54</sup>

Ingredients:

- Water-lily root and leaves (*Castalia alba*) and (*Nymphaea alba*)
- ½ lt of home-made vinegar
- 2 dcl of rain water
- Potatoes
- Garlic
- Parsley
- Peppercorns
- Sprig of rosemary
- Olive oil
- Salt and pepper

Slice the water-lilies, root and leaf, and add them to a pot with water and cook for 15 minutes until tender. Allow to cool and place in warm jars. Pour over the remaining water and top with some olive oil. Boil the potatoes in their skin. When tender peel them and cut them into pieces.

Add the garlic, parsley and olive oil and mix. Season well with salt and pepper and cover with the boiled water-lily.

Black rice<sup>55</sup> (Catalonia, Spain)

This recipe is quite common in the coast of Tarragon and the Ebro River Delta, using local rice and cuttlefish<sup>56</sup>.

Ingredients (for 4 persons):

- 500 gr small or medium common cuttlefish (*Sepia officinalis*)
- 400 gr rice (preferably organic)

<sup>54</sup> Recipe provided by Eugen Draganović.

<sup>55</sup> *Arròs negre* in *catalán*, *arroz negro* in *castellano*. Recipe suggested by Josep Maria Mallarach.

<sup>56</sup> Luján, N. and J. Perucho (1971), *El libro de la cocina española*, Danae, Barcelona, Spain.

- 200 gr tomatoes (peeled and diced)
- 200 gr onions (diced in small cubes)
- 2 peppers or artichokes (cut in small pieces)
- Three cloves of garlic
- Virgin olive oil
- Dry red wine

In a casserole or pot, on a moderate fire with a little olive oil, fry the onions and peppers or artichokes. Add the cuttlefish, after removing and keeping their ink, either whole if they are small, or cut in pieces if they are larger. Once they become golden, add the tomatoes and 1/4 lt of hot water and cook on a moderate fire for about half an hour.

Then add the rice and twice as much water, and once it comes to boiling stir with a wooden spoon. Pour in the ink of the cuttlefish, dissolved in some of the boiling liquid and 2-3 teaspoons of wine, which will make the rice dark brown, and add a pinch of salt, if required. Continue cooking on a low fire, and at the end of about 15 minutes the rice will be quite dry and ready.

Spread on top 4-5 large spoonfuls of *ali i oli negat* sauce and serve. The sauce is made by placing the garlic in a pestle with a bit of salt and pounding it until it becomes a paste and then stirring in a decilitre of oil, little by little, until it becomes homogeneous.

### *3.4 Freshwater and its management*

Water management systems and their infrastructure have developed their own cultural context, which is being lost today due to new technological methods and the pressures of commercialization. Yet, significant lessons can be learned from traditional wisdom related to water. Perhaps the current challenge is how to make best use of contemporary science and technology in water management, while taking into account traditional knowledge and practices.

### 3.4.1 *An ancient system for water harvesting in the desert*<sup>57</sup>

The *foggara* system for managing scarce underground water resources in the Sahara, which has existed for millennia, is a characteristic example of traditional wisdom. The construction and maintenance of the system, which probably had its roots in Persia, resulted in special forms of social organization that have survived up to our days. In the oases of *Tamentit* and *Sid Ahmed Timmi*, this ingenious system is threatened by the introduction of intensive agriculture and its demands for large water quantities, as well as the lack of interest of younger inhabitants. Thus, the maintenance of the *foggara* system poses serious questions and merits careful attention.

In the desert, wealth is not measured by how much property a person owns, but by the water rights attached to one's land. Although water can be considered a scarcity on the surface of the earth, it does ex-



*Foggara, Tamentit Oasis*

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<sup>57</sup> Information provided by Ammar Boumezbeur and Christian Perennou. See also Appendix 2, p. 223.

ist on the subterranean level. A number of sources contribute to the storage and circulation of underground water: infiltration of surface water from springs, deep aquifers and the condensation during night.

Oases are proof that human beings can effectively manage natural resources, even under adverse circumstances. Thousands of years ago Mesopotamians came up with an ingenious irrigation system which took advantage of the water flowing underground, at the same time preventing evaporation. This system is the *foggara*, already mentioned by Herodotus in the 5<sup>th</sup> century BC. It is believed that Copts introduced it to the Maghreb during the Arab conquest (there is even a *foggara* called *Hannou*, the name of their god).

It consists of a subterranean canal structure that may stretch hundreds of kilometres in length, capturing and distributing water in villages in the middle of the desert. The channels (*seguias*) and storage chambers are dug at a depth of 5-14 m below ground, to avoid evaporation and are of a diameter



*Date-palm plantation, Tamentit Oasis*

of 1-1.2 m, allowing a crouching man to enter. Each *foggara* can reach a length from 2 to 10 and sometimes 15 km and the water flow varies from 3 to 12 lt per second. On the surface level, shafts are dug vertically at several points along the length of each *foggara*, allowing monitoring of the water and restoration works. Their flow is stable all year round.

Reaching ground level in each village, thanks to a slight slope of the flow, water is primarily received in tanks. Exiting from the tank, water usually flows through a plate (*kas-ria*) measuring 25 cm wide and 150 cm long with differ-

ently sized holes along its length, which determine the amount of water each family will receive.

*Foggaras* enabled the inhabitants of the oasis to create a unique environment of cultivated land amidst arid and inhospitable surroundings for thousands of years. Date-palm is the main cultivation, along with orchards composed of a wide diversity of species, cereals and several garden plants.

In Islamic tradition and in classical culture the notion of oases is strongly connected to the notion of paradise and they are symbols conveying the mythological conception of the origins of agriculture. At the oases the word *jenna* is used for the cultivated fields, which means garden and paradise. Being an entirely artificial –and not natural– system of vegetation, as thought by many, its construction and maintenance requires a high level of sophisticated knowledge and techniques.

Thus, *foggaras* are more than an irrigation system. They embody the traditional social structure of each village, enabling and regulating the social interactions that are based upon the most precious element, fresh water. They ensure equitable access to this resource of all the inhabitants of the village (*ksar*) and guarantee its quality.

The general assembly of the co-owners, the *djemâa*, constitutes the basis of the social organization. The assembly decides on the maintenance and repairs that need to be carried out, resolves conflicts and approves sales, changes, rentals and sharing of water between owners. Although water is considered the property of the co-owners, the entire village has free access to it for domestic use, which is guaranteed at the main channel that crosses each village. In compensation, all villagers must contribute to the maintenance of the *foggaras*. Owners must share the expenses of restoration work and extension of the galleries needed periodically.

Sand encroachment is a daily concern and villagers have to strive constantly to ensure the good condition of the system. The ceaseless labour required to keep the galleries open is a discouraging factor for the younger generations, and in practice, the older people shoulder the burden. At the outskirts of each village, the sand dunes threaten to cover the oasis, as well. Continuous intensive labour is required in the attempt to stabilize dunes with dry palms.

The increasing number of population, along with the growing trends in monoculture and the subsequent use of pumps in the Saharan desert, cause a depletion of the aquifers. As a result, the entire ecological, biological social and cultural system may be seriously endangered.

### *3.4.2 Roman wells still useful in Egypt*<sup>58</sup>

Within the framework of the MedWetCoast project, the rehabilitation of certain Roman wells or cisterns in Omayed (Egypt) was decided, in order to solve the acute local problem of freshwater shortage.

Dialogue and co-ordination with Underground Water Sector officials in the Ministry of Irrigation and Water Resources has led to the approval for purifying and restoring four Roman wells, used in collecting rainwater. The legal owners of land in which the wells are located have pledged to give the opportunity to all inhabitants in the area to share the water from the wells restored.



*Roman well, Omayed*

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<sup>58</sup> Information provided by Magda Ghonem.

The four wells, in different phases and taking into consideration financial, social and technical aspects, have been selected as follows: initially, meetings were held with local villagers to inventory wells found in the area, and to identify those that needed to be purified and maintained in accordance with their ability to collect and preserve water. Within this dialogue with the villagers, the benefit to be derived from each well by families and groups was specified. Wells that were not useful except for a limited number of inhabitants –probably one family in the area– were excluded, while an agreement was reached that the number of wells needed to be initially restored –in accordance with agreed criteria– would be ten.

The Ministry of Irrigation and Water Resources received a request to inspect these wells, purify and restore those suitable in accordance with appropriate technical standards. These referred to the width of wells, water quantity collected in each, in accordance with the topography of the surrounding area, purification and restoration economics (costs of necessary works in relation to water quantity expected from each well), and the technical efficiency of wells. The Ministry then sent technical experts on missions to undertake initial inspection and identify the site and construction of wells. This inspection process revealed that the number of wells suitable to be purified and restored in accordance with technical and economic criteria were only four.

Subsequently, a request was submitted to the Ministry asking for the restoration of these four selected wells, from which a large number of villagers can use water for agriculture and grazing activities. The Ministry completed the purification and restoration process of the four wells in 2003.

The rehabilitation of six additional Roman wells has also been approved and by now a number of them have been completed. The funding of a small dam for collecting rainwater was approved as well, and the project is under construction.

### 3.4.3 Complex hydrological relations in a Balkan site<sup>59</sup>



*Micro Prespa Lake*

Since 2000, when the *Prespa* Park was established by Albania, Greece and the FYR of Macedonia, serious concern has been focused on hydrological matters. Within its catchment area, wise traditional methods have been abandoned and have been replaced by others that menace both the ecological balance of the area and the welfare of its inhabitants. A major programme is now starting for the integrated management of water resources in the entire basin of the two Prespa lakes and its results may reconnect traditional practices with contemporary scientific and technological expertise.

Both of the lakes are considered as a hydrological unit, related also to Ohrid Lake in Albania and the FYR of Macedonia. These three water bodies and the drained Malik Lake used to be part of the Dassaretic Lake during the Jurassic period.

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<sup>59</sup> Information provided by Myrsini Malacou.

Micro and Macro Prespa were once one lake, but the sediments deposited for thousands of years into the lake by the stream Aghios Germanos created a narrow strip of sandy land that now separates the two lakes. Micro Prespa's surface is 47 sq km and has a maximum depth of 8.4 m, while Macro Prespa has a surface of 259.4 sq km and its maximum depth is 55 m. The limestone character of the geology at Prespa allows the two lakes to communicate with each other through underground channels. Micro Prespa has an artificial surface outflow to Macro Prespa as well, while Macro Prespa communicates with Ohrid Lake through underground channels only.

Human intervention during the last century has greatly altered the hydrological balance of the area and severely deteriorated the environment, affecting the totality of its inhabitants. In 1936 the Aghios Germanos stream was diverted from Micro Prespa to Macro Prespa and 30 years ago an irrigation scheme was implemented, providing irrigation for approximately 2000 ha of land, taking water directly from Aghios Germanos and Micro Prespa. The agricultural practices in the Greek part have changed, as well. Bean monoculture is the dominant agricultural practice, with an increased use of pesticides and fertilizers whose run-off ends up in the lake.

The greatest threat, though, is posed by the deviation of the Devoli River in Albania. It was thought that by opening a channel to the Micro Prespa Lake, about 90 million cu.m. of water could be used in the summer for irrigation purposes, through the means of a sluice that would allow water inflow from the lake to the river. In the winter time, water would be channelled from the Devoli to the lake. The Devoli being one of the most turbid rivers in the Balkans, the result was the deposit of huge quantities of alluvium that coated all shallows of Micro Prespa lakeside and blocked the underground water sources. Locals have testified that in the recent past, several natural springs could be found on the shore of the lake, supplying the lake with fresh water, while the muddy and stony bottom of the lake, that was visible from the surface, can no longer be seen. Overall, on the Albanian side of the lake water cannot be drawn, the water sources are blocked, local fauna and flora have seriously deteriorated and several socio-economic problems have risen.

As far as the Macro Prespa is concerned, large-scale changes were



*Koula channel, Prespa Lakes*

noted there as well, especially since the 1980s, when the water level of the lake decreased by about 6 meters. Scientists argue that a series of dry years in combination with increased quantities of water drawn and abnormalities in the underground communication between Macro Prespa and Ohrid Lake are to be blamed for the situation, although a clear explanation cannot yet be given.

It is widely known that the importance of the Micro and Macro Prespa habitat as a breeding site of rare water birds is major. Both feeding and breeding sites are extremely vulnerable to seasonal fluctuations of the water level. On the other hand, the economy of the region in all three countries that share the basin is based on agriculture. All human interventions were targeted to the improvement of quality of life of all locals and the entire socio-economic situation of the region could be affected by any alterations to the existing networks. It is now however apparent that measures must be taken in order to address the serious problems that will lead to irreversible changes of sensitive habitats.

As a means of handling the situation, it is becoming apparent that a major hydrological study is required, incorporating all factors that

need special attention, including a number of socio-economic parameters. The study must deal initially with the collection and storage of relevant data (meteorological, hydrological, hydro-geological and ecology-related) in a database. New locations for measuring stations should be identified and an accurate water balance model should be used in order to manage the water resources in a sustainable way. The establishment of an integrated management scheme would follow, which would allow the implementation of the model in all three countries. As a first step, a committee of water managers from the three countries has been established and a monitoring scheme has been included in the GEF - UNDP project for Prespa currently in execution.

It is firmly believed that the Prespa area could combine a controlled development and an ecologic quality that will result to the harmonious co-existence of human actions and natural values.

### *3.5 Game and hunting*

Hunting of waterfowl –also of rabbits, wild boar and other species– originated from the need to secure food and, later, evolved –mainly in the developed countries of the basin– into a popular sport and a commercial practice. Although considered unacceptable by many ecologists, hunting has maintained strong cultural aspects in many places around the Mediterranean. Nowadays, it also has a significant financial side, providing profits to the food-related sector and income to many local communities. It cannot be banned but requires sustainable management and control.

One important aspect that needs careful consideration is the feasibility of replacing hunting with eco-tourism, providing people with another option for recreation and income. Related to the Neretva River, the *Hutovo Blato* wetland in Bosnia and Herzegovina was traditionally a hunters' paradise and was formally designated as a hunting reserve in 1963<sup>60</sup>. In 1995, however, the Parliament of Herceg Bosna declared the site as Nature Park, and efforts were made to replace hunting with

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<sup>60</sup> Under the responsibility of Hunting Management Enterprise 'Sarajevo' (1963-1971) and 'HEPOK', a Mostar agricultural concern (1971-1992).

ecotourism. This movement has been intensified after the designation of Hutovo Blato as a Ramsar Site, when Bosnia and Herzegovina acceded to the Convention on Wetlands in 2002. Already the existing hunting lodge was turned into an information centre and eco-tourist facility, and the area has started receiving numerous visitors. It is of interest to monitor this change and to determine its costs and benefits, as it may provide a useful model for other similar Mediterranean sites.

### *3.5.1 Ancient traditions in Egypt*<sup>61</sup>

Waterfowl hunting in *Burullus* has been an economic and social activity since the time of the Dynasties and is strongly embedded in local traditions. A few years ago, it was opened to international sport exploitation with negative results, but efforts are now being made to control hunting and to turn it into a sustainable activity.

Concerning the *Zaranik* protected area, the hunting of waterfowl has been declared illegal within the Protectorate. However, quail netting and falcon trapping (using a pigeon as a lure) are traditional activities of the Bedouins of North Sinai. They consume most of the quail they catch and sell the falcons on the local market in El-Arish. In 1989, it was estimated that more than 20,000 quails were captured along the 17 km shoreline of the Protectorate, but this number has been reduced greatly in recent years. Other birds of prey are also hunted by Bedouins, including Peregrine Falcons, Kestrels and Red-footed Falcons. The rate of success in trapping Peregrine Falcons is very low. As a single one-year old female is priced at USD 4800-6500, peregrines are bought by dealers from outside North Sinai and eventually find their way (illicitly) to Saudi Arabia and other Gulf states.

### *3.5.2 Social and economic aspects of hunting in the Camargue*<sup>62</sup>

In the *Camargue*, one of the major wetlands of southern France, hunting has always been part of the local tradition, due to the abundance of game. In recent years, the interest in hunting in this region has in-

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<sup>61</sup> Information provided by Sylvie Goyet.

<sup>62</sup> Information provided by Raphaël Mathevet.



*Abrivado - the traditional Camargue cattle round-up by the Guardians*

creased, as the Camargue became more accessible by rail, road and air. Thus, hunting has developed into a serious economic activity, attractive to both the wealthy and to the *aficionados* of hunting. This has coincided with a decrease in local agricultural income, due to international competition (especially in the price of rice) and the misuse of the CAP. The combination of these two trends has led many of the local farmers to turn part of their lands into hunting marshes to be leased to individual hunters or –more commonly– to hunting clubs. Such social institutions proliferated in the Camargue, rising to 226 in 1999, of which 20 were public and 195 private, leasing approximately 45,000 ha (Mathevet and Mesléard 2002).

It is obvious from the above numbers that hunting has become a major business in the area, complementing and diversifying the income of local property owners, which used to rely mainly on rice growing, cattle- and horse-raising and small scale ecotourism. The income generated on private estates has been estimated at ca. € 4.4 million /year, and many of the leasing transactions remain informal. The average turnover of clubs exceeds €30,000 per year, while the average fees per hunter are about



*Flamingos, the Camargue*

€3000 yearly. It should be noted that quite a few of the Camargue hunting clubs are used by enterprises for professional contacts and events. A secondary effect has been the rise in land prices in the Camargue, which is today almost double the national average.

For a more balanced picture, the negative aspects must also be assessed. Managers of hunting marshes attempt to increase the attraction of game to their area by managing water levels and vegetation, and dispensing feed (mainly rice, millet and sunflower seeds). Besides their annual cost, these actions may have serious environmental implications (e.g. large clearings in the midst of large reedbeds) and are added to the negative direct impact of hunting on waterbird populations.

Thus, hunting activity in the Camargue remains financially profitable, but shows a doubtful environmental record. It is clear that it cannot be restrained, because of powerful social and economic factors. Maintaining the traditions of hunting, while managing them sustainably<sup>63</sup>, is now the major challenge in the area.

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<sup>63</sup> Through the strict application of regulations, introduction of steel shot and the effective control of illegal hunting.

### 3.5.3 Unpleasant conditions in a shared river<sup>64</sup>

Scandalous hunting conditions have existed in the *Evros Delta* (Greece) in the past, with mass slaughter of waterfowl in periods of extreme cold by both Greek and foreign hunters. In recent years, efforts for the enforcement of regulations have been made in order to curb this phenomenon, with few positive results. The cultural aspects of hunting may provide a longer-term solution.



*Pelicans, Evros Delta*

Hunting in the Evros Delta is controlled by two institutions, the Alexandroupolis Forestry Service and the Greek Hunting Union, but effective control of poaching is not implemented. Overnight stays, as well as hunting during the night in the wetland are prohibited, but are common practice, especially while weather conditions are harsh. Poaching is also practised inside some parts of the game refuge. At the

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<sup>64</sup> Information provided by Andreas Athanassiadis.

same time, access control to the restricted areas is not actively practiced.

Hunting huts and hides constitute traditional hunting techniques. Hunting huts can serve as places of sojourn, overnight stay and meetings with other hunters; and are of course illegal when constructed in protected areas. Hides are temporary constructions made of shrub branches and other materials. It must be stressed that for their construction the local vegetation is usually destroyed. They can be sub-let to hunters, also illegally.

Strangely enough, while the Evros Delta is a frontier area between Greece and Turkey with a heavy military presence, it seems that local authorities and services are unable to curb illegal practices, perhaps because they are deeply embedded in local culture. Therefore, dissemination of information and public awareness is required in order to change the mentality of people towards sustainable hunting and replacement by ecotourism.

Something along these lines has occurred in a wetland of Lebanon. In collaboration with the Youth Club in Aamiq and A Rocha, the Met-WetCoast project organized a bird-watching and awareness-raising field trip for hunters in the Aamiq village. Fifteen hunters joined the trip and the occasion was used to sensitize them on the importance of conserving bird species and to initiate a dialogue with them. Bird hunting is a major threat to the avifauna of the Aamiq wetland and cooperation with the local hunters may convince them to act in a more environmental-friendly way and reduce their negative impact on the wetland.

### *3.6 Rice and intensive cultivation*

Cultivating rice (*Oryza sativa*, a native of the East Indies) has always depended on water. The shallow flooding of fields during most of the growing season, using nearby freshwater resources, has been an ancient practice, creating artificial and variable interfaces between land and water bodies, which constituted characteristic elements of traditional landscapes. In some parts of the world, and especially in South East Asia, rice cultivation on sloping ground has transformed the terrain by human ac-

tion and has resulted in cultural landscapes of unique beauty.

Although growing rice requires humid climatic conditions, it has been imported into the Mediterranean Basin in the proximity of great rivers and wetlands associated with them, such as the Ebro Delta in Spain, the Rhône River and the Camargue in France and the Po Delta in Italy.

The significance of rice fields for biodiversity has been considerable as they host a variety of fauna species for all or part of their life cycle. The expansion and intensification, however, of rice cultivation has resulted in important loss of natural wetlands, while the use of large quantities of agrochemicals<sup>65</sup> has had a negative impact on many species. Recently, the provisions of GATT<sup>66</sup>, the changes in the Common Agricultural Policies and international competition have started menacing the profitability of intensive rice production in the Mediterranean and have generated new interest in small-scale and high-quality organic cultivation.

### *3.6.1 Intensifying rice cultivation in the Camargue<sup>67</sup>*

In the *Camargue* (France), during the second half of the 20<sup>th</sup> century, rice has become a major element of local agriculture. Benefiting from large expanses of flat agricultural lands, amply irrigated from the waters of the Rhône River, it has replaced other traditional cultivations, or has been used as an alternate with wheat or other cereals, providing reasonably high income to the local property owners. The system became threatened by the industrialisation of rice production in Asian countries and the relaxation of French protective measures under international pressure in the application of the GATT measures.

The spread and intensification of rice production in the Camargue resulted in the loss of considerable natural wetland areas, particularly temporary marshes. The presence however of flooded areas, which constitute artificial wetlands, provided feeding grounds for almost 40 bird species through the agricultural year. They consist mainly of in-

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<sup>65</sup> They include herbicides, pesticides and artificial fertilisers.

<sup>66</sup> General Agreement on Tariffs and Trade.

<sup>67</sup> Mathevet, 2005.



*Hydraulic installations, the Camargue*

sectorivorous waders, terns and gulls (such as Gull-billed Terns) during the peak period of April-May, when the fields are flooded and the spring migrations arrive. During the breeding season of May to July, these are replaced by egrets and herons (Cattle Egrets, Little Egrets and Squacco Herons) and in August by Purple Herons. During the fallow period of September to March, when the fields are turned into hunting marshes or are flooded by rains, they host wintering ducks such as teal and waders (Lapwings and Snipe); while throughout the year Cattle Egret, Mallard and Yellow-legged Gull are present. The use of rice-fields by the birds depends to a large extent –directly or indirectly– on agricultural practices (flooding regime, crop rotation, soil preparation, use of agrochemicals). Thus, heavy use of pesticides decreases the abundance of aquatic invertebrates on which insectivores depend<sup>68</sup>. On the other hand, it is argued that rice cultivation helps maintain the

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<sup>68</sup> Tour du Valat has carried out significant scientific research on the use of ricefields by ornithofauna.

complex and extensive hydraulic installations, which are necessary for regulating the water regime in the Camargue –in this respect, a totally anthropic wetland system since the 19<sup>th</sup> century.

Facing growing international competition and a considerable drop in world prices, rice producers in the Camargue are in a serious dilemma. Abandoning rice cultivation is one obvious option; and already some of the less productive fields are being abandoned and could be restored as wetlands. However, finding other crops to replace rice is not such an easy matter, especially in the framework of the new CAP. A second option is to capitalize on the specificity of the Camargue, which has been recognized as a major global wetland with very strong cultural characteristics, and to attempt a reversion to the production of rice with distinct characteristics (such as coloured or scented rice), appropriately marketed under its well-known place of origin. Thus local producers have established the Cap Camargue company in order to commercialise local rice as a recognized product of guaranteed geographic origin (with appropriate certification since 1998), with positive results.

Efforts to turn to organic production have not yet been particularly successful, with less than 2000 ha cultivated, because of low productivity, unsatisfactory prices and lack of encouragement<sup>69</sup>. The experience from similar wetlands (such as the Ebro and Po Deltas) has been more in favour of organic rice production, especially as it has been supported actively by the EC<sup>70</sup>. One of the reasons may be the incorporation of rice as an important ingredient of Spanish and Italian gastronomy (for example, in the *paellas* or the *risottos*), which is not yet the case in France. This aspect could be related very profitably to growing ecotourism around major wetlands, focusing on both the natural and cultural heritage. At present, a significant research project on organic rice production in the Camargue has begun, examining various aspects (genetic, environmental and cultural)<sup>71</sup>. There is also growing interest

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<sup>69</sup> Organic production of rice has not seemed to interest the competent organisations (*Centre français du Riz, Syndicat des Riziculteurs*).

<sup>70</sup> Such as the SEO / BirdLife 1997 project 'Improvement of habitat management in the SPA of the Ebro Delta', supported by EC / LIFE.

<sup>71</sup> Tour du Valat plays a major role in this project.

from rice producers, as they realize that in the future financial support from the EC will depend on environmentally-friendly cultivation methods, and this may encourage the shift to organic growing of rice, or at least to more sustainable and reasonable methods<sup>72</sup>.

European rice production is a small fraction of the global, and in particular on the northern side of the Mediterranean, and certainly could not compete in price and quantities in international markets. It seems that only by capitalizing on high-quality, specialized rice products, associated with cultural values and ecotourism, may a viable agricultural exploitation be maintained.

### *3.7 Salt and salinas*

The extraction of salt from sea water has been an ancient activity in the Mediterranean, creating unique anthropogenic landscapes, provid-



*Salt pans, Castro Marim*

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<sup>72</sup> What is known in France as ‘*agriculture raisonnée*’.

ing refuge to a variety of fauna species and establishing solid cultural values. In contemporary times, however, their financial viability is heavily threatened and many are either already abandoned or converted for other uses (such as aquaculture). Perhaps their only future resides in making specialized products and the eventual use of their cultural potential.

Although it is argued that there is economic viability in artisan salt production, this depends decisively on the quality of the final product. If there is any degree of contamination, the product will lose its value, and will not be competitive with the industrial salt production, nor with any other activity that could be developed in the same area.

In any case, the proposals made for the protection of traditional salinas consist in classifying them as priority Ramsar Sites, integrating them in the category of traditional landscapes to be preserved, and making efforts to support financially the traditional salt-making activity. This seems justified for many reasons, but mainly because traditional salt production can be very attractive to visitors, if appropriate infrastructure is provided. Besides their landscape and biodiversity values, there is in traditional salinas a series of sensations and perceptions that can be very pleasant for both tourists and local inhabitants.

An interesting case is the *Camargue* in France. Its traditional salinas dating from many centuries were heavily industrialized in the 19<sup>th</sup> century, with the establishment of the *Salins du Midi*. Yet many of the local traditions were maintained, especially among the descendants of the Greek saltworkers from Messolonghi, who migrated to the area in the early 20<sup>th</sup> century, settled there and established a village (Giraud). In addition, the area of the salinas remained of high ecological value and they host one of the largest nesting colony of flamingos (*Phoenicopterus ruber*) in the Mediterranean<sup>73</sup>. Today the economic viability of the industrial salinas is menaced, although one of the most successful products is high-quality *fleur du sel*, which projects an artisanal and ecological image.

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<sup>73</sup> In 2007, this colony disappeared (it is hoped temporarily) as the striking workers at Salins du Midi drained the area in which it was located.

### 3.7.1 *Salt pans in Portugal*<sup>74</sup>

The presence of the salt pans bordering *Castro Marim* wetland alongside the Guadiana River in Portugal is centuries old. Locals have exploited the salt marshes for hundreds of years using traditional methods for the extraction of salt. The larger part of the salt flats is natural, but extensive areas have been transformed for the commercial production of salt in more recent times. However, the viability of such facilities remains in doubt and many of the traditional salinas have been converted into fish farms, posing threats to the integrity of the site.

The artisan production of marine salt in *Castro Marim* began 5000 years BC, while in contrast, only in the 1960s, an industrial salt exploitation unit was installed in the area, on a plot of about 300 ha. The traditional salinas occupy about 300 ha as well and have maintained both the structure (small dimension of the tanks and nurseries, with the *talho* being the basic production unit of the salina) and the tradi-



*Salt pans, Castro Marim*

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<sup>74</sup> Information provided by Emilia Paula Silva.

tional artisan methods of salt production, using only the combined action of sun, wind, tides and human labour.

The final product (salt or salt flower), due to its quality (chemical composition, bacteriologic purity, absence of insecticides, hard metals and radioactivity), is an essential dietetic complement to the normal functions of the human body. This activity is considered to have a high economic viability, not only due to the high quality of the products and to their dietetic value, but also due to the emergence of a market based on the awareness of the importance of food quality to human health. The major problem is the low financial capacity and qualifications of the producers, contrasted with the attraction that tourist promoters have for these areas.

### *3.7.2 Salinas in Albania constitute both an opportunity and a challenge<sup>75</sup>*

The salinas of *Narta* constitute a rare and characteristic habitat type, as other salinas in Albania have already disappeared. Also, as a semi-industrial habitat, they are important for their biodiversity values espe-



*Dune, Narta*

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<sup>75</sup> Information provided by Zamir Dedej.

cially for breeding and migrating birds. Their area, with a surface of about 13.8 sq km, also called the Skrofotina Salinas, is separated on the south by an embankment of the Narta lagoon. Some of the characteristics of this installation are its pre-evaporation surface of 550 ha, the evaporation surface of 200 ha, the crystallisation surface of 50 ha, and a total number of 38 pans, of which 21 are still operational. The salina employs about 160 workers, while during the July to September period their number increases to 250. Salt production until 1990 was 140-150,000 tn per year, mainly for industrial uses, trade and export. After the 1990s, the production was reduced to 20-25,000 tn per year, of which 20,000 tn were used to meet domestic needs, while the rest was exported to the FYR of Macedonia.

The main problem, after the change of the economic system of the country in 1991, is the depreciation of the installations, and especially of machinery, equipment, saltpan infrastructure, canals, roads, etc. The sea pumping station, which used to bring seawater from the Adriatic, is not functioning any more, and salina is abstracting lagoon water. Circa six million cum are drawn each year (approximately 15% of the lagoon water volume) during a two-month period, which is considered as very critical by different sources (fishery report, hydrological report etc). Thus, when the communication channels to the sea are blocked, the salina contributes to the rapid drainage of Narta lagoon. It is evident that the current operation of the salina is not sustainable and measures are needed to balance its economic viability with heritage conservation requirements.

### *3.7.3 Successful privatization of management and resource use in Slovenia<sup>76</sup>*

In the *Sečovlje Salina (Soline)*, a salt-making museum has been set up in a complex of traditional salt-workers' houses, including two restored salt pans to represent traditional salt production. The reconstructed buildings and the saltpans initiated the interpretative type of tourism in this part of the salina. Its history is closely related to that of the town of Piran and the local inhabitants. The symbolic, amenity and acknowl-

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<sup>76</sup> Information provided by Andrej Sovinč.



*Piran salt pans, Sečovlje Salina*

edged local values of the salina add to the overall needs for its conservation and proper management. In addition, the entire salt-production sector (named *Lera*, with a total area of around 300 ha) is still active and salt production there is based on traditional practices.

The cultural heritage of the Piran salt pans reflects centuries of the life and work of the salters on the north-eastern coast of the Adriatic Sea. The oldest heritage has been preserved in the Fontanigge basin of the *Sečovlje* Salina, where ruins of the old saltpan houses, traces of salt pans, levees and channels document the fact that the Old Piran Salt pans had been active until the 1960s. Their cultural heritage has been preserved, protected and presented in the Museum of Salt-making, situated on the bank of the Giassi Channel.

Of the once numerous salt pans in the Gulf of Trieste, only those at *Sečovlje* and Strunjan have been preserved. They are the only ones along the Eastern Adriatic coast, where salt is produced with traditional methods in the entire process, by daily gathering brine on the bio-sediment –the *petola*. Their testimonial value is, therefore, even greater, as it places them at the level of ethnological, technical, historic,

settlement and landscape heritage of exceptional significance. The immovable cultural heritage of the salinas includes the still functioning as well as abandoned salt-fields, channels and levees with stone walls, steps and sluice gates (with only their stone parts preserved), saltpan houses with their immediate vicinity (including their ruins and localities), paths, bridges, wind pumps, and other elements.

The *Sečovelje* Salina Nature Park is the first state-designated protected area in Slovenia where the concession for its management has been given to a business company (SOLINE d.o.o.). Management of the area is carried out in accordance with the specifications included in the decree on the establishment of the Nature Park and is put into practice through the management plan, approved by the Government of Slovenia. In return for the efforts and investments into protection and management of the heritage of the area, the private sector management body has been granted with the possibility to exploit part of the income generated from salt-making, tourism and other activities carried out in the area. By taking into account various local natural processes, the company (and management body) provides for the sustainable development of the area. In addition, through the implementation of measures concerning the protection of both natural values and of cultural heritage, the company is contributing to increased public awareness of the significance of protecting *Sečovelje* Salina Nature Park.

Three times a year, at the time of the salt-production season (April-August), a salt-making festival is organized. Among its organizers are the Park and the local communities. The festivities include important cultural events and product trade fairs.

This particular wetland demonstrates that –under certain conditions– privatization of management and resource use activities can result in economic viability along with the conservation of the natural and cultural heritage.

### *3.8 Wetland materials and handicrafts*

The production of handicrafts has been very common in all Mediterranean wetlands, mainly for domestic or religious use, based mostly on local natural materials, with ingenuity and an innate aesthetic sense.

Many of these products were of commercial interest and were transported across the Basin by caravans and boats. Industrialization has resulted in the decline of such practices, except in few places –particularly in North Africa–, where most of the handicrafts now produced are destined to be purchased by visitors.

Thus, in *Burullus Lake* (Egypt) a variety of artefacts and handicrafts are still made from reeds. The practice is decreasing and efforts to reinforce it are very much needed, including improved marketing of products. Similar items made of reeds are also produced in the *Zaranik* protected area, part of Bardawil Lake in Eastern Egypt. In addition, the MedWetCoast project has sponsored a renewal of Bedouin women's handicrafts in four villages of *Omayed* and *Zaranik*. The local skills of embroidery were being lost, as they were applied only to clothes tailored elsewhere. Equipment and training have now been provided so that women in these villages can produce fully tailored and embroi-



*Woven baskets, Tamentit Oasis*

dered clothes of traditional design. A local NGO has been also established to assist in this process.

In the Oases of *Tamentit* and *Sid Ahmed Timmi* (Algeria), inhabitants produce a variety of handicrafts, especially black pottery items, woven baskets, silver jewellery and leather goods, which are highly appreciated by visitors<sup>77</sup>. The black pottery of the area especially, is unique and is made only in Tamentit. Jewellery items that require a forge are made solely by men, but basket weaving and pottery are family affairs, in which both sexes participate.

### *3.8.1 An opening for handicrafts in an Albanian lagoon*<sup>78</sup>

Handicraft products are also made in *Kune-Vain Lagoon* (Albania), but this activity requires some degree of management and quality control. Today handicrafts in the area include a range of products based on wool, wood, reeds, rush and other local materials. They include local dresses, carpets with traditional motifs, socks, shirts, straw mats, rush baskets, fish-traps, various tools, musical instruments and other artefacts. All these are used locally, although some are marketed throughout the country, and are sold mainly as souvenirs in Tirana.

In the two villages in the vicinity of Kune-Vain, in Ishull Lezha and Ishull Shengjin, the most popular handicraft has been the production of mats with raw materials taken from the swamp, which were used as carpets and for protection against cold and humidity. This tradition is almost extinct, even if now such mats can still be seen as decorations in restaurants and other tourist facilities.

Traditional clothing (mountain clothing) is characteristic of the region, although it is not currently produced locally.

The production of handicrafts could be improved by the development of a local scheme for quality control and marketing, the establishment of a co-operative of handicraft workers that could sell their products in a common shop nearby the areas frequented by visitors, such as the Kune-Vain wetland site, and monuments of cultural and historical heritage.

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<sup>77</sup> Visitors are also interested in the *erredim*, a traditional medical treatment for arthralgia, in which the patient is buried in the sand.

<sup>78</sup> Information provided by Zamir Dedej.

In this context, a missionary of the Catholic Church of Blinisht has initiated an activity, which currently is spreading in the area of Zadrima: the hand-made production of carpets. Home-made carpets are very popular there, and the weaving loom is one of the main tools for the production of traditional textiles, which are found in every house. Currently there is a workshop for such textiles and carpets and a modest exhibition in the centre of the village of Blinisht in the vicinity of the church. A display of products can be seen, such as curtains, costumes, sheets, covers, bags, clothing and different decorative elements for bars and restaurants, hotels and offices. The ethnographic values of these products are very well preserved. The dominating red in weaving and the use of golden string gives an attractive uniqueness to the materials. In particular, masterfully and delicately woven scarves have a great artistic value and are envied by modern stylists. A considerable number of handicraft products are currently used to decorate houses in different Italian cities and are very much appreciated by tourists.

The clay of Zadrima is masterfully turned into ceramics and pottery works that are used for building decoration. A pottery workshop is also to be found in the village of Blinisht, whose products are also sold in Italian markets.



*Procession of el Cristo de la Salud, Albufera de Valencia*

## Chapter 4

### Cultural and spiritual aspects

Many of the cultural values of wetlands are non-material in essence. They relate instead to traditions and beliefs, with spiritual or secular implications, to knowledge and education, to personal or social entertainment and pleasure.

A number of major events related to wetlands play a key role in reinforcing the relationship between local inhabitants and other interested people with their wetland heritage. Such events may have a religious or a broader spiritual character or are part of the folklore and the social traditions of specific areas. Some date from past centuries and are still alive today. Others are more recent, but have captured the imagination of people and have become permanent fixtures in their specific areas, helping to reconnect people with wetlands and nature and thus strengthening local conservation efforts. Quite a few of the events take place in the wetlands themselves; others in the surrounding villages or towns, but with a strong link to water and wetlands and to the people that work in them. In addition, such events may provide useful lessons for other Mediterranean sites. Thus, their preservation and enhancement is very much needed today.

The area of the *Santo André Lagoon* (Portugal) provides characteristic examples of both religious and secular events related to the wetland in many different ways<sup>79</sup>. Thus, the 'Opening of the lagoon' is held annually, in March, as an initiative of the Santiago do Cacém Municipality. This work by volunteers lasts a few days, with the participation of almost all the Santo André coastal population, especially fishermen.

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<sup>79</sup> Information provided by Emilia Paula Silva.



*Cattle herds, Santo André*

The event also attracts a growing number of visitors, who flock to the area without needing to be invited.

The Santo André market is organized annually by the local authorities at the beginning of December, and takes place in the village of the same name, near the church, at a spot relatively far from the lagoon. Although it is not a purely lagoon-related activity, it attracts the local population, mainly the fishermen, who use this event as a broader form of social and community integration.

The St. Louis festival, also, takes place in Santo André village during the first days of August. Lapsed for many years, it was resumed recently. It is a religious festival, organized by the local parish, near the church. Initially, the purpose of this festival was blessing of the cattle herds. Currently, with the decrease in cattle raising and grazing, it has lost this specific function, but still maintains a strong identity as a spiritual and social event. This religious event has always been attended by most of the lagoon population.

Pork butchering is a broad family-based activity, with a characteristic social and festive character, which is derived from the cooperation required for killing the animal, treating the meat and preparing various

products (such as sausages)<sup>80</sup>. This activity occupies an important role in the domestic economy of the families who still maintain the tradition, with strong cultural overtones.

#### 4.1 *Religious and spiritual events*

Since antiquity, water has played an important spiritual role for most people in the Mediterranean, and many places related to water (such as springs, rivers, lakes and other wetlands) were considered sacred. Thus baptism and the blessing of the waters is a religious ceremony that still exists in many parts of the Basin.

One of the most characteristic rituals taking place in *Evros Delta* (Greece) is the yearly celebration on the 5<sup>th</sup> of August of the Sotira chapel, in the Valtos-Armires<sup>81</sup> area of the delta. On its eve, people from the surrounding villages stay up all night, light fires and dance next to the chapel, while many of them dive in the shallow waters nearby.

##### 4.1.1 *Blessing the waters for fishing: Procession of El Cristo de la Salud*<sup>82</sup>

El Palmar is a district of Valencia right in the heart of *La Albufera*<sup>83</sup>, a coastal lagoon connected to the sea. It is the site of the water-borne pilgrimage of *El Cristo de la Salud*, also known as *El Cristo de El Palmar*. The celebrations, lasting usually from 1 to 7 August, are organized by the so-called *clavarios* and *camareras*, who are chosen every year after the procession has taken place.

The tradition of pilgrimage in boats for El Cristo de la Salud dates back only to 1974. The previous year, the icon of the Virgin of Los Desamparados, *La Peregrina*, was brought to El Palmar for the first time and was taken out in a boat across the Albufera on the initiative of the local church. That event 'was much enjoyed in El Palmar, so that the *clavarios* decided to repeat it the following year for El Cristo de la Salud'.

<sup>80</sup> It is interesting to note that similar practices exist in many parts of Greece, especially in the islands.

<sup>81</sup> *Valtos* in Greek means marsh, while *Armires* means saline.

<sup>82</sup> Information provided by SEHUMED.

<sup>83</sup> See Appendix 1, section A01, p. 183.

Every year since, in the afternoon of 4 August, the procession leaves from the port of El Palmar, where the inhabitants of the coastal towns (Catarroja, Silla, Sueca, Pinedo and El Perellonet) gather to accompany the image of Christ on its journey to *el lluent*, as local people refer to the central part of the lagoon, so that it may preside over the blessing of the waters to ensure good fishing and catches all year round.

The statue of El Cristo leaves the church at 18:30 to the sound of bursts of fire, and is carried in procession on the shoulders of about 20 local inhabitants from the Niño Jesús del Huerto parish to the district landing stage, where it is lifted onto the largest vessel operating in the lagoon, accompanied by a band of musicians. Once it is settled on the vessel (*barca*), about 5000 pilgrims in some four hundred boats set off for La Albufera lagoon along a two-kilometre route to *el lluent*.

On arrival at *el lluent*, the other boats cluster around the one carrying El Cristo to hear the priest from El Palmar say prayers and bless those present and the waters of La Albufera. Then the fishermen of the Comunidad de El Palmar call on El Cristo to sanctify the waters so that in October –the start of the next fishing season– the catches will be better than the year before.

When the procession returns to the landing stage, there is much cheering and applause. Once the statue has been unloaded onto the jetty, a crackling *mascletà* –a barrage of firecrackers– is heard. El Cristo is then carried to the square of the town for a hymn to be sung in his honour, and, finally, is returned to the church of El Palmar.

#### 4.1.2 *Profound expressions of catholic faith: Pilgrimages of La Virgen del Rocío*<sup>84</sup>

Of all the cultural aspects of the *Doñana*<sup>85</sup> National Park, perhaps the most important symbolically are the celebrations in honour of the Virgin Mary (*La Madre*) of El Rocío, a village in the junction between

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<sup>84</sup> Information provided by SEHUMED, University of Valencia, revised by Fernando Molina, Milagros Pérez and Agueda Villa from the Natural Protected Area Network and Environmental Services Department of the Regional Environmental Ministry in Andalusia.

<sup>85</sup> See Appendix 1, section A06, p. 192.



*El Rocío Pilgrimage, Doñana*

beaches and marshes, part of Almonte in the Province of Huelva in western Andalusia. The Sanctuary in El Rocío is located exactly between La Rocina stream and the marshes, 15 km from the village centre, in an area known as *El Rocío Madre*, with a double meaning referring to the Virgin Mary and the birth of the marshes. Initially of interest to the neighbouring populations, this major religious event has acquired a growing regional significance in Spain during recent decades. Among other events, it includes a procession on foot, horseback and carriages through the Doñana National Park as far as the village of Nuestra Señora de El Rocío<sup>86</sup>, which provides a very good example of the interface between nature and culture.

The Sanctuary has a border location both from the natural and the administrative side. Located between beeches and marshes, it has been shared after *La Reconquista* by two administrative units of Spain, Sevilla and Niebla. More recently, the area has retained its border role, di-

<sup>86</sup> 'Our Lady of the Dew'; the symbolic relationship between the Holy Virgin and the dew (the condensation of humidity formed usually during the night), on which many living beings depend, especially in arid countries, is significant.

vided into four sections: *la Finca Señorial de Doñana, el Cazadero Real del Lomo de Grullo, la propiedad del Consejo de Almonte* and *el Caño Madre de las marismas los Baldíos*. The Sanctuary is also on a crossing between the Sevilla-Moguer and the Niebla-Sanlúcar de Barrameda routes, an inhabited place in a large empty territory.

It should be noted that the initial appellation of the Virgin Mary was *Nuestra Señora de las Rocinas*, which changed to *Nuestra Señora del Rocío*, when she was designated as patron saint of Almonte in 1653. In this capacity, the following three main celebrations are held in Her honour:

- El Rocío Pilgrimage (*Romería del Rocío*), at Whitsun;
- El Rocío Chico, 18 and 19 August;
- Transfer (*Traslado*) of the icon from El Rocío to Almonte, every seven years.

The El Rocío Pilgrimage is held in El Rocío village, 15 km from the town of Almonte. The permanent population of the town, of over 1500 inhabitants, swells to more than one million people as fraternities from all over the country make their way there on foot and in horse-drawn carts to take part in the celebrations. It is such a well-established annual celebration that it has become a prime media event.

The origins of this small town have been associated with the cult of the Virgin of El Rocío for a very long time, as there is documentary evidence that the original Chapel of Santa María de las Rocinas (as the icon was known until the middle of the 17<sup>th</sup> century) already existed at the beginning of the 14<sup>th</sup> century, having probably been built by King Alfonso X the Wise, at the end of the 13<sup>th</sup> century. The sanctuary is located on the very edge of the wetland, at the point where the La Rocina stream flows into marshland. This part of the wetland is known as La Madre, taking on a double symbolic value from the idea of the 'birth' of La Marisma and the presence of the Virgin. The name 'Virgin of El Rocío' has obvious associations with the wetland and particularly the precise characteristics that it lends to its immediate surroundings. The words of songs, customs and the configuration of the marshes are important assets in the way this entire area has been transformed and utilized.

The Pilgrimage is the chief celebration dedicated to the Virgin of El

Rocío, who was proclaimed patron saint of the town of Almonte as early as 1653. In the clause on patronage, it was agreed that a solemn celebration with a mass and sermon shall take place on the day (in September) already determined by the Catholic Church, as well as the



*Farewell ceremony of the Virgin-transfer to Almonte town, Doñana*

one agreed by the town hall. Thus, the El Rocío Pilgrimage, also known as El Rocío Grande, is held each year on Whitsun Saturday, Sunday and Monday –which explains why the dates vary between May and June– fifty days after Easter Sunday.

Given the local nature of the celebrations in honour of the patron saint of Almonte, its organization is the responsibility of the Almonte Town Hall and the fraternity known as *Hermandad Matriz de Almonte*. As the event's importance and influence requires complex planning involving local government, the rest of the fraternities, and other stakeholders, a Pilgrimage Plan is drawn up every year.

One hundred and four fraternities from all over Spain and abroad affiliated to the *Matriz de Almonte* take part, besides the unaffiliated and many groups that may join the ranks of the affiliated in the future. All these fraternities make the pilgrimage to Almonte town on foot, in carts drawn by oxen or on horseback along well-worn dusty tracks in completely natural surroundings.

The rites of worship begin on Saturday at midday, when all the affiliated fraternities are introduced separately in strict order of seniority, presenting their emblems at the entrance of the Sanctuary; the day ends with reciting the rosary. Whit Sunday starts with a pontifical mass celebrated on the wide esplanade. In the evening, the fraternities with their flags and drums participate in a religious procession. In the late hours of Sunday and the dawn of Monday the local people of Almonte carry the statue of the Virgin shoulder-high in a procession through the hamlet's streets. The Virgin's return to the Sanctuary marks the end of the Pilgrimage, whereupon some of the fraternities begin to head back to their respective places of origin.

The origins of a second celebration –*El Rocío Chico*– lie in the ritual act of thanksgiving that the town of Almonte instituted in 1813, after being spared harsh punishment from French troops in reprisal for the death of a French official at the hands of locals on 18 and 19 August 1810: a salvation attributed to the Virgin of El Rocío. As agreed by the secular and ecclesiastical councils of Almonte and the *Hermandad Matriz*, this formal expression of gratitude, on the same days every year, gave rise to what became known as El Rocío Chico<sup>87</sup>. This festive cele-

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<sup>87</sup> In contrast to the El Rocío Grande mentioned above.

bration takes place in August in the village of El Rocío and –although of a more local nature– increasing numbers of people attend, taking advantage of their summer holiday in the region.

*El Traslado*<sup>88</sup> constitutes the third religious event associated with Doñana. Although the portage of the image of the Virgin of El Rocío to Almonte was probably customary long before, the first documented testimony dates to 1607. The agreements to take the Virgin to Almonte in the 17<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup> centuries were always made by the village council. Since then, the image has been taken to the village –now a town– on more than fifty occasions and for a variety of reasons, such as public calamity (e.g. an epidemic, drought, hunger, war), thanksgiving for a happy event, or the need to carry out major refurbishment work in the chapel.

According to tradition, the Virgin is carried shoulder-high by residents of Almonte town, from the village of El Rocío to Almonte 15 km away, along the *Camino de los Llanos* trail, amidst pine groves and stretches of sandy soil. The transfer to Almonte begins at dusk on 19 August after the image has been covered with a cloak or dust-sheet to protect it along the route. Arriving in Almonte at a spot known as El Chaparral at dawn, the cloak is removed to reveal the image's face to the first rays of sunlight. During its stay in the town, various events are arranged, including weekend pilgrimages by all the affiliated fraternities.

It should be noted that all three events, although deeply religious in their origin<sup>89</sup>, have assumed a vibrant social and artistic context of local and regional importance. For example, a specific type of devotional music and liturgy has been developed over time related to El Rocío, the *misas rociaras* and the *canciones rociaras*. Some of this music has preserved archaic rhythms and melodies, accompanied by large drums and flutes<sup>90</sup>, of great beauty.

Besides their positive social and spiritual impact, the El Rocío

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<sup>88</sup> Meaning 'transfer' in Spanish.

<sup>89</sup> Some scientists maintain that in these pilgrimages there has been a strong influence from the gypsy devotional tradition. The gypsies (Romas or Gitanos) originate from Punjab in Northern India, where similar pilgrimages have existed for many centuries.

<sup>90</sup> Without guitars, the main instrument of flamenco, the Andalusian folk music.

events cause a number of environmental problems, especially due to littering, trampling of the vegetation and the need for trash removal. The challenge for the organizers and the management of the Park is to make use of these events for a better appreciation of the Doñana wetlands, strengthening conservation efforts through popular support.

#### *4.2 Secular events*

All public events are social to some degree. There are those, however, that are associated with wetlands without having any religious implications, remaining entirely secular. All of them, to a certain degree, encourage the participation of the public, both local inhabitants and visitors, and thus strengthen their relation to wetlands.

In *Sečovlje soline* (Slovenia), for example, a festival of salt-making is held three times during the salt-production period (beginning of April, beginning of July and end of August). It includes major cultural events, organized jointly by the Park management and local communities; traditional dances and other folk traditions are performed and local products exhibited. In *Ghar el Melh* (Tunisia) and in the town of Arles in the *Camargue* (France) photography festivals are held every year and



*Pelicans, Kuş Lake*

have become quite popular. In *Evros Delta* (Greece) numerous festivities take place all year long in the wider district of the river, such as the Agricultural Exhibition in Feres and the Traditional Dance Festival in Antheia.

In *Kuş Gölü* (Turkey) the Bird Paradise Festival is held in the second week of June each year. The co-ordinator of the event is the Municipality of Bandırma and the Environment Foundation of Bandırma. Other government agencies and NGOs participate actively (such as the Ministry of Environment and Forestry, the Governor of Balıkesir and the Rotary Club). It was initially a local event lasting only one day, but now lasts an entire week hosting a number of activities. Famous artists, rock bands, and other musicians are involved with evening concerts in this process. Its organizers hope that it may become an international wetland cultural festival.

#### *4.2.1 Carnival Day in Narta, Albania*<sup>91</sup>

Although submitted to intense pressures and threats, *Narta Lagoon*<sup>92</sup> still maintains its natural and cultural heritage and efforts are made to preserve it. Thus, the local authorities decided to organize a yearly festivity, in order to strengthen the appreciation of the natural and cultural values of the area and to contribute to its balanced development.

The Narta Carnival was revived on 11-13 April 2004, after a lapse of many years, by the City Council of Vlora District, in co-operation with other active organizations and local authorities, supported by local institutions and enterprises, such as NGOs, the Chamber of Commerce and the religious community; it was a successful event that gathered hundreds of people to enjoy the start of the spring season.

The Carnival was accompanied by puppet shows, concerts, sports events and other shows. The activities included performances by the pupils of the village of Narta, and an ethno-gastronomy fair, games, visits to the wetland, and public awareness events. The basic themes of the festivities were organized in three main groups, each of them led by a guide, dressed in traditional carnival clothes (kilt, waistcoat and dis-

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<sup>91</sup> Information provided by Sylvie Goyet.

<sup>92</sup> See Appendix 1, section A13, p. 205.

guise), recalling the ancestors of this area or imitating various animals. Folk-music bands accompanied the Carnival throughout the ceremony, moving about the streets of the town, while traditional homemade wine and food, especially Easter eggs, were offered to the participants. During the three days of the Carnival, the town inhabitants celebrated in their homes as well and families exchanged visits (occasionally celebrating other family ceremonies, such as church weddings).

The aim of all these activities was to increase the appreciation of the historic and cultural values of the area and also to encourage further conservation and protection of these values, as a support to the development of tourist resources. It was thought in Narta that such events should be further promoted as a cultural activity that would attract numerous visitors.

The MedWetCoast project found it interesting to become involved in this local festivity, because of its highly participatory nature. Given the positive aims of the event, the project team attempted to focus its intervention on the conservation of the natural values of the area, and in particular Narta Lagoon, as well as to address local environmental conditions, exploring problems and solution alternatives, providing significant input to nature conservation of this beautiful landscape.

In the spirit of the carnival, this was done by means of a minibus covered with designs of thematic graphics, artwork and satirical captions, aiming to raise the public awareness of the local community on environmental issues.

The translation of the slogans depicted on the minibus is the following:

- Left side: Hunters are watched by a flamingo who addresses them with the phrase: ‘Hey people, don’t waste your shots: save one egg today to have a henhouse full’ and in the lower part, a duck symbolizing cleaning up of the ecosystem carrying the words ‘eco-machinery’.
- Back: A goose, having caught some insects and sewer pests, armed with a gun, saying: ‘Citizens: try just once what you do to me every day!’.
- Right side: A pelican has captured some hunters saying: ‘Legal hunting of illegal hunters’, while the other picture shows three diverse waterfowl saying: ‘We eco-musketeers –one for all and all for one: let us face the problem– two paws and two spurs to protect ourselves’.

#### 4.2.2 Combining sports and culture in the Neretva: the Ladge Marathon<sup>93</sup>

A rowing event with traditionally built boats, the Ladge Marathon, has been held in the *Neretva Delta* in Croatia each August, serving both as a means to maintain local traditions and as a tourist attraction.

*Ladja* is a wooden boat unique in its construction, found only in the Neretva Delta; a smaller boat, of slightly different construction, is called *trupa*. Both vessels are known and have been used in the area for centuries by the locals for various purposes: access to their plots of arable land in the marshes, transportation of the tools needed and sometimes of the crops collected or food for the livestock.

The main goal of the institution of the race is to prevent this type of boat from disappearing and to preserve the knowledge and skills of old craftsmen in the area.



*Ladge Marathon, Neretva Delta*

<sup>93</sup> Information provided by Eugen Draganović.

The first race was held on 13 September 1998, with 18 boats competing. Today, this race is regularly organised on the second Saturday in August. The boats start at the bridge in Metković and end in the port of Ploče, with a total distance of 22.5 km. The event is organised by the Association of Boatmen and for the last five years has been placed under the sponsorship of the president of Croatia.

In every boat there are ten rowers, the drummer ('the stroke') to keep the rhythm and the cox steering at the back of the boat. The boats are 8 m long, 3.5 wide and can carry a load of 2.5 to 3.5 tons. Anyone can join the crew of a boat in the race regardless of age, sex or nationality, always however in accordance with the strict rules of the Association. At the half-way point of the race in Opuzen, six rowers may be replaced by others. In 2004, 34 boats and more than 300 rowers entered the competition. Several thousand spectators followed the race. The event has become very popular and seems to attract more visitors to watch the race every year.

### *4.3 Educational values and ecotourism*

Combining natural and cultural interest in protected areas may attract a wider variety of visitors, contributing thus to local income. Care must be taken, however, not to exceed the carrying capacity of sites, as this would threaten both the natural and cultural heritage. Such efforts may vary from very modest attempts to increase the number of visitors in certain protected natural areas with strong cultural heritage potential to long-term initiatives for the creation of a particular 'image' of a region, which may attain finally international recognition.

In this latter category, perhaps the most successful example has been the case of the *Camargue*, one of the major Ramsar sites in the Mediterranean and at the same time a well-known tourist destination in the South of France. Bullfights associated with cattle-raising were always popular in the Rhône River delta, but the tradition of bullfights, horse-riding and the *manades* of black cattle with its current codes was the result of a philosophical and cultural movement at the end of the 19<sup>th</sup> century, called *le Félibre*. One of its leaders was the famous writer and Nobel Prize winner F. Mistral. Much later, since the 1950s,

this image of the Camargue was used to advertise the place to visitors. Currently, the activities linked to bulls and horse, associated with eco-tourism, contribute significantly to the conservation of the Camargue landscapes and habitats, by providing economic benefits from intact wetlands, which otherwise would have been transformed into rice fields [Picon 1988].

#### *4.3.1 An integrated approach in a cave system<sup>94</sup>*

*Škocjanske jame* (Škocjan Caves) in Slovenia is the first underground system recognized globally as a wetland.

The length of the caves is 6200 m and their maximum depth 223 m. The system maintains a mean temperature of 12° C. It hosts large breeding colonies of different species of bats, as well as the world famous Cave Salamander (*Proteus anguinus*), in addition to endemic coleoptera



*Inside Škocjan Caves*

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<sup>94</sup> Information provided by Vanja Debevec Gerjevič see also: [www.park-skocjanske-jame.si](http://www.park-skocjanske-jame.si).

and crab species. The caves were first mentioned around 60 BC by Posidonius of Apamea (135-50 BC)<sup>95</sup>.

The area was designated as a UNESCO World Heritage Site in 1986 and the Republic of Slovenia established the Škocjanske jame Regional Park ten years later. In 1999, the cave system was designated as a wetland of international importance according to the Convention on Wetlands and in 2004 it was declared a MaB site.

Since its establishment, the park hosts various public awareness, educational and training activities, focusing on both its natural and cultural assets, which make Škocjan Caves a pilot model for the entire region of Karst.

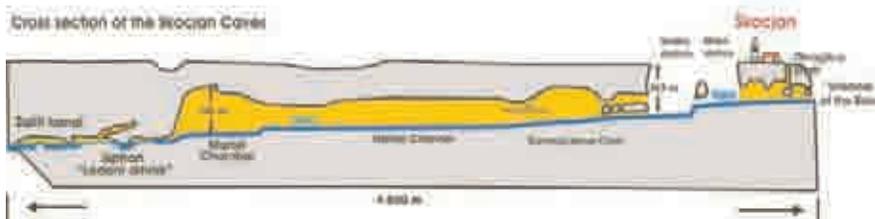
Human involvement with the caves is of long date. Although the earliest visits date back to the 18<sup>th</sup> century, systematic exploration started in the beginning of the 19<sup>th</sup> century and by 1888 the entire cavern was already mapped. The first recorded visits were noted in 1819 and they continued on a sporadic basis. Electricity within the caves was installed as early as 1959 and apart from safety walkways, bridges and an outdoor escalator, no other constructions exist. At present, parts of the caves are accessible to tourists all year round. Visitors, reaching a yearly average of 80,000, can access the heart of the Škocjan Caves escorted by well-trained guides, along a path 3000 metres long and up 500 steps, cross the Cerkevnik Bridge over the Reka River flowing 47 m beneath it and visit the impressive Paradise Hall. The tour duration is an hour and a half and the guides are English-speaking.

On the surface, the visitors can take the Škocjan education trail. It was established in the framework of an EU Phare programme in cooperation with the Environmental Agency of the Slovenian Ministry of Environment and Spatial Planning and numerous experts from various universities, institutes, schools, museums, and associations. The trail begins and ends in front of the Information Centre in Matavun, where visitors can obtain all the necessary information and a guidebook to familiarise them with the basic features of the park and the Karst re-

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<sup>95</sup> 'The river Timavus springs in the mountain, flows into an abyss [i.e. the Škocjan Caves], reappears after the distance of 130 stadia (about 24 km), and flows into the sea.'

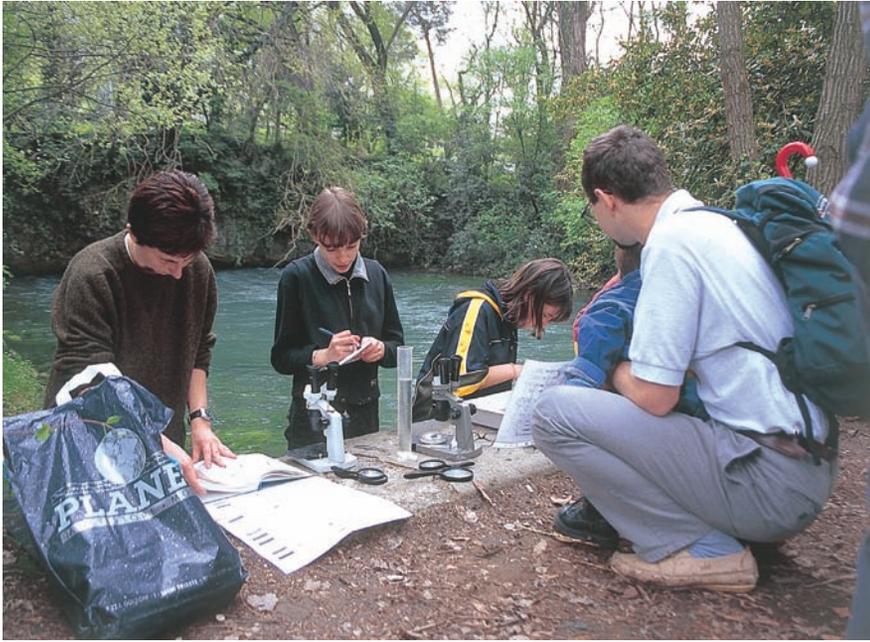
gion. About two kilometres long, the trail takes around two hours to walk. It is suitable for individuals and larger groups, primarily school-children that can enrich their knowledge of the natural and cultural wealth of this part of Slovenia with the assistance of educational folders.



Included in the trail are the restored J'kopin and Jurjev barns in Škocjan, where ethnology, archaeology, and karstology exhibitions are on display. Today, J'kopin barn houses an ethnographic museum presenting cultivation methods and the production of cereal crops and their use, when fields were ploughed by horses and oxen. Grain from the nearby fields was once threshed in the barn, and hay was stored below the roof on planks (*žagance*). Traditional farm implements and tools are also exhibited in the barn.

In Jurjev barn, a museum of speleology has been established, with exhibits from the explorations of the Škocjan Caves displayed.

There are several archaeological sites within the park district from various periods, including settlements, burial grounds and cave sites. In the Škocjan village itself, a prehistoric fortification was found, as well as artefacts from the Bronze and Iron Age. In the same village, a museum of speleology has been established, with exhibits from the explorations of the Škocjan Caves displayed. In the village of Brezec, flat cremation burial grounds are situated, along with traces from late Bronze and Late Iron Age habitation. Prevali Cave of the Velika jama was a cave site, where votive activities took place in the late Bronze and Early Iron Ages and later. In Tominc Cave and Velika dolina Cave, burial grounds and skeleton burials were found of the Neolithic, Bronze and Iron Ages. A Natural Science Centre in a renovated old



*Škocjanske educational trail, Škocjanske Park*

house, Delezova in Škocjan, hosts a permanent archaeological exhibition together with geological and biological exhibitions.

The Škocjan Park staff, in collaboration with the local inhabitants, pays great attention to the protection of the natural ecosystems and archaeological sites, to the restoration of architectural heritage, and to sustainable management, already applying the practice of full integration between nature and culture in this very special wetland site. In return, ecotourism provides substantial employment and income for the local inhabitants, while covering a major part of the costs involved in conserving the area in a satisfactory state.

#### *4.3.2 Local initiatives in a border river*<sup>96</sup>

On the Greek side of the *Evros Delta*, successful ecotourism activities have been developed since 1996, based on the Evros Delta Visitor Cen-

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<sup>96</sup> Information provided by Andreas Athanassiadis.

tre in Traianoupolis, in collaboration with the Feres Tourist Centre. The Centre supervises the protected area, provides appropriate information to visitors, organizes guided tours with buses and boats (with the assistance of a local environmental NGO), as well as special events, such as the European Bird Day, World Wetlands Day and Green Week.

To date, the Visitor Centre operates under the aegis of the Municipality of Traianoupolis and has been financed by several institutions (Ministry of Environment, Physical Planning and Public Works, the Evros Development Company, Association for the Protection and Promotion of Evros Delta) and through European Funding Programmes (INTERREG, LIFE).

One of the primary actions of the Centre concerns the encouragement and facilitation of ecotourism. Appropriate activities are implemented according to the existing legislation for the protection of the wetland (such as areas of permitted access and licensing). The Visitor Centre is at the disposal of all guests, who can visit the exhibition, the projection room (video and slides projection can be scheduled upon request) and the shop, and can obtain free publications. In addition, they are given guidance on the options available for visits to the wetland, depending on the season and weather conditions, as well as on their personal interests and preferences. The Centre offers up-to-date information on the current conditions in the wetland and can advise on the most interesting places to visit during each season.

Guides and guided mini-bus field tours are available most of the year, as well as boat trips around the wetland. All guest categories and groups can participate, such as individual visitors, schools, educational institutes, associations and groups of specific interest (such as bird watchers or specialised scientists).

In the nearby town of Feres, a Tourist Centre operates since 1996, under the Feres Municipal Tourist Development Company. A reception area is available there, where presentations about the Evros Delta and its wider area are organized. Guides accompany guests to a specific itinerary in the Delta and boat trips are offered. Efforts have started to present to visitors an integrated view of the rich natural and cultural



*Boat trips, Evros Delta*

heritage of the site, but much more is needed in terms of human and physical resources, as well as developing a new mentality among all those involved.

In 1997, only 1000 persons visited the Evros Delta, while their number increased during the subsequent years, rising to 25,000 in 2004. A peak period is the month of May, when many schools organize excursions to the wetland, as well as during summer season, and in particular August, when mostly individual visitors arrive.

Visitors are generally not actively involved in nature protection and management activities, although several local groups (schools, scouts and guides and WWF Greece volunteers) participate in actions organized by the Visitor Centre, such as cleaning and watering of reforestation areas. However, the participants in the ecotourism activities described above gain greater appreciation of the natural and cultural heritage of the area and contribute to the increase of local income, both of which are valuable for the conservation of the site.

Nowadays, the Evros Delta Visitor Centre is the headquarters of the

Management Body of Evros Delta National Park, which was established in 2003 on the initiative of the Ministry of Environment, Physical Planning and Public Works.

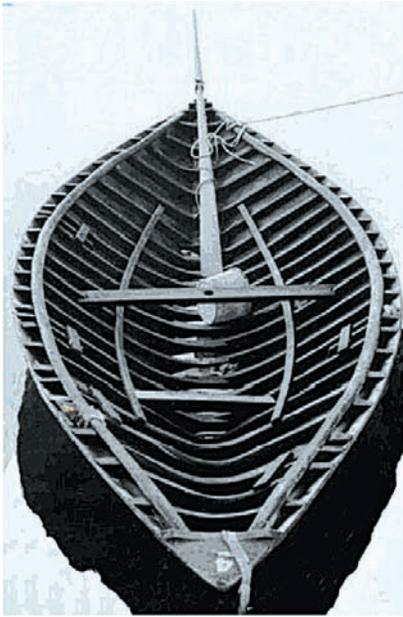
In the meantime, the final zoning of the National Park is still a matter of conjecture as the Management Body has in essence nothing to manage (the area having been designated a National Park, the relevant law is still pending). From the legal point of view, the Evros Delta is currently suspended in a “legal void” since the Greek state has not produced the necessary laws and structures for the enforcement of the above legislation required.

#### *4.3.3 A new tourist product in Neretva*

The Dalmatian coast of Croatia has been a major tourist destination in the Mediterranean, benefiting from a mild climate, extensive and beau-



*Ladja boat, Neretva Delta*



*Neretva typical boat*

tiful coastlines, a multitude of islands and a variety of characteristic landscapes. In addition, the area is rich in cultural heritage, especially in the historic city of Dubrovnik. After the wars in ex-Yugoslavia, reconstruction efforts were directed to repairing the infrastructure in the coastal zone and its tourist facilities, and the war damages in Dubrovnik were meticulously restored.

The delta of the *Neretva River*, on this coast, has never been a major tourist centre, lacking the appropriate infrastructure. Fairly recently, and although protection measures and active management of this major wetland have not yet been instituted, interesting initiatives

have been started by the private sector in order to increase the flow of visitors to the area. Thus, local businesses have developed a very sophisticated programme of activities, which can satisfy both cultural and ecological interests.

Visits usually start with a guided tour of the Naronia archaeological site and museum, with its important classical Greek and Roman remains. They are followed by a boat trip into the wetland, on traditional wooden boats (*ladja*) that have been converted for the purpose to include seats and tables. During the trip, dried fruit, cheese and drinks are offered, including *travarica*, a local alcoholic product, spiced with juniper berries. Boat trips act as a filter to limit the number of visitors inside the wetland, and encourage the maintenance of the boat-building tradition in the Delta.

Depending on the season and the weather, lunch is served either at an open-air barbecue in the middle of the wetland or in one of the quality restaurants in Naronia serving typical dishes from wetland products (such as eels, frogs legs and black water hens) and local wines.

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Although recent, this ecotourism initiative has been successful in drawing visitors from other parts of the coast, and is reputed to be highly appreciated especially by groups of Japanese visitors.



*Wet meadows, Prespa Lakes*

## Chapter 5

### Towards an integrated approach

Already five years after the approval of Ramsar Resolution VIII.19, an integrated approach to the natural and cultural heritage is being considered in certain Mediterranean sites. Such efforts may still be at a preliminary planning phase or even at the stage of definition of needs. Within the broader framework of the MedWet Initiative, it is important to monitor their evolution, to assist wherever possible and to draw conclusions that might be of wider use, both in encouraging practical applications to other sites and in rendering the guidance indicated by Resolution VIII.19 more specific and effective. In addition, efforts to make them known to a broader circle –both national and international– may encourage those responsible for wetland and culture policies and those managing other wetland sites to assist in the incorporation of cultural values of wetlands in conservation and wise use objectives and actions.

Four very different sites have been selected as characteristic examples, each for different reasons: Butrint, because it has achieved a considerable track record of attempting to integrate cultural activities with nature conservation; Doñana, as it is considered as one of the major Mediterranean wetlands, in which cultural values have been properly appreciated; Prespa, an experiment in transboundary co-operation, as it is putting together a full programme for the integration of cultural and natural values, through the creation of a Centre on Nature and Anthropos; finally, Tamentit and Sid Ahmed Timmi Oases, because they are a most particular case, in which the need of combining conservation and wise use efforts for both the natural and cultural heritage is imperative.

The case of the MedWetCoast project is also presented as a positive

example. Following the approval of Ramsar Resolution VIII.19, those responsible for the development of the project decided to incorporate a number of activities for its implementation. Some of them have already produced encouraging results.

### *5.1 An ambitious programme under difficult circumstances*<sup>97</sup>

There are specific lessons to be learned from the case of the Butrint wetland, an Albanian site with rich cultural and natural heritage, being both a major archaeological site, recognized by UNESCO as World Heritage Site (since 1992), and a Ramsar wetland<sup>98</sup>. Consistent efforts are underway to co-ordinate these two aspects and to develop an integrated approach.

#### *5.1.1 Management of the site*

The first lesson is that effective management of the site is most important. Butrint has the rare advantage of having a locally established management body, the Co-ordination and Administration Office of Butrint (CAOB)<sup>99</sup>, which is properly organized and seems to operate efficiently. This has recently been demonstrated by its decisive reaction to stop illegal construction at the entry to the site<sup>100</sup>. Besides its director, the CAOB includes specialists on archaeology, monuments of culture, environment and tourism.

A first management plan for Butrint had already been developed for the period 2000-2005, through close cooperation between the National Park Authority and the Butrint Foundation. This management plan respects the integrity of the site and looks carefully at all aspects

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<sup>97</sup> Information provided by Taulant Bino and Auron Tare.

<sup>98</sup> See section A03, p. 186.

<sup>99</sup> According to the Decision of the Council of Ministers No. 857 of 19 December 2003.

<sup>100</sup> According to a press release dated 3 September 2005, the Park Authorities with the help of the local municipality demolished foundations for illegal houses that had just been constructed by inhabitants of Ksamili village, sending a clear message that illegal activities will not be tolerated.

of site management, including both natural and cultural heritage. It needs at present to be updated in the light of recent socio-economic developments of the area and suggestions deriving from the Butrint Development Study, drafted in the framework of an IDF Butrint World Bank Project.

A second World Bank project is planned for implementation in Butrint. One of its crucial activities is a land use study and the preparation of an integrated management plan for the Ramsar Site. Both studies will give special emphasis to every aspect of the natural and cultural heritage and will integrate biodiversity and nature conservation in tourism and ecotourism development schemes.

A measure of the success of the Management Authority is the re-



*Vivori channel and small marsh, Butrint*



*Detail from city walls, Butrint*

removal in July 2005 of Butrint from UNESCO's List of World Heritage in Danger<sup>101</sup>.

### *5.1.2 Respect for traditional activities*

The management authority of the Butrint National Park tries at all times to incorporate traditional customs and practices in nature conservation activities. As previously stated, some of the traditional practices such as fishing, farming, stock raising and horticulture are intrinsically related to the wetland site. In the course of recent years, various projects have been carried out in the area, attempting to incorporate

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<sup>101</sup> Where it was placed in 1997 '...because of looting, lack of protection, management and conservation'.

traditional activities in the management of the site, along with the enhancement of its natural character. Close co-operation has been established with fishery authorities and fishermen's associations regarding interventions aiming at the improvement of hydrological conditions in Lake Butrint, such as freshwater inflow, reduction of human disturbance and monitoring of hydrological parameters.

In addition, co-operation with livestock breeders has contributed to a reduction of over-grazing pressure, restriction of hunting activity in biodiversity core areas and enhancement of habitat rehabilitation.

Some of the cultural activities developed in the Butrint Antique Theatre present the main local character of the site as an area of animal grazing and stock breeding traditions. Each year a folk festival is held in Butrint aiming to strengthen the pastoral character of the area.

### *5.1.3 Political support*

Another lesson is the need for strong political backing at all levels. Butrint has become a model of nature conservation in Albania, mainly because of the common interest of all stakeholders, including local and central services and authorities, who are committed to the success of the National Park objectives.

This commitment is based on the strong character of the site as an area of special interest for both culture and nature. Wherever such opportunities exist, they should be strengthened and enhanced by all stakeholders. The cultural aspects of the site should take into account the very important implications of ecosystems, habitats and species while, vice-versa, nature conservation activities should stress the impact of traditional lifestyle on the sustainable management of natural resources.

### *5.1.4 Cultural activities*

Finally, the promotion of cultural and educational activities –often with an international dimension– can provide positive results both for the conservation of the site and for the local inhabitants. In Butrint, systematic efforts have been instituted to attract such activities. Some characteristic examples from recent years are noted here:

- Performance of the Russian State Ballet in the Ancient Theatre of Butrint on 24-25 May 2003.
- Youth camp with Albanian and foreign students in June 2003.
- Utica College project on 'Exploring Ancient Footprints: Experience the Visual Art, Architecture and Distinct Flora and Fauna of Butrint National Park' in 21-27 May 2004.
- Archaeological Field School on Forensic Skeletal Analysis of Utica College, New York, held in Butrint on 17 May to 21 June 2004.
- Course of Utica College on 'Albania Art Experience, 6-24 June 2005 (see announcement below).

#### Albania Art Experience

Butrint National Park, a World Heritage Site of UNESCO

June 6 -24, 2005

Utica College Fine Arts, Syracuse University of New York  
in cooperation with Butrint National Park and Academy of Arts of Tirana

Undergraduate and graduate credits, art majors and non-majors

Study abroad in the contemporary and ancient settings of Albania

Enjoy and Learn Art History topics  
attached art inspiration from the mosaics of Butrint Baptistery VI A.D.  
by Prof. Caroline Whitefeather

### *5.2 Integrated efforts in the Doñana National Park (Spain)<sup>102</sup>*

Doñana is one of the great wetland sites in the Mediterranean, due to

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<sup>102</sup> Information provided by SEHUMED, Jordi Falgarona i Bosch and Josep Maria Mal-larach and revised by Fernando Molina, Milagros Pérez and Agueda Villa from the Natural Protected Areas Network and Environmental Services Department of the Regional Environmental Ministry in Andalusia.

its history, its size, its biodiversity and scientific interest, as well as its spiritual connotations for Catholic Spain through the *Romería del Rocío*. However, in spite of a complex management structure, the integration of natural and cultural aspects at this well-known site is still at an early stage and will require considerable additional efforts before Ramsar Resolutions VIII.19 and IX.21 are fully implemented.

### *5.2.1 Rich cultural history*

The history of Doñana is estimated to begin in the 2<sup>nd</sup> century BC with Roman colonies that remained in the vicinity of the estuary of the Guadalquivir River until the 5<sup>th</sup> century AD, involved mainly with fishing and salting. After the expulsion of the Arabs in the 13<sup>th</sup> century, the area was Christianised by King Alfonso X the Savant and the construction of certain religious establishments was begun. It was only two centuries later that the feudal system was restored and during the 16<sup>th</sup> century a mansion was built in the centre of the forest by the Seventh Duke of Medina-Sidonia for his wife Doña Ana Gómez de Mendoza y Silva. Thus, the name of *Bosque de Doña Ana* or Doña Ana became widely used, and is the derivation of the term 'Doñana'. Initially the area was dedicated to hunting and it produced a particular culture, in which the Spanish nobility, including the royal family, participated. Gradually, other activities were developed, including exploitation of the forest, grazing, fishing along the coast and in the *marismas* and collecting sea shells.

Scientific interest in Doñana began in the 19<sup>th</sup> century with the publication of a catalogue of birds in Andalusia by Don Antonio Machado y Nuez. The resulting interest led to the excessive collection of eggs and bird specimens leading to the menace of extinction for some rare species.

During the first half of the 20<sup>th</sup> century, the new owners of Doñana attempted to introduce alien species and organize horseback riding excursions, while in 1952 came the first proposals by ecologists for the conservation of the area. Finally in 1963, after a strong public campaign, the Spanish government purchased 7000 ha of the area, with the support of WWF, and turned it into the Biological Reserve of Doñana.

Six years later, the National Park of Doñana was established, which in 1978 was reclassified and had its legal status clarified.

It is interesting to observe that during the medieval period of Spain and until the second half of the 20<sup>th</sup> century, the Doñana area included two strong cultural traditions; the one –aristocratic to a large extent– related to hunting, and the other –much more popular– focusing on the religious processions of Rocío. One wonders whether a third cultural tradition is currently being developed, centring on the appreciation of nature, as indicated by the nearly 400,000 people who visit the protected area every year.

### *5.2.2 A complex management system*

The area today is divided in two distinct parts, the Doñana National Park, managed by the Ministry of Environment, and the Nature Park under the responsibility of the *Comunidad Autónoma de Andalucía*. Both have management bodies with Regulatory Plans for Use and Management<sup>103</sup>. Public participation is ensured through the *Patronato Doñana* for the National Park and the *Junta Rectora* for the Natural Park. There is a *Comisión Mixta* that is in charge of co-ordination between the two. It is expected that in the near future the two parks will be fused under the responsibility of the Andalusia services, which will be assigned extended responsibilities.

The two management plans include regulations for conservation and management activities and human uses of the site, as well as links with other legislation affecting the wetland.

Local communities are represented in the two participatory bodies, and take part in the development of specific sectoral plans that concern them, such as grazing and public use. For example, a management plan for traditional grazing has been developed recently, with the collaboration of the associations of stock breeders, the local authorities and the environmental services. In spite of such efforts, the relationship between the park managers and the local communities has been at times difficult, due to differing priorities.

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<sup>103</sup> *Planes Rectores de Uso y Gestión* (PRUG).

Another entity is the Doñana 2005 Restoration Project. Its scientific board recently announced the decision to restore 1600 ha of marshes that had been transformed in the 1970s into low-productivity agricultural land. Another positive measure is the removal of 40 km of clay walls around the park, built in the 1980s to prevent flooding from the Brazo de la Torre stream, a tributary of the Guadalquivir River.

Finally, in April 2007, it was announced that the Ramsar site *Parque Nacional de Doñana*, first designated in 1982 (with an area of 50,720 ha), has been substantially extended by the addition of the surrounding Natural Park, reaching now the size of 111,646 ha.

### 5.2.3 Human activities in the Park

Human use of the Park is regulated by the *Plan Rector de Uso y Gestión*. The Plan considers a limited number of traditional activities as compatible with the management objectives (such as the production of coal, the collection of shells, apiculture, and extensive grazing, preferably by autochthonous species).

Tourism, however, plays a key role. In Andalusia, this sector is regulated by policies and plans on public use. Recently, an Action Strategy for Public Use in Andalusia has been prepared<sup>104</sup>.

Local communities develop tourist activities through co-operatives or similar enterprises, usually with official permits. There is considerable demand for visits to the Park, which are organized through five reception centres, which provide information on the Park, guides, shopping of souvenirs and other services. The total number of visitors approaches 400,000 per year and as the visits are usually planned in small groups and by special vehicles, they create satisfactory employment opportunities for local guides. Tourism also provides significant income both for the reception centres and for the surrounding villages.

A completely different human use is the pilgrimages related to the Virgin of El Rocío<sup>105</sup>, which cross the Park and present various environ-

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<sup>104</sup> By the General Direction of the Network of Natural Protected Areas and Environmental Services (RENP y SSAA – *Dirección General de la Red de Espacios naturales Protegidos y Servicios Ambientales*).

<sup>105</sup> See section 4.1.2 'Profound expressions of catholic faith: Pilgrimages of *La Virgen del Rocío*', p. 100.

mental problems. In the management plan of the Park (PRUG), there is a section on the *Flujo Rociero* (Rocío Flow), which is however limited. On the other hand, the major fraternity involved in the pilgrimages, the Hermandad Matriz de Almonte, took the initiative in 2003 to develop detailed environmental guidelines for protecting the paths through the Park, avoiding the disturbance of flora and fauna, controlling littering and other measures. The *Manifiesto de Compromiso por El Rocío y Doñana* was accepted by the other fraternities and by the Park authorities and its implementation has had positive results (for example, 30% diminution of rubbish collected).

#### 5.2.4 Dealing with the cultural aspects

In Spain, cultural and social aspects are mentioned in the national and regional legislation in regard to nature conservation, and provisions



*Temporal structure to receive the Virgin  
in Almonte, Doñana*

are thereby included in the management plans. In Andalusia, the Council on Culture (*Consejería de Cultura*) has its own agencies for the management of the cultural heritage of the region and is in regular contact, as required.

In Doñana and the surrounding communities, several sites have been designated of cultural interest<sup>106</sup>. However, in spite of the rich heritage of the area, insufficient attention has been paid to the integration of cultural and spiritual values, in management planning and the promotion of the Park. This has triggered considerable interest in a novel initiative recently launched: the Project for the Restoration of Cultural Her-

<sup>106</sup> *Bien de Interés Cultural.*

itage<sup>107</sup>, which attempts an integrated approach to natural resources and culture. The project deals with such issues as an inventory of the cultural heritage and maintenance in the Park of certain traditional uses.

The development and results of this project must be followed closely, as they may provide a breakthrough in this area.

### *5.3 Prespa Lakes (Albania, FYR of Macedonia, Greece)*<sup>108</sup>

Besides its great cultural and natural wealth, the Prespa Lakes area is a transboundary site, which creates opportunities and presents challenges. The establishment in 2000 of the Prespa Park catalyzed the collaboration efforts among three Balkan countries that at times face a strained political relationship.

#### *5.3.1 Management aspects*

Actual management on all three sides remains under national competence, while the Prespa Park Co-ordination Committee attempts to provide overall guidance and to deal with transborder issues, in particular water management.

At the national level, authority is shared between local government (municipalities and/or communities) and the management bodies of the protected areas. Thus, in Albania the National Parks are managed by locally established services of the Ministry of Forestry. The Municipality of Korçe and the Community of Liqenas are involved in nature conservation issues as well as in cultural matters. Due to lack of funds and government interest however, many of the Byzantine and Ottoman monuments in the area remain unprotected, particularly in Albania. In the FYR of Macedonia, the Municipality of Resen plays a key role, while the Ezerani Reserve is managed by an NGO, which has shown interest in cultural matters<sup>109</sup>. On the Greek side, the Municipality of Prespa has jurisdiction over the entire area. It has shown interest

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<sup>107</sup> *Proyecto de Recuperación del Patrimonio Cultural.*

<sup>108</sup> Information provided by Aphrodite Sorotou and Myrsini Malacou.

<sup>109</sup> The Bird Study and Protection Society of Macedonia has published a book on the

in both nature conservation and the promotion of cultural activities, supporting the yearly artistic festival each August (the *Prespia*), which focuses mainly on music performances. A Management Body was established in 2003<sup>110</sup>, but its operation has been hampered by administrative problems and funding delays and it is only in 2005 that it has become partly operational. Since 1990, it is a locally established NGO, the Society for the Protection of Prespa (SPP), which undertakes significant activities for the conservation of the cultural and natural heritage of the area<sup>111</sup>. It should be noted that the SPP acts as the secretariat of the Management Body, of which the mayor of Prespa is vice president. Collaboration among the three sides is consequently reasonably close.

The Prespa Park Co-ordination Committee, consisting of representatives of the three central governments, the local authorities and NGOs –with MedWet as a member with observer status– meets twice a year, in a rotation pattern among the three countries. Its secretariat is staffed by the NGO members and based at the SPP headquarters in Aghios Germanos. The Committee endeavours to put aside political differences among the three countries and to focus on conservation issues and the welfare of the local inhabitants. It tries to facilitate communication among the three sides and to encourage an integrated vision of the Prespa region, beyond national borders, which is no easy task. With the assistance of UNDP, it has developed a large GEF project for the area, which began to be implemented in 2007. The Committee has been informed of the need to take into account cultural values for the management of this transboundary site, but has not yet instituted specific activities for the implementation of Resolutions VIII.19 and IX.21. The implementation, however, of the GEF project will enable an integrated approach to the site combining biodiversity, and cultural and socio-economic aspects.

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cultural values of the area and has translated Ramsar Resolution VIII.19 into Macedonian [Micevski 2002].

<sup>110</sup> By the Ministry of Environment, Physical Planning and Public Works.

<sup>111</sup> For its activities, the SPP was awarded in 1998 one of the first Ramsar Awards.

### *5.3.2 The Prespa Centre for Nature and Anthropos*

Since late in 2004, the Society for the Protection of Prespa (SPP) has initiated elaboration of a new, integrated five-year programme concerning both biodiversity and the cultural heritage. It is currently establishing the Prespa Centre for Nature and Anthropos<sup>112</sup>, developing the sophisticated software required for the management of the extensive data on the area, and launching a series of related projects.

Since its establishment in 1990, the SPP has been dedicated to *'the protection of the natural environment and the cultural heritage, in parallel with the mild development of the natural resources for the benefit of the inhabitants of the area'*<sup>113</sup>. In its 17 years of operation, the organization has attempted to implement this mission through integrated programmes (such as the recently completed LIFE project on the management of wet meadows) and specific activities for the restora-



*Prespa view from Albania*

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<sup>112</sup> The Centre will be housed in a 3-storey traditional building, owned by SPP, at the village of Lemos, which has just been restored.

<sup>113</sup> According to its initial bylaws.



*SPP office, Prespa*

tion of traditional buildings, including guidelines for the preservation of local traditional architecture.

On the axis of four main areas of concern, namely management, outreach, policy and research, the SPP has put together an integrated programme that will:

- develop practical mechanisms to incorporate cultural aspects in management activities in Prespa, leading to the conservation of both the natural and cultural heritage and establishing synergy between the two;
- promote and disseminate understanding and appreciation of the cultural values of the area, by making the results of related research readily accessible to the general public, to landowners and managers, and to professional interests, thus contributing to the conservation of the natural heritage of the area;
- encourage an integrated approach towards the natural and cultural heritage in the work of local authorities, national, international and intergovernmental agencies, including decision-making and legislative actions;
- promote applied research to underpin integrated management in



*Prespa Centre for Nature and Anthropolos, Lemos Village, Prespa Lakes*

Prespa, in order to inform future policy, and launch related programmes, as an essential precondition for the development of effective management practices.

The SPP aspires to attain all the above by incorporating cultural aspects in its current programmes and by introducing new projects in development towards a common approach to nature and culture. It is expected that this integrated approach will provide useful examples to other Mediterranean wetland sites for the effective management and sustainable use of both their natural and cultural resources.

### *5.3.3 Current actions*

The SPP is now carrying out various actions with a strong cultural dimension. The major ones are briefly described below.

- Re-introduction of the traditional management of reed-beds through grazing by buffaloes. This has been achieved through a LIFE Nature project. The buffalo herd belonging to SPP has grown considerably and is highly effective both in creating new wet meadows and as an



*Buffaloes in wet meadows, Prespa*

attraction to visitors. The challenge remaining is the adoption of this traditional management practice by local stock breeders, which depends on its financial viability.

- Study of the habitation and land use patterns in Greek Prespa during the past two centuries. This will allow a concrete and more substantial understanding of the relation of human beings with nature in the area, and may provide insights on contemporary trends in land use.
- Development of a physical plan for the Greek side of Prespa establishing regulations on land use and building construction, taking into account the wish for the conservation of the cultural and natural heritage, in harmony with the legitimate request for improving the living conditions of the local communities.

A number of additional actions have been proposed and are being considered for the future:

- Study of the common architectural tradition of Albania and Greece



*Abandoned traditional boat, Prespa lakes*

in Prespa, and proposals for its preservation. This might allow the conservation of the traditional aesthetics of the Prespa villages, which could constitute an important asset for the attraction of visitors. However, there are strong reactions to such an approach from the local inhabitants.

- Applied research on the traditional fishing methods in the Prespa Lakes, including the construction of boats. The project aims at recording past experience, saving specialised knowledge on habitats, species and fishing systems, and attempting to maintain some of the practices. One of the possibilities is the use of traditional boats for ecotourism visits to the lakes, using similar activities in the Neretva Delta as a model.
- Efforts to preserve the traditional gastronomy of Prespa, based on local products, and re-introduce it in the context of the mild tourist development of the area.
- Publication of an illustrated book on the diachronic relationship between human beings and nature on the three sides of Prespa. The

book would also include an analysis of contemporary threats to this relationship and to the prospects for the future.

It should be noted here that these activities, many of which are in a preliminary phase, are expected to concern by stages the entire area of Prespa Lakes region, within the context of the Prespa Park. It is perhaps a rare case when such a broad and integrated approach to culture and nature is undertaken in a systematic way by a locally-established NGO.

#### *5.4 Tamentit and Sid Ahmed Timmi Oases (Algeria)*<sup>114</sup>

*Tamentit* and *Sid Ahmed Timmi* are two of a series of oases in the centre of Algeria. Like most oases, and for many centuries, they represent an amazing integration of human actions and nature. However, nowhere is an integrated approach to the natural and cultural heritage more necessary than in these highly sensitive sites, which are facing new challenges. Unless concerted and sustained efforts are initiated, the fragile balance between human beings and nature may fracture and the damage become irreparable. This is perfectly comprehended by both the competent Algerian authorities and by the local decision makers. In addition, the two oases constitute a case in which international support is imperative.

##### *5.4.1 Existing integration*

The oases present a considerable interest as to their biodiversity, in spite of the general aridity (less than 10 mm of precipitation / year). As documented by the corresponding RIS, they appear to contain a variety of domestic and wild species of flora and fauna, including a fish species in the irrigation canals, which may be either indigenous or introduced. Among the wild fauna species are the Dorcas Gazelle (*Gazella dorcas*), the Algerian Hedgehog (*Atelerix algirus*), the Fennec

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<sup>114</sup> Based on a mission report by Christian Perennou. The full report is included in Appendix II, p. 223.



*Date-palms, Tamentit*

Fox (*Fennucus zerda*), the Sand Cat (*Felis margarita*), the Gundi (*Ctenodactylus vali*), as well as various reptiles including the Desert Monitor (*Varanus griseus*) and the Saharan Lizard (*Uromastix acanthinurus*). These species are present in the desert around the oases, and their relation to them needs to be studied. Palm trees predominate, while medicinal plants are abundant. Several of the domestic species are of genetic interest.

This biodiversity of the oases, at least as to the cultivated part, has always depended on human activities. Fresh water, especially, is necessary for all living beings, and the

oases are the results of an ingenious system of harvesting the limited underground water, through an ancient system of canals and wells, the *foggaras*<sup>115</sup>. This system, with very difficult requirements in construction, maintenance and management, has been the motive for a highly sophisticated social structure, which has made possible survival under the very difficult conditions of the desert. Thus, social conditions in the oases appear to depend to a considerable extent on hydrological aspects.

The *foggaras* are managed equitably by their co-owners, through their assembly (the *Djemâa*), taking into account the domestic and irrigation needs of all local inhabitants. Certain respected individuals are allocated specialized tasks, such as the *chahed*, who acts as secretary of the *Djemâa* and keeps a record of its activities<sup>116</sup>, the *kial el ma*, who is in charge of water measurements and the *el hassab*, a specialist on quotas, distribution and inheritance rights. This system has provid-

<sup>115</sup> See section 3.4.1, p. 69.

<sup>116</sup> It is usually the local imam.



*Manuscripts from the Medersa School, Tamentit Oasis*

ed social stability for centuries and seems to work well with the public administration structure in Algeria. The oases constitute communities, and are under the jurisdiction of the *wilaya* of Adrar in the North, while central government services deal with specific issues of broader importance.

In the oases, culture and nature are totally integrated. Their cultural heritage, possibly introduced from Arabia, and eventually enriched by a slow and constant evolution through time, is of great significance<sup>117</sup>. It consists mainly of a particular architecture of houses and forts, of characteristic artefacts, of deep traditional knowledge in the management of natural resources, of written and oral traditions. The existence in Tamentit of an ancient Coranic school (*Medersa*) indicates the cultural importance of this oasis. The *Medersa* preserves many precious manuscripts (some dating from the 15<sup>th</sup> century) on the disciplines taught, especially on hydrogeology and the construction and management of the *foggaras*.

Thus, the oases are a living demonstration of the harmonious co-ex-

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<sup>117</sup> Although historic research would be needed to document this theory.

istence and synergy between human beings and nature in a particular wetland context.

#### 5.4.2 *The new challenges*

Contemporary trends, however, are activating a subtle and gradual impact on the traditional system of the oases, threatening their social and ecological balance and integrity.

The system of the *foggaras* depends on the existence of stable aquifers. In recent years, intensive cultivation of certain crops in surrounding regions and the development of towns have necessitated large quantities of water for irrigation and domestic use and these have been obtained by means of intensive pumping from underground sources. Such water extraction may affect the aquifers related to the *foggara* system. In addition, the maintenance of the galleries and wells that constitute the *foggaras* is arduous and perilous work and requires an extent of labour which is becoming scarcer.

Elder people considered that the maintenance of the hydraulic system on which the survival of each oasis depended was a traditional obligation and an integral part of local social life. This is not so evident to the younger people, for whom these ancient customs are not always obvious, especially as they come into more contact with the outside world, where modernization and other similar trends apply.

Unpredictable social developments in the oases may be caused by tourism. At present, visitors to Tamentit and the other oases in the region are limited. Ecotourism, however, is considered as a possible alternate activity for the local people, which could provide appreciable income through hosting and other services and the sale of the characteristic handicrafts (mainly black pottery and silver). This activity might have other side-benefits, by encouraging the restoration of local houses to create suitable guestrooms and by promoting the marketing of local products.

These would be the positive sides of tourism. However, if left without reasonable controls, this activity might affect both the cultural and the natural integrity of the oases. Modern tourist facilities, for example, could be built instead of using existing houses, thus gradually altering the local architectural tradition. Some of the potential local investors

would at first favour this option in order to get higher returns on their investments, whereas the local community is wary of the social impact of mass tourism without awareness of local customs. The major impact, however, could be social, causing changes in the mentality and attitude of young inhabitants and undermining the existing social balance.

It should be noted here that, as the oases fully exemplify the harmonious co-existence between human activities and natural processes, any change in one area may influence all others. Therefore, an integrated response is needed for a sustainable future.



*Old canal, Tamentit*

#### *5.4.3 Towards a sustainable future*

The objectives for such a future are clear: on the one hand, to maintain this unique situation of harmony between human beings and nature, with its ancient culture; and on the other, to provide satisfactory living conditions for the local inhabitants.

The hydrological problem must be confronted and its seriousness assessed. A hydrologic study of the sustainability of current aquifer exploitation in the region must be carried out by a competent Algerian institution. In addition, methods to facilitate the maintenance of the *foggaras* must be developed and tested. In this process, ensuring the safety of the persons involved in the maintenance work must be pre-eminent. The study should be done by competent engineers, but full use must be made of the rich traditional knowledge that exists among the elder local inhabitants.

A sociological study of the oases could help in a fuller and deeper understanding of the changes occurring, and an appreciation of the



*Traditional building, Tamentit*

expectations of the younger generations. The results would allow a more realistic assessment of the measures required to maintain the social balance. Such a study would be designed and carried out by scientists, in close co-operation however with the local social structures, which are the ones to draw final conclusions and evaluate the measures proposed.

A third study should examine the opportunities of tourism development, based on the specificities of the oases. Its purpose would be:

- to assess existing tourism activities in other oases in Algeria and elsewhere (such as those in Tunisia) in order to profit from their experience;

- to estimate the potential of the Tamentit oases and their carrying capacity;
- to design a tourist 'product' that might be attractive to foreign visitors and ecotourism operators;
- to design a programme for training local inhabitants –especially young people– to provide the services required;
- to propose the measures for mitigating the negative social, cultural and physical impacts of tourist activities.

The results of these studies should be integrated into a sustainable development programme for the oases, which should be prepared through close collaboration of government authorities, competent scientists and local decision-makers. The local inhabitants must play a key role in the formulation of the programme, through a well-structured participation process, co-ordinated by an expert in such social processes.

This development programme will need few additions to serve as

an integrated management plan, which should be formulated, again, through a highly participative approach. Its implementation must be entrusted to local structures, with outside support as needed.

In view of the significance of these sites, international scientific and financial support for this process seems fully justified. Thus, with encouragement and measures by the Algerian government, with the contribution of applied science and engineering, and with international solidarity, the ancient oases of Tamentit and Sid Ahmed Timmi may gain a sustainable future.

### *5.5 MedWetCoast Project: Integrating culture in wetland work*<sup>118</sup>

The *MedWetCoast* (MWC) project, aimed at conserving the biodiversity of global and regional importance in six countries / authorities in the Mediterranean basin (Albania, Egypt, Lebanon, Morocco, Palestinian Authority and Tunisia), technically supported by the Biological Station of Tour du Valat, the *Conservatoire du Littoral* and the *Atelier Technique des Espaces Naturels*, has been financed by the national contributions of these countries, as well as the Global Environment Facility (GEF), through the United Nations Development Programme (UNDP), and the French Global Environment Facility (FGEF).

Launched in 1999 and completed in 2006, the project consisted of three components. At the local level, it aimed at implementing sustainable and intersectoral management in 15 pilot wetland and coastal sites. At the national level, it called for developing innovative legal frameworks for removing the causes of biodiversity degradation, reinforcing the institutions involved in the management of natural resources and promoting co-ordinating policies. Finally, at the regional level, it strived for the strengthening of potential capacities through training and technical assistance, and developing and sharing experience through networking.

Attracted by the proximity of freshwater and rich available resources, people in the Mediterranean have lived and worked in wet-

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<sup>118</sup> Contribution by Sylvie Goyet, MedWetCoast Regional Facilitator.

land areas for centuries, thereby creating unique landscapes and multiple-use systems. Thus, the MedWetCoast sites display various ways in which the cultural dimension of wetlands can be appreciated.

In the diagnosis phase of resources and uses of the sites, attention was placed on cultural issues in the framework of the socio-economic analysis. Further, two case studies, one in Tunisia and one in Egypt, highlighting the benefits of cultural values and the applicability of these methods with the Ramsar guidelines, were carried out at that time.

When the management plans of the sites were drafted, the cultural heritage was taken into consideration, in particular when assessing the values of the sites and when identifying management objectives. There, and in line with the Ramsar recommendations through Resolutions VIII.19 and IX.21, preservation of the cultural heritage was included as one of the key objectives of each management plan, contributing to the sustainable development of the area and to social cohesion.



*Traditional boats, Ghar el Mell*

Finally, throughout the implementation of the project, the national teams have worked with local inhabitants and have necessarily addressed cultural issues, whether it is in regard to recognizing the need of the traditional fishing community in Zaranik (Egypt), celebrating carnival in Narta (Albania), or working with hunters in Aammiq (Lebanon).

The following are examples of how the MedWetCoast project has addressed some of the cultural dimensions of wetland protection and management.

- Traditional fishing practices exist in many MWC wetland sites of the region<sup>119</sup>. Fishing still represents a significant economic activity in Narta and Orikumi lagoons (Albania), in Zaranik and Burullus (Egypt), or in Cap-Bon (Tunisia). In the latter, fisheries were extremely important in Roman times and the area was used as a centre for fish salting (later for export throughout the Roman Empire). The challenge consisted in improving fish catches using modern and sustainable methods, while maintaining traditional methods and artefacts, wherever possible.
- Resolving freshwater problems has led to the restoration and use of ancient Roman wells in Omayed (Egypt)<sup>120</sup>.
- The production of handicrafts using traditional wetland resources, such as reed, is being revitalised in some of the MWC wetlands. In Aammiq, the project collaborated with the local village women and has set up a co-operative so that the local handicraft production can be sold. In Burullus, as analysed earlier, handicrafts made from reeds are also being made and promoted.
- Hunting, especially of waterfowl, has been a traditional activity in most of the sites<sup>121</sup>. To the extreme limit, the site of Aammiq in Lebanon used to be a place of slaughter. Intense hunting took place, in particular during the migrating season. Today, hunting has been banned in the Aammiq site but poaching is still prevalent.
- Reed bed management and use has been improved in some of the Egyptian sites<sup>122</sup>.

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<sup>119</sup> See section 3.2.1 'A kaleidoscope of fishing practices', p. 57.

<sup>120</sup> See section 3.4.2 'Roman wells still useful in Egypt', p. 72.

<sup>121</sup> See section 3.5.1 'Ancient traditions in Egypt', p. 78.

<sup>122</sup> See section 3.1.1 'Managing reeds in an Egyptian site', p. 53.



*Salinas, Castro Marim*

- Salinas: ‘The extraction of salt from sea water has been an ancient activity in the Mediterranean, creating unique landscapes, providing refuge for a variety of fauna species and establishing solid cultural values’. Salinas are still operating in Narta (Albania)<sup>123</sup>; it is a novel operation in Zaranik (Egypt), where commercial production started in 1997. The project encouraged sustainable production, while maintaining cultural values.
- Religious, spiritual and social events resulting from folklore and social traditions play an important role in strengthening the identity of the communities living in or near the wetlands. That is why the MWC project has contributed to the Carnival Day in Narta<sup>124</sup>.

<sup>123</sup> See section 3.7.2 ‘Salinas in Albania constitute both an opportunity and a challenge’, p. 89.

<sup>124</sup> See section 4.2.1 ‘Carnival Day in Narta, Albania’, p. 107.

It should be mentioned here that in the initial design of the MedWetCoast project, cultural values were not specifically included. However, the regional co-ordination of the project<sup>125</sup> followed Ramsar guidance and proposed the incorporation of related activities, which was well accepted by the national executants. It is clear that in the Mediterranean context the integration of nature and culture is not difficult to accept.

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<sup>125</sup> Established in Tour du Valat.

## Chapter 6

### Major lessons learned

The careful analysis of the information and suggestions received from more than 20 Mediterranean sites, rich both in biodiversity and in culture, has provided some preliminary lessons useful for the entire



*Salinas, Castro Marim*

Mediterranean Region. Of course, additional work will be required in monitoring developments, assessing trends, evaluating solutions proposed and implemented, looking at costs and benefits. This must be done in the years to come, so that a sound approach to the integration of the natural and cultural heritage can be developed gradually<sup>126</sup>.

## *6.1 General conclusions*

### *6.1.1 Culture still alive in wetlands*

From the wetland sites examined, it becomes clear that all of them maintain significant cultural values, derived from local heritage (both ancient and more recent) and from current practices. These values seem to be shifting from the traditional methods of resource use, which are being rapidly abandoned, to a growing interest in spiritual and social aspects; a phenomenon that needs careful study and assessment.

The abandonment of traditional practices is more pronounced in the industrialized, wealthy countries of the North of the Basin. However, it is in these countries that concern for cultural and natural values seems to be more pronounced, and efforts are being made to integrate them in economic activities (such as production of quality agricultural goods, ecotourism, gastronomy and hunting), as an asset in the fight for global competitiveness. Stable demographic conditions make this possible.

In the developing countries, often faced with rapidly expanding populations, the main challenge is survival. Traditional practices are maintained for reasons of subsistence, but are readily abandoned when more economical options are offered. The forces of globalization and the influence of the developed countries often distort local choices and lead to developments that have neither a social nor an economic rationale. Yet, it is precisely in the poorer parts of the Mediterranean, that cultural values have greater pertinence today and contribute substantially in maintaining social balance.

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<sup>126</sup> During the next three years Med-INA will be working along these lines in the framework of a project supported by the MAVA Foundation.



*Salt harvest, Castro Marim*

Another interesting factor is the growing interest in cultural values of the tourist sector, a major economic activity for the Mediterranean. Local cultural specificities –both material and non-material– seem to be in demand and are aggressively marketed as tourist attractions. In many cases, the activities generated in this context contribute significant income to local communities. This leads to the maintenance of certain traditions –often only superficially– and to the restoration of some of those that were abandoned.

### *6.1.2 Culture heavily threatened*

On the contrary, throughout the Mediterranean, cultural values are menaced by rapid and far-reaching changes. On the practical level, industrially manufactured products –often transported from the end of the world– are replacing those locally made, because of facility and lower costs, obliterating their inherent values and leading to cultural

homogenization. Thus, industrial fish nets have almost totally replaced hand-made nets fabricated in the past by local fishermen and craftsmen. Plastic boats are lighter, cheaper and easier to maintain than wooden ones and require less motor energy; they are now found in most of the Mediterranean wetlands.

On a more subtle and pernicious level, an entire cultural ideology is being projected in many overt and subtle ways, through the mass media, the arts, marketing and tourism, promoting a fusion of cultures towards a homogeneous global model. Probably, the reasons behind this trend are both political and economic; the results may be the weakening and eventual obliteration of local cultural specificities.

The incorporation of cultural and natural values in tourist activities also has its negative aspects. Uncontrolled mass tourism influx may harm important heritage elements (such as archaeological sites, historic buildings and protected natural areas), but this can be prevented by appropriate visitors' management and filtering. Much more difficult is to avoid the loss of authenticity and the grotesque transformation of local heritage that may result from tourist uses of culture, leading to a permanent severance of the links between societies and their past traditions.

### *6.1.3 Preserving knowledge*

Going against global or regional trends is not easy and the effectiveness of such efforts is doubtful. What seems urgent at present is to preserve the knowledge in matters of cultural heritage and values still extant in the Mediterranean. This seems to be a daunting task, due to the great cultural wealth of this particular region, resulting from its geomorphology, its ancient and tumultuous history and the great civilisations that were born and flourished in it.

In the framework of the MedWet Initiative, however, this task becomes more limited and thus more feasible, as the focus lies on cultural values related to wetlands only and on their potential role in the management of these ecosystems, as well as the sustainable use of their resources –principally water.

Knowledge about immovable elements of past cultural heritage is obtained through systematic research and other meticulous multidisciplinary work. It is, however, knowledge of the living and intangible tra-



*Traditional building, Tamentit Oasis*

ditions that remains elusive, much endangered by the ageing and passing of generations. This merits urgent attention. The analysis of sites has indicated that in many of them important practices are being gradually abandoned, but a few elderly individuals still remain, who have maintained traditional knowledge and skills, in diverse areas such as boat building, fishing methods or construction. It seems necessary, therefore, to encourage efforts for recording this knowledge in an appropriate manner, before it becomes extinct.

In addition, wise use should be made of existing bibliographic references, which is available for some of these practices. This could be a major endeavour, in which the partnership of appropriate international and national organizations, as well as academic institutions should be sought<sup>127</sup>, and the Ramsar Culture Working Group should include it in its programme.

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<sup>127</sup> In Valencia, for example, the Ethnological and Prehistoric Museum has made systematic studies of the traditional fishing practices in the local Albufera.

#### *6.1.4 Making use of cultural values*

Once knowledge is recorded and safeguarded, it should not remain dormant, but should be used in a creative manner to the benefit of wetlands. This may take many forms. Certain activities that are being –or have been– abandoned can perhaps be maintained or re-established, especially if new uses for them can be found. In Prespa, for ex-



*Fisherman in Micro Prespa*

ample, a project is being considered to restore traditional boat-building and fishing methods, and to associate them with eco-tourism activities, which might ensure its economic feasibility. Creating quality labels for traditionally-made products may become a promising way of generating stable income and maintaining cultural values.

Traditional knowledge can also provide useful guidance for contemporary methods of wetland resource uses, as in agriculture, fisheries, stock-breeding or freshwater management.

Social events based on ancient knowledge and oral tradition also present a potential, as they seem to attract people –both local and visitors– who have considerable leisure time and are searching for new and meaningful experiences.

Knowledge of local traditional practices and their values as well, can be useful on the regional level, not in attempting to create rigid models for other countries and sites, but in showing the possibilities and encouraging the preservation of similar local traditions. The MedWet Culture Working Group, once re-established, should assist in this dissemination process, initially through a dedicated web page and appropriate publications.

## *6.2 Specific guidance*

In addition to the general lessons mentioned above, useful inputs can be deduced from the material gathered and the analysis of site information, which may contribute to the efforts for further refining some of the Guiding Principles (GPs) included in Ramsar Resolution VIII.19 and in providing broader guidance on the incorporation of cultural aspects in wetland management<sup>128</sup>; these are mentioned in the beginning of the four sections below.

### *6.2.1 Cultural landscapes*

– To safeguard the wetland-related cultural landscapes (GP3).  
The experience from all around the Mediterranean indicates that cul-

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<sup>128</sup> A task that has been undertaken by the Ramsar Culture Working Group.



*Wet meadows and reedbeds, Prespa Lakes*

tural landscapes are changing at dramatic rates. The main reasons are the abandonment of traditional activities that have formed them through the ages, the spread of urbanization –especially in coastal areas– and the construction of large scale infrastructure (such as airports, harbours and motorways).

In the past, landscapes were functional, both on the biological and the anthropic level, and the combination of the two gave them their admirable characteristics. Today, landscapes have stopped functioning to a considerable extent and are changing; some are maintained for aesthetic reasons at considerable effort and cost. In Micro Prespa Lake for example, a legal action has started to stop the construction of a windmill farm on Mt. Varnous that would be visible from the site, but could provide ‘clean’ electricity.

Few countries in the Mediterranean have policies and strategies concerning landscapes; Slovenia is one of the most advanced in this

area<sup>129</sup>. Practical questions seem pre-eminent, in the face of development pressures that cannot be easily stopped with abstract considerations. There is also the theoretical argument in favour of change, maintaining that new cultural landscapes are being formed by contemporary societies. All in all, strong evidence exists that landscapes in relation to water and wetlands need a much more precise approach, so that guidance can be provided to those responsible for their management and conservation.

A systematic analysis of landscape changes and their impacts and reasons in a number of pilot sites could provide very useful information and would be a decisive first step in that direction.

### *6.2.2 Historic structures*

- To protect historical structures in wetlands or closely associated with them (GP12).

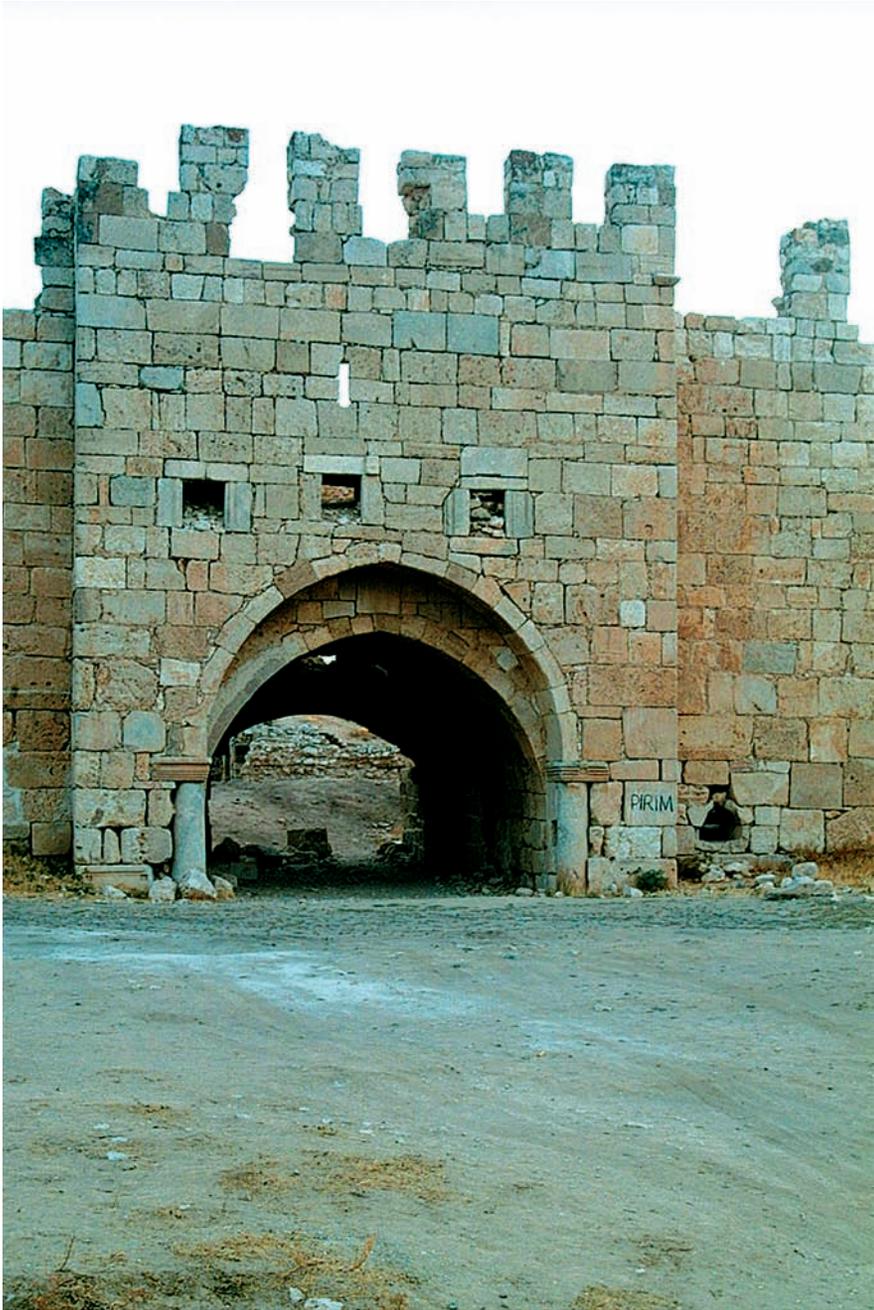
A more straightforward issue concerns historic structures usually related to traditional wetland activities. In many countries of the Mediterranean Basin these structures are being restored. As most of them do not correspond any more to the requirements of current activities, new functions must be found; usually, such buildings are transformed into visitor centres or eco-museums, as in the Sečovlje Soline in Slovenia.

Historic structures constitute a testimony of traditional activities and may carry crucial information. That is why, before restoration, they must be studied carefully so that this information can be extracted, scientifically documented and preserved. A useful project would be to select a number of these structures characteristic of Mediterranean wetland sites and proceed with a comparative analysis of their history and characteristics.

Based on this analysis, specific guidelines should be drawn for the restoration of historic structures related to wetlands that could be of great help to the managers of protected sites and to other responsible authorities.

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<sup>129</sup> According to information presented to the European Landscape Convention, the responsible services in Slovenia have proceeded with a typology and inventory of its landscapes and have developed a strategy for their conservation, which is being implemented at present.



*Caravanserai, Kizoren Obrugu*



*Reed hut, Micro Prespa*

### *6.2.3 Traditional resource uses*

- To learn from traditional approaches (GP4).
- To maintain traditional sustainable self-management practices (GP5).
- To safeguard wetland-related traditional production systems (GP11).
- To protect and preserve wetland-related artefacts (mobile material heritage) (GP13).
- To preserve collective water and land use management systems associated with wetlands (GP14).
- To maintain traditional sustainable practices used in and around wetlands, and value the products resulting from these practices (GP15).
- To consider the possibility of using quality labelling of sustainable traditional wetland products in a voluntary and non-discriminatory manner (GP26).

A number of the Guiding Principles of Resolution VIII.19 refer to the cultural values associated with the traditional uses of wetland resources. A reality that emerges from the analysis of sites is that the modernization of activities cannot be stopped, as it is fuelled by powerful economic and demographic forces. In some cases though, other development activities can be used as a counterforce in an effort to achieve a degree of balance. Tourism, for example, has led in a limited number of sites to the maintenance of traditional activities, as demonstrated in the Camargue, in Neretva Delta, in Castro Marim, in Prespa or in Sečovlje Soline.

Two factors emerge and must be well understood. The first is that wetland resources have a certain specificity that must be recognized and exploited, as it could provide comparative advantages in competitiveness. This is especially true today, when the demand for healthy, high-quality products is growing. The example of the internationally appreciated *bottarga* produced in Orbetello, or the organic dried beans of Prespa, are characteristic<sup>130</sup>. The second factor refers to sustainability; modern practices are often unsustainable, as they lead to the depletion or degradation of natural resources. This is demonstrated in the dramatic decrease of fish catches in many wetlands, resulting from the use of high-performance fishing methods, water pollution and loss of spawning grounds.

The consideration of these two factors might lead to the avoidance of certain destructive activities in wetlands and to the encouragement of others that are both sustainable and maintain the continuity with the past.

In all cases, there is urgent need to record and document the knowledge that is related to traditional activities before it is lost; and, to that goal, efforts for the conservation of cultural heritage must be directed.

#### *6.2.4 Social and spiritual aspects*

- To incorporate cultural aspects in educational and interpretive

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<sup>130</sup> Their price is double than that of conventional beans and the whole production is sold out in 2-3 months.



*Educational activities, Škocjan Cave*

activities in wetlands (GP6).

– To respect wetland-related religious and spiritual beliefs and mythological aspects in the efforts to conserve wetlands (GP18).

In several Mediterranean sites, religious and spiritual events still play a major role, as in the processions of the Albufera de Valencia or of Doñana. It is now necessary to determine how the social energy created by these events could positively affect the conservation of the related wetland sites. This would be a fertile ground for study and experimentation at the national and regional levels in the years to come.

In addition, secular events related to wetlands –as in the Camargue, Narta or the Neretva– seem also to create social energy and enthusiasm, attracting visitors, providing local income and contributing to wetland conservation. They can constitute a positive model for other sites. A great challenge is whether they can be adopted by local societies and thus gradually become a permanent part of local traditions, and not constitute events organised from the outside or from ‘above’.

As to cultural aspects in educational and interpretive activities, there is need of incorporation and integration, not of simple addition. This means that efforts are needed to relate anthropic activities and their culture to the biodiversity aspects of wetlands and to be able to demonstrate their relationship. Some initiatives along these lines have already started, as in the case of the Prespa Centre for Nature and Anthropos, but a lot yet remains to be done.



*Foggara canals, Tamentit Oasis*

## Chapter 7

### Developing methods and tools

As the general acceptance of the need for integrating socio-cultural and ecological approaches to wetland conservation and wise use increases, and efforts to implement Resolutions VIII.19 and IX.21 multiply, it will become apparent that certain methods and tools must be adapted or developed to facilitate the process. It is perhaps too early to attempt devising all-encompassing methods for the integration of cultural aspects in conservation and management work. Only certain guidelines can be proposed for discussion at this stage. On the other hand, specific tools are being developed –especially by SEHUMED– which need to be tested, evaluated and refined.

#### *7.1 The need for an integrative methodology*

##### *7.1.1 Culture and society*

The human mind has the tendency to organize information, to classify data, to create divisions and categories. This tendency may be useful in detailed methodological work, but may be dangerous when dealing with culture. As culture is a product of human beings and their social structures, it has a high degree of complexity, interrelatedness and continuity that defies simplifying approaches. Thus, in spite of the inherent difficulties, we must treat culture in an integrative way, always looking for links and relationships that may be missed.

Moreover, since culture is a social product, it retains the strongest link with the society that produces it, which also creates a clear sense of ‘ownership’. This is particularly true in the case of indigenous peoples and local communities. Such culture is usually related to the past



*Well, Škocjan village*

through traditions, which may retain a varying degree of strength and relevance, depending on the time that has elapsed and on other factors. In addition, there are cultural remains from civilizations, which are now extinct without leaving descendants to claim their spiritual heritage, while newer societies that are occupying the same space feel little interest in them. In certain cases, they may even feel animosity, if these remains represent oppressive past systems of governance.

On the other hand, cultural remains may have a strong value for individuals that belong to different ages and societies, and who are attracted to them for spiritual, aesthetic or sentimental reasons.

These individuals practice 'cultural tourism' and feel that they have rights to the accessibility, protection and enhancement of these values.

Such considerations create complex systems of 'ownership', with social and legal implications, which often lead to contention and conflict. It is therefore advisable to consider that local communities must be consulted when dealing with cultural remains, must be involved in the process of identification and study from an early stage, and must have a decisive voice in decisions concerning any measures proposed, especially intrusive ones.

### *7.1.2 The issue of 'management'*

For the same reasons, the notion of 'management' must be handled carefully. Management can be defined as a programme of active and passive measures, within a comprehensive framework, implemented in

order to achieve agreed objectives. Usually this is planned and carried out by public bodies, authorized in accordance with the legal system of each country, but sometimes through traditional governance practices<sup>131</sup>.

In the case of cultural heritage, many countries have specialized services, at the central or regional level, rarely with a local presence. Their competence is usually limited to antiquities of widely accepted 'value', often with international recognition, as funds are always insufficient and priorities must be carefully allocated. Other cultural values, especially living ones, are often neglected and left at the discretion of local social structures.

As a result, to speak of management of the cultural heritage, and especially from above and from the outside, might be a dangerous starting point. The only approach that seems sensible is –within the legal framework of each country– to assist local social structures to appreciate their cultural heritage, preserve it and enhance it, for the benefit of their communities and of interested visitors, today and for the future.

### *7.1.3 Specificity of culture*

As culture is produced by societies and societies retain their individuality, there is a high degree of diversity concerning cultural heritage. Therefore, the appreciation of cultural values and the appropriateness of measures required for their preservation and enhancement cannot be uniform.

This diversity is increased if the relation with nature is taken into account, as there is very great divergence at this level from case to case. In some societies, especially in the developing world, nature is part of the daily life, a unique source of food and resources, and a capital factor for survival. A typical example would be the populations living along the banks of the Niger River in Western Africa. In the developed world nature plays mainly an aesthetic role and is related more to leisure and recreation. The case of Japan, where carefully landscaped natural elements –often incorporated in the urban environ-

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<sup>131</sup> Such as the management by elders of water distribution systems in tribal societies of Africa and South America.



*Well, Tamentit Oasis*

ment– are part of the national culture since many generations, is characteristic.

Such disparities influence the sense of value that cultural elements related to nature have for each society, and consequently the sense of urgency for their preservation.

Given this extreme diversity of cultural values, care should be given to avoid prescriptive and rigid methodological approaches; in fact Resolution VIII.19 describes very wisely (and clearly) what is required<sup>132</sup>. In this process, the MedWet Culture Working Group –once re-activated– could contribute significant inputs from the Mediterranean context, following broad-based dialogue among the stakeholders mentioned in the Resolution. It is also evident that this contribution will be pertinent only to the Mediterranean, although it might provide other regions with useful ideas and experience.

On a more specific level, care is needed in developing and presenting ‘tools’, as they must be appropriate and adapted to the ‘hands’ that will use them. Thus, management plans for the natural and cultural

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<sup>132</sup> Under point 17, it only asks the Ramsar Bureau ‘to seek inputs from CPs, experts and practitioners, and local communities and indigenous peoples from around the world’ to improve the information document and guidelines and publish the results as a background document only.

heritage may be useful only when there are management structures in place able to implement them. Inventories are useful in improving knowledge, but they are both time-consuming and expensive. Thus they must be designed with great wisdom in order to maximize our understanding of the relationship between human beings and nature, without producing non-essential data.

#### *7.1.4 The built environment*

The built environment incorporates important cultural values, as well as the memories of the past in older structures. It has to be viewed, however, in a very broad sense, including both buildings of any type and infrastructure works, as well as the spaces between constructed elements and their relation with natural elements<sup>133</sup>, which should be



*Roman antiquities, Butrint*

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<sup>133</sup> For example, the proximity of buildings to water bodies.

taken seriously into account. A basic guideline that seems to emerge is that older structures must be preserved in an operational state. This would imply maintaining their initial functions, if at all feasible (such as with traditional salinas), or given new uses not incompatible with their preservation. If none of these options are possible, older structures should be preserved for the benefit of future generations.

Such an approach would be in harmony with the principles of sustainable use of resources as well. Naturally, questions of ownership must be resolved in all cases, and legal aspects of classification must be considered.

## *7.2 Inventorying the cultural heritage*

In the framework of the Community Initiative INTERREG III-B European Southwest 2000-2006 Programme and with the support of the Spanish Ministry of Environment, SEHUMED and the Portuguese Institute of Nature Conservation (ICN) have been concerned to contribute to the conservation, management and sustainable use of wetlands and their cultural values, applying the Inventory Methodology to a network of wetlands.

Cultural Heritage Inventory Sheets, the result of the contribution of the Polytechnic University of Valencia and SEHUMED to the project, were intended to bring together summaries of data sets held through surveys on environmental and cultural heritage resources.

In line with the spirit of Resolution VIII.19 'Guiding principles for taking into account the cultural values on wetlands for the effective management of sites', they are creating a tool that will help assess and manage the cultural assets of wetlands, at the same time generating synergies with communications, education and public awareness (CEPA) activities.

While wetland cultural values represent a legacy of past generations and part of the current life of a large majority of wetland communities, preservation of these values indicates the importance of managing these sites in a sustainable way, maintaining their ecological character and at the same time safeguarding the traditional experience and know-how for future generations.

The need to implement cultural values inventories arises from the wish to:

- identify, protect, interpret and physically preserve movable objects, historic buildings, archaeological sites, and cultural landscapes,
- prevent illicit trade of cultural objects and
- evaluate problems, constraints and opportunities of the sites and make effective plans that will result in sustainable development.

The wetland inventory sheets are planned to record the following cultural values categories:

- cultural landscapes,
- intangible heritage,
- building heritage,
- movable heritage.

At present, SEHUMED is proceeding with the testing of the cultural inventory data sheets in a number of wetland sites. In a new INTERREG project recently developed by MedWet, the results of cultural inventories will be incorporated in the MedWet Wetland Inventory System.

In addition, the Ramsar Working Group on Culture has prepared in 2007 a matrix for the rapid assessment of cultural values of wetland sites.

### *7.3 Future steps required*

During the coming years, further methodological work will be needed to reach the desired state of integration between cultural and natural aspects of wetlands. Some of it concerns general objectives and the rest scientific / technical issues and social aspects, while the international dimension must be considered. In addition, the Guiding Principles (GP) attached to Resolution VIII.19 must be taken into account and further developed, a task undertaken by the Ramsar Culture Working Group; a final text will be presented at the COP10 (Changwon, South Korea, November 2008).

A preliminary identification of these objectives and issues is attempted below, as an incitation to further dialogue and action.



*Marshland, Castro Marim*

### *7.3.1 General aspects*

- To identify the cultural values and relevant associated partners (GP1<sup>134</sup>).
- To link the cultural aspects of wetlands with those of water (GP2).
- To keep traditional knowledge alive (GP17).

Considerable work has already been carried out –mainly in the framework of the Ramsar Convention– in identifying the cultural values of wetlands and linking them with water, one of the most crucial natural resources<sup>135</sup> [Viñals 2002]. There is, however, the need for much more, especially at the national and local level. The Convention should thus encourage its Contracting Parties to proceed with such efforts to identify and document the cultural values of their major wetlands.

This work would require broad collaboration with partners from other sectors and especially from human sciences, which must be

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<sup>134</sup> The numbering refers to the Guiding Principles attached to Resolution VIII.19.

<sup>135</sup> See also 'Information paper on cultural aspects of wetlands', appended to the Ramsar COP8 Draft Resolution DOC.COP8 SG-15, prepared by Thymio Papayannis.

identified and encouraged to participate in joint initiatives with colleagues involved in wetland management and policies.

Concerning traditional knowledge, we have already noted that it cannot be maintained abstractly and artificially, but should remain intimately connected with traditional activities. Some of these can still be viable, if good use is made of their specific characteristics. For the rest, careful recording of the traditional knowledge they incorporate may be the only realistic option.

### *7.3.2 Legal and administrative alignment*

- To consider the use of institutional and legal instruments for conservation and protection of cultural values in wetlands (GP 23).

In most Mediterranean countries, the institutional and legal instruments available in regard to culture and nature are quite divided and constitute the responsibility of separate authorities, at least at the national level.

A first step required would be the establishment of a co-ordination body at the central level, which would be assigned the integration of the two sectors.

A second step would be a joint analysis of legal texts and policy documents that affect both culture and nature, so that areas of synergy can be recognized and made use of, while points of conflict can be identified so that corrective measures are proposed and implemented.

This might provide encouragement to the local stratum, where public administration or self-government tends to have a higher level of integration and collaboration might be easier. It is imperative to note here that work for the incorporation of cultural values in wetland management must be carried out in specific sites, as it will serve to test methods and approaches and to demonstrate positive results, or draw lessons from failures.

### *7.3.3 Scientific and technical measures*

- To bridge the differences of approach between natural and social sciences (GP8).
- To encourage research on palaeoenvironmental, palaeontological,

- anthropological and archaeological aspects of wetlands (GP10).
- To incorporate the cultural aspects of wetlands in management planning (GP21).
  - To include cultural values in wetland monitoring processes (GP22).
  - To integrate cultural and social criteria into environmental impact assessments (GP24).
  - To encourage cross-sectoral co-operation (GP27).

On the scientific level, research by multi-disciplinary teams must be promoted, in order to study in greater depth the relationship between human activities and the culture associated with them and physical processes in wetlands. In the Mediterranean, some of the wetland centres related to MedWet<sup>136</sup> are working along these lines, but need to do more regarding the cultural side.

On the technical level, guidance on the incorporation of cultural values in management planning and in monitoring is very much need-



*Waterfowl, KuşLake*

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<sup>136</sup> Such as EKBY and Med-INA (Greece), ICN (Portugal), SEHUMED (Spain) and Tour du Valat (France).

ed, as it is missing from even the latest manuals [Bonnet 2005]. However, the methods and tools to back this guidance are not yet available and need to be developed, tested and applied.

Even for the incorporation of cultural and social criteria in EIAs, the knowledge and tools currently available are far too limited and need to be improved.

It is obvious that through all the required trans-disciplinary efforts referred to above, a common language and understanding will be brought about and the co-operation among the diverse sectors implicated will be highly improved.

#### *7.3.4 Social aspects*

- To take into account culturally appropriate treatment of gender, age and social role issues (GP7).
- To safeguard wetland-related oral traditions (GP16).
- To use the arts to promote wetland conservation and interpretation (GP19).



*Educational activities, Škocjanske Park*

- To improve wetland-related communication, education and public awareness (CEPA) in the matter of the cultural aspects of wetlands (GP25).

Four Guiding Principles of Resolution VIII.19 cover the principal social aspects that must be dealt with. Most of them refer to the local level, although they have broader implications. As culture is a product of human activities and is related to specific societies, the role of people is paramount. In particular, indigenous peoples and local communities must be encouraged to maintain their own oral traditions concerning water and wetlands, and be informed about the cultural values of wetlands and their relation to conservation in many different ways, including the use of art –modern or traditional. This should be done respecting an equitable relationship of gender, age groups and social roles.

A similar process is important for visitors –both national and international– who must be informed about the various aspects of wetlands, in order to obtain a holistic view.

It should be noted here that, as culture is specific to societies, a uniform approach cannot be applied. Nonetheless, the exchange of information among wetland sites in different countries may be useful in indicating successful options and avoiding the duplication of errors.

### *7.3.5 The international dimension*

- To mobilise international co-operation in matters of culture issues related to wetlands (GP9).
- To incorporate cultural aspects, where available, in the Ramsar Information Sheet (RIS) for the description of Wetlands of International Importance, whilst ensuring the protection of traditional rights and interests (GP20).

International co-operation on matters of culture and wetlands is being promoted through the major conventions; the main work is being carried out by the Ramsar Convention, but the CBD as well has shown particular interest in cultural matters, as well as other international bodies, such as UNESCO, ICOMOS, IUCN<sup>137</sup> and others.

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<sup>137</sup> IUCN includes in its World Commission on Protected Areas (WCPA) a Task Force on the Cultural and Spiritual Values of Protected Areas (CSVPA).

The main responsibility of the Ramsar Secretariat is the implementation of Resolution VIII.19, and more specifically –according to article 17 of the Resolution– ‘to enhance the information paper on cultural aspects of wetlands (COP8 DOC. 15) and the detailed guidance prepared for consideration by this meeting of the Conference of the Parties, with a view to publishing it as a background document, and to inform COP9 of the progress made’. It should be remembered here that this task should involve all those concerned, including Contracting Parties of the Convention, experts from a variety of disciplines and practitioners, as well as local communities and indigenous peoples. This task has been developed by the Ramsar Culture Working Group, established by Resolution IX.21. The work that has been done by the MedWet Culture Working Group intends to provide inputs to this task from the particular region.

One point of major importance is that countries with rich cultural values of their wetlands, maintaining strong traditions still valid today, are among the less affluent in the Mediterranean. That is why, to conserve these values they will need external financial support from the technologically and financially developed countries of the region, in a spirit of solidarity.



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## Appendix 1

### Characteristic Mediterranean sites

The research on which the book was based focused on 21 Mediterranean wetland sites, with the invaluable assistance of persons knowledgeable about each site. In this appendix, it was thought useful to provide an integrated short reference to each one of those sites, combining geographic, historical, cultural and natural aspects.

#### *A01 Albufera de Valencia (Spain)*

Albufera de Valencia is a large coastal lagoon, located on the western Mediterranean coast, 16 km south of the city of Valencia. A wide sand dune peninsula separates it from the sea and stretches over 30 km. The lagoon is fed by streams, rivers and irrigation channels. Two thirds of the site is used for rice cultivation. The habitat's diversity is complemented by the untransformed part of the lagoon with its extensive reed-bed islands and fringe, salt marshes, dune systems and seashore. There are many endangered and rare plants and fish species hosted in the site. More than 250 bird species find shelter in the lagoon sporadically or regularly, of which 90 breed there, while large numbers of staging and wintering waterfowl may also be found.

The region bears evidence of human habitation of thousands of years, supported by paleontological findings. Before the arrival of the Romans in the area, the territory of Valencia was inhabited by the Iberian peoples. They were later succeeded by the Greeks, Romans, Visigoths and Muslims. Archaeological finds and historical sources testify that the region was heavily Romanised. However, even greater influence was exercised by the Muslims.

The inhabitants, taking advantage of their unique environment, adopted exceptional methods of sustainable usage of the natural resources. This is depicted in the agricultural, fishing and hunting techniques they used for hundreds of years, many of which are still practised. Locals used materials from the wetland to manufacture tools and boats, to build houses (the *barracas*) and as a means of sustenance. Their special bond with nature can be detected in the religious ceremonies (typical procession of boats traversing the wetland, in honour of *Cristo de la Salud*), in the traditional celebrations, music, musical instruments, dances and culinary traditions.

The reserve is threatened by pollution, drainage and poaching. In addition, urban and tourist development overload the environment immensely. The water quality is affected and the problem is intensified by the inflow of urban sewage and industrial pollution from nearby areas. Despite the adverse factors imposed on the wetland though, the site preserves its unique cultural character. The local society maintains its bonds with nature, through which it has survived, evolved and developed its exceptional heritage.

Because of the threats to this wetland, a monitoring mission from the Ramsar Convention Secretariat was organised recently, but its final report is not yet available.

### *A02 Burullus Lake (Egypt)*

Burullus Lake is situated in the North part of the Nile Delta, covering an area of 20,000 ha and stretches 65 km in length. A narrow sand-bar separates it from the Mediterranean Sea and before the construction of the Aswan High Dam, the lake was receiving the Nile floods in late summer and autumn. The Lake includes a notable number of environments, among which swamps and sand plains prevail. It constitutes an ideal habitat for 135 different kinds of land and water plants, as well as an important stop-over point for migrating birds. The area is densely populated, as approximately one million people reside around the lake. Social studies revealed that approximately 185,000 people interact daily with the lake.

The land is rich in historical elements. Burullus occupies the northern part of Kafr El-Sheikh district, which was the centre of worship for



*Reed cutting, Burullus Lake*

the god Amun-Re. The site of the ancient city of Xoïs was once capital of the 6<sup>th</sup> Lower Egyptian Nome, where today the village of Sakha is situated. There, the Sanctuary of the Church of the Virgin Mary is located. It is alleged that the child Jesus left his footprint as a bas-relief in a rock during a journey through the Delta by the Holy Family. The rock was kept hidden for many centuries to avoid theft and was unearthed again around the end of the 20<sup>th</sup> century.

The surface of the lake has decreased approximately 20% over the last century and a large part of it has been drained to gain land. Fishermen who have customary rights upon the fishing grounds (which are not recognised by the government) do not receive any compensation for their losses. Fishing is very important for locals. The traditional boats *markebs* and *faloukas*, are still in use. Fishermen use traditional techniques (various kinds of nets) and they also take advantage of the reeds. Unfortunately many illegal fishing methods are currently practised. In the past, locals used to make their own nets and, in addition, they made ropes from old fishing nets. Local women engage in handcrafts, using reeds as a basic material.

The site is under threat by fertilizer and pesticide runoffs. This

causes rapid eutrophication and pollution, which in turn results in excessive reed growth, a problem affecting the ecological balance and the fish resources. Efforts to manage reed beds by domestic buffaloes grazing on the more accessible areas have failed.

Waterfowl hunting has always been an activity in Egypt, dating back to the time of the Dynasties and the frescos on the walls of old Egyptian temples signify birds' economic importance. At present, wild birds are still shot and trapped all over the Egyptian wetlands and deserts. Until recent times, sport hunting was advertised to Europeans through travel companies, but this practice kindled criticism from national and international bird protection organisations and the government decided to ban such activities.

### *A03 Butrint (Albania)*

Butrint is situated in the southwestern part of Albania, occupying the small Ksamili peninsula, between the Straits of Corfu and Lake Butrint. A tectonic lagoon of 1600 ha, Butrint Lake is surrounded by forested hills,



*Roman antiquities, Butrint*

mountains and saltwater, as well as freshwater marshes. Butrint hosts a high proportion of the biodiversity of the country and the largest numbers of amphibians and reptiles ever recorded in an Albanian site.

The site was first occupied in the late Bronze Age and due to its strategic position, was a prominent port on the Adriatic seaway. During the third Macedonian War in 167 BC, the city fell into the hands of the Romans who reclaimed some land and divided it among the veterans of Caesar's army. After three centuries of decline, a new era of prosperity began with the rise of Constantinople. In 1084 AD, the Venetians conquered Butrint. Subsequently, it was occupied by overlords, the Angevins, the Byzantine forces, the Venetians and finally the Ottomans until 1912, when Albania became an independent state. In the beginning of the 19<sup>th</sup> century, Butrint had already declined to a small fishing village round the Venetian castle.

Butrint was brought to light in the 20<sup>th</sup> century by excavations prompted by Mussolini, which revealed remnants of all the civilizations that marked the site. Among them lie the Greek theatre (3-2<sup>nd</sup> century BC), two temples and richly decorated gates, Roman Baths, the Temple of Minerva, the Nymphaeum, the Diaporit villa, the Triconch palace, the Byzantine Baptistery and Basilica, the Venetian Triangular fortress (16<sup>th</sup> century) and the Turkish castle (19<sup>th</sup> century). The Greek theatre is still in use, hosting classical and folklore music concerts, as well as theatre plays. In 1994, the excavations were undertaken by the Albanian Institute of Archaeology and IWA (working under the aegis of the Butrint Foundation). Some reservations have been expressed though, about the effect of the continuous large-scale excavations on the fragile equilibrium of the wetland.

Butrint underwent dramatic changes in the 1950s when marshland reclamation started out. The loss of wetlands and the alteration of the physical-chemical parameters of the lake resulted in the degradation of habitats and in the extinction of certain species. Overgrazing, illegal practices and uncontrolled development were noted accompanying the collapse of the Communist regime in 1991.

The enlargement of the World Heritage Site and the creation of the Butrint National Park (1999-2000) have greatly assisted in the re-establishment of institutional control over the site and several projects have been launched recently. The site is frequently visited by schools and

numerous tourists, while the wider area is under tourist development. During 2006, for example, the number of visitors increased by 30% over the previous years.

On the cultural side, conservation work was carried out in 2006 in various areas of the site, notably in the Nymphaeum, the Roman Villa, the Basilica and the Baths at Diaporit. Also, for the seventh year, the drama festival 'Butrint 2000' held its performances in the recently restored Theatre.

### *A04 Camargue (France)*

Camargue, the delta of the Rhône River, is located in the regions of Provence-Alpes-Côte d'Azur and Languedoc-Roussillon in southern France, and lies between and immediately outside the two branches of



*Welcome sign, the Camargue*

the Rhône. The site includes 6 main wetland types and due to its variety, supports an immensely rich biodiversity. Several millions of the 356 different bird species use the wetland, both migratory and sedentary, among which the pink flamingos (with a population that can reach 20,000 couples) have become the emblem of Camargue; unfortunately, in 2007, action by striking Salins du Midi workers has led to the disappearance of the major nesting site. In addition, Camargue sustains large and diverse flora communities.

In the 6<sup>th</sup> century BC, the Greeks arrived near the site of modern Arles and they were followed by the Romans. By the 1<sup>st</sup> century BC, the city had developed into an important Mediterranean port and two centuries later, Romans built the impressive amphitheatre (*Les Arènes*), the Roman theatre (*Théâtre Antique*), the Constantine Spa (*Les Thermes de Constantin*) and the cemetery complex that once encircled the town (*Les Alyscamps*). After many turbulent centuries, Arles became the capital of an independent state, the Kingdom of Arles, until the 16<sup>th</sup> century, when it became part of the region of Provence.

Only in the 19<sup>th</sup> century did humans manage to subdue nature's elements. In 1859, a sea dike was constructed that limited the rise of tides in southern Camargue and ten years later the Rhône River was embanked, in order to control flooding that occasionally submerged adjoining farmlands. Since Roman times, trade has been a major economic occupation of the population, an activity that is depicted on numerous coins and pottery shards that have been found in the region. Watch towers testify, as well, to the need to defend the town's riches.

Today, the main activities people are involved in include nature conservation (water resources nowadays are strictly managed), agriculture (mainly rice cultivation), animal husbandry (endemic horse and cattle breeds), hunting, fishing, salt exploitation (an activity which has been practised for several centuries) and tourism. The *gardians*, horsemen and cow-herdsmen who tend the livestock of the *manadiers*, the owners of the traditional large country houses, act as a source of live support for the region's folklore, helping the local economy that benefits from the tourism income. Traditional architecture is a distinctive cultural element that stretches from the Roman times and the Middle Ages until the Van Gogh period.

Each year on 24-25 May and for the duration of a week, Camargue is visited by thousands of Romas from all over Europe on a pilgrimage to celebrate their patron saint Sara, who was the Egyptian servant of the *Saintes Maries* (Mary Salomé, the mother of the apostles James and John, and Mary Jacobé, the Virgin Mary's sister), who came to the village of Saintes-Maries de la Mer –situated on the western tip of the delta– after Christ's Ascension. At that time of the year, the statues of the two Marys and Saint Sara are led down to the seashore, where a priest in a boat blesses the sea and the crowd.

In 2006, the 'Camargue Observatory', founded in 2001 by six major scientific and management bodies, presented its first results in a thematic synthesis<sup>138</sup>.

#### *A05 Castro Marim (Portugal)*

Castro Marim is located in the south-eastern corner of Portugal, very close to the Spanish border, alongside the Guadiana River. The wetland is a complex of salt marsh, saltpans, creeks and dry areas of schist soils, red clay, arenite and sand, as well as man-made salinas on the western side of the river. This unique environment renders the area an ideal place for the concentration of many species, most of which bear evidence of strong saline influences and adaptation to a long hot and dry summer season. The wetland plays an important role in sustaining the balance of underground water tables in the region. It moderates the disastrous effects of the floods from the Guadiana River and assists freshwater retention in one of the driest areas of Portugal.

The wetland bears cultural evidence of a plethora of civilizations. The remains of the first settlements date from the Neolithic Period (approximately 5000 BC). During that time, the fortification itself was much nearer to the sea than it is now and, according to geological research, it was considered an island surrounded by sea.

Being a port offering shelter to the ships that sailed up the Guadiana River transporting copper mined from Alcoutim and Mértola, the site contains traces of the Phoenician and Roman presence. Besides its

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<sup>138</sup> [Http://www.tourduvalat.org/nosprogrammes/observatoire\\_des\\_zones\\_humides\\_mediterraneennes/suivi\\_de\\_la\\_camargue](http://www.tourduvalat.org/nosprogrammes/observatoire_des_zones_humides_mediterraneennes/suivi_de_la_camargue) (in French only).



*Castro Marim*

strategic position along the river, Castro Marim was also connected to Lisbon by a Roman road parallel to the Guadiana, increasing its importance. During the time of the Moorish occupation the site was fortified, laying the foundations for its present structure. The fortified wall that surrounded the medieval town on top of the hill must date to the 13<sup>th</sup>-14<sup>th</sup> centuries. Castro Marim was made the headquarters of the Order of Christ during the reign of King Dinis (1261-1325).

The salt pans bordering Castro Marim are centuries old and locals have exploited them for hundreds of years, using traditional methods for the extraction of salt. The larger part of the salt flats is natural, but vast areas were widely transformed to profit from the commercial production of salt in more recent times. In addition, many traditional salinas have been converted to fish farms, posing threats to the integrity of the site. In the past, locals were also employed in the pottery production of tiles and bricks, milling (tidal and wind milling), lime fabrication and handicrafts, traditional land cultivation and fishing. Currently, the main farming activity is the cultivation of fruit trees and, in the proximity of the wetland, the cultivation of non-irrigated orchards (almond, carob and fig trees).

The area suffered several long periods of population decline. Nowadays, the situation is altered. The site is populated and intensive agriculture, fish farming, tourism and recreational activities are carried out. This boom in economic growth, however, is affecting the environmental equilibrium.

### *A06 Doñana National Park (Marismas de Doñana Spain)*

The Marismas de Doñana is a key wetland on a global scale, because of its strategic location amid Europe, Africa, the Atlantic Ocean and the Mediterranean Sea. In spite of the transformations it has been subjected to, mainly during the last 80 years, it maintains a large area in good ecological condition and with a very high biodiversity. Within Andalusia, Doñana occupies a large part of the estuary of the Guadalquivir River or Rio Grande, which articulates the whole region. However, it is subjected to tourist pressure from the adjoining mass tourism develop-



*Virgin del Rocío Sanctuary in the Rocío village, Doñana*

ments. The area is threatened with desertification caused by a depletion of aquifers from excessive extraction for the irrigation of the surrounding intensive cultivations. The threat of pollution is also apparent.

This wetland has been inhabited since antiquity, and was known as Lago Ligur during the Hispano-Roman period. Due to its opening to the Gulf of Cádiz, Doñana was colonised by peoples from far-off lands, such as Phoenicians, Romans, Arabs and Vikings, while in the 20<sup>th</sup> century foreign companies –mostly English– were established, and they all contributed to the rich cultural traditions of the area. Locally, the area is better known as the Marismas del Guadalquivir, and by the names of various sub-areas (such as Isla Mayor, Marisma Gallega, Marisma de Hinojos, Isla Menor, La Madre, Las Nuevas, Rincón del Pescador, Los Caracoles), which are an integral part of local traditions.

The relationship between sandy beaches, marshes and the surrounding terrestrial zones and the exploitation of their resources gave rise to various traditional activities, such as collection of local materials (such as reeds), grazing of animals, fishing, hunting, extensive agriculture. It is characteristic that people in the area tended not to specialise, but to carry out complementary activities. The habitation pattern includes permanent small villages at a safe distance from the marshes (to avoid flooding) and temporary constructions on the beaches.

In El Rocío, a village situated among beaches and marshes, the Virgin Mary of El Rocío is celebrated. In the past, the site was a magnet for large numbers of inhabitants of the broader region, but more recently, thousands of people from all over the country come to participate in the pilgrimage and the festivities. Part of the celebrations is the procession through the Doñana National Park, towards the village of El Rocío.

A number of key issues are evident in this important site, perhaps, principally, the role of a living religious and social tradition, centred on El Rocío, in the conservation and management of a wetland with high biodiversity. Efforts to establish a harmonious relationship between the two in the case of Doñana may provide useful lessons for other Mediterranean sites.



*Evros Delta*

*A07 Evros / Meriç / Maritsa Delta (Bulgaria, Greece, Turkey)*

The Evros Delta is situated at the north-eastern part of Greece on the border with Turkey and is considered one of the most important European wetlands, due both to its strategic position and its ecological value as a significant point for migrating birds. The region hosts 108 species listed in Annex I of the Birds Directive, some of which are threatened worldwide.

Human intervention, especially during the 1950s-1980s, altered the landscape dramatically. Dams, canals, dikes, flood control and irrigation projects served the needs of the local population for arable land, while at the same time degrading the wetland and leading to the extinction of certain fish and bird species. Despite the disastrous effects of all these interventions, farmers at the lower (southern) part of the wetland did not benefit from the new lands due to the high salinity of the reclaimed soils.

The area has always been a cultural crossroads, influenced by Greeks, Romans, Byzantines, Franks, Bulgarians and Turks and has therefore developed a particular cultural character. In the near proxim-

ity of the Delta, on Doriskos hill (inhabited from Neolithic to Hellenistic times), the Persian king Xerxes built a fortress so large that, according to Plinius, it could accommodate 10,000 men. The Roman settlement of Traianoupolis was established by emperor Markus Ulpius Traianus during the 2<sup>nd</sup> century AD. As its location was strategic, next to the thermal springs and the Via Egnatia which connected Rome with Constantinople, it turned the town into a transit station.

The church of the Virgin Mary Cosmosotiras<sup>139</sup> is the most significant Byzantine monument of the entire region of Thrace, built by Isaac Comnene in the 12<sup>th</sup> century AD. During the 16<sup>th</sup> century, within the site of Roman Traianoupolis, the domed bathhouses were built. The thermal springs have been attracting visitors since ancient times and are still in operation.

Traditional activities still practised are hunting and fishing. Fishing is still carried out using traditional methods and equipment that have not altered considerably during the last decades. The boat type that is used is the one without a keel (*blava*) and is made of wood. Main fishing methods are the traditional use of nets, trawl lines and fish traps. Within the Delta area three fishing reserves are found. One of them, Paloukia, is actually a lagoon functioning in the same way as in the past.

A remarkable eco-tourist activity may be observed in the region in recent years. Guided tours and boat trips are organised, while visitors can call on the Evros Delta Visitor Centre, acquire informational material about the wetland and see the related exhibition. The Centre also takes care of wounded birds brought in by locals, feeds birds in the Delta area during winter and participates actively in local events. Other activities of the Centre include water quality and bird monitoring and wardening of the site in co-operation with the responsible authorities, effective management of vegetation (tree plantation) etc.

Throughout the year, folklore and religious activities take place in the surrounding villages.

A major threat for the site has appeared in 2007 through the agreement of Bulgaria, Greece and Russia jointly to construct a petroleum pipe line from Burgas in the Black Sea to Alexandroupolis in the

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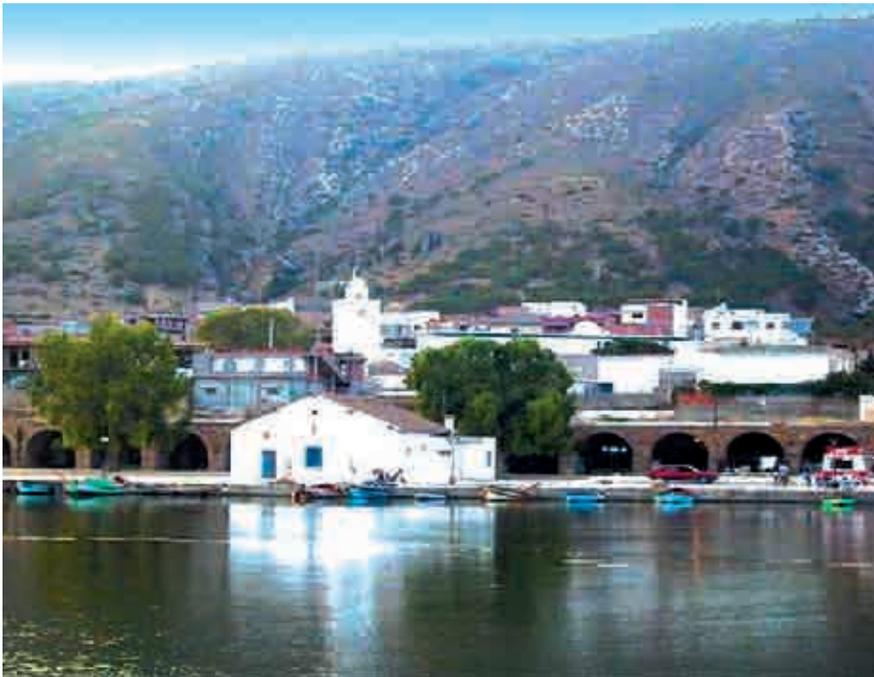
<sup>139</sup> This Greek term means 'Saviour of the World'.

Aegean. It is hoped that a careful environmental assessment may mitigate the potential negative impacts.

*A08 Ghar el Melh Lake (Bobayrit Al Milih, Tunisia)*

Ghar el Melh Lagoon is situated 30 km southeast of the town of Bizerte. On its southern bank the village of Ghar el Melh is built, formerly called Porto Farina. On its southern and western side it is bordered by marshland, while on its eastern side it communicates with the sea. A 6 km long sandbar separates Ghar el Melh from the Mediterranean Sea. In the north it meets the region of Djebel Nadour. Draining channels were constructed on its west side.

The region has a lengthy history. It was first inhabited by Phoenicians. The area, being strategically important, was later conquered by the Romans and later by many others such as Vandals, Byzantines, Arabs, Ottomans and the French.



*Ghar el Melh Lake*

The presence of the ancient port indicates the significance of its strategic position throughout the centuries. In the village of Ghar el Melh, the very well-preserved 15<sup>th</sup> century Spanish fort is a magnificent example of its past, along with the other forts of the same period, as well as the Turkish fortresses, the old bath-houses and the 17-18<sup>th</sup> century prisons.

Fishing has always been important for the local population and the inhabitants around the lake have developed several fishing techniques, tools and boats to serve their needs. Now the old port of the village has been almost abandoned, used by only a few fishermen. The traditional boats have, to some extent, been replaced by motor-boats and aquaculture is being developed.

Land cultivation of the lake shores strongly depends on the level of humidity of each place and on the quantity of soil brought by the floods. The way fields are cultivated in this region (pieces of land nearly floating above the lake) has allowed many families to inhabit the shores all around the wetland. A draining system is used for the agriculture on the banks and in the marshes. The banks were also used for pasturing and the entire area around the wetland for hunting.

An important religious practice for the people of Ghar el Melh village is the visit to their spiritual leader, the *Marabout Sidi Ali el Mekki*, whose home overlooks the entire wetland.

The unique landscape of the lake has inspired many artists. In the past few years, an annual photography festival has been held in the area in which ever more photographers participate. After the recent restoration of the forts and all the monuments of the site, movement of visitors to the lagoon was facilitated for exploration of this area, rich in both traditions and biodiversity.

### *A09 Hutovo Blato (Bosnia and Herzegovina)*

Situated in southern Herzegovina, Hutovo Blato is a natural reserve covering four major lakes, Deransko, Jelinsko, Svitavsko and Skrkino –all connected by the Krupa River. The Krupa is the only river in the world that flows in both directions. It carries waters from the lake to Neretva River. When the water level in the Neretva River is high, it then carries water in the direction of the lakes, causing flooding of the sur-



*Hutovo Blato*

rounding lands. Due to its morphology, Hutovo Blato, and especially its upper zone, is relatively well protected from human impact and is therefore a significant habitat for plant and animal species. Geomorphology, climate, vegetation and water abundance create an ideal environment for the wintering of ducks, waders, herons, cormorants, coots and many other birds, arriving there from northern Europe. In 1979, the large marsh Svitavsko Blato, became a water storage lake of 1200 ha, after the construction of a hydro-electric power plant. This caused a major deterioration of the environment, resulting in a significant reduction of bird and fish species.

The Herzegovina-Neretva canton has always been a place where various civilizations met, clashed and interwove. Traces of the past date from Palaeolithic, Neolithic, Illyrian and Roman and early Christian times, through to the Ottoman and Austro-Hungarian Empires. During the Middle Ages, the three great Mediterranean civilizations met and created a fascinating landscape: Western European with Catholicism,

Byzantine and Orthodox, and Ottoman with Islam. When the Jews were banished from Spain and Portugal at the end of the 15<sup>th</sup> century, the Ottomans offered them asylum, introducing a fourth cultural component in the region. In the canton of Herzegovina-Neretva, numerous carved and engraved stone funeral monuments, the *steak/stecci*, are scattered. They are attributed to the Bogomiles, a Christian sect whose followers inhabited the area between the 13<sup>th</sup> and 16<sup>th</sup> centuries. Engraved are ancient symbols –all connected to earth, family, sun, moon, tribal warriors, dance and praise to the gods.

In the past, agriculture and fishing were the economic activities locals depended on for their subsistence. In order to cultivate the land, they drained the marshes and transformed their surroundings by digging channels. Fishermen used to manufacture a special kind of boat, the *trupa*, a practice which has unfortunately been abandoned. Modern activities carried out are greenhouse cultivation, cattle breeding and tourism. Water abundance and the connection to the sea, through the Neretva and Krupa River, has resulted in the development of very rich stocks.

Before the war, Hutovo Blato was a famous tourist attraction for travellers and pilgrims on their way to Mostar and Medugorje, who often stopped there for a photo-safari and to relish nature along with the renowned local cuisine. In order to counterbalance the damage caused by the war and to preserve what was left of the wild game, fish and birds in the Park, the National Park Hutovo Blato was founded in 1995. Along with archaeological research, cultural activities such as the Čaplina Festival are summer attractions that continue to draw locals and visitors to Hutovo Blato.

### *A10 Kizoren Obrugu (Turkey)*

Kizoren Obrugu is situated in the centre of the Central Anatolian steppes, 65 km northeast of the province of Konya. In Turkish, the word *obruk* means a vertical depression or shaft in karst, developed by means of karstification, in two directions, downwards (from the surface towards the ground, through minor cracks and joints by infiltration) and upwards (from the karstic underground cavities towards the surface, through minor cracks and joints by evaporation). The term *obruk*



*Kizoren Obrugu*

is used to describe the rare karstic lakes, which are found exclusively in the district of Konya in Turkey. Kizoren Obrugu is 180 m long, 150 m wide and its depth reaches 145 m. For a long time it was believed that *obruk* lake waters were still, but today it is known that the water slowly flows from the one lake to the other from beneath. Located at an altitude of 1030 m, Kizoren Obrugu is the only freshwater source for human use in the vicinity. The State Water Institute (DSI) has installed a pump at the *obruk*, in order to provide freshwater for human use.

The region of Konya was inhabited earlier than 7500 BC. One of the oldest and largest known human communities, the Neolithic settlement of Çatalhöyük, where agriculture was initially practiced, is situated 50 km southeast of Konya. Although it is only partially excavated, the settlement covers an area of 15 acres and presents evidence of sophisticated town planning, art and ceremonial buildings.

The civilisation of the Hattians, developed in the region between 3000-2000 BC and was followed by the Hittites who conquered them and built their formidable empire. Around 1200 BC the Phrygians were among the Balkan peoples who came to Anatolia. During the ensuing centuries the region came under successive Roman, Byzantine

and Ottoman rule. Human activity around the lake dates from the time of the Seljuk Empire. Being the sole source of water in the area, it gave its name to the settlement that is situated in the vicinity of the lake, the village of Obruk. Remnants of an inn, the *Obruk Han*, a caravanserai, are found 30 m from the lake. It was probably constructed during Byzantine times (1245-1250 AD) and was operational under Ottoman rule. The dimensions of the building are indicative of the importance of the site as part of the Silk Road.

In the region of Konya, agriculture, mining and livestock breeding are important economic activities for the local population. Konya is also well known for its traditional hand-woven carpets. In addition, textiles and leather goods are manufactured, aluminium processed, and trade is well developed in the area. In recent years, tourism has been developed, as the region attracts visitors for its irrigated gardens, mosques and the monastery of the mystical sect known as the *Mawlawiyah* (in Arabic) or *Mevlevi* (in Turkish).

### *A11 Kune-Vain Lagoon (Albania)*

Kune-Vain Lagoon, known also as Drin Delta, is situated in the admini-



*Kune-Vain*

strative district of Lezha, on the northern Albanian coast. It consists of the coastal lagoons of Kune, Merxhani and Kenalla in the north (Kune lagoons), and Vaini and Ceka in the south (Vain lagoons). The Kune-Vain Lagoon was formed by the accumulated sediments from the Drin and Mati rivers. Two channels connect the lagoon with the sea. Within its district, various habitat types are found, such as riverine woodland, salt marshes, reed-beds, salicornia flats and sandbars. They host a variety of fauna, amongst which waterfowl prevail. It is an important area for migratory and nesting waterfowl. The site was relatively well preserved until 1991.

At the end of the Bronze Age and at the beginning of the Iron Age the area was populated by the ancient tribe of Illyrians. Close to Lezha, the Roman city of Lissus was located, founded by Dionysius of Syracuse in 385 BC, which possessed a strongly fortified acropolis called Acrolissus that was considered impregnable. The Greeks also maintained trading colonies in the region. Romans invaded and occupied the coast, followed by Byzantines, Venetians and Ottomans. Various remnants of those civilizations are scattered in the region, among which is the medieval fort in Lezha, where the grave of Skanderbeg is located. This was the site of the Siege of Lezha in 1444, where Gjergj Kastriot Skanderbeg united the Albanian princes in the fight against the Ottoman Empire.

Traditional activities practised by locals are farming, fishing, stock raising, forestry and hunting, whilst contemporary ones include development of agro-industry, aquaculture, beach and cultural tourism and nature conservation. Salt extraction nowadays is abandoned. Being rich in cultural elements, the site is visited by many tourists. Locals manufacture traditional handicraft products, sold to visitors. Archaeological excavations are currently in progress, as well as restoration of historical monuments.

The site is however threatened by a number of factors, among which are serious pollution caused by factories operating in the proximity of the wetland and sewage from urban centres. After the fall of the communist regime in 1991, land reform took place and the area became densely populated. This caused severe pressure upon the wetland. The new owners felt that they had the right to manage the place on their own, turning to practices that degraded the area (increasing

the number of constructions destined for tourism, pollution, noise, car fuel gases, excessive hunting, illegal fishing, overgrazing).

As a result, the former rich and diversified bird colonies disappeared. The banks are deforested and water circulation must be improved. Therefore, hunting, fishing, building and overgrazing must be regulated and the environmental awareness of the local population must be improved. The wetland could be an ideal place for eco-tourism and action can be taken towards this objective.

### *A12 Kuş Gölü (Turkey)*

Kuş (Manyas) Lake is located in the southern coast of the Sea of Marmara, between the Uluabat and Biga peninsulas, supporting a wide range of biodiversity. Lying on a migratory waterbird route, it hosts more than three million birds each year, of which 255 species nest in the region. With its favourable mild climate conditions, the site makes sheltering possible for birds all year round. The delta, formed by the Sigirci rivulet, is one of the most important breeding areas in the coun-



*Kuş Lake*

try. The wetland also constitutes an ideal environment for insects, worms, frogs and fish, which are necessary for the feeding of birds. A wide variety of plants also grows there –around the lake there are reed, rush and meadow areas– and the region is considered to be the most heavily vegetated part of the coastal region.

It is estimated that the region was first inhabited in approximately 4000 BC. From excavations currently in progress, archaeological evidence was brought to light from the first Bronze Age. During the ensuing centuries, the land was populated by Bithynians, Lydians, Persians, Romans, Byzantines and Ottomans, until the establishment of the Republic of Turkey. On the southern lake shore, the archaeological site of Daskyleion, a Roman settlement, can be found.

During the past two centuries, the region was populated by a group of immigrants from various parts of Europe. Orthodox Christian Cossacks, coming from southern Russia, after migrating first to the Danube Delta, brought with them the knowledge of commercial fishing and in the late 19<sup>th</sup> century Ottoman Muslims from the Balkans arrived and populated the northern shore of the lake. Later on, Pomaks from a village near Kavala, Greece, were relocated around the lake and lately, at the beginning of the 20<sup>th</sup> century, another flow of immigrants arrived from the Caucasus. All these different groups of people from diverse backgrounds not only live in harmony but, adopting new strategies providing their subsistence, are interacting, teaching and learning from one another.

Cossacks commercialized fishing, and gradually the pursuit was taught to all groups, lately even to Pomaks who were previously not consuming fish. Cossacks introduced the traditional method of *ýrýpcýlýk*, a sophisticated system of group fishing. Nowadays, the method of *vole* and *fanyaly* are practised, while other traditional fishing methods are the *pinter*, a basket-like trap device, the *basma* and *kýyy ýrýby* (the last two are now prohibited).

The quality of the land has permitted the cultivation of wheat, sunflowers, corn, pulses, fruits, vegetables, olives, sugar beet, cotton and barley. Although cultivation in inundated lands was always risky, it has also been rewarding to farmers. Hunting has always been important for the population and in more recent years two methods were practised, open-air shooting and the *güme*, a hunter's blind, a little hut con-

structed from wire and cotton, sheltering the hunter from detection by birds. Although the *güme* has been banned by law, some people still use this traditional hunting practice.

In the park there is a visitors' centre and an observation tower and the area is frequented by thousands of naturalists, bird watchers, scientists and researchers every year. Pilot courses for wetland managers have been held and many schools organize educational tours within the site.

### *A13 Narta Lagoon (Albania)*

Narta Lagoon is situated on the south-eastern coast of the Adriatic Sea and stretches over 10,000 ha. The site consists of salinas, sand dunes, salty lands and cultivated land. The area is bordered by the hills of Zverneci and on this side of the lagoon two small islands are located. An embankment lies between the lagoon and the Salinas of Skrofotina and there are two water exchange channels through which Narta com-



*Narta Lagoon*

municates with the sea. It is the second most important site for water birds in Albania and hosts a notable number of mammal species, among which several are rare and endangered, as well as a large number of fish species (mulletts, eels, rays, as well as crabs).

In the region there are traces of civilisation from the Hellenistic period. The Via Egnatia, linking the South Illyrian coast with the East, passed through the city of old Aulona where today the city of Vlore stands. The city was also known as Triport and its remnants date back to the 5<sup>th</sup> century BC, as do the ancient ruins of the city of Spiranica. On Zverneci island a monastery of the 14<sup>th</sup> century AD is located, the Zverneci Monastery, the most important tourist attraction of the region. Most of the inhabitants around the lagoon are farmers, the majority of whom also engages in stock-breeding. Modern agricultural methods have replaced the traditional ones. Fishing constitutes another occupation of the locals. Nowadays, many illegal forms of fishing have been noted, such as poisoning and the use of dynamite. Illegal hunting is another adverse factor affecting the area's ecological equilibrium. Hunters use automatic guns, chase endangered species and kill many amphibians and reptiles, which they consider dangerous or a nuisance. Land reclamation practices have resulted in massive habitat alterations. Large water quantities are also used during the dry season, mainly for irrigation. Salt extraction is taking place at the salinas; the site has been industrialized and the salina owners destroy the islets where many birds nest.

Each year, in the second week of April, Carnival celebration takes place. The festivities include concerts, an ethno-gastronomic fair, games, visits and public awareness events. Objectives of these activities are the appreciation of the historical and cultural values of the area and the support of their protection and conservation in view of the further development of the region. The festivities are organized by the Vlora District City Council, in co-operation with active organizations and local authorities and supported by local NGO's, the Chamber of Commerce and the religious community.

#### *A14 Neretva Delta (Croatia)*

Neretva Delta is the estuary of Neretva River, the longest river that



*Neretva Delta*

crosses the Adriatic coast. Its largest part traverses Bosnia and Herzegovina, while the last 20 km from the Croatian delta. Three relief and morphological sections can be identified in the delta: the karstic frame on both of the river's banks, the low-lying area along the mainstream and its tributaries and the coastal belt consisting of sand. Before 1881 the river flowed into the sea through 12 branches, while today they have been reduced to three. The biodiversity of the site is of great significance as it hosts more than 300 different species of birds (112 of which nest in the area), 34 species of freshwater fish (three endemic), more than 100 marine fish, seven species of amphibians, 16 species of reptiles and 52 species of mammals. It is considered one of the most important wetlands in Europe, in terms of a resting and wintering place for migratory birds.

Neretva has been the 'river highway' of the area, establishing trade with the surrounding regions. The first traces of human habitation date back to the Bronze and Iron Ages. Stone forts and enormous burial

stone piles were found, built by the Illyrians, the first residents of the district. Greeks inhabited the islands of Vis (Issa) and Hvar (Pharos) and they also built a port in the 4<sup>th</sup> century AD, which later developed into the port of Naronia, where today the village of Vid stands. In the 2<sup>nd</sup> century AD Naronia passed to Roman hands and became a Roman colony (*Colonia Julia Naronia*). Numerous temples, winter baths, theatres, statues and more than 200 inscriptions testify to their presence.

The region was prosperous for four centuries, but during the 7<sup>th</sup> century AD Avarian and Slavic raids led to its decline. In the 15<sup>th</sup> century the site was invaded and occupied by the Ottomans, who destroyed many of the churches. In 1685 they were succeeded by the Venetians, then by the French and later on the area fell under Austro-Hungarian rule. The entire delta area is full of settlements, whose ruins are unfortunately below water level. The Ministry of Culture decided to support the building of a museum in Vid to house the finds from the whole region.

The peoples and states that occupied the estuary were all interested in exploiting its resources. During the Classical and the Middle Ages, the resources were moderately used. The Venetians used their experience from similar sites in Italy and established intensive fishery practices, creating large fishponds in the lagoon. The Austro-Hungarians developed a transportation infrastructure, in order to facilitate the efficient trade of raw materials. Therefore, a railway and a port in Metković were constructed and the flow of the Neretva was regulated, which has had a devastating impact on fisheries. During the second half of the 20<sup>th</sup> century a rapid development of agriculture and its associated downstream industries were developed.

Among the threats that menace the ecosystem are illegal land reclamation, pollution and the deterioration of the hydrological balance. The distinctive traditional way of agriculture that is still practised in many parts is currently endangered. Its development under the current principles of sustainability will greatly add to the enhancement of the site.

The Maraton Ladja (the Ladja Marathon) is among the most famous events in Croatia and is held under the auspices of the President of the Republic of Croatia on the second Sunday of August every year. This rowing competition of traditional sailing vessels serves the need of preservation of the old customs and traditions and constitutes a major

tourist attraction. The region is also well known for its gastronomic specialities, such as eels, black water-hens and frogs legs.

### *A15 Orbetello Lagoon (Italy)*

Orbetello Lagoon is situated on the Tyrrhenian coast, 20 km north of Lago di Burano. This site includes sandy beaches, a brackish lagoon, fresh water ponds, small woodlands, pinewoods, woods of cork trees and cultivated land. The site supports more than 10,000 waterbirds (amongst them hundreds of flamingos) and is important for them during migration and wintering. Orbetello is now separated from the sea by two main sandbars, Gionella and Feniglia. A third stretches to the town of Orbetello, which is situated in the middle of the lagoon, extended in the form of an artificial dam (constructed in 1842) to Mt. Ar-



*Orbetello Lagoon*

gentario, separating the lagoon into two basins, the lagoon of Ponente in the west and the lagoon of Levante in the east.

Because of its uniqueness and desirability, Orbetello was conquered by the Aldobrandeschi, the Spaniards, Austrians, French and last by the Three Fountains Abbey, and was a major commercial and trading centre of the Tyrrhenian and Mediterranean Seas. The town of Orbetello is surrounded by an ancient polygonal terrace wall and tombs have been discovered within the city and in the near vicinity. On the north side of the promontory, the remains of a Roman villa are found partially below sea-level.

During the 16<sup>th</sup>-18<sup>th</sup> centuries the Spaniards built the town bastions, although the old Etruscan walls are still visible, and a convict prison, connecting with another prison situated at Porto Ercole on the east side of the peninsula. On Mt. Argentario, the strongly fortified house of the Passionist Order is situated. One of the city's most eminent buildings is the Cathedral, presumably built on the ruins of an Etruscan temple, which was renovated in 1375, as well as La Rocca, built in the 12<sup>th</sup> century by Pietro Farnese. In the near vicinity the ancient Roman city of Cosa is situated, which was founded in 273 BC, on the land that was occupied by the Etruscan village of Vulci. Cosa is considered as the earliest Roman harbour discovered so far.

Approximately 200 of the town's inhabitants are working on issues related to fishing and extensive fishing, to pass down an activity that has continued for centuries. Fishermen still use the traditional nets inside the lagoon and in the three areas that connect the lagoon to the sea. Orbetello is nowadays one of the few places in Italy where *bottarga* (salted mullet roe) is made. It is a particularly skilful process and one of the country's best kept culinary secrets. Bottarga is used grated in pasta dishes as well as in many other traditional recipes.

In the core area of Orbetello lagoon, ecotourism and environmental education are developed, while in the vicinity, agriculture, animal husbandry and tourism are the activities most locals are involved in. Hunting is also permitted outside of the reserve, although under specific rules.

### *A16 Prespa Lakes (Albania, FYR of Macedonia, Greece)*

Prespa is a complex of two lakes shared among Greece, Albania and



*Prespa Lakes*

the FYR of Macedonia, encircled by a ring of tall mountains. Due to its isolation, antiquity, climatic conditions and geomorphologic characteristics, the region's biodiversity is rich and many rare or endemic species are found there. The wetland area and its surroundings support an impressive number of plant species and provide a feeding and breeding habitat for a large number of bird species (among which is an important pelican colony, the largest in the world). The area is an important stopover for many birds during their spring and autumn migrations. In 2000 the Prespa Park was established by the three neighbouring countries, the first transboundary protected area in the Balkans.

Earliest archaeological finds date back to the Bronze Age. Prespa has been under the rule of the Macedonian Kings, the Byzantines, the Bulgarians, the Franks and the Ottomans, until the beginning of the 20<sup>th</sup> century when the borders were secured by the Treaty of Bucharest in 1913 and the area was divided among the three states. Many Byzantine and Post-Byzantine monuments can be found in the region, such as the basilica of Aghios Achillios (10<sup>th</sup> century AD), where the relics of the saint were kept, brought from Larissa by Czar Samuel. Across the

border, in the FYR of Macedonia, the small church of St. George in Kurbinovo is decorated with frescos painted in 1191. On the shores of both lakes small hermitages are carved in the rocks (with important rock paintings).

Protected by the surrounding mountains, Prespa people managed an almost self-reliant way of life up until the 1960s. Fishing has always been a major economic activity. Traditional boats, dugout canoes, were in use until the end of 1960s, when they were replaced with punts (shallow hulls, used mainly in rivers). Most common fishing methods practised were seine netting, long lines, gill and trammel nets (*pezo-vola*, characteristic of the region). *Pelaizia* is an ancient fishing method used by the fishermen of both Micro and Macro Prespa. Traps are used, in order to catch fish that nest around *pelaizia* or *kedra*, which are constructed piles of juniper branches (*kedra*). Traditional fishing is now almost extinct.

Traditional architecture is distinctive. Locals have always been using raw materials from the wetlands, as well as stones from around the region for the construction of houses. Although restoration efforts are taking place, the danger of deterioration of the local architectural character is apparent. Moreover, during the last decades, locals abandoned many other traditional activities, such as buffalo and cattle grazing on the reed-beds, burning the reeds during winter time, thus providing spawning grounds for fish and amphibians (and consequently, food for many waterfowl). In addition, farmers on the Greek part of the wetland turned to intensive monoculture of beans, abandoning other traditional cultivations, while on the Macedonian side intensive apple growing is practised.

Research and collaborative efforts with the local population have resulted in the people of Prespa making efforts to restore their former relationship and traditional practices towards natural resources and attempts have been made towards this direction (e.g. restoration of the wet meadows). The Greek NGO that is currently active in the region is the Society for the Protection of Prespa (SPP). Among the programmes organised and implemented by SPP is the restoration of three traditional buildings, the publication of booklets on the restoration of traditional houses, the promotion of traditional products and the establishment of the Prespa Centre for Nature and Anthropos.

Although the festival of *Narcissus poeticus* is now abandoned, folklore festivals are still organized by locals, while culinary traditions are still alive and practised among the population of the lakes.

*A17 Santo André Lagoon (Lagoa de Santo André, Portugal)*

Lagoa de Santo André is situated on the southwest coast of Iberia, south of Lisbon and the Sado River. Very important from the hydrological point of view, it hosts characteristic dense marshland vegetation, considerably reducing coastal erosion. Furthermore, the lagoon helps in the preservation of the underground water table in the immediate region. Varying seasonably in salinity and depth, it is separated from the sea by a narrow sand-dune strip, covered by scrubs and woods of Maritime Pine. The site's vegetation coverage is relatively highly rated, rendering this remarkable habitat as one of Portugal's most significant wetlands, supporting a large number of breeding birds, reed-bed passerines, as well as wintering birds en route to and from the African continent.



*Santo André Lagoon*

The region is considered to have been inhabited since prehistory. Settlements dating from the late Neolithic age have been located in the vicinity. Excavations at Castelo Velho (Old Castle) confirmed human presence in the area and revealed a Neolithic settlement, later fortified by the Celts (3<sup>rd</sup>-2<sup>nd</sup> centuries BC). A shrine to Venus and Aesculapius, the Baths and the Hippodrome testify to the site's significance. In the 5<sup>th</sup> century AD, the Germanic invasions caused a severe decline of the settlement. The Moors, who later occupied the area, built a new castle on a hill opposite and called it Cacém, which was later taken by the Knights Templar. Christians soon took over the area, successively Byzantines, the Order of Santiago, the Dukes of Aveiro, until it finally passed to the Spanish Crown. The nearby old fortified town of Sines, with its medieval castle, is the birthplace of Vasco de Gama, who in the 16<sup>th</sup> century sailed eastwards to India, circumnavigating Africa and the Cape of Good Hope. The city's archaeological museum displays some remarkable jewellery, probably of Phoenician origin.

Santo André Lagoon has always been an important source of fish, which resulted in a permanent fishermen's settlement and a very lively fishing tradition. Locals still construct their boats and assemble nets in the customary way, as fishing techniques and traditions are passed down from the old to the younger generations. Although not to the same extent, agriculture and cattle breeding are still practised in the region. Among the population, traditional knowledge of viticulture and rice production is widely spread. Water mills are still functioning and rice milling technology is practised. Locals have always found ways to transform their environment, constructing and maintaining sluices, ditches and dams. They also erect straw huts around the wetland.

Religious traditions are also well preserved and pious ceremonies often take place, such as the ceremony 'linking the sea to the lagoon', the worship of St. Andrew and St. Peter and the Santo André fair. Local culinary traditions are one of the region's attractions, offering a combination of fish and eel stews, game dishes, pork, fried bread and coriander soups.

### *A18 Sečovlje soline (Slovenia)*

The site is situated on the Adriatic coast, at the mouth of the Dragonja



*Sečovlje soline*

River, in the southernmost stretch of the coastline of the Piran Bay. The Sečovlje salt pans are among the most important natural heritage sites in Slovenia, the greater part of its pans creating a very special environment hosting a large number of breeding, staging and wintering birds, a number of nationally rare invertebrates and halophytic plants. Forces of nature have been constantly transforming the site, creating a series of diverse biotopes, which complement one another and compose an integrated ecosystem. Only organisms well-adapted to this special environment (salt basin water is several times saltier than sea water) can survive and

among them is the smallest mammal in the world, *Suncus etruscus*.

In Roman times, the area of Piran was part of the provinces of Pan-noria and Noricum. In the 6<sup>th</sup> century AD the region was conquered by the Mongolian Avar, by Slavs and, in the 7<sup>th</sup> century, by the Bavarians. In the ensuing centuries the region was dominated by the Franks and later fell under Austro-Hungarian rule. After the end of World War I, Slovenia became part of Yugoslavia and in 1991, along with Croatia, declared its independence. The town of Piran is an old Mediterranean town boasting numerous medieval structures and the birthplace of the famous composer and violinist Giuseppe Tartini. Its impressive city walls were first constructed in the 7<sup>th</sup> century AD, extended in the 12<sup>th</sup> century and fortified in the 16<sup>th</sup> century, in an attempt to protect Piran against Turkish raids. The municipal archives of Piran reflect a rich his-

torical tradition, some dating back to the 13<sup>th</sup> century, such as the statutes of 1274.

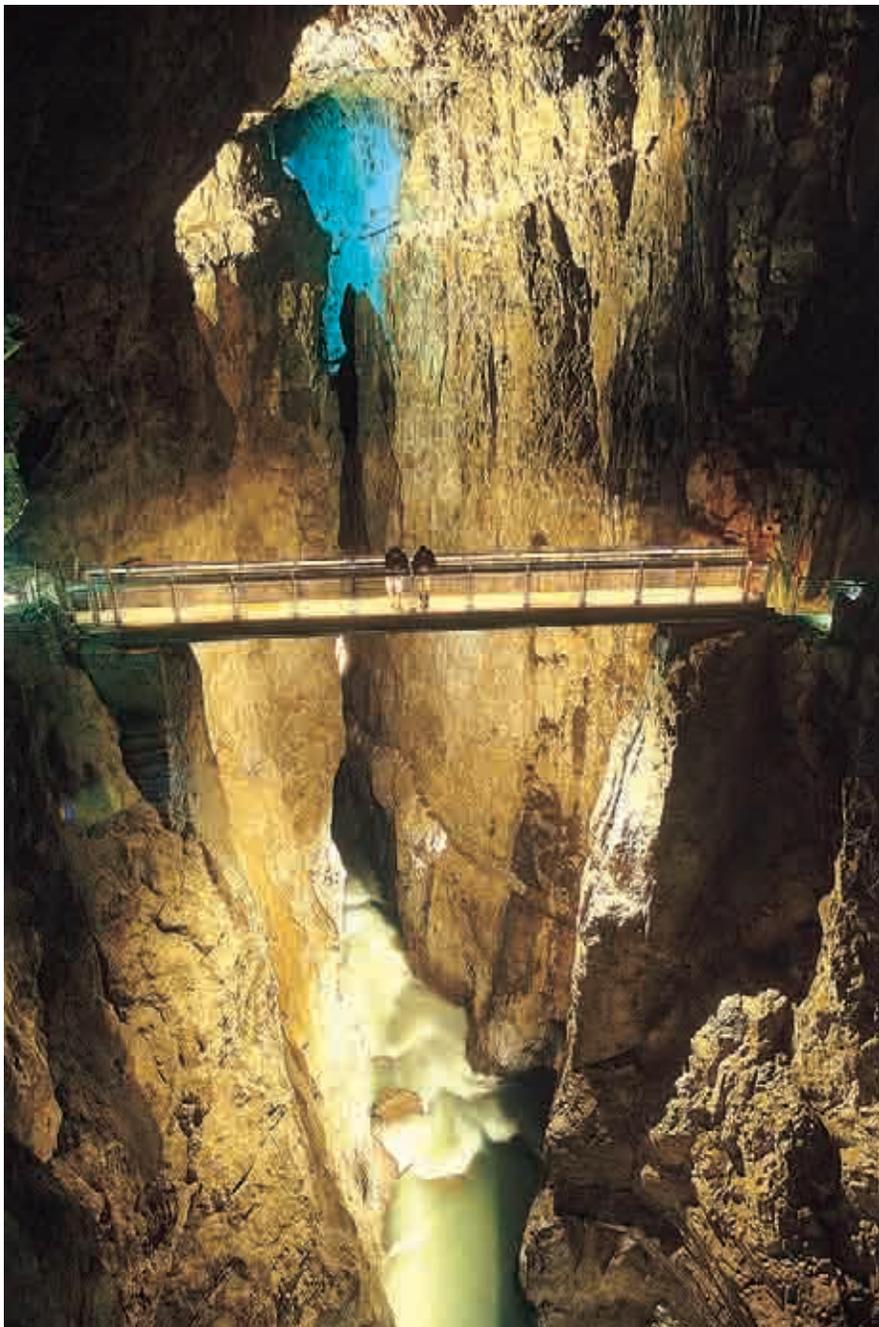
In the past, the inhabitants' income derived mainly from the exploitation of the sea and the land. The Mediterranean climate was favourable for the production of vegetables, wine and olive products. The local inhabitants' link with the sea goes far back in the past, the salt pans in the Dragonja Delta having operated for hundreds of years. During the Napoleonic period, large salt storehouses were built in Portoroz and motivated a vigorous maritime trade. Some areas were abandoned at the beginning of the 20<sup>th</sup> century, allowing the re-establishment of the saltmarsh. Today, the salt production area in Strunjan and Sečovlje operates in the traditional way, daily gathering the brine on the bio-sediment, the *petola*.

The management of the Sečovlje Salina Nature Park has been given to a private company (SOLINE Pridelava soli d.o.o.), which runs the site according to the management plan approved by the Government of Slovenia. The company exploits part of the income, while at the same time applying measures in regard to the park's sustainable development, and promotes environmentally-conscious policies. In the abandoned Fontanigge salt pans, a salt-making museum was established in the last decade, where a wide collection of salt-making tools is kept and two salt repositories can be found. The museum serves educational purposes, in the framework of eco-tourism.

The salt-making festival takes place three times a year during the salt-production period from April to August. The festival is organised by the Park and the local communities and includes significant cultural events, such as traditional dances and local product exhibitions.

### *A19 Škocjanske jame (Slovenia)*

Škocjanske jame or the Škocjan Caves are situated in the south-western part of Slovenia, in the region called Kras or Karst, after which the typical stone formations were named. It is a rather long and complex cave system, over 5800 m long and 209 m deep. The cave environment hosts a significant number of endemic subterranean animal invertebrate species, more than seven species of bats, while the dry grasslands around and above the cave system hold a significant number of



*Škocjan jame*

rare and endangered bird species. At the same time, the flora of the collapsed dolines, galleries and shallow chasms of the river valley is extremely diverse and characteristic of the mixed Mediterranean and Alpine climate.

More than 30 archaeological sites are to be found in the region, dating to the Neolithic. The Velika doline, in which the Reka River disappears before it enters the Škocjan Caves, could be the mythological entrance into the underworld, Hades. The entrance to Musja jama cave remarkably resembles the description in Homer's *Odyssey* of the entrance to Hades and a quantity of archaeological evidence found in the cavern supports this theory. The entire south-eastern Alpine region was one of the most significant pilgrimage sites in the Mediterranean at the beginning of the 1<sup>st</sup> millennium BC, related to the afterlife and communing with ancestral spirits.

Karst ponds built in the villages for watering the cattle, wells, ice pits, mills, sawmills, walls erected to protect the land from the strong north *bora* wind and traditional houses built entirely of stone blend with the characteristic landscape and are proof of the adaptation of human activities to special ecosystems. A land where soil and water were sparse led to demanding cultivation techniques and reduced production sufficing to domestic consumption. Animal husbandry and apiculture supplemented the inhabitants' income. Mills and sawmills along the Reka River supported local economic development, especially between the First and Second World Wars, as well as coal mining and resin production. Lime-kilns were functioning until 1970 and stone-cutting is still today a thriving occupation.

Lack of water has led to exploration of the subterranean and the development of speleology, while horizons were also broadened for a number of sciences, such as archaeology, biology, geology and hydrology. Cave tourism and relevant educational programmes were developed and contribute today to the region's economy.

The churches of the area are of a characteristic architecture, with influences from Istria, Venice and Salzburg. The traditional stone houses have a stone roof, small windows and 50-100 cm thick walls. Mills and sawmill reconstructions are planned for the near future, to preserve and promote their cultural value. Traditional dishes and bread are made from a variety of wheat grains at carnival celebrations, while rit-

uals are still practised. In addition, a multitude of dialects is spoken in the region and several fairytales and stories are preserved.

### *A20 Tamentit and Sid Ahmed Timmi Oases (Algeria)*

Tamentit and Sid Ahmed Timmi are the largest of a complex of oases, located 12 km north of the main town of Adrar's province. On the south, they are bordered by the Oasis of Bouffardi. They constitute a unique habitat for several plant and animal species, some of which are endemic and survive under extreme conditions. Some of these species have developed exceptional mechanisms in order to adapt to their unique environment. The site supports a wide variety of wild life that comes to drink there, such as amphibians, dragonflies, gazelles, hedgehogs, fennecs, sand-cats, lizards and migratory birds.

The region has been an important centre of West Africa, with intensive trading with caravans from Egypt and Timbuktu. Each oasis is dominated by a fortress (*ksar*) which includes the village and a part of the oasis. Traditional architecture is based on the use of local materials. The palm groves are located further down the slope. The Tamentit Oasis is very old and was probably inhabited at the time of the Pharaohs.



*Oasis of Tamentit*

Subterranean water comes from the infiltration of surface water from springs, from deep aquifers and condensation during the night hours. Locals have developed an irrigation system, the *foggara* (of Persian origin). It involves an underground network of channels and galleries, cut into the sandstone. Although the *foggara* system is considered property of the co-owners, the entire popu-

lation of each village has free access to water for domestic use, but has to contribute to the maintenance of the system. The social organization of each village depends in fact on the details of the water distribution and preservation of its quality, as in these societies land ownership is of minimal significance in contrast to water rights attached to land.

The dominant cultivation of the area is date-palms, supplemented by a large number of other plant species. In addition, locals manufacture artefacts, which are very popular among tourists. There is also a traditional medical treatment for rheumatism that is practised, the *erredim* where the patient is buried in the sand.

Currently, the site's status is threatened by several factors, the most serious being modern agriculture, entailing the use of high-volume pumps that decrease the aquifer. As a result, the flow of the *foggaras* is also decreased, leading to the danger of eventual extinction of the entire oases system unless serious measures are taken soon. Water requirements are also rising, due to the increase of the local population, especially during the last decade. Locals are constantly beleaguered, attempting to protect and keep the *foggara* channels clear of the pervasive sand. There is also the problem of the *ergs*, sand dunes that move with the wind and that can literally bury an oasis. This is handled by stabilizing the dunes with dry palms, a technique requiring intensive labour.

People of the Tamentit Oasis perform periodically an important religious ritual, the *ziarettes*. They visit the mausoleums where the *marabouts*, important spiritual leaders, are buried. The residents of the oases and of other neighbouring regions meet there in pilgrimage.

### *A21 Zaranik (Egypt)*

The Zaranik protected area is located at the eastern end of Lake Bardawil, on the Mediterranean coast of the Sinai and forms part of the lake. The wetland is the least polluted in Egypt –and one of the least polluted sites in the entire Mediterranean region– and is considered a major wintering and staging area for large numbers of waterfowl (20% of the total number arriving from southern Europe and Russia). In addition, the region is an important spawning ground for fish and it is also where Egypt's first bird observatory was constructed. It is separated

from the Mediterranean Sea by a narrow coastal strip and communicates with it through three natural and one artificial inlets. Another water source is subterranean water from rainfall in the northern plateau of Mt. El-Maghara. The lagoon is shallow, with numerous small islets, most of which are covered with dense saltmarsh vegetation. Mudflats and saltmarshes are located along its shores.

Historically, it has been part of a very important trading route that crossed the entire region, linking Egypt with the East. Numerous pottery shards have been found scattered around the site, evidence of its history. Within the boundaries of the protected area, the site of Ostarkine is situated, a Roman settlement located on Felusyat Island. The name of the island derives from the Arabic word *felus*, meaning money, and derives from the numerous coins found by locals in the past around the site. The remains of two Byzantine churches can also be found.

The Zaranik area is populated by 3000 Bedouins in four villages, and there is also a seasonal migration by fishermen to the southern part of the lake. Although the site and its surroundings are considered government property, the Bedouins claim traditional land ownership. Bedouin tribal laws are valid among the population and there are gender-oriented tasks (women, for example, are the shepherds of the community). Locals are involved in fishing, pasturing and bird hunting, using mainly the traditional techniques and respecting the hunting seasons (although, occasionally illegal activities of excessive fishing, hunting and grazing occur). They also manufacture handicrafts using reeds as the basic material. Some traditional fishing and bird-catching methods, though, have been abandoned along with pasturing techniques for the protection of pasture lands. Agriculture is also practised, using traditional methods of date-palm cultivation.

Salt extraction is a relatively new activity. A salt factory was recently built, occupying a part of the salt pans of the lagoon. Owing to the growing development of coastal tourism in North Sinai, the value of the land around the lake has increased considerably during the past few years. This led to disputes about the ownership of the land and pressure is being applied to reduce the protected area, especially along its eastern borders.

An administrative building and visitor centre have been opened

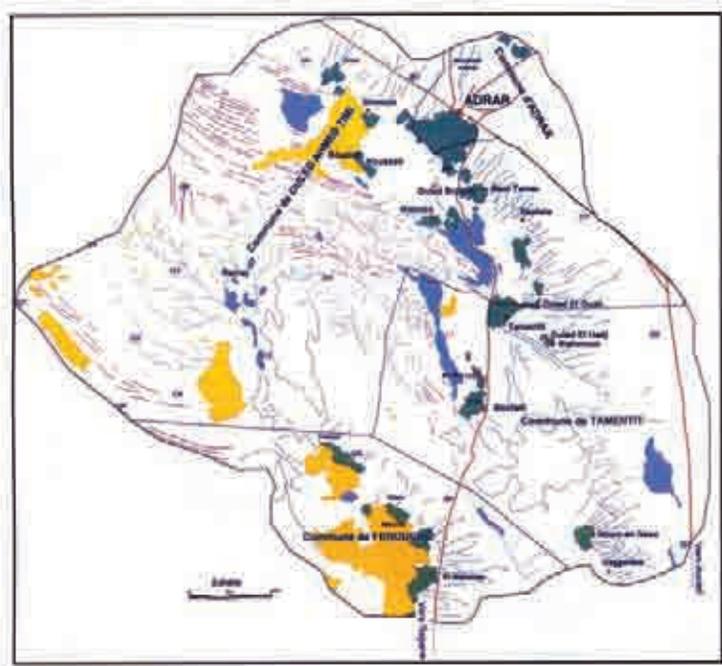
and –with funding from the Ramsar Small Grant Fund– educational material has been distributed, in addition to training in wetland conservation and management.

## Appendix 2:

### The Oases of Tamentit and Sid Ahmed Timmi Cultural values, current threats and administrative challenges

*The text below is a report written by Dr. Christian Perennou, of the Tour du Valat Biological Station, who visited the oases in 2005 at the request of the author, and with the financial support of the MAVA Foundation.*

The twenty-odd oases that constitute this Ramsar site, with a surface



*Tamentit and Sid Ahmed Timi Oases Ramsar Site: the oases in green; the ksour in yellow; and in blue the rarely flooded sebkhas*

area of 957 sq km, are dispersed in the heart of the desert and arid wastes surrounding the town of Adrar. The oldest and largest, Tamentit, extends over 145 ha.

This group is part of a chain of oases scattered over several hundreds of km to the north and south, along the line of the outcrop of the albian underground watertable: the Touat palm groves (in the south, of which the site is a part), Tidikelt farther south and Gourara in the north.

The specific system of exploitation of these oases, found again in numerous others (such as the Ouled Said Ramsar site in the same wilaya of Adrar) has been described in detail in the Ramsar Information Sheet for the site (Annex 2) and in Atlas II and III of Algerian wetlands of international importance. To summarise, the system consists of a remarkable network of subterranean conduits (foggaras) channelled along a gentle incline in a sandstone aquifer situated at a slightly higher altitude than the oases –which are invariably to be found in declivities (for instance, the beds of ancient wadis or oueds). These conduits, sometimes reaching a length of 12 km, thus enable a permanent gravitational flow of water, without any pumping, to the oasis. Regularly placed wells permit their maintenance against invasive sand and possible caving in.



*The foggara maintenance shafts are visible on the surface (the conduits are 10-20 m underground). They outline in the desert the trace of the foggaras which may collect water in certain cases from 10-15 km distance from the oasis.*

In the oasis, a unique civilization has evolved over at least a millennium, centred on the management of water, the modalities of its distribution, the contribution of each inhabitant to the system which ensures the survival of the community.

Thus, generally water does not appear to the surface except in the form of outflow into the oasis canals. Yet the oasis constitutes a very particular wetland, underground for its major part: a geo-hydro-system, partially artificial, consisting of drainage and non-draining canals.



*A water distributor, or kasria, at the outlet of a foggara in the oasis*

A number of sebkhas (saline declivities) are found next to the oases in this Ramsar site, which are flooded very rarely, as well as the Adrar water treatment basins, with a role in attracting waterfowl<sup>140</sup>.

### *The values of oases*

The values of oases in general, and of this Ramsar site in particular, are fundamentally different from those of most ‘classic’ wetlands.

*Spontaneous biodiversity* does not at first sight seem notable: the prevalent dryness (10 mm rainfall average per annum; occasionally 0) remains a strongly limiting factor even in the oasis. A mere dozen bird species (mostly songbirds and doves) was observed in the oasis itself in the course of five

days<sup>141</sup>; but it is nonetheless possible that the network of the region’s oases (whether of the Ramsar site itself or the dozen others that surround it) play a major role as a stop-over in the trans-Saharan migrations of numerous species –our expedition falling late in the peak migratory season.

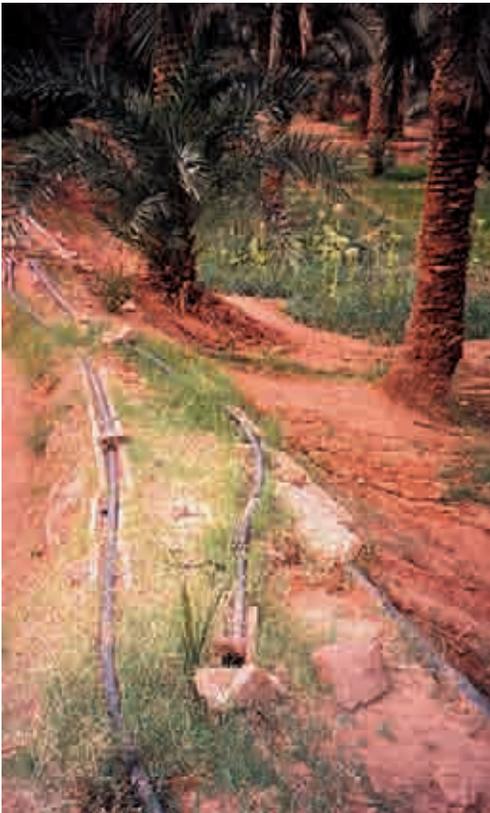
The presence in the irrigation network of a species of fish so far unidentified (introduced or indigenous) is worth special notice, in view of the fact that various Sahara wetlands host certain rare indigenous species, relics of eras with a more humid climate.

<sup>140</sup> For instance *Tadorna casarca*, was found nesting during the mission; migration of waders and spoonbills *Platalea leucorodia* noted as well.

<sup>141</sup> Twenty or so in the entire Ramsar site (of which 3 of waterfowl, outside the oasis).



*While oasis agriculture is based on date palm cultivation, diverse cultures of produce, such as fresh vegetables, dried pulses and cereals, as well as animal fodder, share the lower level.*



A few further elements complete the picture: an aquatic gasteropod mollusc abounds in the irrigation canals; some dragonflies may be seen (but it is not certain that they are regular); mini reedbeds a few square metres extend in the ancient water-retaining basins of abandoned small-sized allotments.

*Anthropic biodiversity* is more notable, with evidence of numerous cultivar varieties (date palms, lentils etc.) some of which may be indigenous to the area. Thus, the Takarbucht date variety is considered locally as Algeria's best, although they are unknown outside the oasis complex which includes Tamentit, being produced solely for local consumption.

*The cultural values of the oasis* appear indisputably as the major element of this agro-hydro-ecosystem. In brief, noteworthy are the following elements:

- The *oasis culture*, based on a highly codified social system, the *touiza*, regulating both the sharing of water within the community and the individual rights and duties. As water constitutes the very basis

of the community's existence in the heart of the desert, the rules governing it are indivisible from the broader social relations.

A subtle social balance between private property (the plots), shared ownership (of each *foggara*: co-proprietors of the land that share water) and global collectivity (including the non-cultivators using water for domestic purposes) has been thus established. This culture includes equally a scientific and technical dimension: traditional knowledge of hydrogeology, techniques for excavating the *foggaras* in hard rock, expertise in management of water flow on slight inclines, techniques for combating invasive sand intrusion<sup>142</sup>. There is diversity within this culture: thus three distinct types of water sharing exist side by side, apparently linked to the various peoples who instituted the *foggaras*, i.e. by physical distributor (the *kasria*), by alternating irrigation days or, finally, per hour.

- The *crossroads of cultures, trade and faiths*, which this group of oases has constituted: the *foggara* technique could have been imported from Persia via the Arabian Peninsula<sup>143</sup> by successive waves of immigration. Thus, the first Tamentit *foggara* (*Foggara Hannou*) appears to have been constructed by Copts (Christians of the eastern Sahara), while cotton cultivation was introduced by Jews from Cyrenaica (modern Libya). The current local Muslim tradition is strongly influenced by Shiism, although Sunniism is the only Muslim branch present. Tamentit was the region's commercial pivotal point, the trade centre for camel caravans travelling from the Mediterranean to the Sahel (Timbuktu). The oasis also housed the major local law court, renowned for the erudition of its judges, trained in the *medersa*.
- The *Koranic School (Medersa)* of Tamentit is the region's most an-

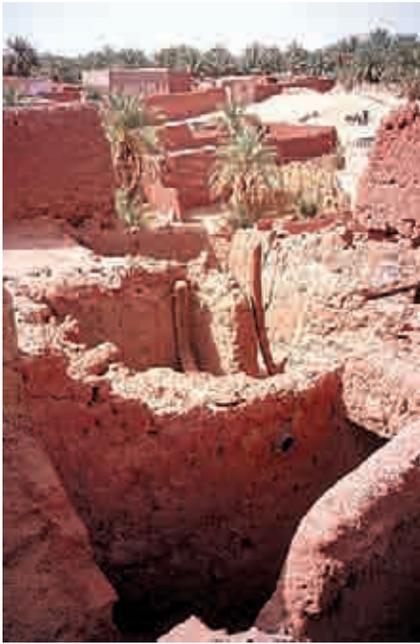
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<sup>142</sup> It could be considered that one of these may be an example of the south-north transfer of technology. Could the age-old technique of erecting palm-frond barriers to stem the movement of sand and the stabilization of dunes around the oases have inspired a very similar technique used to stabilize coastal dunes in Europe?

<sup>143</sup> Very similar *foggaras* exist in Arabia (now dry) and the Sultanate of Oman (still functioning), where the identical system of distribution (calculated on the basis of 24 and not decimal) may still be found.

cient<sup>144</sup>, its influence once radiating well beyond the present Algerian borders, as one of the prestigious sources of knowledge. Aside from the disciplines of belief and of letters, for centuries the sciences and techniques have been taught there, which enabled, among other pursuits, the development of the *foggaras* upon which the oasis culture is based. In the *medersa*, very ancient manuscripts are preserved (dating to the 15<sup>th</sup> century in some cases) concerning all the disciplines taught, notably the hydrogeological sciences and techniques connected with the *foggaras*. In its possession is one of the sole four copies in the world of the Koran, copied directly from the original, the only one extant in Algeria.

- The *traditional architecture* of the villages (or *Ksour*).



*Traditional buildings*

- *Contemporary folk culture* of the oases is articulated around festivities that are still very much alive: in the course of the year, each oasis organises one or two festivities attracting the inhabitants from all the oases in the vicinity (and so-metimes from far away). Among the highlights of these shows are the cavalry charges with firing of a single shot<sup>145</sup> per rider (the *baroud*). For a young man, his first *baroud* represents an intense moment, similar to an initiation (rite of passage to the status of a man). Groups from different oases also proceed to oratory contests of poetry, highly codified, during which an arbiter registers the points achieved. Feast-ing is much in evidence: all the inhabitants of the oasis cooking their spe-

<sup>144</sup> It is argued by some scholars that it dates to the first century of the Hegira.

<sup>145</sup> Generally aiming into the ground; skyward when a particular personage is honoured.

cialities according to their means, and welcoming all participants as guests into their house to partake of them. These events, held regularly, constitute a strong social bonding among the diverse oases, which may be distant from one another. They are not planned for the benefit of tourists, who are still rare. Since the 1990s, a stricter application of the Sharia has led to a greater separation of men and women –who used to mingle freely at these feasts.

- Lastly, the hidden face of the aforementioned values, a historical aspect –locally strictly taboo– is that the excavation and maintenance of the foggaras has long burdened slave labour, the descendants of whom are still manifestly in evidence (about 1/3 of the population of Adrar, the wilaya's main centre, are said to be of sub-Saharan origin).

### *The problems and threats currently faced by the oasis culture*

The oasis culture is intrinsically of a strongly communitarian nature. As in the rest of the world, evolution toward individualistic values and the potential for individuals to abandon the traditional system have since the sixties instigated a decline that continues to this day. In addition, recent recourse to other methods of water exploitation may moreover aggravate local difficulties.

The local problems presented for the conservation of the traditional oasis community<sup>146</sup> are as follows:

- For the majority of the actors, the loss of manual labour, in essence since the 1970-1980 decades constitutes the main problem. The constant maintenance of the foggaras (struggle against the silting of canals and basins, excavating anew of caved-in galleries, etc.) is most exacting in manual labour and toilsome, and young people no longer accept to do the work, especially if they are not paid: they leave the oasis, or in their majority they remain, however seeking less laborious employment (in public service, in construction, etc.). The consequences are: (1) the abandonment of a growing number of plots (called 'gardens') in the heart of the oasis, of which the owners are content to leave them in the hands of a

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<sup>146</sup> As it exists today, and given that certain elements (e.g. those linked to tourism) are of recent origin.

wage-earning employee<sup>147</sup> and (2) the abandonment of a large number of foggaras: thus out of 40 once supplying Tamentit, 20 are still operational<sup>148</sup>. Over the territory as a whole, the gradual abandonment of the plots more distant from the village is evident (abandonment of cultivations, irrigation), only the dates still being gathered. Furthermore, numerous palm trees dispersed over dozens of hectares around active oases show a relatively recent abandonment (of a few decades) as the desert swiftly encroaches on the terrain as soon as the struggle against silting, and the maintenance of the foggaras cease.

- *The parcelling out of land through successive generations*, these days no longer permits the subsistence of a family from the present small patches of ground<sup>149</sup>, all the more since financial expectations have increased due to contact with the outside world. Land may therefore remain *ab indiviso* amongst the diverse heirs and disputes then often lead to a *de facto* abandonment if one individual continue to work the plot, the remainder nonetheless retain the right to harvest).
- *The severe reduction in tourism* resulting from the insecurity of the 1990s has eliminated a traditional outlet for local artisans (earthenware, palm-frond work, and silverwork).
- *The difficulty for numerous 'old-timers' of access to modernizing ancestral practices*, i.e. mechanization of *foggara* maintenance; waiting, in a small shop at the back of the oasis, a buyer of handicrafts to pass by instead of a commercial initiative toward tourist routes.
- *Boring for water* from the aquifer supplying the *foggaras* has multi-

<sup>147</sup> Since wages are monthly and not related to the yield of the plot there is hardly any incentive to maintain a collective system.

<sup>148</sup> At the Adrar wilaya level, of a surface of about 420,000 sq km, 970 foggaras are still operational against 490 desiccated/derelict (ANRH inventory).

<sup>149</sup> It was formerly considered that a 'garden' measuring 0.25-0.5 ha enabled a family of modest requirements to live in quasi self-sufficiency on its 20-30 palms plus cultivations of the lower levels (cereals, vines, fruit, dry and fresh vegetables, fodder). To complement, wheat from Northern Algeria, salt and dried meat from Mali were imported by camel caravans and exchanged for the surplus in dates (a date palm yields on average of 100 kg per annum).

plied since the 1950s in order to supply the growing agglomerations (such as Adrar) and since 1984 for large-scale 'development' projects, i.e. development of agriculture of extensive grain fields in the midst of the desert, with electrically powered irrigation by rotating sprinklers<sup>150</sup>. Water extraction by bore holes substantially exceeds that of *foggaras*, whilst it is proven that the albian aquifer is entirely fossil and is not re-supplied by the scarce Saharan rainfall. A localized abatement of the water level may be seen in the vicinity of certain boreholes; some *foggaras* have ceased flowing or needed extension of the conduits –even boreholes– to supply them in turn. It is possible, although not demonstrated, that massive boreholes at a distance of hundreds of kilometres (notably in the north-east) affecting the same vast Saharan albian aquifer may additionally have contributed to an overall abatement of the water level. This effect has recently been calculated in the Touat by the ANRH as of 15-20 m in 35 years. Since 1995, by decree of the Wali (Prefect), prior consultation with the oasis communities is obligatory before any new boring that could affect them.

- *Untreated disposal of water waste* by the oases' growing populations<sup>151</sup> has affected certain *foggaras*, whose flow is no longer used for human consumption or for irrigation of cultivations, for fear of contamination.

Whilst all of these problems have at some point or other been cited, the perception of the locals is clearly that it is the first that predominates: a farmer summed up the situation, saying: 'There is no lack of water, it is labour (of the land) that is lacking'.

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<sup>150</sup> From an extent at its peak period of 5000 ha, nowadays the exploited surface area has diminished to 2000 ha and is still diminishing due to reduced state subsidies for the electric power this type of agriculture consumes in quantity for pumping.

<sup>151</sup> While the characteristic agricultural system of the oases is in decline, the population on the other hand is on the increase, and continues to live in the *ksar* or its periphery, to meet basic necessities.



*Ancient abandoned plot*

### *The opportunities for the Tamentit oases*

There are, nonetheless, positive aspects and opportunities:

- The high rate of unemployment (17% in Algeria) motivates many young people to revert to the agricultural life on derelict ancient land on the periphery of the oases, which the state wishes to rehabilitate to their benefit, in the framework of the national plan for agricultural and rural development (PNDAR). Thus, for a potential 250 ha recently proposed by the government, there are more candidates than the available surface area provided with modern farming equipment (wells with pumps powered electrically or by gasoline).

- In the past few years,

the state has shown renewed interest in the oases and has launched a series of projects<sup>152</sup> in the PNDAR framework (basically self-funded). The aim is to assist the oasis inhabitants in the struggle against invasive sand (enclosures with palms or bricks, hedgerows anchoring the sand), in maintenance of the *foggaras* and basins, development of new cultivations (olives, etc.) in the gardens, establishment of a property register (*cadastre*) of the *fog-*

<sup>152</sup> One example amid a number of others: a million-euro programme was realized between 1998 and 2002 for the maintenance of the 20 *foggaras* still in operation in the Tamentit commune, including all oases.

*garas* (Directorate for the Environment). Various services and government agencies are involved, each within its specific sector: Directorates of Agricultural Services; of Hydraulics; Directorate General of Forestry; National Agency for Hydraulic Resources (ANRH). The objectives are as much directed toward land use planning (maintaining the nuclei of oasis population) as they are cultural (preservation of a part of Algerian grass-roots culture.) Errors have clearly been committed, for instance leading to re-excavated *foggaras* being rendered useless (due to neglect on the part of state officials or of construction ventures ignoring local know-how). The current philosophy however aims on the one hand at restoring a pivotal role to these communities (mayors, presidents of *foggara* associations) in regard to all dispositions directly or indirectly concerning them (by automatic consultation), and on the other hand at making them responsible by discontinuing 100% funding of major projects deriving from the exterior (e.g. ministries) and partially subsidizing instead (e.g. 70% of projects<sup>153</sup>, henceforth to be initiated and carried out at the regional and not the state level). This novel form of state economic involvement is much appreciated locally.

- The Tamentit community also *invests in the projects*: whereas formerly by tradition the maintenance of the entire system was wholly in the charge of the co-proprietors of each *foggara*<sup>154</sup>, from now on the Tamentit community undertakes maintenance outside the cultivated zone and only the portion within the oasis remains the responsibility of the co-proprietors.
- Whilst Tamentit, contrary to other Southern Algerian oases<sup>155</sup>, does not feature major sand dunes (*erg*) in its vicinity, it offers definite potential for adventure tourism on a minor scale (individual / small groups): the culture of the oasis; traditional Ksour<sup>156</sup> architecture;

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<sup>153</sup> The recently elaborated PNDAR Projects in Proximity of Rural Development (PPDR) are very representative thereof.

<sup>154</sup> Those that receive the water, organised in associations –one per *foggara*.

<sup>155</sup> E.g. Ouled Saïd/Timimoun, oasis backing onto the western *erg*.

<sup>156</sup> The fort (a *ksar*, or plural *ksour*) situated in every oasis for refuge of the population in case of incursions or tribal wars. Some are deserted nowadays and others, as in Tamentit, still inhabited.

tradition in the concept of desert houses<sup>157</sup>; festivities alternating among the diverse oases; option of camping in tents or sleeping under the stars (with permission by the local authorities) in the abandoned plots of the oasis. At present, tourism entails some 14,000 persons per annum in Adrar (at the outskirts of Tamentit) essentially as individuals or small groups attending seminars (the regional public at these cultural festivities is not included).

- Oasis agriculture is of its nature quasi-biological, as in general only natural fertilizer is used and occasionally some pesticides (against the *fusarium* of the palm trees or *bayoud*).
- Various international projects focussing on oases (not exclusively Tamentit, nor even the Adrar Wilaya) are, or are about to be instituted, under the aegis of the Ministry of Culture: the Ksour Route (with UNESCO), restoration of certain Ksour (United Nations).

### *A future scenario*

The Tamentit Ramsar site is not an isolated case: identical factors of decline affect hundreds of other oases of Tidikelt, Touat, Gourara and the rest of Algeria.

Only a few years ago it would have seemed inevitable that the oasis culture was doomed to disappear –at least as we know it today. Since less than 10 years, however, a considerable number of initiatives have been launched or facilitated by the Algerian government, with the objective of conservation of the hydraulic, agricultural and cultural elements. It is nevertheless probable that the majority of oases will not be able to benefit from such assistance which, in total, would be prohibitively costly for the state and are condemned in the long run.

In the case of others, such as Tamentit, positioned at the centre of attention on the part of the government (numerous projects funded in 7-8 years) and increased international recognition (Ramsar, UNESCO, Japan 2005 Universal Exhibition), it is as yet too early to tell whether the recently elaborated policy will suffice to reverse the trend, or merely to slow the process of decline. For example, the will –or defi-

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<sup>157</sup> A relatively independent room for visitors is nearly always available and could be put to advantage for lodging in private quarters.

ciency— of local authorities in appropriating the outcome of pilot projects initiated by government on portions of the oasis so that they can be implemented at the scale of the entire oasis, remains to be proven by action taken beyond mere promises (fighting invasive sand, restoring the *foggaras*, etc.)

It is clear in this context that all innovative economic activity assisting the oasis cultivators in the diversification and accumulation of revenue can but be a step in the right direction —without being able to state here with any certainty what level of supplementary activity is necessary to halt the decline of the oasis.

### *Guidelines for a project benefiting the oases of Tamentit and Sid Ahmed Timmi*

Potential guidelines for helping in the preservation of oasis culture could be the following:

- *Mechanization of the most laborious or tedious aspects of the cultivator's work*, in order to make them more attractive to young people: maintenance of the *foggaras* (mechanization already successful in the framework of recent projects), transportation of manure by tractor rather than by donkey. Clearly, the oasis would then lose some of its picturesque flavour as a possible tourist attraction.
- *Modernization of other facets of the system's management*, at the same time conserving its spirit. Thus, maintenance of the *foggaras* —which in older times consisted in every inhabitant contributing his manual labour— would henceforth entail cash remuneration enabling the hiring of individuals or companies. The Tamentit community recently undertook to encourage the maintenance work by children —volunteers— of the village, for a wage. This initiative was much appreciated, enabling them to earn enough during school holidays to purchase a new outfit for instance. In the same way, some have begun substituting wells made of concrete breeze-blocks, more durable and easy to maintain, for the traditional *foggara* wells when renovating them.
- *A national aid programme* for intensive labour works is in existence; the funds have not yet been made available in the framework of oasis maintenance, but it is a possibility.
- It is of vital importance to foresee, in the programme for the instal-

lation of new cultivators in the oasis periphery, *a system of financial reversion for maintenance of the oasis*: only its proximity permits such installation and logically, the newly-established have to contribute to its survival.

- *Small-scale adventure tourism* (individuals or small groups) clearly promises a major advantage for the site: facility for setting up lodgings for visitors in numerous old houses of the ksour, tents for camping in the abandoned gardens of the palm grove. However, a prior evaluation carried out by professionals of the sector (ecotourism agencies) is necessary in order to validate such potential beforehand, as well as its profitability for the inhabitants. *A local training centre* for the inhabitants of the oasis in reception of tourists could be set up so as to ensure success in this newly developing activity.
- Diverse *more specific aspects* would, finally, also deserve inclusion in a global programme for the oasis: investigate the precise species of the oasis fish; use to advantage the ancient manuscripts of the *Medersa* containing age-old hydraulic data (such as the yield of diverse *foggaras*), thus complementing the information of the ANRH data base (limited to the last decades); assist in the conservation and restoration of the old manuscripts of Tamentit's *Medersa*, and more.

Strategic choices will nonetheless prove essential: is it desired to preserve a 'living museum oasis', with local inhabitants living as in the old days (with donkeys instead of tractors, manual labour for maintenance of the *foggaras* made of earth and stones, without concrete)? Such a solution is clearly not financially viable without permanent injection of public subsidies, but might render the oasis a greater tourist attraction. Its occupants would then *de facto* be quasi civil servants.

Or is it preferred on the other hand to have an oasis adapting to current socio-economic constraints, conserving an agriculture with the capacity of continuing to sustain its inhabitants, at the risk however of the loss of part of what today constitutes its irresistible charm in the eyes of visitors? It is not possible to say what degree of modernization of the oasis culture tourists would be willing to accept, however a clever integration of explanations offered at their introduction to the oasis would definitely aid in their partial acceptance of it.

### *The prerequisites*

The required pre-conditions for a project comprising most of the components mentioned above could be the following:

- *A triple prior evaluation of the local situation: hydrological, sociological as well as the eco-tourist potential.* It is initially advisable to evaluate with greater precision whether, at the current rate of water extraction and the foreseeable growth of towns pumping from the aquifer, the system of exploitation of the *foggaras* is (or is not) condemned in the mid-term. How many years will it take for the lowering of the water level to deprive a majority of *foggaras* of water, even if regularly maintained? The Adrar ANRH agency disposes of rough data on the extractions of diverse origins, the depth of the *foggaras*, the evolution of the yield etc. and would probably be capable of elaborating a crucial prior study<sup>158</sup>. This would for instance enable an assessment whether any investment on the part of the state or of an international project is not inevitably condemned to zero impact within the next 15-20 years, due to desiccation of the *foggaras*. A fine-tuned sociological evaluation of the wishes of the inhabitants (not only the elected in charge whom we met) would moreover permit a prior focus for the strategic options to be applied: it should be established whether a sufficient number of the young people of the oasis are desirous of staying put, what they wish for as an occupation and under what conditions. Without this, any *a priori* investment in ‘eco-tourism’ or ‘modernized oasis agriculture’ runs the risk of proving useless.

It is, finally, crucial that businesses specialized in the development of eco-tourism, from Europe for example, should be able to evaluate the situation on the spot and reply to the precise question: ‘Bearing in mind the other destinations extant in the Sahara, does the development of eco-tourism based on Tamentit present advantageous possibilities and according to what specificities?’

- *Local acceptance of changes:* conservative attitudes are still in evi-

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<sup>158</sup> It is however strictly to be advised to make completely certain that the terms of reference carefully focus on obtaining precise data and not be based on a simple modelization of the operation.

dence (e.g. passive selling practices). However, associations on the contrary favouring adaptation to the modern world (the Adrar Wilaya Association for conservation and rehabilitation of *foggaras*) are equally emergent and are already sensitizing the population: they should undertake to be the buttress of such a project.

- If ‘responsible eco-tourism’ is to be developed, a substantial effort for *clarifying reciprocal expectations* on the part of both visitors and hosts must be included: visitors’ attitude and dress conforming to local mores; equipment and minimum hygienic facilities in private home lodgings to ensure a simple but comfortable stay; basic knowledge of oasis culture on the part of the host family to be able to present it to the visitor. An essential training of the host families and the provision of awareness / information for the visitors is consequently necessary.
- There is already intervention *in situ* by numerous administrations, additionally to the communities, the *foggara* proprietors’ associations and so on. On the whole, they cover such aspects as the agricultural and social (rural development), hydraulic, cultural (notably the *ksour*). A new, wide-based project would probably touch on several of these facets and prior clarification of the roles and responsibilities of each factor is a crucial prerequisite. This distribution of roles should in particular *equilibrate the importance attributed to the local communities* (who are under the impression that their traditional know-how has been neglected in recent major projects) as well as to the technical staff of the administrations.
- *A number of projects* is underway or about to be launched, with the assistance of these diverse administrations, and occasionally providers of international funding (EU, UNESCO, UNDP, WWF / MAVA and others). *Co-ordination* with them should therefore be sought to avoid duplicating the efforts made.

If a development plan for fresh economic activity is realized (eco-tourism, aid in agricultural establishment in the periphery of the oasis and such), it is essential that from the outset, and with great care, the organization of *modalities of reversion from the activities to the maintenance of the oasis system* be ensured: these novel activities can be developed solely thanks to the heritage that created the oasis in the

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first place and consequently have to assist in its survival in return. Such returns could, in the case for instance of tourism in private homes take the form of preference and precedence being given to those that effectively contribute to the maintenance of the oasis and the *foggaras*; or, for newly-established cultivators, to devise a mechanism by which they are required to contribute to budget of the *foggara* associations, even if they are not dependent on them for their water supply. Otherwise there is the danger of development of activities that live as parasites on the oasis culture, without contributing anything to its conservation (for example the construction of a hotel by external investors).



**Appendix 3:  
Ramsar Resolutions  
concerning cultural values**

«Wetlands: water, life, and culture»  
8th Meeting of the Conference of the Contracting  
Parties to the Convention on Wetlands (Ramsar,  
Iran, 1971)  
Valencia, Spain 18-26 November 2002



**Resolution VIII.19**

**Guiding principles for taking into account the cultural values of wetlands for the effective management of sites**

1. ACKNOWLEDGING that the ancient and intimate links of traditional societies to wetlands and water have given rise to important cultural values relevant to wetland conservation and wise use, which have been recognized in the diverse cosmologies of different civilizations and cultures throughout history;
2. FURTHER ACKNOWLEDGING that the specific physical features of wetlands have contributed to particular ways of managing traditional activities through structures, procedures, techniques and specially designed artefacts which are of great cultural significance;
3. RECOGNIZING that peoples' relations with wetlands have given rise to aspects of non-material culture, through folklore, music, mythology, oral traditions, customs, traditional knowledge and popular wisdom, and that their reflection can be found in social practices and the traditional forms of social organization for managing wetland resources, and especially water;

4. FURTHER RECOGNIZING that sustainable traditional uses of wetland resources have frequently created cultural landscapes of significant value to wetland conservation and wise use;
5. AWARE that the cultural values of wetlands have been and still are of great importance to societies living in wetlands and their surroundings, and constitute part of their identity; thus their loss may not only contribute to their alienation from wetlands, but also cause significant negative social and ecological impacts;
6. RECOGNIZING that cultural knowledge of wetlands constitutes a collective legacy for today's societies;
7. AWARE that most of the knowledge about practices, and practices themselves, of traditional wetland management in the diverse cultures have contributed to wetland conservation and wise use over millennia, and continue to contribute to it;
8. FURTHER AWARE that in addition to their spiritual dimension of this knowledge and other aspects of past wetland management, such values can be of considerable socio-economic importance, since they can be used as a resource for sustainable tourism and recreational activities and, through them, contribute to an increase of income and quality of life for the inhabitants;
9. CONSCIOUS of the fact that the adequate recognition of and support for cultural heritage, both material and non-material, is an indispensable component in any process for the sustainable use of wetland resources;
10. RECOGNIZING that there are important weaknesses and gaps in the procedures and methods for identifying, valuing and protecting the cultural heritage of wetlands, as well as in defining and implementing policies related to them;
11. NOTING that the profound and rapid social and economic trans-

formations that have taken place during recent decades have increasingly threatened the adequate preservation of the cultural heritage that is typical of wetlands in many parts of the world;

12. RECOGNIZING that there are various multilateral agreements and organizations that work to recognize and protect cultural values and relationships with ecosystems including wetlands;
13. ACKNOWLEDGING that the Ramsar Convention needs to work in cooperation with multilateral and regional agreements and other bodies addressing the need for resolute action to preserve the cultural heritage, including among others:
  - the Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris, 1972);
  - the Call of Granada (1975) of the Council of Europe on Rural architecture and its landscape;
  - Recommendation 881 (1979) of the Parliamentary Assembly of the Council of Europe on Rural architecture heritage;
  - UNESCO's activities in the promotion of the conservation of cultural heritage;
  - the general principles for conservation proposed by the Vernacular Built Heritage Charter (Jerusalem, 1996), ratified by the XI General Assembly of the International Council of Monuments and Historical Sites (ICOMOS);
  - the various recommendations of the World Intellectual Property Organization (WIPO) for the protection, conservation, legal status, economic exploitation, and international protection of folklore;
  - the Convention on Biological Diversity, in particular concerning its Decision VI/10 of the Conference of the Contracting Parties on the *Outline of the composite report on the status and trends regarding the knowledge, innovations and practices of indigenous and local communities relevant to the conservation and sustainable use of biodiversity*, and the plan and timetable for its preparation; and on *Recommendations for the conduct of cultural, environmental and social impact assessment regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on*

*lands and waters traditionally occupied or used by indigenous and local communities;*

- the European Landscape Convention (Florence, 2000);
- the Convention concerning Indigenous and Tribal Peoples in Independent Countries (International Labour Organisation No. 169, 5 September 1991); and
- the Permanent Forum of Indigenous People.

14. RECALLING that *inter alia* the text of the Ramsar Convention already recognizes, in the third paragraph of its preamble, “that wetlands constitute a resource of great economic, cultural, scientific, and recreational value, the loss of which would be irreparable” and FURTHER RECALLING that COP7 adopted *Guidelines for establishing and strengthening local communities’ and indigenous peoples’ participation in the management of wetlands* (Resolution VII.8); and

15. NOTING the background documentation and examples on the cultural aspects of wetlands from around the world presented during Technical Session 5 of this meeting of the Conference of the Parties;

#### THE CONFERENCE OF THE CONTRACTING PARTIES

16. TAKES NOTE WITH INTEREST of the list of *Guiding Principles* included in the Annex to this Resolution;

17. REQUESTS that the Ramsar Bureau seek inputs from Contracting Parties, experts and practitioners, and local communities and indigenous peoples from around the world to enhance the information paper on cultural aspects of wetlands (COP8 DOC. 15) and the detailed guidance prepared for consideration by this meeting of the Conference of the Parties, with a view to publishing it as a background document, and to inform COP9 of the progress made;

18. ENCOURAGES Contracting Parties to consider using the list of

Guiding principles included in the Annex to this Resolution, but only in relation to the conservation and enhancement of the cultural values of wetlands;

19. FURTHER ENCOURAGES Contracting Parties, within their national and legal frameworks and available resources and capacity:
  - a) to consider the compilation and assessment of both material and non-material cultural elements related to wetlands and water, in particular when preparing the Ramsar Information Sheet (RIS) for the designation of new Wetlands of International Importance or when updating the RIS of existing Ramsar sites, taking into account, as appropriate, intellectual property rights, customary law, and the principle of prior informed consent, in accordance with CBD and WIPO rules;
  - b) to promote the appreciation and revitalization, of these cultural values among populations close to wetlands, and in general among the wider public;
  - c) to include relevant aspects of cultural heritage in both the design and implementation of wetland management plans;
  - d) to make efforts to integrate cultural and social impact criteria into environmental assessments, which could include, inter alia, issues of particular cultural concern, such as beliefs and religions, customary practices, forms of social organization, systems of natural resources use, including patterns of land use, places of cultural significance, sacred sites and ritual ceremonies, languages, customary lore/law systems, political structures, roles and customs;
  - e) to carry out such efforts with the active participation of indigenous peoples, local communities and other stakeholders, and to consider using the cultural values of wetlands as a tool to strengthen this involvement, particularly in wetland planning and management;
20. ENCOURAGES Contracting Parties to recognize cultural and her-

itage values relating to wetlands in their existing heritage protection, legal framework and policies;

21. INVITES Contracting Parties to consider conducting appropriate joint educational and training activities with regard to the cultural values of wetlands, as well as to consider developing pilot projects for testing on a local, regional and national scale with a view to further improving the application and/or integration of the Guiding Principles in wetland conservation and wise use;
22. ENCOURAGES Contracting Parties to establish appropriate consultation mechanisms at regional or national levels, in order to consider how the Guiding Principles might be applied in developing and promoting the cultural values of wetlands; and
23. URGES Contracting Parties and the Ramsar Bureau to develop synergies and to avoid duplication of efforts with the relevant multilateral agreements, such as those mentioned in paragraph 13 above.

## Annex

### **Guiding principles for taking into account the cultural values of wetlands for the effective management of sites**

#### General principles

1. This document proposes a number of general principles for identifying, preserving and reinforcing the cultural values of wetlands, which could be supplemented with additional ones at future meetings of the Conference of the Parties as more knowledge and experience are obtained. Some of them may overlap, but this is only natural as cultural values are often related and require an integrative approach.

2. There is a strong link between wetland conservation and benefits to people. In addition, a positive correlation between conservation and the sustainable use of wetlands has been repeatedly demonstrated. Therefore, conservation requires the involvement of indigenous peoples and local communities and cultural values offer excellent opportunities for this.

Guiding principle 1 –To identify the cultural values and relevant associated partners.

Guiding principle 2 –To link the cultural aspects of wetlands with those of water.

Guiding Principle 3 –To safeguard the wetland-related cultural landscapes.

Guiding principle 4 –To learn from traditional approaches.

Guiding principle 5 –To maintain traditional sustainable self-management practices.

Guiding principle 6 –To incorporate cultural aspects in educational and interpretive activities in wetlands.

Guiding principle 7 –To take into account culturally appropriate treatment of gender, age and social role issues.

Guiding principle 8 –To bridge the differences of approach between natural and social sciences.

Guiding principle 9 –To mobilise international cooperation in matter of culture issues related to wetlands.

Guiding principle 10 –To encourage research on palaeoenvironmental, palaeontological, anthropological and archaeological aspects of wetlands.

Guiding principle 11 –To safeguard wetland-related traditional production systems.

Guiding principle 12 –To protect historical structures in wetlands or closely associated with them.

Guiding principle 13 –To protect and preserve wetland-related artefacts (mobile material heritage).

Guiding principle 14 –To preserve collective water and land use management systems associated with wetlands.

Guiding principle 15 –To maintain traditional sustainable practices used in and around wetlands, and value the products resulting from these practices.

Guiding principle 16 –To safeguard wetland-related oral traditions.

Guiding principle 17 –To keep traditional knowledge alive.

Guiding principle 18 –To respect wetland-related religious and spiritual beliefs and mythological aspects in the efforts to conserve wetlands.

Guiding principle 19 –To use the arts to promote wetland conservation and interpretation.

Guiding principle 20 –To incorporate cultural aspects, where available, in the Ramsar Information Sheet (RIS) for the description of Wetlands of International Importance, whilst ensuring the protection of traditional rights and interests.

Guiding principle 21 –To incorporate the cultural aspects of wetlands in management planning.

Guiding principle 22 –To include cultural values in wetland monitoring processes.

Guiding principle 23 –To consider the use of institutional and legal instruments for conservation and protection of cultural values in wetlands.

Guiding principle 24 –To integrate cultural and social criteria into environmental impact assessments.

Guiding principle 25 –To improve wetland-related communication, education and public awareness (CEPA) in the matter of the cultural aspects of wetlands.

Guiding principle 26 –To consider the possibility of using quality labeling of sustainable traditional wetland products in a voluntary and non-discriminatory manner.

Guiding principle 27 –To encourage cross-sectoral cooperation.



9<sup>th</sup> Meeting of the Conference of the Parties  
to the Convention on Wetlands (Ramsar,  
Iran, 1971)

«Wetlands and water: supporting life, sustaining liveli-  
hoods»

Kampala, Uganda, 8-15 November 2005

## Resolution IX.21

### Taking into account the cultural values of wetlands

1. AWARE that wetlands and water resources in all parts of the world have been focal points for people and societies, providing vital services and being places where local communities and indigenous peoples have developed strong cultural connections and sustainable use practices;
2. ALSO AWARE that wetlands are especially important to local communities and indigenous peoples and that these groups must have a decisive voice in matters concerning their cultural heritage;
3. FURTHER AWARE that a great number of Ramsar wetlands hold significant cultural values linked to the ecological functioning of these wetlands.
4. RECALLING that the Ramsar Convention from its beginning has recognized the cultural values of wetlands in its Preamble, as well as recognizing that cultural actions may be determined by ecological processes and vice versa;
5. APPRECIATING that the wise use of wetlands, the foundation of the Ramsar Convention, requires taking seriously into account these cultural values as they may assist in strengthening or re-es-

- tablishing the links between people and wetlands, and giving cultural values greater recognition within the Convention;
6. NOTING Resolution VIII.19 *Guiding principles for taking into account the cultural values of wetlands for the effective management of sites*, adopted by COP8, and the need for its implementation;
  7. TAKING ALSO INTO ACCOUNT a) Resolution VII.8 *Guidelines for establishing and strengthening local communities' and indigenous peoples' participation in the management of wetlands*, adopted by COP7, and b) paragraph 30 of Resolution VIII.10 on "additional criteria and guidelines for the identification and designation of Ramsar sites concerning socio-economic and cultural values and functions that are relevant to biological diversity which would be applied on each occasion in conjunction with one or more existing criteria for the identification and designation of Ramsar sites";
  8. AWARE of the work undertaken by the Scientific and Technical Review Panel during the 2003-2005 triennium concerning the inclusion of the cultural importance of wetlands in Ramsar site designation processes;
  9. MINDFUL that the Ramsar Convention needs to work in cooperation with multilateral and regional agreements and other international bodies, within their respective mandates, addressing cultural heritage issues as they relate to wetlands, and NOTING the role of the World Heritage Convention in the protection of cultural heritage; and
  10. NOTING the presentations and discussions during the COP9 Technical Session 2 on 'Culture and knowledge in wetland management';

#### THE CONFERENCE OF THE CONTRACTING PARTIES

11. ENCOURAGES the Contracting Parties to identify and analyze further case studies of wetlands with significant cultural values and make them widely known, thus increasing the knowledge and un-

derstanding of the relationship between cultural processes and wetland conservation and wise use;

12. AGREES that in the application of the existing criteria for identifying Wetlands of International Importance, a wetland may also be considered of international importance when, in addition to relevant ecological values, it holds examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning;
13. FURTHER ENCOURAGES Contracting Parties to incorporate cultural values in wetland policies and strategies, as well as in wetland management plans, and to communicate the results, thus contributing to the development of comprehensive and integrated approaches;
14. EMPHASIZES that measures taken with respect to this Resolution in accordance with the Ramsar Convention are consistent with Parties' rights and obligations under other international agreements;
15. IDENTIFIES the following cultural characteristics as relevant in the designation of Ramsar sites:
  - i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland;
  - ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland;
  - iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples;
  - iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland;

16. INSTRUCTS the Ramsar Secretariat to complete, through a broad participatory process, the work prescribed in paragraph 17 of Resolution VIII.19 concerning the guidance to be provided on cultural values;
17. REQUESTS the Ramsar Secretariat to establish a multi-disciplinary working group on the cultural values of wetlands, with a balanced geographic representation, under the supervision of Standing Committee, with appropriate input from the STRP, to coordinate the activities described above; and
18. FURTHER REQUESTS the Ramsar Secretariat to analyse the activities carried out to incorporate cultural values in the work of the Convention during the triennium 2006-2008 and the experience gained, and to report to the Standing Committee and to the 10th Conference of the Parties (COP10).

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