RE-IMAGINING URBAN WETLANDS

Watery heritage and food policies in the Albufera de València

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Chiara Spadaro

Udine University <chiara.spadaro@studenti.unipd.it>

Francesco Vallerani

Ca Foscari University, Venice <ramusa@unive.it>

ABSTRACT: Urban food policies require interdisciplinary research and action. Based on a holistic vision, these policies aim to facilitate the transformation of the food systems of cities in a sustainable, equitable and resilient manner. Food availability is key to urban food policies and involves recognition of the widespread disconnect between agriculture and consumers and the central role that food-related practices can play in the transition towards sustainable and resilient cities. This article addresses this topic by investigating the strategic role of one area of urban wetlands that has fostered new positive and shared attitudes towards watery heritage. The recovery of waterscapes in the Albufera, in close proximity to one of the most rapidly expanding Spanish urban areas, València, has allowed for a remarkable improvement of both traditional fisheries and paddy fields that has facilitated the regeneration of sustainable food practices. In 2019, the Horta de València, comprising a system of fields extending over a 28 km² area that is irrigated by the Túria River, was recognised by the United Nations Food and Agriculture Organisation (FAO) as a Globally Important Agricultural Heritage System (GIAHS). The area includes the historic Huerta and a section of the Albufera National Park that still maintains elements of traditional Arab heritage. The Albufera is thereby a significant repository of watery memories related to fisher people, peasants and sailors that an increasing number of environmentalists and seaside tourists interact with, and it thereby exemplifies the nature of wetlands as knowledge resources that can inspire sustainable food practices and policies.

KEYWORDS: food policies, urban wetlands, Albufera, València, fisheries, paddy fields, watery heritage

I. Introduction. Food challenges in urban areas

Food insecurity has been constantly growing since 2014 (World Bank, 2023) due to an increase in conflicts, climate shocks and economic crises – factors that threaten access to food. Moreover, by 2050, the world's population is estimated to reach 9.7 billion people, and two-thirds of the population is expected to be living in urban areas (FAO, 2018), particularly in Africa and Asia, increasing the global demand for agricultural products by about 50% compared to current levels. In addition, the increasing consumption of meat, fruit, vegetables and processed foods is accelerating deforestation, land consumption and greenhouse gas emissions, while climate change negatively affects food production (FAO, 2018). This prospect has been further aggravated by the COVID-19 pandemic – a health crisis that has severely affected all pillars of food security (Béné *et al.,* 2021; Laborde *et al.,* 2020; UN, 2020). In this scenario, while food systems are at the centre of a profound transformation in the management of supply chains due to increasing consumption; feeding a growing urban population in a sustainable and ethical way –i.e., culturally, socially, economically and environmentally – becomes challenging (Viljoen and Wiskerke, 2012).

The scientific community traces the debate on urban food planning back to the work of Pothukuchi and Kaufman (1999, 2000) who were the first to denounce its absence from the academic sphere and political agendas. It is only at the beginning of the new millennium that food begins to be considered an urban policy issue. Hence, a relatively recent and interdisciplinary field of research and action comprises food policies interpreted as holistic processes of transformation of city food systems in a sustainable, equitable and resilient sense (Moragues *et al.*, 2013).

A new impetus for this debate came from the Milan Urban Food Policy Pact (MUFPP) launched by the Milan Municipality in 2015. The MUFPP is an international agreement among cities from all over the world that constitutes a concrete working tool for cities committed:

> *to develop sustainable food systems that are inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework, that minimise waste and conserve biodiversity while adapting to and mitigating impacts of climate change*.

Its main aim is to support cities intending to develop more sustainable urban food systems by fostering city-to-city cooperation and exchange of best practices.

Since then, academia has been increasingly recognised as an actor in food policies and has been more involved in international research projects and partnerships. Today, the study of food policies represents an "action space for geographical research" (Dansero and Nicolarea, 2016). Especially during the last two decades, scientific debate on foodscapes as key to analysing socio-economic and environmental issues, processes and policies has continued. Several authors have investigated the articulated relationship between food and territory (Colombino, 2014; Dansero & Nicolarea, 2016; Van der Ploeg, 2015; Winter, 2005), opening a new theoretical and practical space for the territorial approach in urban food policies. In response to the delocalisation of food systems due to globalisation (Morgan *et al.,* 2006), the re-territorialisation of the food system at the urban scale is the main aim of food plans. Consequently, many authors have repositioned the system of relations around food in a more complex social, economic, institutional (Marino, 2016), and geographical (Dansero *et al.,* 2017) context. As a matter of fact, with the development of industrial production and the

globalisation of food systems, there has been a progressive deterritorialisation of food: a disconnection between production and consumption, between foods and places (Wiskerke, 2009; Dansero & Pettenati, 2018). The results are "weakened relations between societies and places, territories, landscapes, the environment – and food" (Dansero and Pettenati, 2018, p. 281). To find a renovated "sense of food" in terms of ethics, ecology, relationships, and rights, we need to reconnect the broken relationships between foods and places. For example, we can find this reterritorialisation of food incarnated in the practices of alternative geographies of food and Alternative Food Networks (AFNs) (Dansero & Pettenati, 2018).

The possibilities that local food policies offer for a critical transformation of relations between food and territory, and the role of academia in these processes, recall the relational approach suggested by Woods (2011) to construct a relational account of the rural and arrive at an understanding of how relationships define the space of food (Massey, 2005). Hence, the challenge for researchers is to be able to recognise and enhance the planning possibilities of each geography in the relationship between food and places (Tecco *et al*., 2017).

While cities have become leading places in filling the gap left by national and supranational states in food policies, in recent years, some authors have repeatedly warned about the risks of addressing the food-city relationship by emphasising the latter and relegating peri-urban and rural spaces on the fringe. However, as Morgan & Sonnino (2010) tern it, the "new food equation" can only be resolved through a dialogue between places of production and consumption of food, between city and countryside, and between land and water. The 'invisibility' of the food system within urban systems is particularly true in the case of urban lagoons, for which regenerative food policies are rarely mentioned. However, even if observed from the perspective of urban food policies, lagoonscapes – transitional spaces between land and water, areas "of passage, hybridity, and fragile thresholds" – are confirmed as a "repertoire that is continually (re)created, (re)told, (re)represented and manifests itself in negotiations and frictions in everyday life and localised actions" (Cavallo *et al.*, 2021, p. 2).

From this amphibious point of view, many elements of connection exist with the international debate that question how to facilitate the transition towards more sustainable and equitable food systems. It cannot be ignored that, according to FAO data, while about 60% more food will have to be produced by 2050 to ensure global food security, agriculture will continue to be the largest user of water withdrawn for human consumption. However, the volume of water available for agriculture will progressively decrease. This topic opens new insights into the link between water governance and food governance in the construction of food policies in lagoonscapes. Food fluxes and water fluxes related to food represent original keys to interpreting our relationship with these amphibious landscapes, which are peculiar foodscapes connected to the protection of hydraulic heritage (Pettenati, 2017). After an analysis of what we call the 'urban wetlands turn' this article aims to situate this scientific debate in the amphibious geography of the Albufera de València (henceforth referred to as the Albufera[1]). We contend that the locale illustrates the important interconnection between urban space and lagoon and peri-urban landscape with regard to the maintenance of sustainable food systems.

[1] The Catalan language term a*lbufera* denotes a lagoon and there are also lagoons with this designation in the Balearic Islands (S'Albufera de Mallorca and S'Albufera des Grau) and in Gayannes (Alicante). We refer to the Albufera de València as *the* Albufera throughout the article to indicate the specific locale.

II. Toward an urban wetlands turn

In recent decades, hydraulic dynamics have been heavily impacted by human-related phenomena, such as those related to global warming. The widely accepted concept of the Anthropocene is an effective means of encompassing the multifaceted array of transformations that impact humans' everyday geographies (Lewis & Maslin, 2015; Matthews, 2020). Because of the oppressive effects of human activities, the air, soil and water have been altered to an extent that further pressures can no longer be easily absorbed. In coastal waterscapes, where inland hydrography interacts with the sea and the regular tidal rhythm, many anthropogenic interventions can be monitored. The slowly reinforced liminal uncertainty of coastlines, which result from alluvial processes triggered by fluvial siltations that are subsequently reshaped by marine motion, provided one of the most favourable coastal morphologies for permanent dwellers. That said, it could not have been easy to reside within such environments, in that specific and highly local problems related to manifold needs would have had to have been addressed, ranging from small island drainage to mud bank maintenance, from fresh water supply to canal dredging, and from reduction of salt- and freshwater marshes due to natural factors such subsidence. The successful governance of local hydrography seems to have entailed a large number of technical strategies necessary to achieve an effective social, economic and culturally amphibious territoriality.

Throughout history, amphibious communities have taken advantage of the vital interfaces they inhabit, trying to get the most from both natural resources and logistic opportunities. A wide variety of archive documents – ranging from historical cartography to water engineering reports, and from economic figures to old statutory rules – are helpful in retracing the stages of waterscape evolution (Ciriacono, 2006). Through a form of empirical 'apprenticeship', human societies have achieved a fruitful interpretation of geomorphological processes affecting amphibious environments. For this reason, a large number of worldwide coastal wetlands have been transformed by water engineering advancements (Alikhani, Nummi and Ojala, 2021).

From an ecological point of view, wetlands are among the most important yet most fragile ecosystems. As stated in the Ramsar Convention on Wetlands (1971), large brackish and backwater systems, both permanent and temporary, provide a broad number of advantages. These apparently unfruitful waterscapes offer many environmental benefits, ranging from the regulation of extreme temperatures and flood events, especially in urbanised contexts, to supporting specific natural habitats that are crucial in trapping carbon dioxide. Furthermore, wetlands are suitable environments for provisioning both fisheries and fish breeding. It is also worth mentioning the increasing attraction of wetlands for visitors who strongly appreciating the cultural and ludic character of such "paludal playscapes" (Gearey, 2021). Despite these remarkable assets:

> *64% of the world's wetlands have disappeared since 1900. In some regions, such as Asia, the loss is even higher. Inland wetlands (including urban wetlands) are disappearing at a faster pace than coastal ones, but the overall trend is clear that wetlands and their benefits are being lost.* (WWT Consulting, 2018, p.9).

In many urban areas, residual watery[2] environments are often found in the final stages of ecological degradation. Extended drainage, water pollution, clearing and degradation of suburban vegetation are the most visible effects of urban sprawl influencing the uneasy coexistence between growing cities and the surrounding original waterscapes. In the past, when no awareness of global warming or concern about rising sea levels existed to affect both planners' and people's perceptions, the unstable ambiguity of amphibious areas led them to be seen as functionally useless. Indeed, marshlands, swamps and shallow lagoons have been widely considered as dreadful and unhealthy places that impede modernist goals. This widespread cultural perception produced a tradition of negative representations of wetlands that were symbolically related to death, monstrosity and melancholy (Giblett, 2007). As a result, in the social and economic formations of modern states the presence of pristine waterscapes other than deep lakes or navigable hydrography has been marginal. The technocratic vision that a modern territory is a 'territory that works' fuelled specific utilitarian attitudes towards natural waterscapes. Drainage and reclamation schemes – from northern European areas such as Holland, North Germany or Poland, to Mediterranean countries such as Italy and Spain – aimed to 'improve' water engineering (Vallerani and Visentin, 2018). For the latter countries, the common ground of fascist dictatorships in the first half of the 20th century emphasised a shared disdain for wetlands as obstacles to defeating malaria and improving agriculture.

In the second half of the last century, there was a discernible rise in environmental sensitivity in a range of social and institutional contexts. Especially after the 1972 United Nations Conference on the Environment, held in Stockholm, a new shared awareness began to take hold. Following this green 'turning point', heed was slowly paid to not only untouched natural waterscapes but also to the entire hydrography under pressure from urban land use and surface sealing. Within densely inhabited territories affected by urban sprawl, rivers, canals, ponds and coastal lagoons have a great potential to improve urban environments. As a result, urban wetland restoration suburban districts and rural surroundings has been expanding since the 1990s in most European metropolitan areas. Such interventions range from well-grounded ecologically based approaches to more superficial landscape design aiming at the amelioration of blue space aesthetics, opening enticing opportunities for recreational pursuits and educational goals for both residents and outside visitors. As a result, increasing attention has been paid to the urgency of recovering urban wetlands, largely due to citizens' desires to live in a better environment. The intense urgency of the climate crisis has severely affected the quality of life in urban clusters, especially in areas where the intensification of population density enhances the adverse effects of heat waves, water pollution and green infrastructure degradation (Ampatzidis & Kershaw, 2020). As a result, there is an increased awareness of the remarkable ecological efficiency of wetlands in large conurbations.

Due to the nature of the coastal lagoon generated by the interaction among the rivers Júcar and Túria with the Mediterranean Sea, the watery lowland, commonly known as the Albufera (Figure 1) can be easily examined within this 'urban wetlands turn'. The expanding coastal conurbation of València in the mid-late 20th century has affected the entire surrounding alluvial system, with notable impacts on the Albufera's multifaceted morphology. Whilst the

[2] With regard to urban wetlands, the term 'watery' helps to identify specific environmental heritage aspects, going well beyond the framework of shared values found in traditional cultural landscape studies. In the Albufera this requires recognition not only of the valuable assets that are at the core of wetland management but also more intangible aspects that can involve both local people's and visitors' perceptions.

original structure of marshlands, lagoons, riparian forests and dunes detaching the wetland from the sea clearly evolved over centuries, this peculiar waterscape has been deeply transformed in recent years. In the following section, the geo-historical evolution of this stretch of Catalan sublittoral wetland will be considered, focusing on both the impacts of human intervention and the latest strategies of recovering the region's watery heritage.

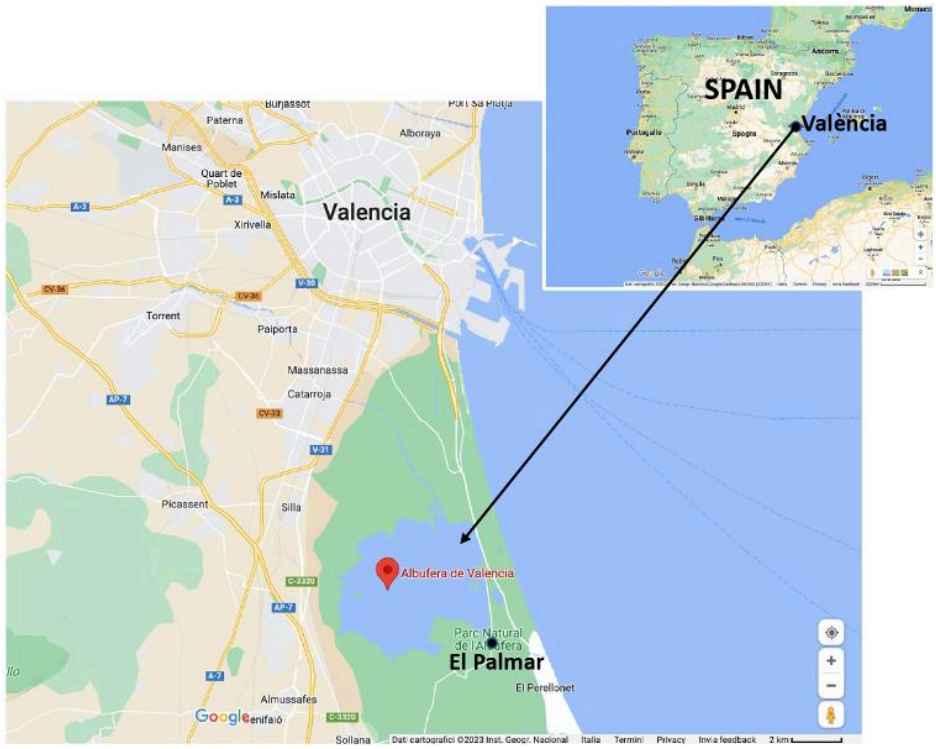

Figure 1 – The Albufera's location in relation to Valencia and in western Mediterranean

II. Pluritemporal waterscapes in the Albufera

The Mediterranean basin contains an extraordinary and varied range of coastal wetlands whose morphological complexity represents an equally fascinating geo-historical evolution. Most of these wetlands are narrowly related to the specific dynamics of fluvial catchments flowing from nearby mountainous areas. Upstream erosive action, the subsequent transportation of sediments and finally, according to the steady decrease of gradients, the slow deposition of debris and the consequent formation of sandbars when approaching the coastline, represent the dynamic pattern of wetlands formation. Despite its limited size, compared to the wider extension of other Mediterranean wetlands (ranging from the huge Nile delta to the fascinating complexity of the Venetian lagoons), València's watery lowland offers an ideal opportunity to investigate the strategic role of urban wetlands, where specific interactions between land and water entail the construction of new shared attitudes towards watery heritage. The methods and aims of geo-historical research are considered a good pathway to follow to examine and understand the most remarkable steps in the definition of the present complex waterscape.

Like most Mediterranean lagoons and wetlands, the long-term evolution of the Albufera can be investigated, starting from the scattered presence of pre-historic remains along its inland edges, where some stretches of higher ground could host tiny, permanent dwellings. Afterwards, the Roman Age entailed a more effectual territorial process when the area was involved in the economic context of the expanding sea trade based on the Roman port of *Valentia* (Roselló Mesquida & Cotino Villa, 2005). Only from the Middle Age can we rely on a documentary tradition concerning both historical and morphological aspects. Such tangible heritage is a helpful tool to better explain the most remarkable transformations arising from human interventions on the original Albufera morphology (Segarra Ferrando & Dies Jambrino, 2014). The prevailing character of a wide lagoon was favoured by the presence of a natural outlet to the sea (called *gola* in Catalan), allowing not only the entrance of salt water but also a notable inflow of fish. As a consequence, the water system of the Albufera, with its surrounding lowland dotted with marshes, small forested areas and wet pastures, mostly supported fishing activities, while poor and marginal farming could be practised in drier grounds (Figure 2). Its two other profitable uses were salt extraction and hunting, whose economic prominence was traditionally subjected to Crown surveillance through privileges and ordinances aimed at regulation and protection (Sanchiz Ibor, 2001).

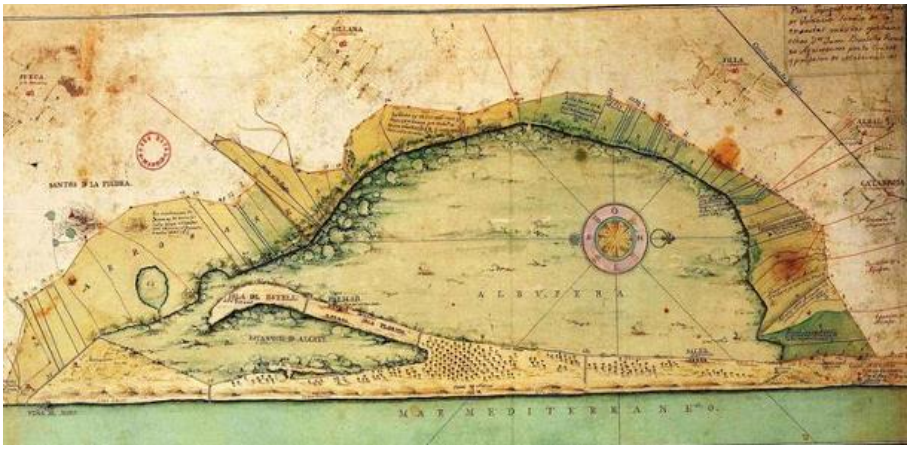

Figure 2 – Romero's 1761 map of the Albufera (Madrid, Museo Naval).

Over the following centuries, agricultural activity gradually gained importance, especially with the expansion of irrigation promoted by the construction of the royal ditch (*Acequia Real*) that drew water from the Júcar river. The work started in the 13th century and the canal can be considered as one of the first infrastructural elements within Spanish irrigation systems (Glick, 2007; Sala Giner, 2015). Throughout this period, and up to the 18th century, a large area of the Albufera's perimeter began to be slowly transformed, introducing many of the present agricultural and water distribution systems, although hunting, fishing and extensive livestock farming continued to be the main uses for centuries (Castelló i Ballester, 1991). Most of these environmental transformations were related to the regulation of water flows, trying to balance the drainage of freshwater coming from the new cultivated lands with the control of seawater entrance into the lagoon. As a result:

> *In 1607, the first fixed sluice was built (the Antonelli sluice) in the only outlet connecting the Albufera with the sea. Although ephemeral and vulnerable to*

> *the force of storms, the structure interrupted the entry of salt water into the lagoon.* (Ferrando & Dies Jambrino, 2014, p.60 – authors' translation)

Thus, the Albufera gradually stopped receiving the water inflow from the sea, while the flow of fresh water coming from its western drainage basin started to influence the evolution of previous marshlands. These new hydrological dynamics were the consequence of the improved mastery and management of the irrigation network fed by the two rivers: Júcar and Túria. It is worth noting that since local fishermen working in the Albufera ensured a significant income for the monarchy, their interests were protected to the extent that the whole brackish area was commonly identified as the 'fishermen's salt lagoon'. They were the ones who actually controlled the fluctuations of the water table, closing and opening the small sluices that artificially introduced water from the Júcar and Túria rivers when it was essential to raise the level of the lagoon (Sanchis-Ibor, Jégou & Pech, 2008).

A meaningful contribution to the knowledge of the historical waterscape comes from Flemish painter and sketcher Antoon van der Wijngaerde's outstanding pictorial representation of the entire Albufera. He was probably born in Antwerp in 1525 and began working in Spain, commissioned by King Philip II, in 1557, during Spanish domination of southern Low Countries (Kagan, 1989; Galera i Monegal, 1998). The magnificent iconography of his rendition shows great accuracy in depicting València's suburban wetland, skilfully focusing on the peculiar waterscape details (Figure 3). Wijngaerde's map-making style is mostly based on the bird's eye technique:

> *Between 1562 and 1571, Van den Wijngaerde travelled the length and breadth of Spain, depicting over sixty Spanish cities for the king using much the same techniques as those used in the Low Countries. In most Spanish cities, Van den Wijngaerde made his sketches from a hill or a mountain, from where he had a good overview*. (Rutte, 2020, p.1)

Figure 3 - Antoon van der Wijngaerde's bird's eye view of the Albufera (1563).[3]

To some extent, Wijngaerde's cartographic activity was related to the commitment of royal officials to collecting socioeconomic and geographical information by means of painstaking questionnaires (the so-called *Relaciones Topograficas*) sent to a large number of rural villages between Castilla la Nueva and Murcia, beginning in 1575. Wijngaerde's illustrated map shows

[3] https://commons.wikimedia.org/wiki/File:L%27Albufera_de_Val%C3%A8ncia,_1563,_Anton_van_den_Wyngaerde.jpg?uselang=it

the coastline of the lagoon as comprising sand dunes covered by loosely aggregated trees (known as *devesa*), used for hunting and pasture, while to the south, the traces of disused salt pans can be observed. In the centre, on the lagoon's surface, duck hunters on boats are represented and to the east along the lagoon side of the *devesa*, one can see traditional fishermen's houses (*barracas*) at the site of the current hamlet, El Saler (Figure 4). When considering one of the primary aims of this article, to provide an understanding of the relationship between cultural heritage and food policies within the Renaissance depiction of this urban wetland, one can easily detect the effectual representation of a peculiar landscape of food. A coherent territorial logic aiming at the exploitation of ecosystem services broadly developed throughout the following centuries, focusing on the wide range of food support coming from the lagoon to the increasing needs of nearby València's expanding urban area.

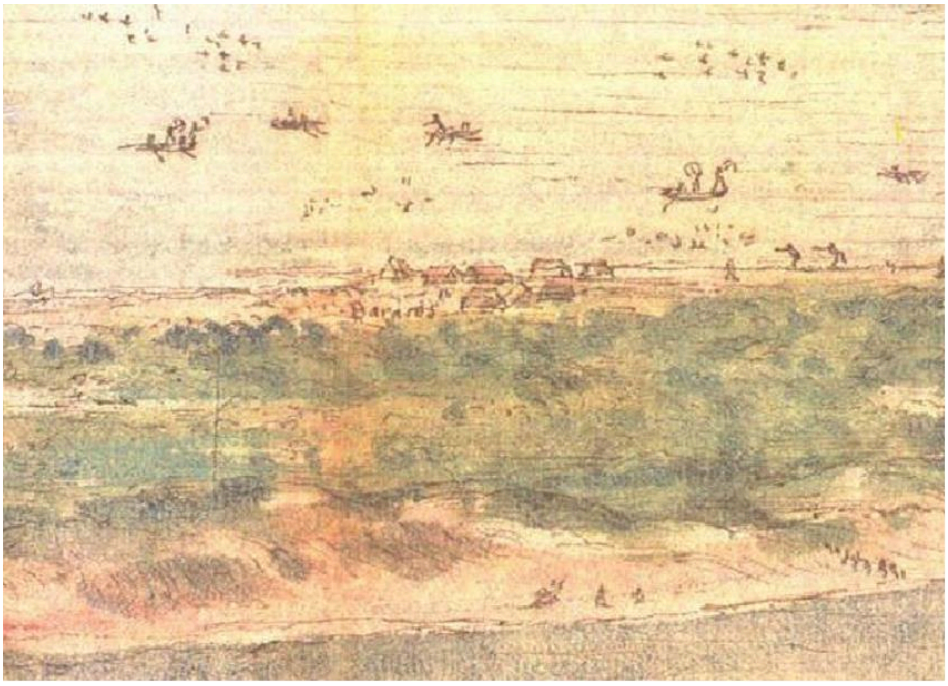

Figure 4 – Detail from Wijngaerde's map showing fishing boats and the lagoon village with its *baracos* (traditional fishers' huts).

The brackish lagoon gradually transformed into a freshwater lake with the consolidation of the Acequia Real del Júcar, a community with the right to use the waters of the Júcar River (which flows into the Gulf of València near Cullera) for irrigation. This is a public law body linked to the Confederación Hidrográfica del Júcar, responsible for the control, distribution and administration of the river's waters. Between the 18th century and the second half of the 20th century, the Acequia Real del Júcar brought enough water to the Albufera to transform it into a freshwater lake surrounded by rice paddies.

More recently, over just two decades (the 1960s and 1970s), the spread of intensive rice cultivation and the impacts of intrusive tourism developments along the Albufera's fragile coastline caused a major decline in the blue-green values that had been central to its community (Generalitat Valenciana, 1990). This has, fortunately, been reversed. In the face

of an increasing awareness about the decline of suburban wetlands in the early 1980s, recovery policies were established. Popular support for the protection and recovery of the Albufera resulted in its declaration as a natural park in 1986. This complemented València's arrival in the European food and environmental policies scene. The following section analyses the role of the Albufera in the construction of València city's food policy in order to understand the importance of this wetland in relation to the close urban space.

III. València in the panorama of urban food policies

In October 2022, the European Commission (EC) proclaimed València the European Green Capital of 2024. As the EC explained, València earned the title due to "its past and current achievements in the field of sustainable tourism, climate neutrality, as well as fair and inclusive green transition". In particular, the city has proved to be committed to restoring wetland ecosystems and stimulating sustainable local food production. This is the latest recognition given to the Spanish city in this field of interest and policy.

In 2015 València signed the MUFPP. The following year the World Sustainable Urban Food Centre of València (*Centro Mundial de València para la Alimentación Urbana Sostenible* - CEMAS) began to be developed, fostered by the local municipality in alliance with the FAO, in order to develop sustainable urban food systems. A memorandum of understanding was then signed between FAO and the municipality, outlining the details of this collaboration for research, technical advice and dissemination activities on agriculture, fisheries, healthy food and the rural and coastal economy. This memorandum states the engagement of the Adjuntament de València "in the process of changing its farming and food policies in its peri-urban croplands with the aim of putting an end to their ongoing destruction and degradation by implementing new policies" based on the sustainable production and distribution of food. This process continued in 2017 with the proclamation of València as World Food Capital, and that year, in October, the city hosted the third global summit of the MUFPP. The summit concluded with an appeal to the need to adopt "multi-level approaches to food systems governance" to include "actors at subnational level in upcoming review and follow up to the global agendas" and involve different actors "to strengthen urban rural linkages integral to sustainable development" (MUFPP, 2017). However, despite this ostensible attention to the *continuum* between urban and rural spaces, the Albufera is rarely mentioned or considered by CEMAS, and the important and historical system of *huertas* (vegetable gardens) are the main focus in the recovery of Valencian agricultural heritage. As stated in the report *CEMAS and the global challenges of sustainable urban food*:

> *In the words of FAO: "The horta landscape is the combination of multiple kinds of environments such as the Mediterranean coast, the banks of the Turia river and the Albufera. The secular interaction between humankind and the structure of the local territory has helped shape a unique landscape that combines a traditional irrigation system, a rural communication network and settlements and agricultural patterns"... The value of this whole agricultural system is far more than what is simply produced. The farmers use sustainable techniques to conserve water, soil resources and the local biodiversity, which includes birds, fish and over 800 species of plants, many of them classified as endemic or at risk of extinction. And there is also the unique Albufera Lake, one of the most important wetlands on the European continent.* (CEMAS, 2020, p. 123)

In 2019 the FAO included the historical irrigation system at l'Horta de València in the register of Globally Important Agricultural Heritage Systems (GIAHS) (FAO, 2019), a category that comprises diversified and locally adapted agricultural systems managed for centuries by farmers, shepherds, fishermen and foresters that have produced biodiverse and resilient landscapes and protected their cultural heritage. According to FAO's definition, "a GIAHS is a living, evolving system of human communities in an intricate relationship with their territory, cultural or agricultural landscape or biophysical and wider social environment". The main goal of the GHISAS register is to promote a balance between conservation, adaptation and future development of registered sites. Since 2005, the FAO has designated 72 GIAHS in 23 countries around the world and there have been 15 new proposals from 7 countries.

The historical irrigation system at l'Horta de València is a network of canals conveying waters released by the Júcar and Túria rivers. Such traditional water management, derived from the Arabs, who regulated fresh water supply for centuries, is in close relationship with the Albufera. The Albufera Natural Park (declared in 1986[4]) is part of the 28-square-kilometre area of the *horta* (Figure 5): a system that includes 6,000 family farms, 10 of which are fisheries, and reflects the historical outcome of a culture of adaptation to climatic conditions. The designation of the historical irrigation system at l'Horta de València as a GIAHS has led to better coordination between the different sectors of agricultural and water heritage protection, with the creation of a management body called the *Consell de l'Horta* ('Vegetable Garden Council').[5] Moreover, the city of València created the *Consell Alimentari* ('Food Council') another consultative body, to strengthen collaborations between local producers and schools in urban areas.[6]

Furthermore, the system of *horta* plays a key role in the city's goal of achieving carbon neutrality by 2030. In this sense, the *Estrategia Agroalimentaria València* ('Agroalimentary Valencian Strategy') *2025*, a strategic document approved in 2018 to guide municipal food policies, becomes even more significant (Adjuntament de València, 2018). This food strategy aims "to build a sustainable agro-food system, in which community-territory ecosystem relations (urban, peri-urban and rural) are established on the basis of relations of balance, and social and environmental justice" (2020, p.5), linking the metropolitan area, the *horta*, the Albufera and its rice fields, the port and the coastal area, the network of municipal markets and Mercavalència (the biggest agri-food, commercial and logistics centre in the *Comunitat Valenciana*). In that document, when referring to the city's culture, heritage and eating habits, there is a cross-reference to "la Huerta de València y la Albufera", key places where "knowledge, practices, values and social relations that need to be strengthened and shared, as they shape a part of the responses to the city's food challenges" (2020, p.5), are concentrated.

[4] The Albufera was declared a natural park in 1986, and it has been recognised as a 'Wetland of international importance' since 1989, as stated in the Ramsar Convention. Since 1990, the area has also been part of Natura 2000 Network and, since 2006, it has been selected as a 'Site of Community Importance'. For more details, see parquesnaturales.gva.es/es/web/pn-l-albufera/l-albufera

[5] See, consellhorta.gva.es

[6] See, consellalimentari.org

Figure 5 – The Albufera Natural Park.[7]

[7] https://parquesnaturales.gva.es/es/web/pn-l-albufera/mapa-turistico

Despite its official recognition, the Albufera still plays a secondary role in València's food policy, as shown by the mapping project *Alimentos de la Huerta y el mar para València* ('Food from gardens and the sea for València').[8] The map of the local agri-food system is promoted by the Delegation of Agriculture, sustainable food and vegetable garden in collaboration with the *Consell Alimentari*, and it reveals an 'agro-centric' tendency in urban food policies, which tend to neglect the lagoon and, more generally, aquatic resources, and focus on agricultural products instead. Despite this, the recognition in València of a GIAHS focused on the traditional irrigation system could be an incentive to place the water heritage at the centre of the local food strategy and develop an alliance with other urban lagoonscapes that want to enhance their water systems against the background of an amphibious food policy. However, a double trend seems to have appeared: while agri-food production is still the focus of attention for institutional subjects, attention to lagoon food resources and the cultural heritage connected to them is strengthening from the base, from the local community, associations and groups active in the Albufera. Drawing on fieldwork carried out in the Spring of 2022, food and water fluxes connected to fishing and agriculture in the Albufera are analysed in the following section. During this fieldwork, amphibious memories of the people who dwell in the lagoon were collected, especially in El Palmar Village. These stories show a renewed sensitivity towards lagoon resources and heritage that is also beginning to spread to the institutional world.

IV. Food and water narratives: El Palmar

Between March and May 2022, about 20 open interviews were conducted in the Albufera, mainly in El Palmar, a fishing village that overlooks the lagoon (Figure 6). El Palmar is a microcosm that presents a lively cohabitation of fishermen and rice farmers, fish and birds, restaurateurs and paellas, local visitors and a growing flux of international tourists (Figure 6). These different dwelling voices helped in understanding the metamorphosis of this lagoon, which is still in progress, and helped enter the metabolic fluxes that flood it. From a methodological point of view, oral history methods, such as listening to people's life stories through open interviews were adopted. With them, some aspects of the lagoon's materiality – crossing it by boat, visiting small shipyards and sharing paella and *ali pebre*[9] at the tables of the fishermen's bar – were also experienced. This was initiated through the local fishing community (*Comunitat de pescadors de El Palmar*), legally recognised in 1250 by King Jaime I of Aragon (Boelens & Claudín, 2015). During the interviews, each witness, sooner or later, defined El Palmar as "eight hundred inhabitants and thirty-three restaurants". A place that every weekend welcomes and feeds, more than 3000 people coming from the city, or the surrounding area, to take a boat ride or eat some 'original' paella.

According to anthropologists Beatriz Santamarina Campos and Aida Vizcaíno Estevan (2021), the Albufera is an activator of identity: an iconic landscape (strongly influenced by the novels of Vicente Blasco Ibáñez[10]) and a touristic brand designed around the lagoon and its specialties. In their opinion, many families and people go to the Albufera during the weekend to have lunch, take a walk or a boat ride or go to the *devesa* to enjoy the seaside. Then, they

[8] See the map online: consellalimentari.org/es/alimentos-de-la-huerta-y-el-mar.

[9] Eel is the main ingredient of Albufera's traditional dish.

[10] Blasco Ibáñez (1867-1928) was a Valencian novelist, screenwriter, and politician. He was the author of best-selling novels, such as *La barraca* (1898, 'The Hut'), *Cañas y barro* (1902, 'Reeds and Mud') – both set in the Albufera – and *Sangre y arena* (1908, 'Blood and Sand').

come back home without having a real interest in knowing and understanding the environmental dynamics of the lagoon or its history.

Figure 6 - El Palmar: a vernacular lagoon waterfront with an increasing number of restaurants for international tourists.[11]

Mobility was a recurring theme during the interviews: mobility between the urban area of València and the outskirts of the Albufera; mobility within the lagoon, between the so-called 'lake' and the rice fields; and mobility inside the fishing community and between old and new fish species. The fishers who first settled in El Palmar came from Ruzafa, a neighbourhood on the southeast outskirts of València. From an administrative point of view, until 2 years ago, El Palmar belonged to the district council of Ruzafa. Even today, the village is often referred to as an 'island.' From Ruzafa, one can travel 21 kilometres to this 'island' on bus 24, by bicycle or car; then, at the village, one can go passed the fountain in the square of Sequiota to find the blue gate of the fish market (*lonja de pescados*), the headquarters of the local fisher community, on a side street. Today, this community has 400 members, the average age of whom is 55, and fewer than 60 of them still engage in fishing, in most cases integrating this activity with other jobs, mainly related to tourism or agriculture in vegetable gardens or paddies. Thus, despite the described historical conflicts of interest over the management of water in the Albufera between the fishing community and the rice-growing community, many of the former are also presently rice farmers themselves.

Somehow, terrestrial work seems to be safer than water work. "Going fishing means putting your life on the line", said a fisherman busy with companions removing a bountiful catch of mullet from fishing nets (Figure 7). Mullet are cleaned and prepared in boxes with ice to be distributed to the restaurants of El Palmar and to the Mercavalència. It can be a "dangerous' work", he explained, going out in the boat early in the morning, particularly with rain, strong

[11] https://www.affittivacanze-spagna.it/Valenzia-citta/articoli/il-cuore-della-albufera-el-palmar

wind and fog that hides the landscape, looking for the best catch: eels (*Anguilla anguilla*), wild bass (*Dicentrarchus labrax*), zander (*Sander lucioperca*), carp (*Cyprinus carpio*) and, more recently, blue crabs (*Callinectes sapidus*) arriving from the Atlantic Ocean into the Mediterranean lagoons. The current fishers are all sons of fishermen who grew up in boats, helping their fathers in preparing the fishing nets and unloading the fish. Even though today "parents prefer their children to go to school instead of fishing", as one said, these fishersbelieve that their community will survive, even if with reduced numbers in terms of members and catches compared to the past. Perhaps they are right if, as the last paragraph observes, such survival will be related to the protection and enhancement of the cultural heritage and landscape of the Albufera. In that sense, as Boelens & Claudín (2015) wrote, for fishers, "community existence is not a fact but a constellation that is, at once, threatened, dynamic and indispensable" (p. 1060). In other words, the challenge of maintaining and reproducing a community depends on "creating and reaffirming shared norms, values, rights and symbols" (p. 1072). Among these traditional habits, the practice of allocating the particular areas of the Albufera where each fisher is allowed to position their fixed stake nets (called *redolins* or *calades*) is worth mentioning. The position of each fisher's *redolin* is randomly chosen every year on the second Sunday in July during a private ceremony, and this is one of the distinctive characteristics of the El Palmar fishing community.[12]

In 2016, artisanal fishing and traditional navigation with the lateen sailed boats (Figure 8), to date a pivotal element in both sustainable recreation and in the recovery of local sense of place, were declared intangible cultural assets in order to protect and maintain their heritage value. Traditionally, different fishing gears have been used in the Albufera, depending on the species and fishing posts: submerged gillnets (*tir pla y de trasmall*, *paraderas* y *cel*), longline fishing gears (*canya*, *palangre*, *guillem*, *canyetes*) and stationary traps or pots (*mornell*, *monot*, *mona*, *mornella*, *ganguill*, among others). *Mornell* is a cylindrical net used to catch eels that can only be fished within a limited period, from October 1 to April 30. During the summer, with some modifications, the same gear is also used to catch blue crabs that have been living in the Albufera for several years.

Eel is the ingredient of a notable traditional dish from the Albufera, *all i pebre* (*all*, garlic + *pebre*, pepper), a soup of eel and potatoes prepared with ample garlic. Together with paella, *all i pebre* is a key dish on the the menus of the 33 restaurants in El Palmar: it is a matter of tradition, but above all, it is a matter of the imagination functional to tourism. Food heritage in the Albufera is also a catalyst for a great debate about the ingredients of the 'original' paella recipe. This is a humble recipe, as Vidal-González, Medrano-Ábalos & Sáez Álvarez wrote, a "perfect example of how the inhabitants of the Valencian lands made the most of the scarce resources that the environment offered them' (2022, p.1). Originally, paella was a dish with a social value, to be eaten together outdoors. It was a symbol of farmers' self-sufficiency, with rice and vegetables from their gardens, with fish obtained locally. However, today, this dish owes its global popularity "to tourism and the growing importance of Spanish cuisine on the international scene' (2022, p.1).

[12] Mobile fishing is however practised in other Albufera fishing communities, based in the villages of Catarroja and Silla (Ramón Fernández, 2019).

Figure 7 – A good catch of mullet in El Palmar (2022, photo by Chiara Spadaro).

Figure 8 - Traditional Albuferan sailing boats: from fishing activity to pleasure navigation (2021, Facebook page GVA Parc Natural de l'Albufera).

In 2022, the International Year of Artisanal Fisheries and Aquaculture (IYAFA) was declared by the UN General Assembly and the FAO described a sector with great potentia' that is facing complex challenges, such as the degradation of natural habitats, illegal, unreported and unregulated fishing, overfishing and power imbalances along the supply chain. However, the FAO's *Global Action Plan* does not speak about an activity in crisis in terms of production and consumption. In 2020, total fishery and aquaculture production reached a record of 214 million tonnes, mainly due to the growth of aquaculture in Asia. This sector employs about

58.5 million people – only 21% are women. Fish consumption is also growing at the global level. On average, we ate 20.2 kilograms of fish per capita in 2020, which is more than double its consumption in the 1960s (FAO, 2022). In addition, urbanisation, improvements in post-harvest techniques and changes in dietary trends are expected to lead to a further 15% increase in consumption by 2030. However, a question arises: How can fish consumption increase in a world where water bodies and fish resources are increasingly compromised? Securing the long-term supply of aquatic food will require improved fisheries management and ecosystem restoration. A "blue transformation", as FAO calls it, a transition that combines the two challenges of food security and environmental sustainability "safeguarding ecosystems, reducing pollution, protecting biodiversity and ensuring social equity" (FAO, 2022a).

V. Towards a new lagoon imaginary

Despite the difficulties related to the lack of generational change in the fishing community and the environmental issues in the Albufera, stakeholders in El Palmar are trying to build their future by enhancing local history and cultural and water heritage as well as by bringing about some ecological innovations. Many of these innovations are 'evolving and have been made possible thanks to the cooperation between associations in the village, with other near communities and some institutions, such as the Gandia-Albufera Local Fisheries Action Group (GALP),[13] and the Universitat Politècnica de València. The whole wetland is the focus of an overarching shared goal to improve effectual conservation programs. With regard to social perceptions and attitudes, the Albufera's closeness to Valencia encouraged urban people to spend leisure time there, enhancing their awareness about natural ecosystem values. We have previously emphasised the significance of wetlands ecosystem services, particularly when considering the strategies of reterritorialisation of food systems and the Albufera case study efficiently demonstrates the achievement of a new lagoon imaginary. The increasingly evident impacts of climatic disruption are affecting sensibilities about the benefits offered by an urban wetland. As a consequence, a wide range of values are fuelling innovative feelings and behaviours. Among these values we can include aesthetics, recreation, ecology and fisheries. For example, the recent praise of Albuferan culinary aesthetics is a common perception well-grounded in the peculiar foodscape, with its wide range of traditional recipes that can be tasted in attractive locations, facing crimson lagoon sunsets.

An electric bicycle stands in the fishermen market and its rear fridge box is loaded every day to distribute fresh fish to El Palmar restaurants (Figure 9). Not far from the fish market, in the Calafat carpentry, a prototype electric boat is being built. Here, we see a wooden skeleton: a light-coloured body of French ash covered with highly flexible Finnish pine. This special boat is part of a study project for the electrification of the boats on the Albufera lake, supported by the GALP energy company, with the Valencian Council for Agriculture, Rural Development, Climate Emergency and Ecological Transition and the European Maritime and Fisheries Fund.[14] With the prototype, the European Union has founded a pilot study on electric boats with an environmental analysis of their energy, social and economic effects.

[13] The aim of this Fishing Local Action Group is to implement the Participatory Local Development Strategy (EDLP), within the framework of the European Maritime and Fisheries Fund (EMFF). Their site is galpgandiaalbufera.com.

[14] See Directorate-Generale for Maritime Affairs and Fisheries (2022).

Today, there are about a thousand boats in the Albufera, in their sizes ranging from 6 to 12 metres in length. They are used for fishing, for tourism or as leisure boats. The gradual electrification of boats would reduce direct pollution due to fuel losses and reduce carbon dioxide emissions and noise in the Albufera. The modification of traditional vessels is part of a general effort to protect and enhance the Valencian lagoon's cultural heritage, trying to merge the specific functionality of fishing boats with the recreational water mobility.

Figure 9 - Electric bicycle to distribute fresh fish to El Palmar restaurants (2018, Facebook page Galpgandiaalbufera)

As the future of fishing seems to closely be interconnected with the well-being of the lagoon, together with other local stakeholders, the fishing community is increasingly involved in environmental protection initiatives. Moreover, this growing environmental awareness of the local community, in line with global concerns related to the climate crisis, is likely to attract funds from the EU to support and enhance fishing in the Albufera. However, at this time of metamorphosis of the fishing community, we still do not know whether its future will be linked to fishing activities, the protection of cultural and water heritage or a combination of both. Another ongoing project, the *Camins de la Pesca* ('Fishery Trails') website, is developing in this second direction. It is an initiative of the *Cátedra Tierra Ciudadana* ('Citizen;'s Earth Chair') of the Universitat Politècnica de València[15] with the Valencian Food Council and the municipality. The starting point of this project is that a thousand-year-old activity linked to fishing in the Albufera has remained "unknown to a large part of the public and invisible to most visitors" (caminsdelapesca.org - authors' translation). To discover this heritage, the website mentions trails that will allow visitors to discover "shops, bars and other spaces linked to the past and present history of fishing in our maritime villages", and a "living archive" and supports these with some in-depth videos. Furthermore, it could be a starting point for the design of a water museum project that could be developed under the aegis of the Global Network of Water Museums (WAMU-NET),

[15] See upv.es/contenidos/CATIERRA and the project site at caminsdelapesca.org.

founded in Venice in 2017 to support cooperation between different local actors and implement new actions to protect the amphibious practices and memories of places such as the Albufera.

The growth of tourism in València driven by the iconic *Ciudad de las Artes y las Ciencias* has been characterised in terms of "spectacularisation and precariousness: two sides of the same coin of the empty València of the 21st century" (Santamarina, 2014, p. 715 - authors' translation). By preserving its heritage aspects as the premise for cultural regeneration, the Albufera might still experience a more appropriate and sustainable development. In order to attain this, an alliance between heritage protection and new imaginaries, between men and women, between fishermen and farmers, between human beings and the living organisms of the lake should be pursued as part of a systemic vision of the Valencian coast and in the dense network of relations between the lagoon and the urban area. In this sense, the *Camins de la Pesca* project – through its 'living archive' and the trails through the city and in the Albufera – offers alternatives to the museumification of the amphibious heritage that connects urban and peri-urban spaces.

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