Context: My dissertation is about the post-Franco history of an area called the Albufera de Valencia Natural Park, which consists of a shallow lake (the Albufera); a long, narrow stretch of forest, sand dunes, and beaches separating the lake from the Mediterranean (the Dehesa); and a large area of rice fields surrounding the lake to the north, west, and south. The preceding chapter deals with a popular movement in the early 1970s in which Valencian citizens mobilized against developers and developmentalist politicians to block a major urbanization scheme in the Dehesa. The following two chapters deal with issues of water pollution and the social conflicts arising from water shortages during the same period as the events described in this chapter, approximately 1975-2000.

Comments, please: I would like to know if this chapter seems cohesive, if the thematic issues I outline in the first section are clearly carried throughout the chapter, and if the explanations of international policy are too long, too confusing, or not detailed enough. The section on the rise of scientific environmentalism in Valencia is a late addition, and I'm not sure if it fits here and/or needs more explanation (I have a lot of material on Valencian environmentalists and the organization they founded, and am not sure if/where to include it). I also need to know where I could cut about ten pages (temporarily) so as to meet a page limit for a fellowship proposal. Thank you for reading!

CHAPTER 3: RICE FARMING, SCIENTIFIC CONSERVATION, AND INTERNATIONAL POLITICS IN THE ALBUFERA, 1980-2000

Out of the popular movement to save the Dehesa a small group of highly educated Valencians emerged as advocates of a new relationship between the city and the environment. Strongly influenced by spread of scientific ecology and popular global currents, beginning in the late 1970s they pushed local politicians to protect local landscapes, which they reinterpreted using scientific criteria that challenged traditional understandings of space and land. This brought new social pressures to bear on those who lived within those landscapes. In the context of the Albufera, which served as an early focus of the Valencian environmental movement, more than eight thousand families whose livelihoods depended on rice cultivation suddenly found their fields redefined as "artificial wetlands" necessitating conservation, and found themselves accused of contributing to the decline of local ecosystems. Simultaneously, an increasingly complex and constantly shifting backdrop of international markets and regulations created a morass of inconsistent demands and expectations for farmers across Europe. During a twenty-year period at the end of the twentieth century, these conflicts would force Albufera rice farmers to defend and redefine their role in Spanish society.

This chapter shifts the focus from the beaches to the fields, as scientific ecology reclassified the three major parts of the Albufera region (lake, Dehesa, and rice fields) as a single integrated landscape demanding unified and comprehensive management. It follows three parallel trends in the farmers' experience. First, the protection of the Albufera as an integrated ecosystem required a transformation of local understandings of both nature and farming, defined in large part by the naturalization of massively altered anthropogenic landscapes. For centuries, rice farmers had drained, canalized, tilled, and planted the swamps around the Albufera, in many cases reclaiming the land from the depths of the lake itself. To now have these hard-won,

unrecognizably transformed fields protected under the guise of "nature conservation" posed a contradiction that farmers found senseless, demeaning, and threatening to their very survival.

Second, Spain's integration into global markets and political units such as the European Economic Community, increased Valencian farmers' vulnerability to international trends and policies. Though rice farming remained an iconic source of Valencian identity and pride, in the late 1980s the farmers' reality came to be defined far more by political decisions in Brussels and Uruguay than by Spanish diets and culture. By 1990, rice production in Valencia continued only as a result of international subsidies, as even Spanish demand for Valencian rice varieties declined. This heightened farmers' sense that modern society had relegated them to a marginal role both from the relatively new urban culture and from decision-making processes.

Third, just as the anti-development movement of the 1970s had challenged Franco-era ideas about "productive" land uses, reforms of international agricultural policies in the early 1990s sought to redefine agricultural productivity not as "producing *more,* but rather producing *better.*"[1] Heavily subsidized and protected markets in the late Franco period and the early years of Spain's EEC membership had rewarded high yields, but Valencian rice farmers' incomes declined steadily throughout the 1980s despite their efforts to modernize. The lowering of trade barriers around 1990 exposed Valencian farmers to increased financial pressure even as environmental protections in the Albufera restricted their efforts to adapt. When the situation seemed bleakest and the very future of Valencian agriculture in doubt, a long-delayed compromise with local ecologists would encourage the Albufera's farmers to accept a new emphasis on their role as environmental stewards, rather than economic producers.

I. VALENCIAN RICE FARMING IN BROAD STROKES

Though Valencia enjoys a sunny, relatively mild climate, its dry summers and average soil produced unexceptional harvests until the arrival of the Moors in 711 CE. The conquerors introduced large-scale irrigation, diverting the waters of the Túria and Júcar rivers into canals across the delta and converting the area around the city into the peninsula's most prolific garden. The Valencian *huerta* (garden) became famed around the Mediterranean for its rich harvests of irrigated vegetables, including new imports such as eggplants and artichokes; tiger nuts, used to make the still-characteristic Valencian beverage, *horchata*; and rice.

Rice proved especially transformative to Valencia's economy, culture, and landscape. Rice farming requires very little land: a single hectare can yield 7000-8000 kilos, more than enough to support a family. It also requires very little effort, compared to labor-intensive vegetables; it can be sown in flooded fields in March, left to grow all summer with only occasional weeding, harvested in September, and the land left fallow or used for another purpose in the winter. What rice cultivation does require, however, is water, carefully regulated and monitored in alternating cycles of flooding and drainage. In this, Valencia's lakes, rivers, and Moorish irrigation technology would play crucial roles.

The simultaneous introduction of rice and hydraulic construction in medieval Valencia offered new potential uses for water-logged, previously unproductive lands. Despite that potential, however, other factors mitigated against widespread settlement in the marshes of the Albufera until the mid-eighteenth century. Between 1450 and 1753, the crown outlawed Valencian rice cultivation because of the risk of malaria, which had decimated local populations.[2] Simultaneously, the Dehesa's bountiful wildlife –especially the flocks of cranes, herons, ducks, stilts, plovers, and dozens of other bird species - induced the monarchs to declare it a royal hunting reserve, punishing poachers and prohibiting locals from hunting or gathering

wood except with special permission.[3] Only the small fishing community of El Palmar braved the soggy isolation of the Albufera's southern shore, eking out a living catching eels and sea bass for sale in Valencian markets. Villagers in the aptly named "El Saler," at the northern end of the Dehesa, produced salt on at least two sizeable flats on the brackish lake's eastern banks, and grazed their livestock in the forests and fields nearby.[4]

Though the Albufera's immediate surroundings remained largely uncultivated, the intensification of farming in the *huerta* during this period led to a major chemical and ecological shift that would severely curtail traditional activities of the region's early settlers. At the time of the Reconquest, the lake remained linked to the sea via a wide opening in the Dehesa, across which the El Palmar fishermen would erect seasonal barriers of reeds and mud to trap migrating eels, but which allowed salt water to enter whenever the lake's level was low. The completion of the first phase of the Acequía Mayor of Sueca in 1497, however, diverted large amounts of fresh water north from the Júcar river into the fields between the river and the lake. Runoff from the canals and fields flowed downhill, raising the lake's water level higher than that of the sea and forcing brackish water out through the canal in the Dehesa. In 1607, the crown financed construction of a permanent gate across the Dehesa's canal that could be opened and closed (rather than dismantled seasonally as the fishermens' had been) to prevent flooding when sea levels rose and forced the lake's water level to rise uncontrollably. As a result of these two construction projects, the lake gradually lost its remaining salinity. In 1639 the local representative of the Crown wrote disapprovingly that "the Albufera was full of fresh water, and so many reeds that you can sail upon it only with difficulty, and such a lack of fish that one suspects that there will be no one who will wish to rent it."[5] A few decades later the salt industry at El Saler collapsed completely, and the same agent despaired that "the lake is lost, as there is

neither the abundance of fish that there was, nor are those that remain of such good quality, as they are fresh water fish."[6] This transformation would be compounded by the completion of the Acequía Real in 1801, which enabled farmers to divert almost the entire flow of the Júcar River into the fields west of the Albufera, and thence down the canals to the lake.

As fishing declined, agriculture increased. Nationwide, the population boom of the eighteenth century produced both an excess of labor on available land and a heightened demand for food, leading to renewed interest in the practice of reclaiming wetlands for agriculture.[7] Fishermen and rice farmers engaged in legal and physical confrontations regarding control of the canal to the sea and the farmers' aggressive transformations of land around the edges of the lake. Economic pressures mitigated strongly in favor of farming, though, and the Crown established a series of Ordinances unequivocally recognizing rice production as the preferential activity in the Albufera and its surroundings.[8] Placing stone markers around the edges of the lake to mark the 1761 boundaries, agents of the Crown measured the lake at 13,972 hectares and spent the next century selling lots of "uncultivated land" within that boundary to nobles, merchants, and other wealthy Valencians, who then hired local fishermen and farmers to drain and farm the lots with rice.[9]

Rice fields reclaimed from the lake were called "*tancats*," a Valencian term that translates literally as "closed." To build a *tancat,* a farmer built a low earthen dike around a submerged area on the shores of the lake, then allowed gravity to drain the enclosure when the lake's waters receded. The next spring, canals drawing water from the Acequía Real or the Acequía Mayor carried the waters of the Júcar into the fields on the uphill side, and farmers closed their uphill sluicegates, trapping the water inside and planting their rice seedlings in the flooded fields. In late summer, when the rice ripened, the farmers opened sluicegates on the

downhill side of their *tancats,* draining the fields into the canals and allowing the water to continue downhill into the lake. So long as the level of the lake remained low enough that gravity could carry the water out of the fields –ensured by keeping the Dehesa canal's sluicegate closed to prevent sea water from entering - the *tancat* system allowed farmers some insurance against droughts and floods that would otherwise ruin their crops.[10]

The construction of new *tancats* after 1761 soon left the Crown's property markers high and dry. In 1863, the area of open water measured only 8,190 hectares, and by 1911 that number had dropped to around 3000.[11] As the *tancats* encroached upon the lowest point of the primordial lake, the slope of the land decreased until gravity no longer sufficed to drain the fields, and farmers constructed mechanical and, later, steam pumps to flood and empty their fields.[12]

In the summer of 1862, "all the owners of lands falling within the old borders of the lake" (defined by the 1761 survey) organized the Albufera Drainage Committee (*Junta de Desagüe de la Albufera*) to regulate the three new canals and modern sluicegates that connected the lake to the sea, which they would open or close depending on the specific needs of the rice crop.[13] On higher ground farther from the lake's ancient center, farmers formed their own irrigation collectives to regulate the opening and closing of canals along much the same schedule as the Drainage Committee. The water levels of the lake came to follow a strict schedule based entirely on the optimal growing conditions of the short-grained rice varieties preferred in Valencia. Between February and April, farmers both on the high ground and the lower *tancats* aerated and tilled the soil for planting. In April, the upland farmers opened their canals to water from the Jucar and Túria rivers, while the Drainage Committee closed the sluicegates and allowed the lake level to rise and flood the low-lying *tancats*. In September, farmers opened their downhill sluicegates, pumping if necessary, and began to drain the fields. They harvested the rice in

September and early October, and the fields lay fallow for most of the winter, with the exception of a brief flooding in December – the *perelloná* – to "clean" the fields and prepare them for the next year.

Valencian author Vicente Blasco Ibañez described the agricultural landscape of the Albufera in his iconic 1902 novel, *Cañas y Barro* (*Reeds and Mud*), which depicted the late-nineteenth century lake as little more than an endless rice farm: "the immense plain of the rice-fields merge[d] into the horizon, blending with the distant mountains…vast fields of liquid mud mottled with bronze stalks."[14] By the early twentieth century, even the few remaining fishermen at the hamlet of El Palmar supplemented their income with work in the fields. The seasonal cycle of rice farming interrupted migration patterns for anadromous species such as mullet, sea bass, and eels as the impermeable sluicegates to the sea prevented their movement between fresh and salt water, and populations declined sharply. Biologist Luís Pardo estimated that between 1900 and 1920, the annual fish catch from the lake fell from 175,200 kg to 78,800 kg, due in part to the shrinking area of open water but principally to the decline of fishermen active in the lake.[15]

Despite these physical transformations, the Albufera region retained an immense wealth of wildlife. When the Drainage Committee closed the sluicegates each spring, the lake's fish scattered into the flooded *tancats,* frustrating the fishermen but facilitating hunting for wading birds. In the summer, when natural wetlands dried out, the rice fields came to provide the only haven for these animals. Likewise, the brief December flooding offered crucial winter habitat for migratory species such as mallards, spoonbills, and teals. The rice fields also absorbed sediment and contaminants from farther upstream, such that Blasco Ibañez and others commented admiringly on the extraordinary clarity of the Albufera's waters and the "underwater prairie" of rooted plants waving beneath the surface. At night, he wrote, "the light penetrated to the bottom

of the lake. There one could see the shell bed, the aquatic plants, a whole world of mystery, invisible during the day; the water was so transparent that the boat seemed to be floating in the air with no support whatever."[16] The banks bloomed with thick growths of duckweed, iris, eelgrass, and other rooted plants; and a diverse array of algae's and leafy water plants covered two-thirds of the surface, offering food and habitat for a wide range of fish, amphibians, birds, and invertebrates.[17] According to some estimates, the fish, insects, water plants, and seedlings of the rice fields provided ninety percent of the total food consumed by waterfowl. Meanwhile, the rice plants themselves served as a sort of "green filter" for the water that entered the lake, absorbing much of the nutrient load from upstream and allowing sediment to settle before reaching the lake.

In addition to their ecological functions, by the late 1970s the fields around the Albufera produced thirty percent of Spain's rice, with farms in the village of Sueca alone producing fifteen percent of the national total.[18] Part of this extraordinary productivity was due to the particular type of rice grown in Valencia, which had been selected and bred to suit local conditions and markets. Worldwide, nearly eighty percent of rice consumed is long-grained, but Valencian farmers have always grown the short-grain rices that predominate in Mediterranean dishes.[19] These varieties developed over time through crossings with Italian varieties and careful greenhouse cultivation, and in the late twentieth century Valencians began to market three major varieties– bomba, senia, and bahia –as "traditional" short-grained Valencian rices. Despite marketing appeals to the "age-old tradition" of Valencian rice growing, the oldest of these varieties – bomba - first appeared in Valencian records only in 1890, while local growers developed bahia during the Franco era and senia in 1986.[20]

Not only did their specialization in a type of rice with limited international appeal, but other shared characteristics made Valencian rice farmers less competitive on international markets in the aftermath of Franco's death. Over the decades and centuries of their cultivation, many of the larger farms and *tancats* had been broken up through inheritance or sale. The average individual holding measured less than two hectares of land, and well into the 1980s most farmers continued to use traditional low-technology, labor-intensive methods such as sowing and weeding fields by hand and working the soil with horse-drawn plows rather than tractors (fig. 1).[21] Though this reduced their costs with regard to fertilizers and phytosanitary chemicals prevalent elsewhere in Europe, it raised their costs of labor relative to larger, more efficient producers. Despite significant protective tariffs under Franco, as the rice market expanded Valencia's high costs of production became a serious limitation on profits and many of the farmers on the outskirts of the rice-growing region switched to fruit and vegetable cultivation, which brought higher prices, or sold their land to developers. Between 1940 and 1990, half of all the rice fields in the Autonomous Community of Valencia (constituting the provinces of Valencia, Alicante, and Castellón) disappeared, and by 1980 the area around the Albufera was the only remaining rice-growing area in the region.[22]

Albufera rice farmers, like primary producers around the country, responded to the globalizing markets of the post-Franco period with a movement towards professional associations, and by the late 1980s about seventy percent of Valencian rice farmers belonged to either a cooperative or an "Agrarian Transformation Society" to share the costs of supplies and storage facilities and negotiate jointly for prices. In addition, rice farmers joined other producers in local, regional, and eventually national farmers' organizations. By the late 1970s unions such as the National Association for Young Farmers (ASAJA), though originally convened as

professional, not political organizations, had begun to organize protests in Madrid, lobbying the government to set higher prices, increase exports, and intervene directly in markets. The Association of Valencian Farmers (AVA), the local ASAJA affiliate, represented about eighty percent of the farmers in Valencia including essentially all of the rice farmers by the mid-1980s. AVA served as an intermediary between farmers and the state, lobbying for local interests and conveying information about new laws and requirements back to the farmers. According to Miguel Minguet, a fifth-generation rice farmer working his family's fields on the outskirts of the Albufera, information about laws and subsidies either reached the farmers through AVA's meetings and announcements or not at all: if he skipped AVA meetings or failed to read its mailings, a farmer might well find out about his obligations only when he was fined for noncompliance.[23] AVA's role as the sole source of farmers' legal and political information would prove crucial during the decades ahead, as farmers' understanding of their rights and responsibilities, as well as the perceived injustices of the international market and modern industrial society, would be filtered entirely through the union.

Fig. 1: Rice farming in the Albufera, 1983. Photo: Museo Etnográfico de Valencia

II. THE RISE OF SCIENTIFIC ECOLOGY AND THE DECLARATION OF THE ALBUFERA NATURAL PARK

In the late twentieth century, a perfect storm of new social and political concerns would challenge Valencian rice farmers' way of life. One of the greatest threats, as AVA understood it, came from a group of highly-educated, well-connected ecologists that had emerged from the popular movement to save the Dehesa in the early 1970s. The movement had halted construction, but beginning around 1977 its self-proclaimed "heirs" called on the city to reverse the "environmental death" that construction had begun. After the city reopened the Dehesa to public access, traffic in the area had multiplied severalfold, facilitated by the abandoned construction. Where once visitors from the city had parked haphazardly in the forest and walked over the rough terrain to the beaches, now a state-of-the art network of paved roads and immense parking lots allowed them to park just a few meters away. In addition to the proliferation of litter and careless use, the entire dunar area, the seasonal wetlands, and much of the coastal forest had been completely leveled, and many of the inland trees that the dunes had once sheltered now suffered from the constant pressure of salty winds. The degradation of the Dehesa mirrored that of the adjacent lake, though it was attributed to different causes: water pollution from urban, industrial, and agricultural sources flowed unceasingly down the canals into the Albufera, turning it into an open-air sewer and causing several spectacular incidents of discolored foam, thick sludge, and dead fish that raised as much public protest as the degradation of the Dehesa itself. Since both the Dehesa and the Albufera belonged to the city, locals concerned with their condition naturally turned to political pressure as the best means of saving them.

The first democratic elections had ushered in a socialist city government with progressive tendencies and strong sympathies for the burgeoning environmental movement, which evinced a genuine desire to respond to public concerns and to preserve the Dehesa and Albufera as public

parks. At first, the city council relied heavily on the advice of the local office of the National Institute for Nature Conservation (ICONA), which had official jurisdiction over such issues but completely lacked the experience or expertise to institute effective remedies. One such attempt, a line of flimsy plastic screens set up where the dunes had once been to try to stop the destruction of the forest by salty and sandy winds, promptly blew away, and ICONA's engineers seemed at a loss as to an alternative solution. Its management of the lake reflected a complete lack of understanding of the native ecosystems: one engineer had used the state-funded fish nursery to grow Asian carp, American perch, and other voracious invasive species since the 1960s, and bred partridges for hunting in the animal sanctuary. Valencian biologists would later describe these actions as "indefensible," in many cases worsening the situation rather than improving it.[24]

By 1979, ICONA had abandoned any pretense of directing the restoration of the Dehesa or the lake, and the city turned to private citizens whose professional experiences – as biologists, geologists, and technicians for local universities and other government projects - suggested the ability to succeed where ICONA had failed. Most of them were members of the Spanish Ornithological Society; bird-watching enthusiasts and amateur "naturalists" concerned about the declining habitat of the Albufera. Some of them, including Victor Navarro, Guillermo de Felipe, and Antonio Vizcaino, would later found Valencia's first environmental organization, Agró (Valencian for "heron," named for one of the most prominent denizens of the Albufera). Many of them had been radicalized by their experiences in the Dehesa movement and the post-Franco explosion of progressive political activity, but their activism was fundamentally scientific in nature. Whereas the average activist in 1974 had been a middle-class Valencian who saw the Dehesa simply as a free nearby beach to take his family on a summer weekend, the major players in its defense by the late 1970s were motivated principally by scientific interest in protecting the

area's unique landscapes and ecosystems. Navarro described a psychological shift "from naturalism to ecology" as his interest in the Albufera matured;[25] another young biologist said that "the movement to protect the Dehesa gave a name – 'ecologist' – to what I had been all along without knowing it."[26]

This new brand of conservation through science first came into play in the Dehesa in 1979, when the city ordered chief architect Vicente Gonzáles Móstoles to coordinate multidisciplinary preliminary studies of the lake and the Dehesa that would clarify the precise causes of and possible solutions to their respective ecological problems. González turned immediately to de Felipe, with whom he had worked on previous projects, who in turn gathered a hand-picked team of specialists on the Albufera's and Dehesa's flora, fauna, and geology from among his ecologically minded colleagues, including both Navarro and Vizcaino. The team easily reached three central conclusions. First, it found that the lake retained important biological value, despite the massive damage that had been inflicted upon it by decades of uncontrolled pollution. Second, it found that the lake was at risk of further deterioration, and required immediate protection. And third, it found that the entire region – lake, Dehesa, and rice fields – functioned together as a single incorporated system, each part intrinsic to the ecological survival of the others. Thus, any efforts to protect the City's property on the lake and the forest would need to also protect the privately owned rice fields and ensure their continued functioning as artificial wetlands and "green filter."[27]

The scientific consensus that the Albufera and the Dehesa constituted interrelated parts of a single ecosystem, linked to the vast expanse of rice fields around them, fundamentally altered technical and political understandings of the region. De Felipe's committee was not the first to suggest that the lake and Dehesa were affected by outside influences: the year before his

committee's report, a state-sponsored monograph by the chief of the Valencian Institute of Applied Biology had concluded that both "the industrial and urban contamination of the Albufera **and the touristic and urbanization pressures** have modified the status of our lake" (emphasis added).[28] De Felipe's report added to these factors the importance of agricultural runoff, largely from fruit and vegetable fields outside of the lake's immediate surroundings but increasingly from rice fields as well. It also highlighted the central ecological role of the rice fields in the ecosystem's overall health, and made it clear that any effort to protect the City's property on the Dehesa and the lake would necessitate intervention in the private lands surrounding it as well.

The boundary de Felipe's team drew around what it referred to as the "Albufera-Dehesa ecosystem" transgressed every other boundary line drawn in the region, either by the state or by the landowners themselves. The Dehesa and lake had belonged to one government or another since the thirteenth century, but the rice fields had always been private, in many cases carved out of the lake itself and transformed into private lands through farmers' labor over the course of centuries. Within those private lands, farmers distinguished land based largely on farming association and irrigation collective, as those who watered their fields from the Acequía Real consulted with their neighbors about crop timing and water supply, but were independent from those whose water came from the Acequía Mayor or from the lake itself. The new ecological boundary ignored both the public-private split and the irrigation zones, reclassifying land on the basis of criteria that relied on hydrology and biology, not social and economic criteria.

The city council, unlike the farmers, appeared convinced by de Felipe's logic, and appointed him "Biologist- Conservator" of the Dehesa and Albufera in late 1980. It gave him offices in an old ranger station south of El Saler, which it renamed the Technical Office of the

Dehesa and staffed with a half-dozen manual laborers to assist de Felipe in uprooting eucalyptus, removing abandoned construction materials, and other small-scale reconstruction projects.[29] The City also ordered de Felipe to oversee the development of a "Special Plan" of use and management based on the recommendations of the preliminary studies. In this de Felipe would continue to work closely with Victor Navarro, who headed the twelve-member team of scientists, and other veterans of the preliminary studies.[30] Navarro's guidelines were to develop a purely ecological Plan, listing the scientific best-case scenario for protecting the ecosystem. While separate teams working for the city would subject the ecological plan to financial and legal analyses, they would not alter the initial proposal in any way. This essentially simplified an immensely complex and socially contentious problem, enabling the scientists to follow the logic of their unitary ecosystem theory without political or social restrictions. The resulting Plan, then, was a quintessentially technocratic document with little room for negotiation on sociological grounds.

De Felipe approved Navarro's plan and submitted it to the city in 1983. In it, the scientists advocated the declaration of the Dehesa-Albufera ecosystem as a Natural Park. Unlike National Parks, which were characterized by "pristine" natural settings, a Valencian law later passed specifically to encompass the Albufera defined Natural Parks as

> Natural areas that…possess ecological, scientific, educational, cultural or aesthetic values, the conservation of which merits preferential attention and adequate consideration for their integration in national and international networks of protected spaces. The activities to be carried out will be oriented towards traditional agricultural, livestock, and forestry uses, and to other uses compatible with the goals that motivated their declaration.[31]

In an profoundly anthropogenically modified area such as the Albufera, Natural Park status could support multiple uses, including "adequate environmental protection, the ordered maintenance of traditional uses, and the encouragement of contact between people and nature."[32] Farming,

beach-going, and fishing, then, were to be as integral to the park as its scenic and ecological values.[33]

Spurred not only by internal recommendations from its own scientists but by increasing public pressure arising from several spectacular fish die-offs and visible industrial contamination in the lake, the City Council accepted de Felipe's proposal for an "environmentally logical" park that incorporated 14,000 hectares of privately-owned rice fields in thirteen separate municipalities, in addition to the public lands of the lake and the Dehesa, and sent it to the Generalitat (the governing body of the Autonomous Community of Valencia) for final approval. Navarro admits now that he never thought such an ambitious plan would succeed: he and many others who had worked on the Special Plan assumed that any park limits they proposed would be drastically cut, and that their proposed boundary encompassed much more than the ecologists could realistically expect to be included in the park. He was shocked, then, when the Generalitat approved their plan without cutting anything from the proposed park. Indeed, during the Generalitat's debate on the measure, while most participants expressed some measure of apprehension with regard to the almost-certain conflicts the park would engender with farmers, the only real opposition came from the representative of the Valencian Ministry of Agriculture, who argued in favor of indemnization for farmers whose property rights would be abridged.[34] His objections were overruled, and in the summer of 1986 the Albufera Natural Park became the first protected natural area in the Community of Valencia, its boundaries and terms of use defined entirely by de Felipe's conclusions on the Dehesa-Albufera ecosystem (fig. 2).[35]

The anticipated conflicts with rice farmers followed almost immediately. Within the park, national laws on Natural Parks forbid property owners from engaging in any construction that could alter the physical environment, including canal-building or repair, filling in the lake,

draining wetlands, or building rice storage facilities.[36] The specific legal regime of the park, which would again be developed by de Felipe, Navarro, and their associates, also limited the types and amounts of agricultural chemicals that could be applied in the *tancats* and prohibited farmers from growing anything other than rice within park boundaries. These restrictions denied Albufera farmers the flexibility to change their crops or methods depending on market pressures, adding to financial stresses in the already-struggling Spanish agricultural sector. Farmers' protested strenuously against a regulation that forced them to maintain "solely rice cultivation that is going to leave you in poverty" rather than increasing land values by changing crops, and objected more generally to the classification of their private property as part of the park's ecosystem.[37] The scientists' broad definition of the "wetlands environment," they argued, could legitimate protection of the entire hydrological basin, making the inclusion of some fields and the exclusion of others seem arbitrary.[38]

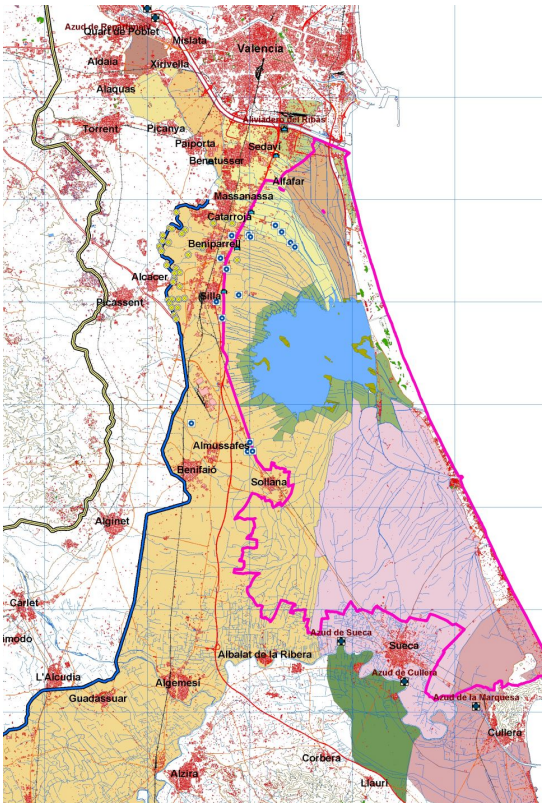

Fig. 2: This late-twentieth century map reflects two different ideas about the division of space in the Albufera region. The colored areas represent irrigation zones, each color denoting a different water source (the Acequía Real in tan, the Acequia Mayor in pink, and the lake itself in the light-green *tancats*). The bright pink line, conversely, encompasses the lake, a large portion of fields, and the Dehesa, and demarcates the "unified ecosystem" of the Albufera Natural Park.

At the time of the Romans, the Albufera measured an estimated 30,000 hectares, or about ten times the size shown here. Nearly all of the land currently encompassed by the park boundary was under water in 1761, when the farming boom began.

Every farming collective and irrigation association in the area filed complaints with the Generalitat, calling the park boundary "totally disproportionate and outside of any logic."[39] By the fall of 1986, the Generalitat had received a total of two hundred and fifty-six written complaints objecting to the inclusion of private property within the park, including a petition with with more than seventeen hundred signatures, letters from individuals, and formal complaints from the town councils of Alfafar, Sueca, Catarroja, and Sollana; the Popular Municipal Group of the City of Valencia; all the local irrigation cooperatives; urban landowners' associations from Sueca and Valencia; AVA; and the fishermen's organization of El Palmar.[40] Despite compelling appeals to economic productivity and private property rights, which had almost uniformly won the day in the Franco era, the Generalitat flatly rejected the farmers' demands to reduce the park's boundary, stating simply that "the proposed reduced ambit is not functional as an ecosystem."[41] The Sueca irrigation collective formally filed suit against the Generalitat seeking to annul the park's declaration in the fall of 1988,[42] and a few months later several hundred rice farmers marched through downtown Valencia to demand its repeal and the formation of a representative commission to negotiate new boundaries and terms.[43] Protestors with signs reading, in Valencian, "The lands are ours;" "No to the dictatorial Park;" and "Our environmentalism is practical, not utopian," blocked traffic downtown for two hours.[44] The park's opponents did not limit themselves to legal protests: graffiti appeared around Valencia ("die, biologists;" "No to the park") and de Felipe arrived at work one morning to find that the Technical Office had been broken into and several fires set.[45]

Some of the vehemence of farmers' resistance arose from the spread of rumors and misconceptions of the restrictions it would impose. Miguel Minguet, like many other farmers, understood the ecologists' goal as returning the entire area to its "natural state," and feared the

park would prohibit rice farming altogether.[46] Other farmers complained to AVA that park biologists prevented them from keeping canals and irrigation ditches clear of sediment, because "for these civil servants, the survival of miniscule creatures in the mud of the canals must be more important than the fields of rice with which millions and millions of people are fed."[47] Many Valencians, wary of attempts to curtail the public beach acess they had won in the early 1970s, feared that "the radical sector of ecologists...did not want anyone to get near the Albufera."[48]

Navarro, Vizcaino, and de Felipe disputed these interpretations, which have no textual basis in any incarnation of the Park regulations or the studies that led up to it. To the contrary, at every step they had emphasized the central importance of maintaining an active agricultural population within the park and ensuring public access to the Dehesa. De Felipe attributed the farmers' misconceptions to a deliberate campaign of misinformation spread by poachers, developers, hunters, and others with personal financial interests arrayed against the park.[49] Indeed, AVA fomented a strong anti-park consensus through a series of "educational" meetings with affected rice farmers.[50] If AVA was not the direct source of the rumors, at the very least it did nothing to correct its members' false impressions.

But deliberate misinformation was not the only source for the farmers' confusion about the park, nor was it the only cause of their outrage. Vizcaino, who had worked on the park proposal and preliminary studies before going to work with de Felipe in the Technical Office, attributed the farmers' protests as arising largely from "lack of knowledge," but he emphasized that this was the fault of scientists and policymakers for failing to reach out to farmers during the planning process. AVA leaders, too, emphasized the lack of democratic participation as a major source of resentment, repeatedly stating that "a natural park of 270,000 hanegadas cannot be

established by decree;"[51] "the most serious problem is the spirit in which the plan was made;"[52] "a natural park is not viable without consensus."[53] Indeed, at no point prior to the park's declaration had any of the City's scientists reached out to members of the agricultural community. In retrospect, Vizcaino regrets this insularity. "It wasn't enough to invite comments after the plan had already been proposed," he reflects, "and the fact that the rice farmers in particular had not been consulted brought about a lot of resentment and unfounded fears." De Felipe, however, claimed that such outreach would have been "impossible," as rural Valencians inhabited "another world" with enormous cultural barriers separating them from urban academics.[54] He even cited linguistic barriers – most of the biologists were natives of Valencia city, and had learned Valencian as a second language only as adults: though the ecologists were staunch Valencian nationalists, de Felipe noted that the farmers could tell the difference, and asserted that they "would not respect our knowledge" as a result.[55]

The farmers, meanwhile, voiced an identical complaint about the ecologists, and interpreted the ecologists' failure to consult them as evidence of their lack of respect for the farmers' opinions and experience on their own land. One AVA representative told researchers in the early 1990s that ecologists "move in a different world from ours, in a postcard-vision; we touch and walk on and profit from the park, but they have a completely different sense of it, they are interested exclusively in the environment and so their basic concern is that the little ducks are pretty."[56] Minguet disparagingly referred to the Agró biologists as "theorists" with no respect for traditional knowledge and no concern for the livelihoods of the rural people whose lives would be affected.[57] They were narrow-minded, uncompromising, and impossible to work with; "they work for the Administration, or they do senior theses for the university;"[58] they suffered a complete "lack of knowledge of reality."[59] AVA editorialists scoffed at the idea that "ecologists

of books and offices" should presume to give farmers advice on how best to care for their own lands.[60] A decade after the park's declaration, farmers continued to insist that if park managers truly wanted to improve the environment "the first thing they would have to do is to call those who really know the park and live in it, those who really need the area to be in good conditions."[61]

Adding insult to injury, rice farmers understood de Felipe's claims that agricultural chemicals contributed to the lake's pollution as an accusation, putting them immediately on the defensive. Faced with repeated villainization in the local press, AVA retorted that "it is thanks to the farmers that anything at all remains of the Albufera today"[62] and insisted that "the lake is not polluted with pesticides, but rather by waste from industries and towns on the rivers."[63]

> We are the true environmentalists, who have been caring for [the land] with our own money. Nobody has ever worried about it. Everything that was done, for better or worse, we did it. We pay for the water that enters the Albufera, we make it circulate around the lake, when it enters in our fields it is cleaned of sediment and oxygenated, and when it leaves them it is clean. We pay to drain it, and we take care of the gates. We pay for the maintenance, and when things break we fix them.[64]

Minguet echoed the sentiment, describing the ecologists' portrayal of farmers as a "black beast" destroying the countryside, and adding that "if people knew the true role of farmers in the environment we would be the heroes, not the villains."[65]

In this atmosphere of mutual distrust and resentment, Valencian rice farmers experienced the conservation movement as a powerful hostile force, threatening both their financial stability and their social prestige, and almost reflexively opposed any suggestion by its representatives. As Valencia came more prominently under the influence of international governments and markets, this hostility carried over into a profound suspicion of any policy citing environmental protection as a principal goal. The Albufera's inclusion under the United Nations' Ramsar Convention on wetlands in 1989, the European Community's Birds Directive in 1991, and the

EC's Habitats Directive in 1992 did not impose any new requirements on the farmers themselves, but simply added pressure on local authorities to maintain the integrity of the ecosystems. Other regulations, however, such as the 1991 Nitrates Directive on chemical fertilizer use in sensitive areas, were met with major resistance from the entire national agricultural sector.[66] Though in general Spain's extensive agriculture did not engage in the fertilizer overuse characteristic of large northern European farms, the irrigated areas around Valencia were the exception, suffering from intense nitrate contamination that reached urban water supplies as well as fragile ecosystems like the Albufera.[67] Valencia, along with Murcia and the Canary Islands, also ranked among the worst polluted regions in Europe in terms of pesticide use, which other EC regulations sought to curb.[68] Despite clear evidence of their environmental impact, however, Valencian farmers remained strongly resentful of any insinuation that their farms had negative environmental consequences, and opposed legal efforts to modify their activities with appeals to the cultural and symbolic importance of rice farming in the area and to economic viability.

III. SPAIN IN THE EU: ACCESSION AND MARKET CRISIS, 1986-1993

Even before the imposition of international and park regulations, the fallout from Spain's 1986 accession to the European Economic Community had placed Valencian rice farmers in tenuous financial straits. The EEC had accepted applications from the newly democratic states of Greece, Spain and Portugal in the 1970s to support political stability in southern Europe despite their relatively undeveloped economies and the expected strain they would place on European resources. Accession negotiations revolved around several key issues, centrally membership of the Mediterranean nations in the North Atlantic Treaty Organization, but also around the terms

under which their massive agricultural sectors could be incorporated into the Common Agricultural Policy (CAP).

The CAP is one of only four common policies required in the Treaty of Rome, which set forth the agricultural goals of the EEC as increasing production; stabilizing markets; and ensuring a fair standard of living for farmers, the availability of supplies, and reasonable prices to consumers.[69] Under the original CAP, which entered into force in 1962, a council composed of member states' Ministers of Agriculture would agree on annual "target prices" for each regulated commodity and maintain them through import levies, export subsidies, and intervention buying of surpluses. The Ministers would set the target price as one at which the least efficient farmers in the EEC could gain "an adequate income" from their crops, which meant that farmers who increased their efficiency could expect significantly higher profits.[70] In effect this primarily benefitted large producers in wealthy states who intensified production and increased yields at unprecedented levels, freed from the risk that overproduction could drive down prices. As a result the CAP enabled many member states to achieve complete self-sufficiency in food production within ten years of its implementation.

This resounding success quickly became a liability. Small farmers struggled to compete with large ones, even with guaranteed prices, and their real incomes dropped across Europe. Simultaneously, they came to rely on the application of fertilizers, phytosanitary chemicals, and mechanized agriculture to intensify their production, creating new environmental problems and food safety concerns. These methods proved so successful at increasing production that by the mid-1970s storage of surplus crops that the CAP obligated Brussels to purchase had become financially onerous, leading to a decision to subsidize exports. These export subsidies angered foreign producers, notably the United States and Australia, whose own farmers suffered

plummeting prices as a result of European "dumping" and found European markets virtually closed to their own more expensive agricultural products. Those countries found themselves in the position of either allowing their own farmers to fail or somehow funding their own subsidies to enable competition with Europeans. The cost of the CAP continued to rise, absorbing half of the EEC's entire budget by the mid-1980s.[71] All of this led *The Economist* to call the CAP the "single most idiotic system of economic mismanagement that the rich western countries have ever devised."[72]

Despite the many evident problems, Valencian farmers had expressed cautious optimism with regard to the CAP. Even as they recognized that it would necessitate "a profound change of adaptation to a common agricultural policy established from Brussels," they understood that policy as characterized fundamentally by "the protection of community markets relative to outsiders and the support of internal prices and markets through intervention prices."[73] Accession could open up new markets for their products and the CAP could free them from concerns of low prices, and AVA expressed its hope that it would substitute for the Franco-era protectionism that Spanish farmers had previously enjoyed.

The terms of Spanish accession, however, were disappointing from the start. Due largely to pressure from the powerful French farm lobby, Spanish cereals including rice would be "phased in" to the CAP over a span of seven years, becoming eligible for full price supports and export subsidies only in 1993.[74] Over that period AVA would accuse the EEC of "abandoning the traditional policy of market support" by steadily reducing prices, imposing anti-production fees and penalties, and imposing new budgetary restrictions.[75] Pedro Barato, the president of ASAJA, would later describe the accession negotiations as "weak and precipitate," sacrificing agricultural interests for the greater social and political benefits of integration.[76] In retrospect, he

claimed, it was not Spain that entered the EEC so much as it was "Europe that entered Spain," allowing a flood of produce from northern and central Europe into Spanish markets and undermining domestic production.[77]

The problem was exacerbated in the Albufera, where high production costs kept profits low even in good harvest years.[78] European production of the short-grain varieties, which Italy cultivated as well as Spain, reached surplus levels by the late 1980s, driving market prices steadily downwards, and unlike their Italian competitors Valencian producers could not rely on the full CAP subsidies to bring their profits up to sustainable levels. For the smallest producers, sales did not even cover their costs of production.[79] To make matters worse, AVA claimed that higher rates of Mediterranean women working outside the home meant that fewer families gathered each day for a large midday meal, the traditional venue for rice dishes, leading to declining demand for their product.[80] A "good" rice harvest, AVA noted glumly, no longer had as much to do with the vagaries of weather and pests as it did on the goodwill of the agency responsible for distributing subsidies.[81] Between 1983 and 1990, agricultural incomes in the Autonomous Community of Valencia declined by 40%, and Valencian farmers lamented that "our income is farther each day from that of the other sectors."[82]

Outside of the Albufera area, many farmers responded to the declining rice prices by transforming their fields to more valuable crops, especially citrus, but within the park boundaries farmers' hands were tied by regulations forbidding them to grow crops other than rice. Even so, between 1986 and 1990, four hundred and sixty hectares (3.3% of the total rice fields in the Park) were illegally converted to fruits and vegetables.[83] In 1989 and 1990, the situation reached a tipping point, and rice farmers repeatedly marched – or, in one headline-grabbing episode, drove more than a hundred tractors - through downtown Valencia to "demonstrate our total

rejection of the agricultural policy being carried out by the European Community."[84] Even after the EEC ended Spain's transition period early, equalizing its price supports with those of the rest of Europe in July 1990, market prices continued to decline and AVA's editorials grew increasingly despondent regarding the future of Valencian agriculture.

While Valencians and other farmers called for Europe to devote more money to its subsidy system, non-European competitors brought substantial pressure to bear on to achieve the opposite. By 1986, concern over market stability and agricultural prices, largely created by the CAP, brought parties to the General Agreement on Tariffs and Trade to place agriculture on the bargaining table for the first time. During the Uruguay Round of negotiations (1986-1994) the United States, supported by the Cairns Group of non-European agricultural exporters including Australia, New Zealand, Canada, much of southeast Asia, and most of South America, demanded that the EEC substantially reduce its price supports and export subsidies to allow for the free movement of agricultural goods on the international market. Though reluctantly willing to do so, the EEC insisted it be permitted to proceed moderately and on a product-by-product basis rather than across the board. Carlos Romero, the Spanish Agriculture representative for GATT, asked in particular that "Mediterranean products" be excluded as a group from the new subsidy reductions.[85] Additionally, Ministers of Agriculture from all the EEC member states with the exception of Holland and the UK agreed that the EEC could not cut the existing subsidy system without providing some form of direct payments to compensate the farmers for their lost income.[86]

Spanish farmers saw the Uruguay Round as yet another attack by foreigners on their livelihoods, compounding the challenges they already faced from Italian and Northern African producers. AVA staunchly opposed any suggestion of compromise at the GATT negotiations,

calling European willingness to consider reforms "a major concession by the agrarian sector to the multinational pressure groups" that "once again demonstrates the inability of the Ministers of Agriculture to defend the survival of a sector that is restructuring in the EEC and especially in Spain."[87] With regard to the notion of compensatory direct subsidies, Spanish farmers' unions led by ASAJA argued that such direct payments could not compensate for reduced price supports because they might "offer results in the medium-term but do not help the farmer in the moment when he confronts a fall in prices."[88] In sum, the price-support reductions would signify "the disappearance of four hundred thousand producers in the space of seven years; the total transformation of the basis of the CAP; and the appearance of an absolutely free market, with which we cannot cope."[89]

But even while mobilizing in pan-European protests against the proposed modifications to their subsidy system, Valencian farmers recognized that the reforms were likely to pass regardless of their opposition.[90] The CAP's spiraling costs and growing pressure from environmental interest groups contributed to a sense that the policy was overdue for reforms. Several northern and central European states, especially Germany, pressured the Council of Agricultural Ministers to accept the reduced price supports so as to placate Europe's opponents in the Uruguay Round and obtain favorable terms of trade for intellectual and industrial exports. Such connections lent credence to Spanish accusations that the "ambiguous and nonstop modifications of the CAP have clearly benefitted the strategies of the North and the center of the EEC, while always trapping the Spanish interests."[91]

In the summer of 1991, the Council of Europe released a preliminary draft of CAP reforms proposed by Commissioner of Agriculture Ray MacSharry, the EEC's chief negotiator in the Uruguay Round. As expected, the plan proposed dramatic cuts in intervention prices for

various crops, primarily cereals, and the introduction of a system of compensatory payments for vaguely defined voluntary measures intended to reduce production, which would theoretically "safeguard[] the position of the vast majority of farmers,…improve the standard of land use and land conservation and ensure a balanced development of the countryside."[92] Those compensatory measures would include incentives for farmers to retire early or to withdraw their land from cultivation and per-hectare subsidies paid to farmers who agreed to follow "agri-environmental" practices such as reducing chemical use and promoting biodiversity.

AVA's response to the MacSharry proposal carried no small measure of desperation, and reflected the common belief that Spanish farmers were continually being asked to sacrifice for the greater good of the country without compensation.[93]

> We want to continue being farmers….If we tighten our belts another notch, we will suffocate. We have already exceeded our capacity for resistance. All that is left is to flee the countryside, entering a different economic sector, or staying with mere subsistence farming.[94]

As the reform moved inexorably towards approval in Brussels, AVA echoed agricultural organizations around the country with its demand for "minimum conditions that permit the development of our profession with dignity and quality of life."[95] Nonetheless, in an effort to better understand what the new regulations would expect of them in the early 1990s AVA sponsored a workshop on "Agriculture and the Environment," published essays and editorials on new ideas about organic and traditional farming, and sent representatives to Brussels to meet their peers from around Europe and to learn about lobbying and negotiating at the international level.[96]

Against consistent opposition from the farm lobby, the EEC adopted the MacSharry reforms in the summer of 1992.[97] In its final version, the reform had minimal direct impacts on the rice market: fortunately for the farmers of the Albufera, the new CAP would not reduce price

supports for rice as it would for many other crops, leaving them at least no worse off than they had been at the start of the negotiations. Nonetheless, they remained on the verge of insolvency and apprehensive about their future.[98] AVA claimed that foreign imports that fall had brought prices so low that farmers left their crops to rot in the fields rather than spend the effort and money to harvest and process them.[99] A nationwide drought between 1993 and 1995 contributed to the crisis of Spanish agriculture generally, though Valencia's highly controlled irrigation system made Albuferan rice the exception to this rule in the drought's first year.[100] By the 1994 harvest, though, even rice suffered from "the excessive heat and scarce rain" and compounded with a particularly bad infestation of rice borer parasites, causing many farmers to again grumble about the "discrimination" they suffered from the government in the form of prohibitions on the use of certain highly toxic chemicals in environmentally sensitive areas.[101] As if these problems were not enough, they worried that the new CAP could lead to the devaluation of rice on the global market, which would push them over the edge into bankruptcy.[102]

Unexpectedly, after a decade of hostility to environmental protection, the Albufera's protected status would prove the salvation of Valencian rice farmers. Though the principal objective of the compensatory measures of the new CAP had been to reduce production without financially ruining farmers, the reforms offered a golden opportunity to simultaneously support "farming practices compatible with the increasing demands of protection of the environment and natural resources and upkeep of the landscape and the countryside."[103] Accordingly, an "accompanying measure" to the main body of the MacSharry reforms required each member state to enact national and regional "agri-environmental" programs allowing farmers to sign contracts commiting them to specific production-reducing practices in exchange for direct payments for each hectare they farmed.[104] Beginning with the UK in 1985, most European states

had already implemented some form of direct subsidies for farmers who voluntarily agreed to environmentally responsible practices that exceeded their legal responsibilities under national and international law. Spain, unsurprisingly, had not, largely because of the extensive nature of most Spanish farming but also because of the demands such a policy would place on the budget.[105] Whereas those earlier agri-environmental subsidies had been financed entirely by the state administering them, under the MacSharry reforms Brussels would provide fifty to seventy-five percent of the money, depending on the wealth of the region where the subsidy was claimed.[106]

The Spanish Ministry of Agriculture, which designed and managed the subsidy program prior to the formation of the Ministry of the Environment in 1996, quickly developed a plan for horizontal measures to be applied throughout the national territory. These measures included training programs to improve farmers' environmental awareness as well as per-hectare subsidies for extensifying cereal production, reducing the use of chemical herbicides and pesticides, instituting organic farming, and protecting endangered species.[107] The MacSharry reforms also provided for special subsidies for farmers in environmentally sensitive areas including National Parks, Ramsar wetlands, and internationally protected Bird Habitats, as well as areas proposed by regional governments.[108] The Spanish national government ordered each Autonomous Community to compile a list of such areas within its territory and the specific farming practices they deemed most beneficial in each area, depending on specific environmental and social conditions. In Valencia, the Albufera was automatically included on the list of protected areas due to its status as a Natural Park, as well as its inclusion in both the Ramsar convention on wetlands and the Birds Directive. For farmers to benefit from this status, however, the

Generalitat needed to submit a specific plan for agri-environmental measures that took into account the needs of the Dehesa-Albufera ecosystem.

The park's chief technician, Ignacio Lacomba, and Park Director Joan Mikel Benavent, both devoted ecologists and younger colleagues of the scientists who had drafted the park regulations, seized this opportunity to finally end the hostilities with farmers and smooth the way for real progress towards environmental preservation in the Park. Lacomba, in particular, repeatedly emphasized the importance of supporting rice farming in the Albufera, calculating that rice paddies contributed ninety percent of the wild birds' diet within the Park and that rice cultivation was "the only agricultural activity compatible with the conservation of the Park's natural values."[109] In a report to the Generalitat, Lacomba wrote that the survival of the Albufera ecosystem "depends on the maintenance of the different environments that make up the natural Park but primarily that of the rice fields, which provide the great majority of the ecosystem's basic resources."[110] Even before the national plan had been submitted, and long before the horizontal measures would go into effect, the two young biologists had designed a complete plan to bring aid to the Albufera's rice farmers.[111]

IV. THE VALENCIAN EXPERIENCE UNDER THE AGRI-ENVIRONMENTAL PROGRAM, 1993-2000

Lacomba's and Benavent's Agri-Environmental Program for the Albufera Natural Park represented the first major step by representatives of the Valencian environmental movement towards reconciliation with the farmers. By the early 1990s, though still resentful of social portrayals of agriculture as a major polluter, few farmers disputed the basic principles of scientific ecology. AVA admitted the likelihood "that the system does not work and that we are destroying nature; that the irrational exploitation of land and its productions leads to the

anihilation of vegetable and animal species, to the exhaustion of the earth itself and to desertification."[112] Nonetheless, "as much as he may understand this, any farmer feels that his primary obligation is to the immediate economic needs of his family and his farm, and so he cannot stop to experiment, he has to continue to produce on a day to day basis….So we are trapped."[113] The agri-environmental subsidies, Lacomba hoped, offered an opportunity to escape this trap; to fulfil their economic obligations and continue their work while simultaneously reducing pressures on the immediate environment.

Though drafters of local agri-environmental programs enjoyed substantial discretion, the guiding regulations of the MacSharry reforms did mandate that farmers had to go beyond the mere legal requirements. They could not simply receive compensation, for instance, for abiding by their obligations pursuant to the Nitrates Directive or local regulations limiting pesticide use.[114] Lacomba and Benavent thus took a "carrot-and-stick" approach to subsidy design, offering direct payments for activities that directly complemented existing regulations but did not require farmers to substantially modify their existing practices. For example, the ecological objective of providing winter bird habitat was met through a combination of restrictions (park regulations forbid farmers from growing anything other than rice, from growing a winter crop, and from constructing anything not directly related to the rice fields) and rewards (subsidies for farmers who promised to maintain their rice crops, avoid winter cultivation, and flood their fields between November and March).[115] Likewise, the objective of reducing chemical inputs to the ecosystem was achieved through complementary limitations (the park prohibition on aggressive chemicals) and incentives (payments for weeding fields mechanically rather than using herbicides) (fig. 3).[116]

Fig. 3: A farmer works his winter-flooded *tancat* pursuant to his obligations under the agri-environmental program, surrounded by migratory wild birds (2011).

The first set of agri-environmental subsidies in the Albufera offered compensation totaling 95,000 pesetas per hectare per year, calculated as "sufficient economic aid to compensate for the decline in profitability implied by the maintenance of forty thousand hectares of rice in its traditional mode of cultivation."[117] It was included in Valencia's regional plan, which in turn joined those of other Autonomous Communities as annexes to the 1993 Spanish law enacting the MacSharry agri-environmental measures.[118] Thanks to Lacomba's and Benavent's rapid action, the Albufera would be the first Spanish Ramsar site and one of the first sites in Valencia to distribute agri-environmental subsidies.[119]

Following their plan's approval in Madrid in 1993, the two biologists arranged a series of informal meetings with Miguel Minguet, who worked with AVA as president of the rice-growers' division. For several weeks in 1994, the three men met in local bars after work to talk about what the farmers and the environment needed. Both Lacomba and Benavent hailed originally from the Albufera towns themselves, speaking Valencian from childhood and counting

rice farmers among their families and friends, a fact that earned them far more respect from the farmers than the degrees and official support wielded by de Felipe and Navarro a decade earlier. Minguet described the pair as "more intelligent" and "less theoretical" than the conservationists with whom AVA had so often found itself in conflict.[120] He understood the subsidies as a peace offering by the scientists; a way to raise the farmers' profits "so that everyone would be content with the park."[121]

The common ground between Lacomba, Benavent, and Minguet facilitated their trust and communication, but also contributed to the creation of a false sense of parity on Minguet's part. The plan was already law by the time of their first meeting, and Benavent and Lacomba had arranged the meetings for the purpose of spreading the word about the coming subsidy opportunities and encouraging the farmers to participate. Minguet, however, understood their talks as "negotiations" or "studies" designed to solicit his input and contributions in a collaborative process. AVA's continued opposition to the park and occasional technical legal victory against the Generalitat, Minguet believed, had succeeded in convincing the scientists that they could get more accomplished if they "work with the farmers, not impose regulations without consulting us."[122]

Minguet, and AVA as a whole, also misinterpreted the subsidies as "compensations for additional expenses" incurred as a result of the restrictions imposed by the park. The flip side of that coin is that rice farmers routinely described the European Union as "requiring" farmers to reduce chemical use or to flood their fields, and as "fining" them for their failure to do so. This is not the way the subsidy program worked: participation was entirely voluntary, and the European Union lacked the power to fine individuals. The subsidies were merely intended to bring a new calculus to agricultural production, as each farmer weighed the relative profitability of high

production versus the combined value of smaller harvests plus the production-limiting subsidies. In the case of Valencian rice farmers, however, their reliance on AVA as the sole interpreter of law meant that farmers tended to simply sign the papers AVA gave them and obey the restrictions about which AVA informed them. Even if AVA representatives incompletely or incorrectly explained exactly what the farmers were signing, they had no reason to doubt their union's word. Whether its erroneous depiction of the agri-environmental program reflects authentic confusion on AVA's part or the union intentionally depicted the subsidies as entitlements and fines is unclear. Regardless of its origins, the effect of this belief was that farmers understood a program designed to reward them for positive actions as a system of punishments for following standard agricultural practices, again depicting environmentalists as the "dictators" of policy.

Despite these communication gaps, the agri-environmental programs of the early 1990s did help to bring farmers and ecologists closer to an understanding of their common interests. During the first subsidy year, participation in the program was relatively low: Minguet and other large landowners signed agri-environmental contracts, but farmers with only a few hectares of land deemed the subsidies too small and uncertain to justify the requisite paperwork.[123] The 1996-2000 round of subsidies, however, met with resounding success. Though the requirements and payments were reduced (to 55,000 pesetas per hectare per year) participation dramatically increased as the first successful recipients encouraged their peers to apply.[124] By 1998 nearly three thousand five hundred different farmers collected subsidies, representing more than eighty percent of the rice fields within the park.[125]

Their successful participation in the agri-environmental program led to a definite shift in the farmers' attitudes towards the park, if not towards conservation as a whole. In the words of

one AVA editorialist, "the predominant posture of the agricultural sector towards the environment has been distinguished by its eminently defensive character in part because, until now, the most visible aspect of the environment has been the establishment of restrictive conditions on agricultural activity."[126] With the introduction of agri-environmental subsidies, for the first time farmers began to see short-term benefits from increased environmental responsibility. As early as 1992, the Valencian Farmworkers' and Ranchers' Union told researchers that the agri-environmental program would "make farmers the great beneficiaries of the park."[127] Minguet and other AVA representatives confirmed this presentiment over the following years, noting that while market prices remained low for Valencian rice, the subsidies enabled them to continue farming with a livable income. As a result, their opposition to the park declined notably. In 1995, when an association of developers and industrialists leveled new legal charges against the park's limitations on land use, AVA expressed solidarity with the effort but failed to muster the kind of enthusiasm that had characterized the protests of the late 1980s.[128]

This reflects a general shift in farmers' basic identity towards a multi-functionality that incorporated both economic and environmental roles. José Sanmartin, the Generalitat's Minister of Labor, said in 1996 that arguing against continued support of agriculture "because it represents only three percent of the GDP, and arguing that Spain should be a country of services, is a clearly suicidal tendency" that ignored the many industries and jobs that depended a relatively small number of primary producers.[129] More importantly, farmers' role in "a modern advanced society" entailed much more than mere economic production, including "ensuring a healthy, varied and affordable diet;…maintaining lively cultural systems; fixing populations in the rural environment, slowing emigration to the cities and, finally, environmental issues because it is in everyone's interst that the countryside is cared for and inhabited to avoid fires and

erosion."[130] This is certainly not to say that farmers abandoned their old, productivist ideas: when Benavent was replaced as park Director in 1995 with the son of a Sueca rice farmer, AVA celebrated the change, and his old friend Minguet described the new administration as "easier to work with." Minguet still considers the national and local Ministries of the Environment to be "anti-farmer," and following a falling-out with Lacomba in the late 1990s he did not reestablish ties with biologists in the park.

Nonetheless, despite continued friction between farmers and environmentalists Minguet and other AVA representatives admit that the park is, in the end, "a very good thing." Without its restrictions on land use the fields would almost certainly have been overrun by urban development, abandoned, or converted to other uses. The park's existence enabled farmers to charge subsidies denied to their neighbors between 1995 and 2000, which in turn made rice cultivation economically sustainable. In Minguet's words, "without the Park, there would be no rice fields; but without the rice fields, there would be no Park."[131]

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[1] "Lo que nos viene encima," *Agricultores y Ganaderos* no. 17, Mar. 1991, pp. 19-20.
[2] It is unclear to what extent this prohibition in fact prevented the spread of malaria. Rice farming's repeated flooding and draining of fields would have reduced the overall mosquito population, the need to work in flooded fields, where insects swarmed, would have certainly placed the individual farmers at higher risk.
[3] See, eg, Denuncia de Bautista Garrea, arrendador de la Caza Volatíl, contra Francisco Fontaine, su hijo, y un criado, sobre cazar pájaros sin licencia en la Albufera, 1780. Archivo Reino Valenciana, Bailia AA 2000.
[4] Carles Sanchis Ibor, *Regadiu i Canvi Ambiental a L'Albufera de València*, Universitat de València, 2001.
[5] ACA, Consell d'Aragó, Secretria de València, llig. 657, f. 82 i Quartiella-Roman (1989, p, 206), quoted in Carles Sanchis Ibor, *Regadiu i Canvi Ambiental a L'Albufera de València*, Universitat de València, 2001, p. 121.
[6] ACA, Consell d'Aragó, Secretria de València, llig. 791, f. 46/1. Quartiella-Roman (1989, p. 218), quoted in Carles Sanchis Ibor, *Regadiu i Canvi Ambiental a L'Albufera de València*, Universitat de València, 2001, p. 122.
[7] Ricardo Sanmartín Arce, *La Albufera y sus Hombres*. Akal/Universitaria (Madrid 1982), pp. 30-31.
[8] Carles Sanchis Ibor, *Regadiu i Canvi Ambiental a L'Albufera de València*, Universitat de València, 2001, p. 305.
[9] Ricardo Sanmartín Arce, *La Albufera y sus Hombres*. Akal/Universitaria (Madrid 1982), p. 31.
[10] This gradual slope from the old borders of the lake towards its center is usually sufficient for the water to drain out of the fields when the appropriate tancat gates are opened. For example, Sueca, at the most distant edge of the lake's old boundaries, lies about two meters above the lake's deepest point. As land transformation reached lower points o the lake, however, the slope of the land was at times too shallow to permit for flooding and draining by gravity, a farmer might join with his neighbors to install a water wheel, driven by hand or mule, or, later, a coal-driven motor. Dozens of pump houses and small chimneys from these motors have become one of the most characteristic features of the Albufera landscape.

[11] Collado Rosigue, Francisco J. 2007. "Water management at the Albufera in Valencia." Paper presented at the European Comission's Short and Medium Term Environmental Action Programme (SMAP III) Regional Seminar in Marseille-Barcelona, July 2-6, 2007, p. 4.
[12] Plácido Virgili Sorribes (Inginiero de Montes). *Aprovechamiento Piscícola de la Albufera de Valencia y Marjales Lindantes*, Direccion General de Montes, Caza, y Pesca Fluvial (Madrid 1956), p. 17.
[13] Prior to about 1800, the Albufera had a single wide opening to the sea that allowed fresh and salt water to flow back and forth depending on water levels and weather. Fishermen constructed the first sluicegate to enable higher catches, releasing or containing lakewater to match fish reproductive cycles. The three drains currently in existence, and their mechanized gates, were constructed by farmers during the course of the nineteenth and twentieth centuries for the express purpose of desalinating the lake and optimizing rice cultivation. See, e.g., Soria p. 137. Membership on the Committee is gained through ownership of a certain amount of land ("twenty fanegas), and votes are weighted according to how much land the individual owns. Collado Rosigue, Francisco J. 2007. "Water management at the Albufera in Valencia." Paper presented at the European Comission's Short and Medium Term Environmental Action Programme (SMAP III) Regional Seminar in Marseille-Barcelona, July 2-6, 2007, p. 22.
[14] Blasco Ibáñez, Vicente. *Cañas y Barro*, 1902.
[15] Luis Pardo. *La Albufera de Valencia: Estudio Limnográfico, Biológico, Económico y Antropológico*. Vol II. Instituto Forestal de Investigaciones y Experiencias, Madrid 1942, p. 181.
[16] Blasco Ibáñez, Vicente. *Cañas y Barro*, 1902.
[17] Collado Rosigue, Francisco J. 2007. "Water management at the Albufera in Valencia." Paper presented at the European Comission's Short and Medium Term Environmental Action Programme (SMAP III) Regional Seminar in Marseille-Barcelona, July 2-6, 2007, p. 5; Villena, María José, and Susana Romo, 2003. "Phytoplankton changes in a shallow Mediterranean lake (Albufera of Valencia, Spain) after sewage diversion," *Hydrobiologia* 506-509: 281-287, 281.
[18] Conselleria de Medi Ambient, Generalitat Valenciana, *Plan Especial de Protección del Parque Natural de la Albufera*, 1991, p. 41. This percentage would fall to about 20% by the 1990s, despite a record harvest, due to the increased plantations of long-grain rice in Sevilla and Extremadura. "El arroz puede alcanzar una cosecha récord," *Agricultores y Ganaderos,* Vol. 22.1, Sept. 1991, pp. 8-9, 8.
[19] Francisco Collado Rosique, "Estudio del arrozal en el término municipal de Valencia," working paper, January 2007.
[20] Francisco Collado Rosique, "Estudio del arrozal en el término municipal de Valencia," working paper, January 2007, p. 10.
[21] "La industria arrocera fija precios a la baja," *Agricultores y Ganaderos* no. 13, Oct. 1990, pp. 10-11; "El arroz se salva de la crisis del campo," *Agricultores y Ganaderos,* June-July 1993, p. 7.
[22] Conselleria de Medi Ambient, Generalitat Valenciana, *Plan Especial de Protección del Parque Natural de la Albufera*, 1991, p. 41.
[23] Interview with Miguel Minguet, March 2 2011, Alfafar (Valencia).
[24] Interview with Guillermo de Felipe, June 7 2011, Valencia.
[25] Interview with Victor Navarro.
[26] Interview with Joan Mikel Benavent.
[27] Interview with Guillermo de Felipe, June 7 2011, Valencia*; Estudios Previos para la Ordenación del Monte de la Dehesa del Saler*, April 1980. Ayuntamiento de Valencia, Información Urbanística.
[28] Ignacio Docavo Alberti, *La Albufera de Valencia: Sus Peces y sus aves*, Diputación Provincial de Valencia (Valencia 1979), p. 8.
[29] Pleno Extra Nov 28 1980
[30] Vicente Gonzáles Móstoles, "Informe sobre el desarrollo técnico de la ordenación del monte de la Dehesa del Saler en relación al acuerdo plenario de 3 de Junio de 1980," July 7 1980. Filed with documents relating to the *Estudios Previos para la Ordenación del Monte de la Dehesa del Saler*, April 1980. Ayuntamiento de Valencia, Información Urbanística.
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[32] Decreto 89/1986, de 8 de julio, del Consell de la Generalitat Valenciana, de régimen jurídico del Parque Natural de la Albufera. Diari Oficial 408, 23 julio 1986, p. 3091.
[33] Decreto 71/1993, de 31 de Mayo, del Gobierno Valenciano, de Régimen Jurídico del Parque de la Albufera. (Dogv núm. 2057, de 30.06.93), Art 1.2.

[34] Minutes from the March 14, 1985 meeting of the Conselleria de Obras Publicas. Available at the Archivo de la Generalitat Valenciana.
[35] Interview with Guillermo de Felipe, June 7 2011, Valencia; Minutes of the Commission for the Declaration of the Albufera as Protected Natural Space, November 4 1985; Consellería de Obras Publicas, Urbanismo y Transportes, Decreto 89/1986, de 8 julio, del Consell de la Generalitat Valenciana, de régimen juridico del Parque Natural de la Albufera, *Diari Oficial de la Generalitat Valenciana,* no. 408.
[36] Ley 15/1975, de 2 de mayo, de Espacios Naturales Protegidos.
[37] AVA representative, quoted in Garcia, Ernest & Maria Cabrejas. "Medio Ambiente y conflicto social: El caso de la Albufera de Valencia," *Política y sociedad*, 23 (1996), pp. 75-97, 86.
[38] Camara Agraria de Sueca, report to the Conselleria de Obras Publicas, April 24 1986.
[39] Camara Agraria de Sueca, report to the Conselleria de Obras Publicas, April 24 1986.
[40] Camara Agraria de Sueca, report to the Conselleria de Obras Publicas, April 24 1986; Amparo Beltrán Artés, "Recurso de Reposicion contra Decreto 89/1986 de 8 de julio," August 28 1986; Recurso de la Camara Agraria de Sueca, April 24 1986; Recursos de las Camaras Agrarias of Sollana, Sueca, Algemesí, Valencia, Catarroja, Beniparrel, Albalat de la Ribera, Silla and Cullera (August 1986); Asociacion Valenciana de Agricultores, "Recurso de Reposicion, Decreto 89/1986 de 8 de julio," August 28 1986; Recurso de la "Union Cristiana" of Sueca; "Alegaciones que presenta el Grupo Popular del Ayuntamiento de Valencia al Decreto 89/1986, de 8 de Julio, del Consell de la Generalidad Valenciana de Regimen Juridico del Parque Natural de la Albufera," August 25 1986; Manuel David Pardo, Daniel David Pardo, Consuelo Bigne Fink, and others, "Recurso de Reposicion contra Decreto 89/1986 de 8 de julio," August 26 1986; forty-two complaints filed by individuals and small groups of tancat owners. All documents on file with the Archivo Central Generalitat Valenciana.
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[42] "Los agricultores arroceros contra el parque de la Albufera, oficial," *Levante* (Valencia), Nov. 2 1988.
[43] Juan Lagardera, "Los arroceros colapsan el centro para que se derogue el parque de la Albufera," *Levante* (Valencia), Dec. 3 1988.
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[45] Juanjo García del Moral, "Un incendio provocado daña la oficina de los biólogos del parque natural de la Albufera," *El País* (Valencia), December 12 1988.
[46] Interview with Miguel Minguet, March 2 2011, Alfafar (Valencia). See also Camara Local Agraria de Cullera, August 26 1986. "Recurso de Reposicion contra el Decreto 89/1986."
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[48] Conselleria de Medio Ambiente de la Generalitat Valenciana, quoted in Garcia, Ernest & Maria Cabrejas. "Medio Ambiente y conflicto social: El caso de la Albufera de Valencia," *Política y sociedad*, 23 (1996), pp. 75-97, 80.
[49] Interview with Guillermo de Felipe, June 7 2011, Valencia.
[50] "La forma de imponer el parque es una tomadura de pelo," *Agricultores y Ganaderos,* July 1989, p. 6.
[51] AVA president Vicente Hernández, quoted in *Anuario Asociación Valenciana Agricultores*, 1989, p. 10.
[52] José R. Pascual, president of AVA's rice sector, quoted in "La forma de imponer el parque es una tomadura de pelo," *Agricultores y Ganaderos,* July 1989, p. 6.
[53] "Un parque natural no es viable sin consenso," *Agricultores y Ganaderos* no. 40, Feb-Mar 1994, pp. 13-15, 13.
[54] Interview with Guillermo de Felipe, June 7 2011, Valencia.
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[58] Garcia, Ernest & Maria Cabrejas. "Medio Ambiente y conflicto social: El caso de la Albufera de Valencia," *Política y sociedad*, 23 (1996), pp. 75-97, 80.
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[62] *Anuario Asociación Valenciana Agricultores*, 1989, p. 10.

[63] *Anuario Asociación Valenciana Agricultores*, 1989, p. 10; see also "Los agricultores arroceros contra el parque de la Albufera, oficial," *Levante* (Valencia), Nov. 2 1988.
[64] "Los agricultores arroceros contra el parque de la Albufera, oficial," *Levante* (Valencia), Nov. 2 1988.
[65] Interview with Miguel Minguet, March 2 2011, Alfafar (Valencia).
[66] EEC Directive of 12 December 1991, concerning the protection of waters against pollution caused by nitrates from agricultural sources, 91/676/EEC, was finally enacted into national law more than four years after its approval in Brussels, in Real Decreto 261/1996, de 16 de febrero, sobre protección de las aguas contra la contaminación producida por los nitratos procedentes de fuentes agrarias (BOE núm. 61, de 11 de marzo de 1996).
[67] Simón Pedro Izcara Palacios. "La agricultura europea ante el problema de la contaminación nítrica de las aguas." Agricultura y Sociedad, v. 84 (Spet.-Dec. 1997), pp. 167-196, 189.
[68] Simón Pedro Izcara Palacios. "La agricultura europea ante el problema de la contaminación nítrica de las aguas." Agricultura y Sociedad, v. 84 (Spet.-Dec. 1997), pp. 167-196, 189.
[69] Rieger, p. 185.
[70] Bache & George.
[71] Rolf Moehler, "The internal and external forces driving CAP reform," in Johan F.M. Swinnen, ed., *The perfect storm: The political economy of the Fischler Reforms of the Common Agricultural Policy,* Center for European Policy Studies, 2009.
[72] 29 September 1990.
[73] "El Campo en Lucha," *Agricultores y Ganaderos* no. 15, Jan 1991 pp. 4-6, 4.
[74] SEDES, p. 16
[75] "El Campo en Lucha," *Agricultores y Ganaderos* no. 15, Jan 1991 pp. 4-6, 5.
[76] Pedro Barato, national president of ASAJA, "Situación y perspectivas de futuro de la PAC," *Agricultores y Ganaderos* no. 56, Mar-Apr. 1996, pp. 5-6, 5.
[77] Pedro Barato, national president of ASAJA, "Situación y perspectivas de futuro de la PAC," *Agricultores y Ganaderos* no. 56, Mar-Apr. 1996, pp. 5-6, 5.
[78] "Una gran asamblea para quien lo quiera entender," *Agricultores y Ganaderos,* Oct. 1989, p. 5.
[79] "Propuestas para equilibrar los mercados de arroz en la CEE," *Agricultores y Ganaderos* no. 17, pp. 15-16. Long-grain rice, on the other hand, was a deficit crop in Europe and most of the rice consumed in Europe was imported from outside the EC. Long-grain rice was in high demand in north and central Europe, where mediterranean-style rice dishes using short-grain rice were all but unknown. In the summer of 1992, the EEC adopted a proposal to subsidize long-grain "Indian" rice at a value of 200 ECUs (30,200 pesetas) per hectare, administered through the Ministry of Agriculture. Many farms in Sevilla and Extremadura took advantage of this opportunity, and whereas Valencian farms had produced nearly 30% of the country's rice in the late 1970s, in 1991 that percentage had dropped more than ten points due to the dramatic spread of long-grain rice plantations elsewhere on the peninsula. Long experience had taught the Valencians that this crop did not work well for them, however, and the few who tried to switch found that the 4,000-peseta-per-hanegada subsidy did not compensate them for the 5-15% productivity declines and uncertain domestic market for the new crop. "Propuestas para equilibrar los mercados de arroz en la CEE," *Agricultores y Ganaderos* no. 17, pp. 15-16; "Arroz largo subvencionado," *Agricultores y Ganaderos* no. 28, June 1992, p. 16; "Arroz se paga ya a 47 pesetas el kilo en el campo," *Agricultores y Ganaderos* no. 31, Nov-Dec. 1992, p. 25; "El arroz puede alcanzar una cosecha récord," *Agricultores y Ganaderos,* Vol. 22.1, Sept. 1991, pp. 8-9, 8; Francisco Astorga Ramírez, "La evolución del sector arrocero en la Comunidad Valenciana," *Agricultores y Ganaderos,* Sept. 1989, p. 5.
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[81] "La industria arrocera fija precios a la baja," *Agricultores y Ganaderos* no. 13, Oct. 1990, pp. 10-11.
[82] "El Campo en Lucha," *Agricultores y Ganaderos* no. 15, Jan 1991 pp. 4-6, 5.
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[84] L. Goicoechea, "Movilizaciones de las Organizaciones Agrarias Europeas," *Agricultores y Ganaderos* no. 8, March 1990, p. 15.
[85] "Si se reducen las subvenciones se exigen compensaciones," *Agricultores y Ganaderos* no. 13, Oct. 1990, pp. 18-19.
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[87] "AVA-ASAJA rechaza el recorte de ayudas de la CEE," *Agricultores y Ganaderos* no. 14, Dec. 1990, p. 12.
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[90] "El Campo en Lucha," *Agricultores y Ganaderos* no. 15, Jan 1991 pp. 4-6, 4.
[91] "La PAC nos pilla siempre a contrapelo," *Agricultores y Ganaderos* no. 22, Sept. 1991, p. 17.
[92] Commission of the European Communities, *The Development and Future of the Common Agricultural Policy*, Revised version of Document COM(91) 258 final, Brussels, July 22 1991, p. 9 & 32.
[93] "La PAC nos pilla siempre a contrapelo," *Agricultores y Ganaderos* no. 22, Sept. 1991, p. 17.
[94] "Maastricht, sí, pero…." *Agricultores y Ganaderos* no. 29, Jul-Aug 1992, p. 3.
[95] "Queremos seguir siendo agricultores," *Agricultores y Ganaderos* no. 26, Mar 1992, p. 3.
[96] "La agricultura debe compatilizar el rendimiento económico con el respeto al medio ambiente," *Agricultores y Ganaderos* no. 32, Jan. 1993, p. 22-23; "Agricultura biológica, ¿Ilusión o realidad?" *Agricultores y Ganaderos* no. 27, Apr.-May 1992, p. 16; "La Comunidad Europea debate el futuro del cultivo del arroz," *Agricultores y Ganaderos* no. 38, Nov-Dec. 1993, p. 6; "Hay que presionar en Bruselas para obtener resultados favorables para nuestra agricultura," *Agricultores y Ganaderos* no 42, May-June 1994, p. 10.
[97] Council Regulation (EEC) No 1765/92, 30 June 1992, establishing a support system for producers of certain arable crops.
[98] "Arroz se paga ya a 47 pesetas el kilo en el campo," *Agricultores y Ganaderos* no. 31, Nov-Dec. 1992, p. 25.
[99] "Maastricht, sí, pero…." *Agricultores y Ganaderos* no. 29, Jul-Aug 1992, p. 3; España compra más productos agrícolas de los que vende," *Agricultores y Ganaderos* no. 27, Apr.-May 1992, p. 7
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[101] "La producción de arroz disminuye más de un 13 por cien debido a causas climatológicas," *Agricultores y Ganaderos,* No. 49, Oct. 1994, p. 19.
[102] "La Comunidad Europea debate el futuro del cultivo del arroz," *Agricultores y Ganaderos* no. 38, Nov-Dec. 1993, p. 6.
[103] Council Regulation (EEC) No 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and maintenance of the countryside, OJ L 215/85 30-6-1992.
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[106] Council Regulation (EEC) No 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside. Official Journal L 215, 30/07/1992 p. 0085 – 0090, Article 8.
[107] Real Decreto 51/1995, of January 20. See Instituto Nacional de Reforma y Desarrollo Agrario (Ministerio de Agricultura, Pesca y Aimentacion), *Programa de ayudas para fomentar metodos de producción agraria compatibles con las exigencias de la protección y la conservación del espacio natural,* July 26 1993. In posession of author.
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[111] Ignacio Lacomba, Paloma Mateache Sacristán, Juan Miguel Benavent, & Juan B. Ors Martínez, *Programa de manenimiento del cultivo tradicional del arrozal en el Parque natural de L'Albufera de Valencia (ZEPA, Ramsar) y su compatibilización con la conservación del potencial biogenético*, April 25 1994.
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[114] Lowe & Baldock, p. 46.
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[129] "Despreciar la agricultura porque representa el 3% del PIB y hacer de España un país de servicios es de siucidas," *Agricultores y Ganaderos* no. 58, July-Aug. 1996, pp. 8-9, 8.
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