
TOMATO WORLD

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Source: *PRAXIS: Journal of Writing + Building*, 2002, No. 4, LANDSCAPES (2002), pp. 116-123

Published by: PRAXIS, Inc.

Stable URL: <https://www.jstor.org/stable/24328963>

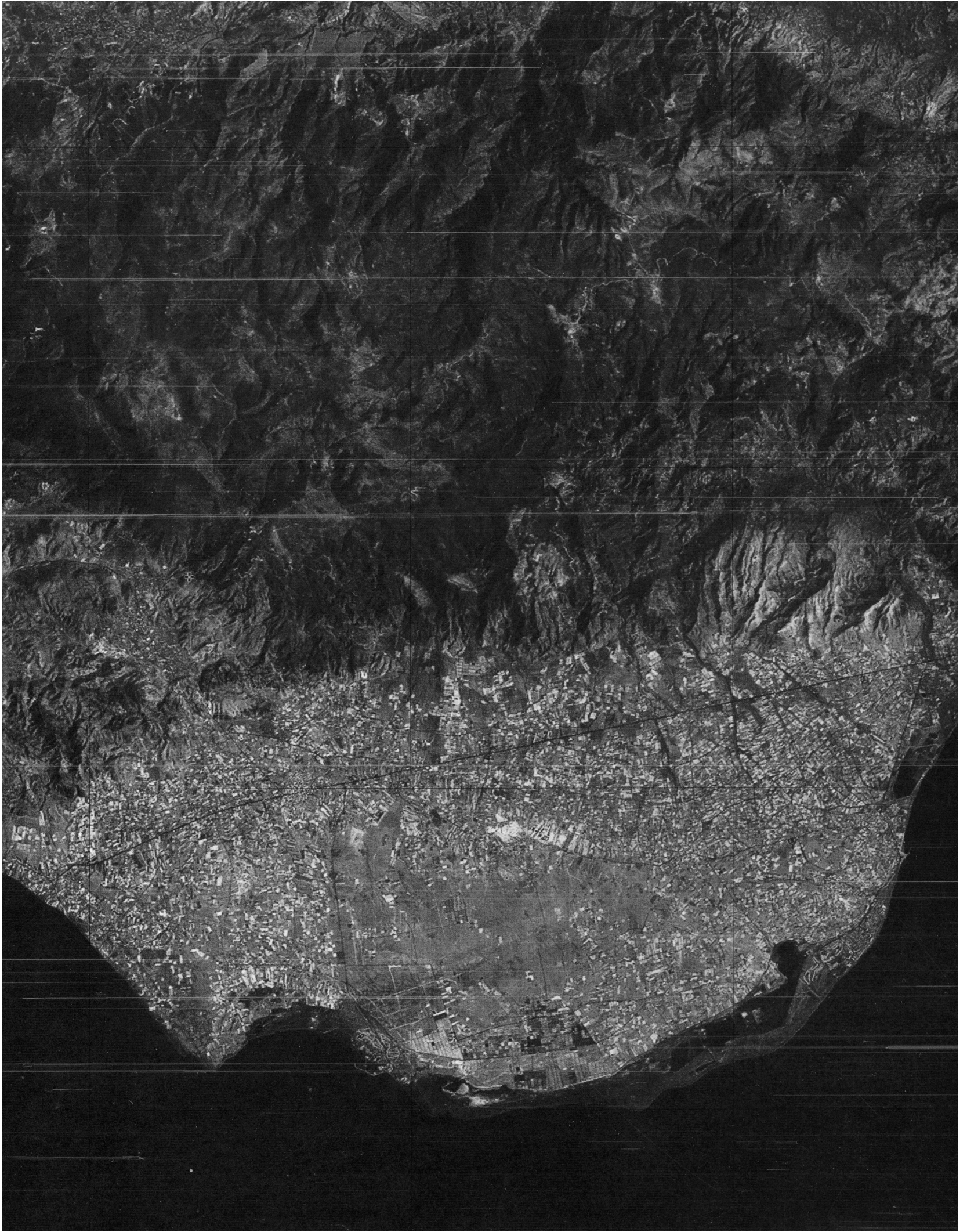
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TOMATO WORLD

KELLER EASTERLING

A world is a global cultural current. The tourist world, the sports world, the business world, the fashion world: these are cultural repertoires that travel everywhere, maintaining an identity independent of place. Yet “world” might describe not only those passions and practices that are central to cultural fluencies but also those which detach as separate domains. While some traveling worlds may embed and indigenize wherever they land, within many strata of culture, others develop separately, in parallel, as programs bounded by economic imperatives or a belief in expertise. Often wishing to remain undetected, these may operate without synthetic ties to other components of culture, outside the jurisdiction of political checks to power. A world may travel all over the globe but remain segregated, only mixing with other worlds that share similar logistical attributes or extrapolitical conditions. However rational and logical it may purport to be, a world may be a global fiction. Indeed, the most earnest attempts at logical or rational orders may produce the most hyperbolic environments. And, if hyperbolic enough, this world can drive the collective political discourse that threatens to control it. The distention of the fiction may make an inevitable reckoning with contradictory information a more violent encounter with the real.¹

OPPOSITE PAGE: Visible in Landsat images, southern Spain's "Almerian miracle" is a natural landscape augmented for maximum productivity. A dense field of plastic greenhouses coats over 177 square miles of coastline and foothills.

For many industries, a resource or a desire may shape the boundaries of a world. The tourist industry creates a world within the world by indexing the globe according to selected climatic attributes. The tilted planet reveals luxurious veins of photosynthesis bleeding across the Mediterranean and the Southern hemispheres. Whatever their location, resort formulas will deliver a profit in territories with abundant hours of sunshine, pale sand, and an average temperature of approximately nineteen degrees Celsius. Similarly, the high-tech agricultural industry requires territories with sunshine, which become even more precious when combined with cooling winds, water, cheap labor, and relaxed trade agreements with the darker hemisphere. For the tourist industry, the cruise ship facilitates the conquest of these abstract territories by eliminating some of the necessary attachments and inconveniences of a single, culture-laden location and delivering the selected audience, in accommodations to which they are accustomed, to any of the appropriate climates or attractions. In the agricultural industry, greenhouses are the analog. They have made the agricultural industry into a mobile territory. By regulating and optimizing water, growth medium, temperature, and genetic constitution, greenhouses deliver horticultural necessities as abstracted variables independent of the imponderable complexities of the terroir.

No longer used only as a freestanding structure where land or sunshine is sparse, greenhouses are propagated by the square mile. The greenhouse is no longer an object in a field; rather, the field has become a massive, three-dimensional construction. While an agricultural landscape is typically considered to be a cultivated form of exurban countryside—a self-cleansing, counterbalancing organization of overlapping ecologies of animals, atmosphere, and vegetation—a landscape of greenhouses is a continuous sea of twelve to twenty-foot high structures. As such, it is not only a formula for the growth of plants but also for the growth of urbanism. Different from urban agriculture—crop cultivation within urban areas—greenhouse formations are a form of agricultural urbanism that intensi-

fies not only production but labor and waste in agripoles the size of a city. Since most cultivate flowers, fruits, and vegetables intended for export, they also constitute international formations. Since the 1970s, the substitution of plastic sheeting for glass has made greenhouse construction a less expensive proposition, thus transforming a few horticultural techniques into a boom industry. A global network of plasticulture urbanism—25,000 square miles in size—is filling in peak areas of sunshine around the world.²

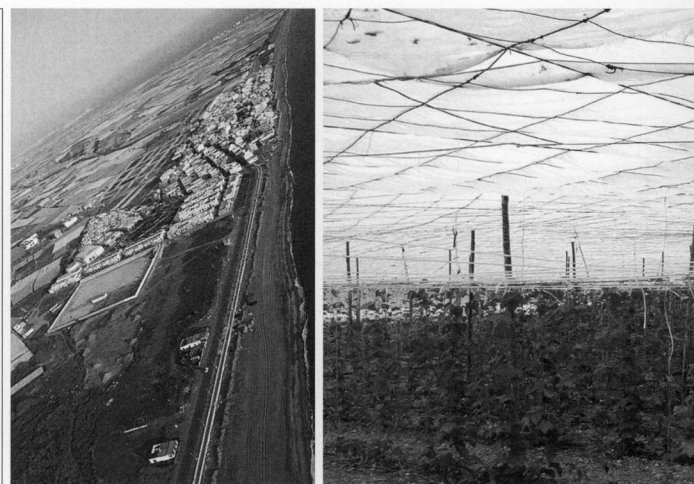
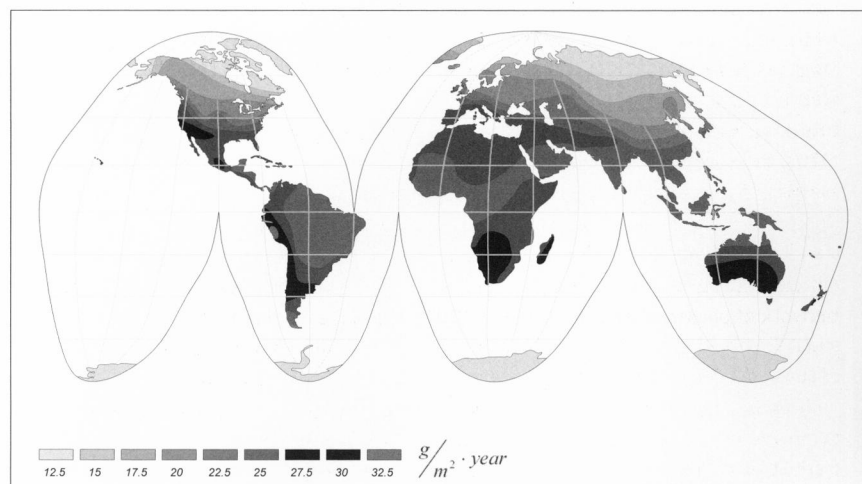
International greenhouse agripoles, as components of segregated worlds, are distinct from existing international agricultural networks. It is a long-standing practice for empires to import out-of-season vegetables from colonial plantations. In this new colonization of photosynthesis, however, national and private powers criss-cross the oceans in a contraseasonal exchange that is only occasionally affected by location, laws, or the loyalties of nations. Countering associations between landscape, place, and the specifics of geologic, atmospheric, and climatic conditions, these agripoles are part of mobile territories, often forming global networks of similar sites and sometimes even attempting to secede from their local conditions. By locating near the cheap labor that they demand or by attracting immigrant labor, the formations index not only climatic attributes but global wage scales and labor migration patterns. While landscape is customarily evaluated aesthetically, these landscapes must also be evaluated as magnets of labor, as the means of formatting a political constitution, and as powerful political pawns in local or international conflicts with global resonance. In the agricultural industry, to talk of landscape is to talk of labor, food, markets of sunshine, and even several species of war.

Emblazoned on the flag of this sovereign world of photosynthesis, appearing in every feature of its crest, is the greatest object of plasticulture desire: the tomato. Nurturing harems of tomatoes in plastic greenhouses is an extremely complex game of cheating the seasons by manipulating environmental factors, as well as tweaking the mechanisms of international finance and the juridical pacts of international diplomacy. The

tomato is the game's most durable player. In the horticultural nursery-cum-stock market, the actual growth of a tomato signals growth in profits. Trade bargains, the differentials of labor costs, and the lust for enhanced and stylized vegetables can transform this fruit into a semi-precious nugget and object of international piracy. "Tomato world" is expanding in Spain, Italy, Egypt, Jordan, Morocco, Tunisia, Cyprus, the Canary Islands, New Zealand, Japan, China, and South Korea.³ Asia has the largest total area of greenhouses with approximately 1800 square miles, but the Mediterranean alone has almost 400 square miles.⁴

A comedy of intense control and endless research accompanies the quest for the perfect tomato. Multinational seed companies continually merge and change names, only occasionally revealing their affiliation with larger biotech or drug companies. They often act as private versions of government or university extension agencies, developing laboratories in areas of greenhouse concentrations around the world. In their installations one can see in miniature the factors of global competition. For example, they might test the performance of competing glass and plastic, arched versus flat-roofed greenhouse types. Hardiness and resistance to disease are bred into the plants. Breeding for a myriad of genetic factors is best controlled by hormonally stressing female plants into a hermaphroditic state within which they can be milked for seeds. In the most hi-tech greenhouses, the plants emerge not from soil but from linear bags of growth medium punctured with tubes that deliver fluids and nutrients. The entire enclosure is computer controlled—buzzing, burping, and opening flaps in response to a shift in wind or a moment when the sun temporarily slips behind a cloud. Seeds are developed to produce over twenty kilos of vegetables per square meter per growing season and can even be dated for planting during a specific week of the year. Plastics are manufactured to block the visible wavelengths of flies and mosquitoes, making it impossible for the blind insects to infect the plants.⁵

Not only is the greenhouse business itself in vogue around the world, but the



growers must match colors with new trends in clothing and dining. Growers manipulate slight changes in color, variegation, and aroma, synchronizing the new rapid growing cycles to produce the correct color of carnation or the newest strain of grape tomato. A grower in Spain, for example, may grow a special strain of red ripe tomatoes for New Yorkers and another smaller green variety for the Swedes, styling their ripeness and packaging to suit the taste of its customers.⁶

The greenhouse is not only an instrument of fashion but the subject of fierce export wars and trade agreements between nations. Yet, in this species of war one chooses enemies opportunistically, cooperatively rotating enemies at intervals, territorializing and deterritorializing, operating with a stream of tactics rather than a consistent or sustained strategy. Warfare becomes quite confusing, in part because of the contraseasonal trading rhythms. Countries in opposing hemispheres that are ostensibly in competition during some parts of the year may actually rely on each other for out-of-season fruits and vegetables. Also, some developed countries supply intelligence to developing countries, who, having perhaps "learned too well" from sponsors, establish their own pockets of high-tech industry that eventually compete with the tutor.⁷ The military theaters are organized by longitude. The United States, Canada, and Mexico fight over tomatoes; Spain, Morocco, and the Canary Islands also

fight over tomatoes. In air and naval battles, the combat, called "dumping," is usually an offshore bombardment of very inexpensive tomatoes. After steaming into port the inexpensive tomatoes simply refuse to leave. Throughout the world any product whose price approaches zero constitutes a notorious sign of aggression.

The biggest growers are making new theaters of trade war in longitudes different from their own. Northern Europe and the United States, despite having fewer than one hundred square miles of greenhouses each, are critical players in the complex exchange of produce. The United States, the world's model of self-sufficiency, is large and climatically diverse enough that states such as California and Florida can provide most of its out-of-season produce, both for home and for export. Yet, in addition to being a dominant exporter, the United States remains the dominant importer, maintaining a seemingly insatiable appetite for vegetables and fruit.⁸ The Netherlands, the country that—along with Israel—developed many high-tech greenhouse techniques, uses the most substantial, expensive, and energy consumptive types of glass and climate-controlled greenhouses in order to overcome its northern climate. Yet, while it has less area than the gigantic Mediterranean fields of greenhouses, it produces more kilos per area of, for instance, tomatoes, than the Mediterranean.⁹ Perhaps more importantly, the Dutch have, through their flower produc-

tion, established themselves as a trade hub, a stock market for the global exchange of flowers, fruits, and vegetables. Markets in whatever longitude are trying to feed America, and the Netherlands is opening markets as far away as Japan. (The Japanese like pastel tomatoes packaged in special net bags). In fact, the whole world is both exporting and importing more tomatoes, sending proverbial coals to Newcastle or tomatoes to tomato worlds.

The global capital of the tomato world, the Rome or Alexandria of this mobile territory, is the province of Almería in southern Spain. This one location, the undisputed model for the international agripole, is deflecting the most extensive networks of global tomato trade. In the 1970's, when greenhouse technology surfaced as a technique for growing more than cut flowers, southern Spain, with its 3000 annual hours of sunshine, average temperature of sixty seven degrees Fahrenheit, and underground aquifer, became a laboratory for the technology, a giant horticultural experiment called the "Almería miracle."¹⁰ In 1970, there were only 1.16 square miles of greenhouses in Spain, near Barcelona.¹¹ In 1971, there were 7.72 square miles in Almería alone, and by 2001 there were over 177 square miles concentrated there, half the size of all five boroughs of New York City.¹² The Spanish developed a technique of skinning with plastic the vertical poles and connecting wires typical of vineyard structures. Landsat images of the area show the entire Almería

ABOVE LEFT: A global map of average photosynthesis per year indicates areas of maximum opportunity for horticultural productivity, regardless of political boundaries.

ABOVE CENTER: El Ejido, seen from the air, is revealed as an urban agglomeration of greenhouses, agricultural support structures, and accommodations and amenities for farmers and laborers.

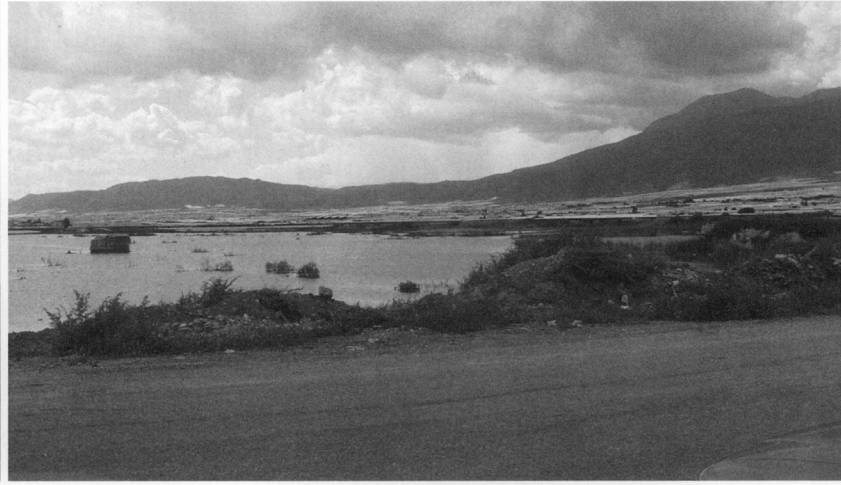
ABOVE:

Tomatoes in an El Ejido greenhouse—the roof is a sandwich of plastics on a low-tech construction that is adapted from local vineyard structures, but the plastics themselves are the product of careful high-tech research.



ABOVE: The structures to the right in this image belong to a seed company established in El Ejido for the purposes of experimenting with techniques of greenhouse construction.

ABOVE RIGHT: Almerian greenhouses and their support structures cultivate every available surface from the Mediterranean coast to the foothills of the Sierra Nevadas.



region, from the sea to the foothills of the Sierra Nevada mountains, literally coated white with this type of greenhouse. The golf courses and artificial lakes that have long flourished as part of the Costa del Sol's tourist industry now fluidly intermingles with the greenhouses in a planimetric soup of development patterns.

The landscape seems American in its extremes. Likened to the discovery of oil, the \$2.5 billion dollar industry has turned one of the poorest regions of Spain into one of the wealthiest.¹³ In this form of prospecting for natural resources, the sunshine is the vein of oil in the firmament and the Dalias aquifer the vein of oil below. The vegetable industry has exploded, exporting 1.5 million tons annually compared to its 1980 production of 100,000 tons.¹⁴ The small town of El Ejido in the Almerian province is completely engulfed in plastic, a white landscape visible at the end of every street. The city's population has surged in recent decades, from 17,000 people in 1970 to 55,000 people in 2000.¹⁵ During a good year, a farmer with just ten acres can earn \$50,000.¹⁶ New banks, SUV dealerships, luxury stores, and "unifamiliares" or single-family subdivisions have sprouted throughout the town. Even Almería's brothels have participated in the transformation; they now resemble compounds of self-storage units arranged in jagged, stepped configurations like individual miniature condominiums with roll-up doors and their own parking places. The women working there are

not local but migrating or trafficked from Eastern Europe or Africa.

Another eccentric layer to this already hyperbolic landscape is also strangely fictional and American. Not only was the soil in Almería the poorest in Spain, but it was naturally an arid region, more a desert than a garden. The Tabernas area, just east of Almería, is in fact Europe's only real desert. During the 1960's, the profitable industry was not tomatoes but films. Dr. Zhivago, Cleopatra, and Lawrence of Arabia were all shot here, and Sergio Leone substituted Almería's landscape for the American West for in his famed "spaghetti westerns," including *The Good, the Bad and the Ugly*, *A Fistful of Dollars*, and *A Few Dollars More* with Clint Eastwood. One of the tourist attractions just to the east of El Ejido is Mini-Hollywood, a theme park with a western main street, performances by cowboy cast members, and a zoo for African animals like zebras, monkeys, and tigers. With the exception of some cinematic views, Mini-Hollywood is also surrounded with plastic.

Although arid, everything about this particular region of the Iberian peninsula, has for centuries, embodied a sort of factory of landscape and an urbanism of agriculture. Gerald Brenan, a British author and a friend of the Bloomsbury group who lived in Yegen (between Granada and Almería) for six years between 1920 and 1934, wrote that the "view of mountains, valleys, villages, and distant sea lay spread out like an illustration of the features of the world in a child's geography

book."¹⁷ From the air, the landscape is perfectly hatched with patches of computer-generated patterns. Like any agricultural area that must negotiate altitude, the growing seasons were dated to the week and even to the day with crops ripening later and later in the season as they climbed the hill, four days for every 300 feet.¹⁸ As if available by some miraculous feat of remote engineering, melting snows from the same mountains continually replenish the Dalias aquifer, making water freely available as a separate, controllable ingredient of horticulture that has permitted the region to consistently irrigate crops of grapes and tangerines, despite drought or political difficulty.

In this engineered landscape, every conceivable need or desire of a tomato is completely optimized. Factories standing within the complex of fields manufacture the necessary tons of plastic. Distribution stations, also within the fields, quickly absorb and deliver the vegetables to Malaga for shipping to the rest of the European Community or air freighting to other parts of the world. Growers can, by remote control, inject fluids rich with various chemicals and nutrients into the hydroponic IVs. Many of the roads between the greenhouses are paved to prevent the spread of disease. The pattern of development in this agro-industrial area is then oriented in a wavy, north-south pattern that permits cross breezes and prevents lingering shadows during the day. While some of the vegetables are grown in soilless medium,

some are grown in a specially prepared soil that does not touch the existing ground. The growth medium lies atop a layer of clay and sand, both of which are, of course, in abundant supply in the area.

Although El Ejido is one of the most remarkable landscape formations on earth, it might have remained like so many distended or secessionary spaces in culture that optimize an extrapolitical situation, within which many collective democratic demands are temporarily overlooked or unenforced. Yet perfectly engineered worlds are also the most susceptible to errors resulting from attempts at complete control. This world capital has launched not only global trade wars over tomatoes, but also entrenched, place-specific turf wars reflecting deep-seated cultural conflict. Alternating between scales, the local war becomes a critical pawn in a regional and a global condition, and tomato world, now no longer mobile and undetected, meets other political imperatives.

The final requirement for perfection in Almería, an inexpensive labor force, was also miraculously available in the region, but it revived a long-standing history of piracy and conflict between Spain and the source of that labor, North Africa. In the larger cartographic landscape, the two opposing European and African shores mirror each other competitively across the Mediterranean. They share the same calendar of sunshine. Responding to swings of prosperity and poverty, they have traded alternating rhythms of occupation, resistance, warfare, and expulsion over hundreds of years. Sited in a pivotal location, this theater of the tomato war is a translocal fulcrum of global political manipulations and one of the major valves of labor, race, and migration issues in Europe.

The North African immigrants, providing the approximately 20,000 workers required to maintain the greenhouses, work eight-hour days for approximately \$25 per day in temperatures exceeding 100 degrees Fahrenheit. Since most have open-ended contracts, they can be terminated at any time for any complaint or insurgency, even if asked to perform extra work. Of the \$300 to \$500 dollars that a picker makes, half of what a Spanish worker would expect to be

paid, most is sent home as it is about five times what they might earn in some places in northern Africa.¹⁹ The \$3,000 fine for hiring an illegal worker does not seem to be strictly enforced.²⁰ If given workers' papers, the employers are required to pay their social security, money that seems to disappear for both parties. The Spanish are also concerned that providing papers for these workers will make Almería and El Ejido entry points for immigrants seeking work elsewhere in Spain or Europe.

Typically, the workers do not rent permanent housing, and owners complain that when they do, too many people share the apartment. They live in "charbolas," or temporary shelters in fields that have become cities of both people and vegetables. El Ejido's "Plan of Rural Hygiene" and "Plan of Rural Regulation" seem to recall the sorts of reformed housing laws for big cities that, in the nineteenth and twentieth centuries that resulted in the New York's "New Law" tenement. The plan establishes rules and waste removal and ventilation. Yet, the citizen subjects of the plan are not the greenhouse workers, the human inhabitants of the agripole, but rather the tomatoes themselves. The workers' housing, constructed from the same materials as the greenhouses, draws no law or regulation.²¹

For some time, the sons of local landowners have organized in bands that terrorize the Moroccans with masked manhunts. In these hunts, typically lasting from Saturday night through the whole of Sunday, as many as fifteen young men may descend on the home of a Moroccan.²² The most intense violence, however, erupted in early 2000, in the midst of tensions over a new labor law, when a Moroccan worker killed his boss and another man in a fight. Soon afterwards, on Saturday, February 5, 2000, a troubled Moroccan man killed a Spanish woman in the market. Throughout Sunday and into Monday, groups of farmers, high school students, and townspeople, some of them galvanized by a neo-Nazi website, set out to revenge the killing by setting fire to the houses of Moroccans, over-turning cars, beating with pipes, and throwing stones.²³ Policemen were not in evidence during the raids on the houses but did counter the Moroccans' organized

attempts to fight back.²⁴

The chant of the rioters, "Moros out!," returns the story to centuries-old episodes of racism and expulsion in Analusia.²⁵ When Ferdinand and Isabella gained control of the Iberian peninsula in 1492, the same year they were exploring other prizes further west, they initially agreed to coexistence with the Muslims, but quickly reneged and insisted on conversion to Christianity. The forced conversion devolved into a revolt followed by an all-out war that the Spaniards won. The Muslims were eventually expelled, but they left behind horticultural expertise, especially irrigation techniques, that sustained Andalusian agriculture. Some of the Moriscoes who landed on the North African shore joined ranks with privateers and their underworld commerce on the Mediterranean, and some became pirates whose exploits were fueled by a desire for revenge against the Spanish. From the very towers that early Arab Andalusians constructed, the Christians who expelled them kept watch for North African pirates. A common Andalusian saying was "Hay Moros en la costa".²⁶

In the twenty-first century, forms of piracy and trafficking that haunt the western Mediterranean are very similar to the activities of the early privateers. Today, mafia groups respond to covert "calls" for workers among the growers.²⁷ Thousands of potential immigrants wait in the Spanish enclaves of Ceuta and Melilla, and thousands die attempting to make the Mediterranean crossing, having paid as much as \$1,500 for passage.²⁸ The Spanish Canary Islands are visible from the African coast, and smugglers often charge from \$500 to \$2,500 for the 12-hour trip.²⁹ To counter piracy, the Spanish use special high-tech sensing devices, radar, and heat-sensitive equipment to catch "clandestinos" as they come in.³⁰ There are also reports of militant and underworld Muslim groups also reportedly coercing the Muslim workers and their families.³¹ Now that Eastern Europeans are also working in greenhouses, however, an Eastern European mafia attends the newest greenhouse workers. In a kind of contemporary slavery, this mafia retains passports, takes a cut of profits, and generally treats the agricultural workers as it would its

brothel workers.³²

Perhaps the greatest irony in the symmetrical competition between Spain and Morocco is that Morocco traditionally provided field tomatoes to Europe. In the late 1950's, Spain began to supplement its own Canary Island exports to Europe by intensifying production with greenhouses. By the 1970's, the country had over 1,000 acres of greenhouses, to compete with Morocco.³³ In turn, Morocco has increased its development of greenhouses from 60 hectares (150 acres, 0.23 square miles) in 1971 to 6500 hectares (15,990 acres, 25 square miles) in 2001, to counter the competition.³⁴ In 1999, claiming that Moroccans had exported more than their quota, several groups of Spanish exporters and growers demonstrated against Morocco in the ports of Algeciras and Almería by overturning trucks and by hurling the ultimate weapon in this sort of war: tomatoes.

Almería, perhaps developed to capacity, has become a fulcrum to leverage other changes to development and immigration within official forms of piracy and diplomatic bargaining. Prime Minister Aznar's "Programme of Integrated Action for the Development and Order of the Mediterranean Region of Morocco," signed in 2000, translated Moroccan debt to Spanish investment and suggested that Spain might lend to Morocco expertise in tourism and building infrastructure. By offering development incentives and debt relief to Moroccans, Spain hopes to curb the success of Moroccan tomato production and establish settlements on the Moroccan shores that would provide some remote control of the most crowded launching points for illegal immigration. It may even be argued that Spain is attempting to recolonize a space not unlike the strip of Moroccan coast that it occupied until 1956.³⁵ July's naval skirmishes over Perejil, a rock in the Mediterranean inhabited only by goats, provided a mock pageant of the territorial tensions between the two countries. The long history of racial turmoil and the xenophobic sentiments surfacing across Europe have spurred additional labor legislation, for instance a deportation and repatriation, which in the end did little to reduce the immigrant population.³⁶ The

Spanish themselves have been European immigrants, leaving the country to do menial work elsewhere until the 1970's, and they need immigrants to counterbalance their aging population.³⁷ Given the increasing immigration from Eastern Europe, however, Spain may use the Almería formation as the means to curate the racial content of its immigrant population.

Finally, Almería exports not only tomatoes but a development cocktail of industries colonizing atmospheric conditions. Tutored by the success of places like El Ejido, many global growers are simply attempting to reproduce the same conditions elsewhere in a similar latitude and band of sunshine. Just as the Almería formation side-stepped labor laws, so the most advanced growers side-step certain trade obstacles by maintaining affiliations in several regions in order to ship on a continuous twelve-month cycle.³⁸ Seed companies that serve Spain, Jordan, and Asia also provide expertise in Mexico within bands of sunshine and atmosphere very similar to North Africa and the Iberian Peninsula. Although the numbers occasionally dip in response to trade fluctuations, greenhouse production, often sponsored by foreign growers, has more than doubled in Mexico.³⁹ Greenhouse area in Asia has also more than doubled.⁴⁰

The agripoles of plasticulture urbanism transpose landscape to market and so to many other means of leveraging political and cultural change. Perhaps only as commodities—rather than in response to the emotional or ethical pleas of environmentalists—will landscape, soil, sunshine, and atmosphere be placed on the political bargaining table as alternative variables in the world's fuel and resource wars. In many locations, the same mix of tourism and agriculture appears, sometimes because agriculture has itself become a tourist attraction. Called "agriturismo" in Italy, "farm stay" in New Zealand, and "sleeping in the Straw" in Switzerland, agricultural tourism makes the open field of agripole into a recreational park within which the tourist pays to be a field hand. As the fortunes of tomatoes flourish and fail, so do intensified agriculture aggregates with, for instance, tourism, solar energy, water, desalination,

any one of which extends leverage and adds ingredients to the unlikely mix of variables from which change inevitably emerges.

The world's fictions and the fictions of worlds occasionally become so obdurate and distended as concentrations of power that they exit the fluid mix of fictions and become hyperbole that is all too real. El Ejido is the capital of a world that has both inflated and collapsed in response to local contingencies, and its collapse identifies several potential forms of political resistance.

The classic political tools used to insist upon adherence to labor's legal regulatory mechanisms are effective here. Yet there may also be additional forms of effective piracy, the means to hack into and deflect the elusive boundaries of this mobile territory of sunshine. The persuasions of this piracy may concoct an entirely different condition of work or an entirely different set of terms and attractions that affect local and global labor. Worlds like the tomato world, which try to remain undetected, may draw unusual contingencies and unlikely associations and programs, improbabilities that make them penetrable to pirates of the Mediterranean Sea and the global sea of photosynthesis. ☹

NOTES

1. Marc Augé, *An Anthropology for Contemporaneous Worlds* (Stanford: Stanford University Press, 1999), 88; and Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis: University of Minnesota Press, 1996), 12. When Marc Augé writes about "contemporaneous worlds" as the "tightly woven, complex fabric of contemporaneity" that "should be of primary interest to the anthropologist," Arjun Appadurai writes about "imagined worlds," as "the multiple worlds that are constituted by the historically situated imaginations of persons and groups spread around the globe."

2. Data compiled from several sources including: Daniel J. Cantliffe and John J. Vansickle, "Competitiveness of the Spanish and Dutch Greenhouse Industries with the Florida Fresh Vegetable Industry" Gainesville, Florida Horticultural Sciences Department, Proc. Fla. State Hort. Soc. 2001 Paper No. 96; and Merle J. Jensen and Lan J. Malter, *Protected Agriculture: A Global Review* (Washington, D. C.: The World Bank, 1995), 100-107; and <http://www.canadiangreenhouse-conference.com>; and http://www.tropical-seeds.com/tech_forum/pubs_res/pump_tom_trials.html; and Merle H. Jensen, "Controlled Environment Agriculture in Deserts, Tropics, and Temperate Regions—A World Review" (Controlled Environment Agricultural Center, March 2001); and <http://www.sbceo.k12.ca.us/~uccesb1/sf82001.htm>

3. Merle J. Jensen and Lan J. Malter, *Protected Agriculture: A Global Review* (The World Bank: Washington, D. C.), 1995, 100; and Daniel J. Cantliffe and John J. Vansickle, Florida Agricultural Experiment Station Journal Series No. N-02089, 2001.



4. Merle H. Jensen, "Controlled Environment Agriculture in Deserts, Tropics, and Temperate Regions—A World Review"; and <http://www.sbceo.k12.ca.us/~uccesbl/sf82001.htm>
5. Visit to C and G seed company, El Ejido, Spain, May 3, 2002.
6. *The Wall Street Journal*, 18 February 1997.
7. Jensen, 100. Canada, US, England, France, Netherlands, Italy and Spain, Hungary, Israel, Turkey, Australia, and Japan have supplied countries that include Chile and Columbia, Belgium Greece and Portugal, Eastern Europe, Algeria Canary Islands, Egypt, Morocco Tunisia, Iran, China, or South Korea.
8. <http://www.canadiangreenhouseconference.com>; and http://www.tropical-seeds.com/tech_forum/pubs_res/pump_tom_trials.html; and Roberta L. Cook, "International Trends in the Fresh Fruit and Vegetable Sector" (Department of Agricultural and Resource Economics, UC Davis, May 1998), 6,7,8.
9. Daniel J. Cantliffe and John J. Vansickle, "Competitiveness of the Spanish and Dutch Greenhouse Industries with the Florida Fresh Vegetable Industry."
10. <http://www.iacr.bbsrc.ac.uk/enmaria/workshops/almeria98/escobar.html>
11. Dana G. Dalrymple, *A Global Review of Greenhouse Food Production* (Washington, D.C.: U.S. Department of Agriculture, 1973), 110.
12. In 1971, there were 2000 hectares (4940 acres, 7.72 square miles). In 1990 this number had increased to 25,000 hectares (61,750 acres, 96.5 square miles). In 1999, there were 36,585 hectares (90,000-100,000 acres, 141 square miles). And in 2001 there were 46,205 hectares (113,667 acres, 177 square miles). See data sources, footnote 1.
13. Associated Press Newswires, 6 August 2000.
14. *New York Times*, 8 May 2000, 1.
15. *The Wall Street Journal*, 29 February 1997.
16. "A Cry of 'Moors Out!' in Andalusia," *Business Week* (8 May 2000).
17. Gerald Brenan, *South From Granada: A Sojourn in Southern Spain* (New York: Kodansha International, 1998), 11, reprinted from Farrar, Straus, Cudahy, 1957.
18. *Ibid.*, 53.
19. "Riots in Spain's 'Vegetable Patch'" *Christian Science Monitor* Vol. 92 Issue 60 (17 February 2000), 6.
20. *The Independent* (London), 30 September 2000, 17; and "A Cry of 'Moors Out!' in Andalusia," *Business Week* (8 May 2000).
21. <http://www.iacr.bbsrc.ac.uk/enmaria/workshops/alme->

- [ria98/escobar.html](http://www.iacr.bbsrc.ac.uk/enmaria/workshops/almeria98/escobar.html)
22. http://www.humanrights.de/news/el_ejido/1.htm
23. *The Guardian*, 14 February 2000.
24. Human rights watch reported that 500 Moroccans filed complaints and that of the 46 people arrested 26 were Moroccan. The organization published accounts accusing the mobs of attempted mass-murder. They characterized the situation as one with "systematic" human rights abuse. Most of the workers went on strike, in part to stay out of sight. http://www.humanrights.de/news/el_ejido/1.htm
25. "A Cry of 'Moors Out!' in Andalusia," *Business Week* (8 May 2000); and *The Guardian*, 14 February 2000.
26. Brenan, *Ibid.*; and Juan García Latorre and Jesús García Latorre, "Muslims and Christians in a Mediterranean Mountain: Two Ways of using and Shaping the Land" (Association for Landscape Research in Arid Zones, Jesús García Latorre 27. Higginbottom
28. http://migration.ucdavis.edu/mn/archive_mn/jun_2000-13mn.html; and Associated Press Newswires, 14 October 1997; "Riots in Spain's 'Vegetable Patch'" *Christian Science Monitor* Vol. 92 Issue 60 (17 February 2000), 6.
29. Andy Higginbottom, "Super-Exploitation of Immigrant Labour in Europe: the Case of Intense Agriculture in Spain." Paper to the CSE conference Global Capital and Global Struggles; Strategies, Alliances, Alternatives in London, 1-2 July 2000.
30. "A Cry of 'Moors Out!' in Andalusia," *Business Week* (8 May 2000).
31. In July of 2001, a Moroccan mafia of smugglers and extortionists were caught in the town attempting to extract a ransom kidnapped Moroccans who thought they were coming to Spain for work. *El Pais*, 5 July 2001. There were reports of the AIG or Armed Islamic Group collecting a so called "revolutionary tax" from workers in El Ejido. *El Pais*, 14 September 2001.
32. Andy Higginbottom, "Super-Exploitation of Immigrant Labour in Europe: the Case of Intense Agriculture in Spain" Paper to the CSE conference on Global Capital and Global Struggles; Strategies, Alliances, Alternatives in London, 1-2 July 2000.
33. Dalrymple, 116.
34. Dalrymple, 117; and Jensen and Malter, 106, 144; and Daniel J. Cantliffe and John J. Vansickle, *Florida Agricultural Experiment Station Journal Series No. N-02089. A*;
35. Higginbottom.
36. *Manchester Guardian Weekly*, 7 February 2001; and

- "Unwelcome to Iberia," *The Economist* (10 February 2001).
37. *New York Times*, 8 May 2000, 1; and *The Los Angeles Times*, 8 October 2000.
38. Cook, 23.
39. Total acreage in Mexico is approximately 1,200 acres. http://www.tropical-seeds.com/tech_forum/pubs_res/pump_tom_trials.html; For instance, Sinca Agros is the preeminent producer of greenhouse tomatoes in Mexico, located on a 150 acre site two hours north of Mexico City, specifically chosen because it a cool mountainous area of Queretaro with the same latitude as North Africa. They use the Dutch type of greenhouse that is glass and entirely computer controlled. It is 100% export. The company has five other agricultural projects in Mexico including citrus production for Coca-Cola. Baron F. Levin, "Fields of plenty: Agricultural project cultivated in the boardroom," *Business Mexico*, September 1, 1998.
40. Merle H. Jensen, "Controlled Environment Agriculture in Deserts, Tropics, and Temperate Regions—A World Review"

ABOVE, AND ABOVE LEFT: Paved roadways and natural land formations make up the divisions between greenhouses in this hybrid condition of agricultural urbanism.