

SPECIAL FEATURE

Mechanical Harvesting, Globalization, and the Fate of Citrus Farmworkers in Florida and São Paulo, 1965–1985

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Abstract

This paper explores an obsolescence of labor that did not take place. In the 1960s, Florida's citrus growers appeared poised to accompany farmers across the South in pursuing a strategy of agricultural modernization that would mechanize their harvesting labor, rendering obsolete the thirty thousand Black and white farmworkers who harvested the orange crop. Their efforts were coordinated by the Florida Citrus Commission's Harvesting Research and Development Committee (HRDC), a rotating group of growers, trade association representatives, researchers, and engineers, who were confident that mechanization was within their grasp. But two decades later, every Florida orange was harvested by hand and HRDC's funding had been gutted. Why did growers think that mechanizing harvesting labor was both necessary and imminent? And then why, within only two decades, did they make such an about-face, largely abandoning the project of mechanization? The answer, I argue, lies in the particularities of the citrus industry's experience of globalization. At the level of capital, Florida's growers were caught flat-footed by competition from the nascent citrus industry of the State of São Paulo, Brazil; and at the level of labor, immigrants from Mexico, Guatemala, and Haiti swelled the ranks of available workers. The narrative moves between Florida and São Paulo, examining the efforts of growers to control, monitor, and replace farmworkers, and farmworkers' response, with the efforts and commentary of the HRDC providing the unifying thread. The argument is shown to bear on (1) the historiography of the South's agricultural modernization and (2) the historiography of the South's globalization (the "Nuevo South"), showing that it is necessary to join these two rarely connected historiographies to understand Florida's citrus industry, whose mechanization efforts spanned the 1960s histories of agricultural modernization and the 1980s histories of globalization.

Keywords: mechanization; immigration; globalization; agriculture

Florida's citrus groves sprawled across five hundred thousand acres, from the state's center, in and around Orlando, far south, to Lake Okeechobee.¹ During citrus's long harvesting season, which lasted from October until the following June, the groves would pull in thirty thousand workers—migrant workers on crew leaders' buses, locals in cars and trucks—who arrived each morning and, for hours, would set

their ladders against a tree's wide canopy, climb ten to thirty feet up, and reach deep into the foliage to pick, twisting each orange by hand from its stem, dropping them into the heavy vinyl sack they wore across their bodies.²

"Grove" conjures the bucolic image of a small, shaded family farm, an image reflected in the cart labels and advertising used in selling the oranges. But by the middle of the 1960s, grove ownership had gone through wave after wave of consolidation, and the trees that a worker worked on were now often owned by large firms or absentee landowners.³ In 1965, the industry was, in most respects, a characteristically modern agribusiness.⁴ Except that citrus harvesting itself—the climbing, the picking, the bagging—was not mechanized.⁵

The oranges that were stuffed by workers into sacks were then poured into tubs, hoisted by a mechanical forklift into the bed of a truck, and sold in boxes weighing ninety pounds. Unlike in California, where the harvested oranges were shipped for immediate consumption, in Florida, the largest bulk of citrus was converted into frozen orange juice concentrate, in sterile, noisy processing plants, whose exhalation of white steam made them visible across the citrus belt. The ownership of the processing plants was even more centralized than the groves, with about two dozen plants for the hundreds of millions of boxes to be processed each growing season.⁶ By turning fresh fruit into frozen concentrate, the processors made themselves nearly immune from many of the typical problems that ailed agriculture: spoilage, abrupt price changes, unexpected oversupply.⁷

Citrus was the largest agricultural product of Florida, which was, by the 1960s, among the largest agricultural producing states in the country.⁸ Reflecting its economic importance, the industry's interests weighed heavily in the state's government. The Department of Citrus (DoC), formed in the early 1930s at the behest of the industry, administered the operations of Florida's citrus growers and processors, guided in their policy by the Florida Citrus Commission, which was funded by a self-imposed tax on boxes of citrus and led by a body of political appointees chosen annually by the industry.⁹ The Florida Citrus Commission mediated between the interests of growers and processors. No one in either the DoC or the Florida Citrus Commission represented the workers who daily harvested the industry's citrus.

In its wealth, political influence, profitability in global markets, and seasonal reliance on cheaply paid, primarily Black, farmworkers, Florida's growers had raised citrus to the ranks of the South's "global agricultural commodities," crops whose divergent histories came—in the second half of the twentieth century—to run in ever closer parallel, as Southern farms weathered international competition and staged conflicts between owners and workers.¹⁰ The southern growers who thrived did so "through innovation and mechanization" that reduced their reliance on labor-intensive harvesting—that is, on a domestic Black labor force.¹¹

The modernization of Southern agriculture has yielded a rich historiography recounting, in tones both nostalgic and indignant, the depopulation of the rural South, as growers' restless drive toward the consolidation and mechanization of farms resulted in wave after wave of out-migration and, for those who remained, in a continued fight against seemingly hopeless poverty and political repression. Gilbert Fite, Pete Daniel, and Jack Temple Kirby established the now canonical narrative in which Southern growers followed a "federal road" to agricultural

modernization. First, New Deal agricultural policies subsidized growers to limit their acreage to raise crop prices, resulting in profits rarely shared with tenants.¹² Then, as WWII drew greater numbers of potential farmworkers out of the rural labor force, federal research offered growers the possibility to mechanize their crop harvesting, pushing tenant farmers out and farmworkers into total market dependence, completing the post-WWII South's "enclosure movement."¹³

Between 1965 and 1975, Florida's citrus industry expanded its production by half and cemented its place as the world's single largest producer of oranges. The Florida Citrus Commission was poised and eager to follow the rutted path of modernization and labor mechanization: the Commission's vocal complaints of domestic labor shortages elicited a wave of state and federal research money to be poured into harvesting research, until total mechanization seemed not only desirable but commercially viable and *imminent*.¹⁴

But Florida's citrus industry did not mechanize its harvesting. To this day, each orange processed into each glass of Florida orange juice remains picked by hand. Why did growers think that mechanizing harvesting labor was necessary? And why, within only two decades, did they make such an about-face, largely abandoning the project of mechanization?

The answer, I argue, is that instead of following the familiar route of other southern crops—mechanization and rural depopulation—Florida's citrus industry became both an eager participant and reluctant victim of a different trend: the globalization of the South. Where growers expected to supplant Black and white farmworkers with tree-limb shaking machines and abscission chemicals, they instead utilized new methods of third-party labor contracting to take advantage of rapidly growing and more pliable immigrant communities from Mexico, Guatemala, and Haiti; and where they hoped to extend their position as the largest global supplier of orange juice, they found themselves unseated and out-competed by growers and processors in São Paulo State, Brazil, whose industry they initially seeded with capital to offer a reserve supply during Florida's devastating cold seasons.

Florida's citrus industry was unusual in that it experienced, in the same moment, the two movements of globalization that are normally considered, and studied, separately: *the movement of labor* (via immigration and guestworker programs) and *the movement of capital* (via international competition and consolidation). This separation is reproduced in the historiography of the South's globalization, resulting in a literature on "humble immigrants" and one on "mighty corporations" that have too rarely been brought together.¹⁵ Leon Fink's *Maya of Morganton* inaugurated the former, the study of the "Nuevo New South," in which he recounted how immigrant poultry workers from Guatemala worked, lived, and organized in 1980s and 1990s North Carolina, and argued that traditions of unionism that workers brought with them allowed their success in the US South, in a region and an industry notoriously hostile to labor.¹⁶ Historians since Fink have questioned the novelty of this "nuevo" South, and have attended more closely to the sustained and reciprocal connections between immigrant communities in the South and their countries of origin.¹⁷ And at the level of capital, historians have examined how southern communities have attempted to draw in foreign corporations, and how southern corporations have expanded abroad, in what historian Tore Olsson characterizes as a "boomerang"

movement.¹⁸ It is notable not just that Florida's citrus experienced these two movements at the same time, but that it did so earlier.¹⁹

Because its globalization occurred earlier, it is easier, and still more necessary, to see how it followed from, and was a continuation of, citrus's earlier history: the attempted modernization along the lines of the South's other major crops. Where histories of the South's agricultural modernization often end in the early 1960s—in mechanization and the expulsion of its rural workers, who either left or were left behind—and where histories of the South's globalization often begin in the 1980s and 1990s—when the “thickening webs” of people and capital changed the face of a South, whose plantation past still loomed—in Florida's citrus industry these were joined as a continuous narrative.²⁰ The thread binding them was the growers' efforts to control their access to a supply of harvesting labor.²¹ That mechanization did not ultimately succeed does not diminish its place in that history.

This paper draws together these historiographies to narrate the rapid rise and anti-climactic decline of the Florida Citrus Commission's Mechanical Harvesting Research and Development Committee (HRDC), the committee of growers, engineers, and scientists that coordinated the efforts of the industry to mechanize its harvesting. In the first section, covering 1965 to 1975, I show how the HRDC and associated growers framed their efforts as a response to rising labor costs, often attributed to the unions and farmworker organizations that they closely tracked. The HRDC's effort to mechanize harvesting, accordingly, is best understood as a crucial but overlooked step in the history of Florida's growers' attempt to maintain and control access to a supply of labor. Their effort bridged the earlier reliance on guestworker programs and Jim Crow repression with the later adoption of third-party contracting of noncitizen immigrants to achieve those same ends.²² In the second section, I show how the HRDC responded to the crises and opportunities that unfolded for Florida's industry between 1975 and 1985: the series of freezes in Florida that opened the floodgates to international competition from São Paulo and the concerted federal effort to reform immigration laws affecting farmworkers. Throughout this section, I aim to demonstrate how joining the history of southern agricultural modernization to that of the South's globalization changes the understanding of both. Globalization, here meaning the pressure of international competition, is typically broached in histories of southern agricultural modernization as a catalyst toward mechanization. But the peculiar way in which Florida's citrus industry globalized—experiencing in-migration and international competition simultaneously—meant that it instead it dampened the industry's desire for mechanization and left Florida's crop as an appendage to its more successful South American competitor. Florida's growers stayed afloat not by mechanizing their harvesting, a proposition too costly after São Paulo cut into Florida's profits, but by “peripheralizing” its own labor force, exploiting ever more vulnerable populations with ever more flexible contracting methods, reducing its labor costs to a level more comparable to that of São Paulo farmworkers.²³ In both sections, I attempt to show how growers' efforts to control, document, and replace labor was shaped and experienced by workers in both Florida and São Paulo. Ultimately, farmworkers in both Florida and São Paulo State toiled and struggled in the shadow of a mechanization that never happened.

“The Peaceful and Sound Labor Climate”

Labor shortages, real and imagined, haunted the imaginations of Florida’s citrus growers throughout the mid-1960s.²⁴ The slow death of Jim Crow in Florida and the fast economic growth of the state presented farmworkers with higher-wage jobs elsewhere. This situation was worsened when Willard Wirtz, Secretary of Labor under Lyndon B. Johnson, steeply curtailed the availability of the migrant guestworkers to whom growers would turn when domestic labor was deemed too expensive.²⁵ All the while, Florida’s growers watched anxiously as the United Farm Worker Union (UFW) in California mounted a nationwide grape boycott and, in 1966, began to win contract after contract with California’s powerful grape growers. Fears that the UFW would turn their attention to Florida’s farmworkers were realized in 1969, when the union began to organize sugar harvesters in the far south of the state²⁶; and again in 1972, when the UFW’s threat of a boycott of Coca-Cola—the parent company of Minute Maid and the largest single citrus grove owner in Florida—won the union their first contract in the state, a contract that left more than three-thousand Minute Maid farmworkers “looking like autoworkers.”²⁷

The same year that the UFW’s Minute Maid contract was signed, the largest line on the Florida Citrus Commission’s annual research budget was mechanical harvesting.²⁸ The Florida Citrus Commission’s mechanical harvesting program was overseen by the HRDC, the sub-committee that met monthly from the early 1960s until 1984, composed of roughly a dozen of researchers, growers, and representatives from grower, producer, and packinghouse associations. Under their supervision, at research facilities, universities, and in groves throughout the citrus belt, the effort to rid the industry of its worsening labor problem was pursued aggressively, an effort that echoed the initiatives undertaken in the Deep South’s cotton fields and presaged similar efforts for Florida’s sugar and North Carolina’s tobacco crops.

When the HRDC met during 1965’s growing season, it was to discuss what was seen as *the* immediate problem facing the industry: labor costs. Committee members agreed that “the cost of harvesting was increasing excessively,” presenting a “serious problem” to the industry.²⁹ But they lamented that the severity of the problem was not yet matched by the resources available to them. Though they had the clear objective of devising “a practical solution” to the harvesting problem they still lacked a workable plan to get there.³⁰ And so Committee members traveled to California during the summer off-season to observe the progress of citrus mechanization there. They were disappointed by what they saw.³¹ As in cotton, sugar, tomatoes, or any crop whose harvesting has been mechanized, orange trees presented physical and natural difficulties that seemed, at times, insurmountable. In California, those problems were exacerbated by the demands of picking and selling fresh fruit. Many of the proposed machine designs could scathe and damage the oranges, leaving them unappealing to consumers. As a result of this, California’s citrus growers had less incentive to develop what was for Florida’s growers the holy grail: a “mass removal machine.”³²

The machines used in Florida were not constrained by the need to keep the oranges attractive. Because the bulk of Florida’s oranges were taken to be peeled and pulped in processing plants and made into frozen concentrate, it did not matter if they were scuffed, scratched, or dirtied.³³ Which was fortunate, given that the

HRDC pinned their hopes on machines like limb shakers, water blasters, and air blasters, which would move on tire or tread between trees and violently shake or force the fruit from their limbs with concentrated bursts of water or hurricane-force winds. The oranges would then fall into either a catch frame or directly onto the ground, into the dirt. In the latter case, workers would still be needed to gather the fallen oranges, but this was not a concern: Because the labor was less demanding, the committee thought, they could hire elderly or unfit workers, who could be paid even less. While they waited for funding from the USDA to come in, the HRDC turned to temporary measures: mailing questionnaires to growers that asked, “how to improve the attitude of the workforce” and sending Committee members to groves during harvest to closely watch the picking movements of workers, to spot any unecological movement or downtime that could be eliminated.³⁴

The HRDC’s desire to observe and document the movement of workers was not limited to members’ time in the groves. In July 1968, the HRDC welcomed a new member onto their committee, George F. Sorn. At the time of his appointment, Sorn was the manager of the Labor Division of the Florida Fruit and Vegetable Association (FFVA), a powerful growers’ association. As recorded in the HRDC’s meeting minutes, Sorn did not say much, only stressing the urgency of mechanical harvesting given the “labor problem.”³⁵ Outside of the meetings and even after his tenure on the HRDC, he was far more vocal. Sorn edited, and often wrote entirely, the FFVA’s *Labor Bulletin* and its confidential citrus and sugar supplements: newsletters that were mailed to growers across the state, which tracked any labor problems that came under Sorn’s purview. And, seemingly, every labor problem came under Sorn’s purview. In 1965, his biggest concern was Secretary of Labor Wirtz’s national effort to curtail the use of temporary guestworkers in agriculture. Citrus growers did not use as many guestworkers as did Florida’s sugar industry. But the availability of a reserve of labor was important. Growers clamored to convince Wirtz that labor shortages would ruin them absent guestworkers.³⁶ And their clamor was joined by the *Labor Bulletin*, which argued that Wirtz’s “radical efforts to attempt to correct various social problem of the so-called migratory worker problem,” would only “wreak irrevocable damage throughout a large sector of the agricultural industry.”³⁷

The threat of unionization weighed heavily on the pages of the *Labor Bulletin*. The newsletter tracked the efforts of organizers among Florida’s farmworkers and the churches that supported them. Those churches that “stressed noble humanitarian objectives as justification” for the support of “certain splinter union groups” had to be reined in, and the newsletter called for its readers to contact their “priest or rabbi” to impress “the economic facts of life” on them.³⁸ When the inclusion of farmworkers under the National Labor Relations Act (NLRA)—allowing for collective bargaining—was raised in the 1960s, the *Bulletin* argued that “giving Unions the additional power dictated by the NLRA” would “completely destroy” the balance of power between farmers and workers.³⁹ Explicitly connecting the threat of unionization to mechanization, the *Bulletin* claimed that “mechanization as a means of keeping production costs down may be the only answer to a grower’s continued existence,” and that unionization could disrupt the forward march of mechanization, as “strikes and labor disputes to prevent the adoption of technological improvements” would “be disastrous in agriculture.”⁴⁰

The *Bulletin* harbored a particular concern for the Florida Christian Migrant Ministry (FCMM)—a ecumenical group representing Florida’s farmworkers, which was closely allied with the UFW throughout the late 1960s and 1970s, publishing the FCMM’s member lists, members’ positions in the organization, office locations, updates when locations changed, and reports on the contents of the FCMM’s own newsletters and proceedings, all to the *Bulletin*’s readership of growers.⁴¹ The FCMM was only one of the groups representing Florida’s farmworkers, but it was unique in that it split its efforts between support for the UFW and services for the large majority of farmworkers who were not members of the union. After winning its contract in 1973, the UFW was unable to expand into any further citrus groves, and by 1974, all of its organizing efforts were consumed by contract renegotiation. More typical among Florida’s farmworker organizations were groups like Benito Lopez’s United Migrant Association, which won no collective bargaining contracts but instead operated partly as a political pressure group and partly as a service center. Because these groups did not pose an immediate threat to growers, they often slipped under the radar of the *Bulletin*.

The twin threats of labor shortages and unionization hung over the HRDC’s meetings in the early 1970s. But their desire for increased funding was finally realized. Between 1965 and 1972, the HRDC’s budget ballooned from the low hundreds of thousands of dollars to nearly two million per year. This boost in research funding was paid for by a new tax on growers to be renewed every three years and by larger allotments offered by the FCC and the USDA.⁴² The largest portion of the budget went to the HRDC’s ambitious mechanical harvesting incentive program. The incentive program would pay growers who volunteered to use mechanical harvesting instead of hand labor for the cost of that harvesting and for any damage done to their groves by the experimental machines. The initial list of growers eager to sign up for the program was long and represented the largest players in the industry, from Minute Maid—where the machines would be used as a substitute for unionized workers—to Golden Gem, the largest cooperative of independent growers.⁴³ “Since the cost of picking soared beyond expectations,” the Committee reasoned, “growers were becoming more willing” to adopt any method to ameliorate the costs and some ideas previously “thought too costly might be reconsidered.”⁴⁴

The HRDC found the first two years of the incentive program, 1973 to 1974, to be a resounding success. It was the sea change the HRDC longed for and which established that mechanical harvesting was commercially viable, producing results that were no long “haphazard and uncoordinated,” but precisely implemented, observed, and documented.⁴⁵ The growers, too, were satisfied: “almost without exception the users are enthusiastic.”⁴⁶ The most commonly leased machine was the limb shaker. It became the clear frontrunner of viable harvesting machines, harvesting as much as 90 percent of a grove’s early and midseason oranges, a number that the HRDC previously considered so good as to be unrealistic. Reviewing the progress of the program, the committee’s lead researcher felt confident in saying that “the gap between hand-picked and mechanical harvested is fast closing.”⁴⁷

Left Out in the Cold

As the 1970s wore on, the HRDC's resolve, and funding, would be tested. It was not because the FCC withdrew support for the program, nor because the Committee's enthusiasm diminished. Instead, the industry as a whole felt the impact of events beyond its immense control. In 1975, to the relief of growers but the chagrin of the HRDC, there was a reversal in the long trend of "labor shortages" seen as plaguing the industry. In meetings, Committee members attributed the turnaround to the nationwide economic downturn, suggesting that workers turn to farm labor in moments of economic desperation. The FFVA's *Activities Report* and *Labor Bulletin* also noted a trickling increase of noncitizen immigrants working in Florida's groves, warning its grower readership of increasing border patrol activity in the state, "apprehending and deporting illegal aliens" and advising on how to avoid employer penalties.⁴⁸

At the same time, the UFW—with its contract renegotiations finally secured—launched an ambitious effort to introduce an Agricultural Labor Relations Act into Florida's legislature, which would secure organizing rights along the lines of the National Labor Relations Act for Florida's farmworkers. They found sympathetic representatives in both the House and the Senate, who introduced the bill, and it went to the House Agriculture Committee for a vote in 1976. Sorn's *Labor Bulletin* expressed dismay at the prospect of the UFW's legislation and chastised its readers: "there were about 200 United Farm Workers sympathizers including workers in attendance" but only "about 30 growers."⁴⁹ Because the bill "would allow strikes at harvest," the *Bulletin* encouraged readers to write urgently to the House Agriculture Committee.⁵⁰ It was not necessary. The Committee killed the bill before it could go to the floor for a vote. In response, growers doubled down on efforts to prevent further unionization, pushing agricultural "right to work" bills in the state legislature, lobbying against secondary boycotts, blocking efforts to introduce unemployment insurance and workers' comp, and firing on sight any workers seen talking with union organizers.⁵¹

But just as growers exhaled in relief at the failure of the UFW's labor legislation, their groves were visited by a devastating freeze in January of 1977. When temperatures fell below 26°F and remained there, oranges would begin to spoil as the sun rose and thawed the groves. Growers needed their trees harvested quickly and so could not risk any fruit loss or delays due to mechanical failure. For the HRDC, the freeze had the immediate consequence of drastically reducing the number of groves available to mechanically harvest. With yields reduced by the freeze across the citrus belt, Sorn's *Labor Bulletin* reported that this would mean there would be a surplus of labor for the harvesting that remained. It was a bright spot, no doubt, in an otherwise dire moment for growers.⁵²

The 1977 freeze had a long-term impact that would ultimately blindside Florida's citrus growers: it opened the door to international and domestic markets for São Paulo State's nascent citrus industry. Demand for orange juice was strong enough that in the early 1970s, Florida's processors began to invest in São Paulo's rural interior, providing know-how and capital for juice processing plants, unconcerned that it might later pose a threat. At the time, it made sense: Brazilian oranges could

supplement Florida's when demand grew, or yields fell—as during the 1977 freeze—keeping prices low and consumers happy. But São Paulo's groves were sown with Floridians' hubris. A product of cheaper labor, cheaper land, and an aggressive agricultural export policy pursued by the country's military dictatorship, Brazil's citrus industry would become globally dominant within the decade.⁵³ It would be difficult to overstate Brazil's competitive advantage in citrus. A quip common among Florida's growers was that "Brazil has a growing area 300 miles wide and as long as from Miami to Canada . . . and it never freezes."⁵⁴ But the biggest advantage that São Paulo State's growers and processors had, in terms of costs, more even than cheap land, was its labor: Farmworker wages were tragically low and even farmworkers' access to regular food and clean water in São Paulo's citrus towns was never guaranteed.⁵⁵

But São Paulo remained far from the forefront of the HRDC's concerns. Now with a genuine alternative available—given the overabundance of labor and the failure of the UFW to expand in citrus or pass their ambitious farmworker labor legislation in Florida—getting buy-in from growers with the incentive program became substantially more difficult. And the growers who did continue with the program became more critical of, and impatient with, the results. After two harvesting seasons where there "has not been a real crunch in terms of hand labor costs," growers felt "considerable discouragement."⁵⁶ The reports from the fields became nearly comical in their descriptions of problems that, earlier, were easier to overlook. Machinery would regularly get stuck in Florida's soft sugar sand, oranges would fall through or out of catch frames completely, and regular rains in the late harvesting season would wash off abscission chemicals—which made the oranges easier to remove from their stems—before harvesting could take place.⁵⁷ The machines were noisy, unwieldy, and prone to breaking down, which would often take hours to fix. The HRDC remained committed, convinced that the temporary abundance of labor would pass.

With the incentive program on its last legs but with full mechanization still seemingly within their reach, the HRDC turned to another approach to put their ideas, and their machines, into practice. The committee agreed to fund and operate a non-profit harvesting operation, the Citrus Research Foundation (CRF), which, instead of relying on growers taking the initiative, would lease groves outright and harvest them directly.⁵⁸ One of the first grove owners to volunteer was Minute Maid, which arranged a five-year lease on a forty-acre grove to be harvested by the CRF. The program was slow to get off the ground and would regularly run over budget. The machinery they had available was not the best: It was either experimental or leftover from earlier projects, cobbled together with spare parts and makeshift fixes the morning before harvesting. With skepticism from grower organizations, particularly from the Florida Citrus Mutual, the HRDC proposed that the CRF either be cut back substantially or that the committee go all-in, investing more heavily and riskily, accepting losses in order to keep afloat the dream of mechanization.⁵⁹

At the same time, growers began to adopt a very different "technology" in their groves: third-party labor contracting. The hiring structure used by Florida's growers for their farmworker labor force was becoming gradually more complicated. In an attempt to circumvent legal responsibility for labor violations, byzantine layers of

hierarchy were added between the grower and the worker. Growers hired grove managers, who hired contracting companies, which temporarily employed individual contractors, who hired (often with little or no paperwork) teams of workers.⁶⁰ Sorn documented the changes with approval and from his position as manager of FFVA's Labor Committee, was instrumental in disseminating information to growers about the use of labor contractors, the proper wording of contracts, and in lobbying for favorable immigration reform legislation. In 1980, the FFVA praised Sorn for keeping federal enforcement of contractor laws "off our backs."⁶¹

Back-to-back January freezes in 1981 and 1982 and a Christmas freeze in 1983 would reshape the landscape of Florida's citrus industry for the HRDC, for growers, and for farmworkers. After each freeze, Florida's grove workers rose earlier than usual. Picking oranges was, like most agricultural work, tedious, dangerous, and hard. Doing it with numb fingers in the ragged cold was worse. But workers who relied on the long harvest season, which had been cut from months into days by the freeze, were eager to be there, to earn what they could, while they could. As badly as the freeze hurt growers, it hurt farmworkers, already precarious, with a threadbare safety net, more. Sleeping in cars, in trailers, or in dilapidated company housing, farmworkers woke up after a freeze to see their livelihoods destroyed along with the groves, a crucial workforce reduced to a reserve army of labor in a single night.

The HRDC saw its increasingly precarious funding dwindle further. With profits threatened first by the series of freezes and then, as a consequence, by mounting competition from São Paulo's industry, the Committee's tax on boxes was allowed to lapse. The nonprofit CRF followed shortly after. The HRDC made a case for its continued existence while also acknowledging the causes of grower reluctance. "This committee and the Citrus Commission had a responsibility to continue bona fide efforts to improve methods of harvesting," an effort that should be maintained despite the reluctance of growers, because, at any moment, labor costs could again begin "rapidly spiraling" out of control. Machinery should be kept in good repair, research should continue even if at a reduced pace, and the option of mechanization should remain open should it become necessary, especially if proposed federal immigration reforms threatened a greater "loss of labor." As the Committee stated forthrightly, "only because of new sources of Mexican labor has the harvesting situation remained tolerable at all."⁶²

As many of Florida's growers succumbed to the freezes, the growers of São Paulo State stepped in to fill global demand. In the sunbaked town square of Bebedouro, in the interior of the state, the weather was warm and moods were light. A corner café buzzed with activity, as patrons rubbed elbows, drinking, eager to discuss the news: the devastating freeze in Florida.⁶³ It would mean another year of expansion. Bebedouro was a watering-hole transformed into a boomtown by the explosive growth of its citrus industry, which provided 85 percent of the city's employment, anchored by two massive processing plants and surrounded by miles of orange groves.⁶⁴ For Bebedouro's largest citrus magnates, like Sérgio Stamato—mayor of Bebedouro, and owner of miles of groves that he surveyed daily from his two-engine airplane—the freeze meant that US juice companies would clamor to import Brazilian oranges to meet domestic demand.⁶⁵ Sérgio Stamato's daughter Elizabeth,

royalty in Bebedouro, said it simply, “when there is a freeze in Florida, everyone here smiles.”⁶⁶

The vast majority of São Paulo State’s citrus workers were, as in Florida, temporary wage workers, with no landholdings of their own.⁶⁷ When Father José Domingos Bragheto, a Catholic priest who had been providing ministry in Bebedouro since the mid-1970s, visited the houses and apartments of the farmworkers, he found families eager to talk to him about labor issues but concerned about the consequences; he found children playing in the yards, pious wives, and slightly less-than-pious husbands.⁶⁸ Workers in Bebedouro watched the town and its prominent grower families flourishing, fat with wealth after the freezes in Florida, while farmworker wages barely moved, and persistent inflation ate away at the little value of the cash they had.

In May of 1984, six months after the Christmas freeze in Florida, after US workers disappeared into quiet despair, or into other crops, or into other states, the farmworkers of rural São Paulo ignited into an all-consuming fire that burned through Bebedouro.⁶⁹ For the month of May, farmworkers in sugarcane and citrus went on strike in the tens of thousands across São Paulo State. The strikes began among sugarcane workers but in less than a week had spread to the citrus towns that neighbored them.⁷⁰ Bebedouro became a center of the conflict, and its town square, with its characteristic “shade trees” and “red-tiled roofs,” would be filled with thousands of striking workers and hundreds of military police attempting to force them into submission.⁷¹

As Sérgio Stamato would acknowledge a year later, the workers’ demands were articulated on the basis of the industry’s rising prices—due to the increased market penetration into Florida—that benefited seemingly everyone but the them.⁷² Workers demanded a doubling of their current wages and blocked the road used to transport farmworkers to the groves, and, with sticks, stones, knives, and gasoline, destroyed and set fire to buses and contractor trucks outside of the town. Sérgio Stamato promised, vaguely, that farmworkers’ wages would rise along with prices.⁷³ During the day, workers skirmished with police, exchanging stones and blows. At night, military police kicked in the doors of citrus workers’ homes and beat them.⁷⁴

Father Bragheto, who had lived in and around Bebedouro for nearly a decade, was stunned by the sudden urgency and violence of the strike.⁷⁵ A radicalized, liberation-oriented Catholic, Bragheto had been attempting to encourage farmworker unionization for years. Just nights before the strikes started, he was at a local union meeting with exactly fifteen workers present. Though decades of organizing laid the groundwork, when the strike began, it took on a life, and a ferocity, all its own.⁷⁶ The accumulated misery of the workers was black powder, that, once ignited, threatened to upend the town. After little more than a week of strikes, workers in Bebedouro won their terms, and farmworkers, stunned union organizers, and industry representatives gathered into a soccer stadium in Bebedouro to formalize the gains.⁷⁷ *Folha de São Paulo* noted the “irony” that by publicizing the boom in prices, processors unwittingly condemned themselves to the strike. If processors refused to share in the bounty, workers had only one weapon, but a devastating one: “cruzar o braço,” to cross their arms.⁷⁸

Florida’s farmworkers experienced the freezes of the early 1980s very differently than their counterparts in São Paulo. Florida’s growers continued to grumble

about how the migrant stream, and consequently their labor supply, had “thinned.”⁷⁹ They turned their energy toward lobbying for favorable legislation that would guarantee a surplus of workers. Grower associations made clear their support of the proposed Migrant and Seasonal Agricultural Worker Act in 1982 for that reason, praising it because it “would delete the prohibition against farmers, processors and packers and their employees hiring illegal aliens” that was law at the time.⁸⁰ Trade journals ran articles on the “Pros and Cons of Illegal Labor,” in which they called for a robust, grower-oriented guestworker program but acknowledged that “raids on Florida citrus groves and vegetable fields by the Border Patrol certainly showed that knowingly or unwittingly farmers or crew chiefs hired the illegal immigrants.”⁸¹ This callous weighing of “pros and cons” had real consequences for the farmworkers, documented and undocumented, that were employed by these growers. Golden Gem was raided in 1984 by the US Border Patrol, ultimately deporting eighty-eight farmworkers to Mexico.⁸² Golden Gem’s president pled ignorance, placing blame on the labor contractor. The border patrol officials told the press that “more aliens without work permits have come to Central Florida this year than ever before,” with deportation numbers doubling the already-high counts of the previous two years.⁸³ Labor contractors noted that even still, the rate of deportations was lax and the penalties paid for by the profits.⁸⁴ The number of workers swelled as the migrant stream from Mexico was joined by refugees from Haiti and Guatemala in the middle of the decade.⁸⁵

Florida’s farmworker organizations attempted to confront this new situation—and, in particular, the byzantine system of third-party labor contracting—in two ways. The UFW’s strategy was to win a contract stipulating that all of the farmworkers used by grove owners were rightly the employees of that grove owner, not of a third-party contractor. Organizers targeted the groves of the Adams Packing Association, which employed only four hundred workers. The employees had the lowest pay of any citrus workers in Florida, roughly \$3 an hour, nearly half the rate Minute Maid workers made.⁸⁶ Any whiff of meetings between farmworkers and UFW representatives, and Adams would call county deputies. Despite these odds, over two years the union managed to get signatures from all of the Adams grove workers demanding the recognition of a union and the opening of collective bargaining negotiations. The response from Adams was swift: all four hundred workers were terminated. The UFW thought this would be a clear-cut legal case of discrimination. But the rabbit hole of labor contracting was deep. Adams’s executives pleaded that they were a mere juice processor, that they neither owned groves, nor hired farmworkers.⁸⁷ The actual owners of the groves were “Gapway Grove Corp.” The union provided paperwork proving that Gapway Grove Corp. was a shell company of Adams, sharing offices and board members. Nevertheless, Adams pleaded again, even Gapway Grove Corp. does not directly employ farmworkers, they hire contractors—crew-leaders—and those contractors are responsible for the workers and working conditions. Adams ultimately succeeded. It was the last citrus grove in Florida that the UFW would attempt to organize.

The other approach was to challenge exploitative labor contracting methods by operating farmworker-owned cooperative contractors. Tirso Moreno, a former UFW member, saw that Adams was able to evade not only legal liability by their use of harvesting companies but also avoid any chance of workers achieving a

collective bargaining agreement.⁸⁸ Moreno founded his own harvesting company, PEP Labor Crews, a worker-owned cooperative that would compete directly with the industry's harvesting companies.⁸⁹ Because it was a cooperative, PEP Labor Crews would, ideally avoid the abuses that Moreno associated with crew-leaders, which were "given authority in the field by the companies," and who "mistreat the people pretty badly."⁹⁰ Although, at the peak of its operations, PEP Labor Crews employed more than a hundred workers, it faced a steep uphill climb before it would become sustainable, much less competitive. Although farmworker wages and piece rates within the dwindling UFW Florida Division rose at negotiated amounts, what Moreno found outside of the UFW was that farmworkers' real wages had fallen sharply.

As Florida's farmworkers attempted to navigate this new landscape, so too did the HRDC. Proposing a threadbare budget that allowed just for continuity of staff and maintenance of machines, they all but acknowledged that their committee had come to an end. It was finally dissolved in 1984. But it served its purpose: demonstrating the commercial viability of mechanical harvesting. But it was a "commercial viability" achieved only in a specific moment, when Florida's industry was not seriously challenged by global competitors and when labor costs appeared to be trending steeply upward. The peculiar globalization, which brought, in the same moment, new sources of labor and new sources of competition, ultimately led growers to adopt a different means of maintaining control over their supply of labor. Unlike the more familiar fate of farmworkers in the US South, Florida's citrus workers were not displaced by mechanization in order to allow the industry to compete globally. Instead, their wages and the conditions of their work were systematically pushed down, made comparable to those of their counterparts in São Paulo. But unlike the workers in São Paulo, where growers had not yet fully adopted the methods of third-party labor contracting, Florida's farmworkers seemed not to have any recourse, either legally or by making demands of a grove owner. It could be a fate worse than obsolescence. The stories of resistance in both Florida and São Paulo, though, suggests how obsolescence can be addressed in a comprehensive way: abuse of labor contracting met with state or national legislation, declining wages or untrammelled mechanization met with collective bargaining, and most challengingly, global competition that pits workers in a "race to the bottom," met with forms of international solidarity.

Notes

1. *Florida Agricultural Statistics: Citrus Summary, 1965 Issue* (Florida Department of Agriculture Publication Department, 1965), 4–5.
2. J. Kamal Dow, *Impact of Mechanical Harvesting on the Demand for Labor in the Florida Citrus Industry* (Gainesville, FL, 1970), 7.
3. 1969 *U.S. Census of Agriculture*, Part 29: Florida, vol. 1, U. S. Census Bureau, Washington, DC.
4. On the characteristics of modern agriculture—consolidated ownership, synthetic fertilizers, market dependent labor, partial or total mechanization—see the overview by Shane Hamilton, "Revisiting the History of Agribusiness," *Business History Review* 90 (Autumn 2016): 541–45; for a history of American agribusiness sensitive to social and political factors, see Paul Conkin, *A Revolution Down on the Farm: The Transformation of American Agriculture since 1929* (Lexington, KY, 2008); Harriett Friedman, "The Political Economy of Food: the Rise and Fall of the Postwar International Food Order," *American Journal of Sociology* 88: 248–68, which shows how the modern agricultural regime sustains the dependency

of an agrarian periphery, and Marcel Mazoyer and Laurence Roudart, *A History of World Agriculture: From the Neolithic Age to the Current Crisis* (New York, 2006), esp. 375–439.

5. This runs counter to the normal tendency in agricultural modernization that “due to the industrialization of agriculture, the quantity of land and labor needed for growing crops was minimized—in the case of labor, almost to the vanishing point,” Aaron Benanav, “A Global History of Unemployment: Surplus Populations in the World Economy, 1949–2010,” (PhD diss., University of California, 2015), 125.

6. *Florida Agricultural Statistics: Citrus Summary, 1965 Issue* (Florida Department of Agriculture Publication Department, 1965), 5.

7. On the development of frozen concentrate, see Shane Hamilton, “Cold Capitalism: The Political Ecology of Frozen Concentrated Orange Juice,” *Agricultural History* 77, 4 (Autumn 2003): 557–81. On the modern history of Florida’s citrus industry as a whole, Christopher Warren, “‘Nature’s Navels’: An Overview of the Many Environmental Histories of Florida Citrus,” in *Paradise Lost?: The Environmental History of Florida*, Jack E. Davis and Raymond Arsenault, eds. (Gainesville, FL, 2005): 177–200, and Scott Hussey, “Freezes, Fights, and Fancy: The Formation of Agricultural Cooperatives in the Florida Citrus Industry,” *The Florida Historical Quarterly* 89, 1 (Summer 2010): 81–105. These histories do not reach beyond the 1960s and so necessarily miss how quickly and fundamentally the industry was transformed by events of the 1970s and 1980s and largely neglect the topic of harvesting labor.

8. Leo C. Polopolus, *Agriculture and Its Importance to the Florida Economy* (Gainesville, FL, 1976).

9. *The First 50 Years of the Florida Citrus Commission* (Florida Department of Citrus, 1986). As John McPhee describes the commissioners, “all growers or canners or packers and nearly all millionaires,” in *Oranges* (New York, 1966), 123.

10. On the demographics of the labor force in the 1960s, *Migrant Farm Labor in Florida* (State of Florida Legislative Council, 1963), 5. The quoted term comes from Richard Follett, Sven Beckert, Peter Coclanis, and Barbara Hahn, eds., *Plantation Kingdom: The American South and Its Global Commodities* (Baltimore, MD, 2016) and the description of Southern agricultural modernization, p. 156.

11. Follett, Beckert et al., eds., *Plantation Kingdom*, 156. Cindy Hahamovitch, “Planting Jim Crow in Modern South Florida: Growers, Government, and the Making of a Mobile Reserve Army of the Unemployed,” (unpublished manuscript, presented October 8, 2021, DC Area Labor and Working-Class History Seminar) has characterized the US South’s agriculture as a whole as being meaningfully distinct from the rest of the nation due to this overwhelming “reliance on Black labor.” This, she argues, fits Florida’s agriculture squarely among the southern states; but Florida departs from its plantation South neighbors in that their Black labor force was stationary—held in place through tenant contracts, debt, and threats of violence—while Florida’s was mobile and migratory. I endorse this characterization and, in this paper, attempt to explain how that crucial difference resulted in a very different experience with mechanization—for growers and for workers—in Florida’s citrus industry than in other southern agriculture.

12. Gilbert C. Fite, *Cotton Fields No More: Southern Agriculture 1865–1980* (Lexington, KY, 1984); Pete Daniel, *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures Since 1880* (Urbana, IL, 1985); Jack Temple Kirby, *Rural Worlds Lost: The American South 1920–1960* (Baton Rouge, LA, 1987); Jack Temple Kirby, *Rural Worlds Lost: The American South 1920–1960* (Baton Rouge, LA, 1987). For the overview that identified the “federal road” as the common culprit behind the authors’ shared stories of modernization, enclosure, and depopulation, Numan V. Bartley, “The Southern Enclosure Movement,” *The Georgia Historical Quarterly* 71, 71 (Fall 1987): 438–50.

13. For the characterization of this as an “enclosure movement,” similar in both cause and effect to the much earlier English enclosure movements, Bartley, “The Southern Enclosure Movement,” and Daniel, *Breaking the Land*, 292–93. Historians have since expanded this canonical narrative of southern modernization—without changing its broad outlines—by focusing on conflicts among growers, between growers and the federal government, and between growers and the sharecroppers, tenants, and farmworkers whose labor was being displaced. Jeannie Whayne, *A New Plantation South: Land, Labor, and Federal Favor in Twentieth-Century Arkansas* (Charlottesville, VA, 1996), and Nan Woodruff, “Mississippi Delta Planters and Debates over Mechanization, Labor, and Civil Rights in the 1940s,” *Journal of Southern History* 60, 2 (May 1994): 263–28, both narrate conflict between planters’ associations, whose obstinance to accept a world where “where black workers lived off the plantation,” met with the organized resistance of tenant farmers’ unions. Economic historians Gavin Wright, *Old South, New South: Revolutions in the Southern Economy Since the Civil War* (New York, 1986), and Susan A. Mann, “The Rise of Wage

Labour in the Cotton South: A Global Analysis,” *The Journal of Peasant Studies* 14, 2: 226–42, expanded the narrative outward, looking at how international economic pressures shaped the balance of forces in the region. And, more recently, Greta de Jong’s *You Can’t Eat Freedom: Southerners and Social Justice After the Civil Rights Movements* (Chapel Hill, NC, 2016), has extended the story beyond the moment of enclosure, to the 1960s and 1970s, when Black Southerners, whose labor was now “expendable,” struggled to gain and retain rights in a hostile post-Jim Crow South where “the means of economic survival” were still held beyond their reach. On the often-parallel story in tobacco and the Upper South, Barbara Hahn, “Into the Belly of the Beast: The 2002 North Carolina Flue-Cured Tobacco Tour,” *Southern Cultures* 9, 3 (Fall 2003): 25–50, and Adrienne Petty, *Standing Their Ground: Small Farmers in North Carolina Since the Civil War* (Oxford, 2016), chapters 8 and 9.

14. *Florida Agricultural Statistics: Citrus Summary, 1975 Issue* (Florida Department of Agriculture Publication Department, 1975), 4.

15. Tore C. Olsson, “The South in the World since 1865: A Review Essay,” *Journal of Southern History* 87, 1 (February 2021), 102. Olsson’s overview is comprehensive and his argument—that transnational histories, rather than more traditional diplomatic or comparative histories, is the most promising method to study this history—is exactly correct, and his monograph, *Agrarian Crossings: Reformers and the Remaking of the US and Mexican Countryside* (Princeton, NJ, 2017), serves as a model case, while still incorporating an ambitious comparative account into its transnational framework.

16. Leon Fink, *The Maya of Morganton: Work and Community in the Nuevo New South* (Chapel Hill, NC, 2007).

17. For arguments against the novelty of the “Nuevo New South” on the grounds that it largely reproduced the dominant racial hierarchies and white supremacy of the South, see Perla Guerrero, *Nuevo South: Latinas/os, Asians, and the Remaking of Place* (Austin, TX, 2017), and Angela Stuesse, *Scratching Out a Living: Latinos, Race, and Work in the Deep South* (Berkeley, CA, 2016); for the long history of Latina/o communities navigating and subverting those racial hierarchies, see Sarah McNamara, “Borderland Unionism: Latina Activism in Ybor City and Tampa, Florida, 1935–1937,” *Journal of American Ethnic History* 38, 4 (Summer 2019): 10–32, and for a comprehensive argument that recent migration can only be understood in the long context of Latina/o migration and in the joint histories the US South and Latin America, see Julie Weise, “Dispatches from the ‘Viejo’ New South: Historicizing recent Latino migrations,” *Latino Studies* 10 (2012): 41–59, and *Corazón de Dixie: Mexicanos in the U.S. South since 1910* (Chapel Hill, NC, 2015). In the case of Florida citrus, an emphasis on continuity must be tempered by an acknowledgement that worker demographics shifted radically between the 1960s and the end of the 1980s, when Latina/os grew as a portion of the workforce from around 10 percent to around 70 percent, a quantitative change large enough to have qualitative significance. Leo C. Polopolus and Robert D. Emerson, “IRCA and Agriculture in Florida,” *Immigration Reform and U.S. Agriculture*, Philip L. Martin et al., eds. (University of California, Division of Agriculture and Natural Resources, 1995), 89.

18. For capital moving into the South, Timothy Minchin, “When Kia Came to Georgia: Southern Transplants and the Growth of America’s ‘Other’ Automakers,” *Journal of Southern History* 83 (November 2017): 889–930; for southern companies expanding beyond the South, Bart Elmore, *Citizen Coke: The Making of Coca-Cola Capitalism* (New York, 2015) and *Country Capitalism: The American South and Planetary Ecological Change* (Chapel Hill, NC, forthcoming).

19. And in occurring earlier, the experience of Florida citrus’s globalization sometimes anticipates and sometimes confounds the historiographies of southern globalization. Though most of the studies of Latina/o immigration from the South begin their histories, like Fink, in the 1980s and 1990s, it began nearly a decade earlier in Florida’s citrus industry. And that it happened earlier in citrus is significant. The experience with unionization of the Guatemalan poultry workers that Fink wrote about was, in fact—and as revealed in the archived interviews he conducted with workers—the union to which they belonged was in Indiantown, Florida, where they first immigrated before moving to North Carolina: it was the United Farm Workers Union, Florida Division, where they worked in Coca-Cola’s Indiantown citrus groves. And in the case of citrus’s capital exported into São Paulo State, it was not an “inward/outward movement,” as Olsson describes, but rather, outward/inward, and the boomerang landed with an unpleasant “thwack” when it returned to Florida’s citrus industry.

20. Olsson, “The South in the World since 1865,” 98.

21. Erin Conlin, “Work . . . or be deported’: Florida Growers and the Emergence of a Non-Citizen Agricultural Workforce,” *The Florida Historical Quarterly* 96, 4 (Spring 2018): 435–67, has connected

the histories of (1) Florida's guest worker programs with the (2) later use of noncitizen immigrants in Florida's sugar and vegetable industries. But in citrus, attempted mechanization was the step between those two moments, pursued aggressively and at great expense by growers in the effort to control access to a labor supply.

22. The history of how industries and growers have revised contracting and hiring methods to further exploit, without consequence, the "Nuevo New South's" immigrant communities is itself still too little studied, especially in agriculture, although factory and poultry work has received attention, as in Stuesse, *Scratching Out a Living* and Steve Striffler, *Chicken: The Dangerous Transformation of America's Favorite Food* (New Haven, CT, 2007). For agriculture, the literature has largely been on Florida's Coalition of Immokalee Workers (CIW), as in Sean Sellers's "Del pueblo, para el pueblo': The Coalition of Immokalee Workers and the Fight for Fair Food," (MA thesis, University of Texas at Austin, 2009); Sean Sellers and Greg Absed, "The History and Evolution of Forced Labor in Florida Agriculture," *Race/Ethnicity: Multidisciplinary Global Contexts* 5, 1 (Autumn 2001): 29–49; and Silvia Giagnoni, *Fields of Resistance: The Struggle of Florida's Farmworkers for Justice* (Chicago: Haymarket Books, 2011). The focus on the CIW can be somewhat misleading. Because the CIW eschews traditional goals of organizing, namely, collective bargaining contracts, as won by the UFW in Florida citrus, and legislative change, as fought for by the UFW—and because Sellers neglects citrus and Giagnoni begins so close to the present—a longer history not just of farmworkers' exploitation but of their organization is overlooked. From this perspective, I would argue that the CIW, for all of its successes, is better understood as one of the many successor organizations, less ambitious and more local, that grew up from the defeat of Florida's UFW.

23. On the increasing peripheralization and flexibilization of labor within the "agrarian periphery" proper, see Philip McMichael, ed., *The Global Restructuring of Agro-Food Systems* (Ithaca, NY, 1994), and, more recently, with a particular focus on Brazil, Josefa Salette Barbosa Cavalcanti and Alessandro Bonanno, eds., *Labor in Globalized Food* (London, 2014). In general, the strategy adopted—a familiar one in agriculture—by global agribusinesses is to hire farmworkers who are wholly dependent on wages but who have vanishingly few resources to contest exploitation or underpayment, either via law and the state (by hiring noncitizen workers) or by directly confronting an employer (by using easily replaceable third-party contractors). On guestworker programs in the United States context, see also Vanessa Casanova and Josh McDaniel, "Pines in Lines: Tree Planting, H2B Guest Workers, and Rural Poverty in Alabama," *Southern Rural Sociology*, 19 (2003): 73–96.

24. On the ideological character of labor shortages, which is more typically a concern with having the "right kind" of labor available at the right cost, rather than a concern with absolute numbers of possible workers, see Conlin, "Work or Be Deported," 445.

25. Conlin, "Work or Be Deported," and Cindy Hahamovitch, *No Man's Land: Jamaican Guestworkers in America and the Global History of Deportable Labor* (Princeton, NJ, 2011), 145–46.

26. Hahamovitch, "No Man's Land," chapter 8, and "FFVA Labor Bulletin No. 307," November 24, 1970, box 129, folder 1, Chase Collection, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida Repository, Gainesville, FL (hereafter cited as Chase Collection).

27. Hahamovitch, *No Man's Land*, 179. On the UFW in Florida citrus, see Terrell Orr, "Now We Work Just Like One': The United Farm Workers in Florida Citrus," *Southern Cultures* 25, 4 (Winter 2019): 140–57.

28. "Harvesting Research and Development Committee Meeting," January 17, 1972, box 9, folder 18, Minutes, 1935–2017, Florida Citrus Commission, Dept. of Citrus, State Library and Archive of Florida, Tallahassee, FL (hereafter FCC Minutes).

29. "Florida Citrus Research Council Meeting," November 3, 1966, box 9, folder 4, FCC Minutes; "Florida Citrus Research Council Meetings," March 17, 1967, box 9, folder 6, date, FCC Minutes.

30. "Florida Citrus Research Council Meeting," box 9, folder 4, November 3, 1966, FCC Minutes.

31. 6/3/1965, box 9 folder 1, FCC Minutes. On the difficulties of mechanizing citrus in California, Matt Garcia, *A World of Its Own: Race, Labor, and Citrus in the Making of Greater Los Angeles, 1900–1970* (Chapel Hill, NC, 2001), 37.

32. "Harvesting Research and Development Committee Meeting," June 3, 1965, box 9 folder 1, FCC Minutes.

33. But other natural difficulties remained persistent: in particular, nearly half of the Florida orange crop were Valencia oranges, whose trees carry "ripe fruit and new fruit at the same time," so removal of the

former threatens to remove the latter, McPhee, *Oranges*, 59. The HRDC's solution to this problem was abscission chemicals, which loosened ripe oranges enough that tree shakers would release only those.

34. "Study of Handpicking Methods of Fruit Separation," July 18, 1967, box 9 folder 7, FCC Minutes.
35. "Meeting of Florida Citrus Industry Harvesting Committee," May 13, 1969, box 9 folder 12, FCC Minutes.
36. "FFVA Labor Bulletin No. 233," April 14, 1965, box 128, Florida Fruit and Vegetable Association - Labor committee (1970), Chase Collection.
37. "FFVA Labor Bulletin No. 221," February 28, 1965, box 128, Florida Fruit and Vegetable Association - Labor committee (1970), Chase Collection.
38. "FFVA Labor Bulletin No. 221," February 28, 1965, box 128, Florida Fruit and Vegetable Association - Labor committee (1970), Chase Collection.
39. "Correspondence to Senator Harrison Williams," April 29, 1969, box 127, Florida Fruit and Vegetable Association - Labor (1969), Chase Collection.
40. "Correspondence to Senator Harrison Williams," April 29, 1969, box 127, Florida Fruit and Vegetable Association - Labor (1969), Chase Collection.
41. "FFVA Labor Bulletin No. 328," March 16, 1973, Florida Fruit and Vegetable Association - Labor: bulletins and legislative matters (1973), Chase Collection.
42. "Minutes: Industry Harvesting Committee," October 13, 1972, box 9, folder 12, FCC Minutes.
43. "Florida Citrus Harvesting Research and Development Committee," November 19, 1973, box 10, folder 1, FCC Minutes.
44. "Meeting of Florida Citrus Harvesting Research and Development Committee," August 20, 1973, box 10, folder 1, FCC Minutes.
45. "Presentation of Mechanical Harvesting Status," April 15, 1974, box 10, folder 2, FCC Minutes.
46. "Presentation of Mechanical Harvesting Status," April 15, 1974, box 10, folder 2, FCC Minutes.
47. "Presentation of Mechanical Harvesting Status," April 15, 1974, box 10, folder 2, FCC Minutes.
48. "FFVA Activities Report," November 27, 1976, Florida Fruit and Vegetable Association - General File (1976-1977), Chase Collection.
49. "Labor Bulletin, No. 350," May 12, 1976, Florida Fruit and Vegetable Association (1976), Chase Collection.
50. "Labor Bulletin, No. 350," May 12, 1976, Florida Fruit and Vegetable Association (1976), Chase Collection.
51. "Public Needs it Most of All," *The Citrus Industry*, December 1976, 20.
52. "Labor Bulletin, No. 357," February 3, 1977, Florida Fruit and Vegetable Association (1976), Chase Collection.
53. José Graziano da Silva, "Agroindústria e globalização: o caso da laranja em São Paulo," in ed. Josefa Salete Barbosa Cavalcanti, *Globalização, trabalho, meio ambiente* (Recife: INSPO, 2004).
54. "Freeze," *The Pensacola News*, Feb. 6, 1985, 2D.
55. Elio Neves, interviewed by Cliff Welch, Araraquara, São Paulo, July 22, 1997.
56. "Meeting of Florida Citrus Harvesting Research and Development Committee," May 19, 1975, box 10, folder 6, FCC Minutes.
57. "Meeting of Florida Citrus Harvesting Research and Development Committee," May 14, 1974, box 10, folder 3, FCC Minutes.
58. "Meeting of Florida Citrus Harvesting Research and Development Committee," October 2, 1975, box 10, folder 7, FCC Minutes.
59. "Meeting of Florida Citrus Harvesting Research and Development Committee," May 4, 1976, box 10, folder 7, FCC Minutes.
60. An overview of the hiring structures and history of their adoption can be found in Leo Polopolus, Robert Emerson, Noy Chunkasut, and Rebecca Chung, *The Florida Citrus Harvest: Prevailing Wages, Labor Practices, and Implications* (Gainesville, FL, 1996).
61. "FFVA Activity Report," September 25, 1980, Florida Fruit and Vegetable Association (1979-1980), Chase Collection.
62. "Program for the Future," April 14, 1981, box 11, folder 6, FCC Minutes.
63. "Florida's Frost Warms Brazilian Hearts," *Tallahassee Democrat*, January 24, 1982.
64. "Colhedores de laranja comemoram acordo," *Jornal do Brasil*, May 20, 1981, 18.
65. "São Paulo mostra sua força," *Citrus SP*, Nov. 1985, 12-13.

66. "Brazil has advantage in Orange Juice Wars," *Fort Lauderdale News*, May 5, 1985.
67. Simão Pedro Chiovetti, "Reestruturação Produtiva na Agroindústria Paulista e a Luta dos Trabalhadores Rurais Assalariados," *Lutas Sociais* 6 (1999): 151–66.
68. Maria Aparecida de Moraes Silva, "entrevista com Padre José Domingos Barghetto."
69. "Apanhadores de laranja em greve, em agosto, se não houverem acordos," *Realidade rural*, Julho de 1984.
70. Two paradigmatic works exploring this strike are José Graziano da Silva, *De bóias-frias a empregados rurais (As greves dos canavieiros paulistas de Guariba e de Leme)* (Maceió: Edufal, 1997) and Jennifer Eaglin, "Sweet Fuel: Ethanol's Socio-Political Origins in Ribeirão Preto, São Paulo, 1933–1985" (PhD dissertation, Michigan State University, 2015), 221–73. Both works explore the reasons behind the sugarcane workers striking but neither differentiates the cause of the sugarcane and citrus workers. I argue that the strike of the citrus works had as much to do with local issues and traditions of labor organizing as it did with industry-specific changes in global competition, specifically, with rise in prices that benefited São Paulo's citrus growers and processors after the freezes in Florida.
71. Oliveira, "Aos Trabalhadores nem o Bagaço," 172, and "Brazil has advantage in Orange Juice Wars," *Fort Lauderdale News*, May 5, 1985.
72. "Brazil has advantage in Orange Juice Wars," *Fort Lauderdale News*, May 5, 1985.
73. Oliveira, "Aos Trabalhadores nem o Bagaço," 173.
74. Oliveira, "Aos Trabalhadores nem o Bagaço," 173.
75. It is too easy, especially in this dramatic case, to overstress the role of "spontaneity," as Elio Neves attested, FETAESP and other local unions were organizing workers toward the ultimate conflagration for years.
76. Maria Aparecida de Moraes Silva, "entrevista com Padre José Domingos Barghetto."
77. Oliveira, "Aos Trabalhadores nem o Bagaço," 194.
78. Oliveira, "Aos Trabalhadores nem o Bagaço," 212. This reversal-of-fortunes among workers competing across national boundaries suggests a tentative revision to the "race to the bottom" conception of global labor history best exemplified by Aviva Chomsky, *Linked Labor Histories: New England, Colombia, and the Making of a Global Working Class* (Durham, NC, 2008), 11, 211–12, along the lines of Beverly Silver, *Forces of Labor: Workers' Movements and Globalization Since 1870* (Cambridge, 2003), 3–5. Though, per Chomsky, it does seem that this opportunity for organization and gains among São Paulo's citrus farmworkers was only temporary. There may be a race, though it runs through the zigzagging and non-linear course of global capitalist competition.
79. Jeff Bloch, "Citrus Freeze Puts Long-term Squeeze on Industry," *The Miami Herald*, March 14, 1982. This claim was later shown to have been spurious by labor economist D. Marshall Barry, "The Adverse Impact of Immigration," 7–8.
80. *Florida Citrus Mutual Triangle*, October 29, 1982, 2.
81. "The Pros and Cons of Illegal Labor," *The Citrus Industry*, August 1983, 11.
82. Lauren Ritchie, "88 Illegal Aliens Sent Home, U.S. Probes Crew Bosses," *The Orlando Sentinel*, February 18, 1983.
83. Lauren Ritchie, "88 Illegal Aliens Sent Home, U.S. Probes Crew Bosses," *The Orlando Sentinel*, February 18, 1983.
84. Lauren Ritchie, "Workers Find a Promised Land After the Dismal Life in Mexico," *The Orlando Sentinel*, May 9, 1983.
85. *The Hands that Feed Us: Undocumented Farmworkers in Florida* (Washington DC, 1986), 25–28.
86. Box 6, Folder 11, UFW Florida Boycott Records.
87. "United Farm Workers Hope to Squeeze Citrus Processors," *The Tampa Tribune*, December 12, 1985.
88. Tirso Moreno, interview by author, May 21, 2021.
89. "Report to the PEP Labor Crews, Inc. and Farmworker Association of Central Florida, Inc.," Florida International University Special Collections, Miami, FL.
90. Tirso Moreno, interview by Laurie Sommers, Apopka, Fla. March 6, 1998, Last Harvest Documentation Project, UA 22-12, Box 14, Valdosta State University, Valdosta, GA.