

ARE MIGRATION AND FREE TRADE APPROPRIATE FORMS  
OF ECONOMIC DEVELOPMENT? THE CASE OF MEXICO  
AND U.S. AGRICULTURE

*Don Villarejo\**

TABLE OF CONTENTS

I. INTRODUCTION.....	175
II. HOW HAS FREE TRADE IN AGRICULTURE UNDER NAFTA PROCEEDED?.....	178
III. HOW HAS MEXICAN MIGRATION PROCEEDED UNDER IRCA? .....	189
IV. IMPACT ON LOCAL COMMUNITIES? .....	194
A. <i>Educational attainment</i> .....	200
V. DISCUSSION .....	203
A. <i>Agricultural trade</i> .....	203
B. <i>Mexican migration</i> .....	204
C. <i>Local communities</i> .....	205
VI. RECOMMENDATIONS.....	206

I. INTRODUCTION

This Symposium has an excellent focus: the relationship between migration, trade, and globalization, and their impact on local communities. In my view, the major issue of our lifetime is how to address the gap in income and wealth between much of the industrialized world and those who live in poverty, mostly in the developing nations. This is not a small question because nearly half of the world's people—some 2.8 billion human beings—live in poverty today, existing on less than \$2 per day.<sup>1</sup>

During the 1990s economic boom—regarded by some as the largest economic boom in the history of industrialized world—the evidence indicates that inequality increased, not only between the poor and most people in the industrialized world, but also within large portions of the industrialized world.

---

\* Don Villarejo, Ph.D., former Executive Director, California Institute for Rural Studies.

<sup>1</sup> See The World Bank Group, *World Development Report 2000/2001: Attacking Poverty*, at <http://www.worldbank.org/poverty/wdrpoverty/report/index.htm> (2001).

To those who quote John Kennedy about the benefits of periods of economic expansion, my response is, "No—when the enormous tide of money flowed in the 1990s, not all boats were lifted."

So the question is: how do we address the poverty faced by so many of the people of the world? Quite obviously, this Symposium only reflects the perspective of those of us present, and the direct involvement of the poor as contributors to this discussion will be absent. In my view, a full discussion must necessarily include these missing voices and no solution will ever be found without their participation.

Capitalism offers a potential solution—industrialization and free trade. Obviously, this approach has thus far failed in much of the developing world; those in poverty in sub-Saharan Africa actually lost ground during the recent economic expansion.

If this proposed solution did not work during a period of unprecedented prosperity, how could it possibly work during recession? Indeed, Argentina's economy has crashed and burned despite its enthusiastic embrace of free-market capitalism, free trade, and even tying the Argentine peso to the U.S. dollar.

In fairness, it must be said that some nations did gain ground as a result of expanded trade and free market economics, notably Ireland, Portugal and Spain, whose entry into the European Common Market is correctly understood to have been the signal event in raising the standard of living in those nations in recent years. Chile, in the Western Hemisphere, also gained ground, again as a concomitant part of their export policy. As this is written, a formal agreement is being drafted to commit the U.S. and Chile to free trade.

Some developing nations, notably China and India, home to a very large share of the world's poor, have clearly benefited from expanded trade. The most recent evidence does support expanded trade policy as a contributing factor in solving the problem of persistent poverty in poor countries, at the very least in those two countries.<sup>2</sup>

Interestingly, poor countries today argue that the U.S. and the European Union are unfairly limiting imports with anti-free trade barriers: tariffs and other protectionist measures. Even worse, they say, huge farm subsidies in the developed countries are artificially stimulating production, exacerbating global agricultural surpluses, which in turn depresses world commodity prices for staples such as grain.<sup>3</sup> Chronically low agricultural commodity prices differentially impacts those nations in

---

<sup>2</sup> Jagdish Bhagwati & T.N. Srinivasan, *Trade and Poverty in the Poor Countries*, AMER. ECON. REV., 2000, at 180, 182.

<sup>3</sup> Nicole Winfield, *Poor Nations Denounce U.S. Farm Subsidies*, WASHINGTON POST, June 12, 2002, at E02.

which agriculture accounts for a large share of GDP, i.e., non-industrialized nations.

My interest area is agriculture, and so my comments will be limited to food production and food processing. As Lappé pointed out many years ago, there is a world-wide surplus of food production, enough food to provide a fully adequate diet for every person on the planet.<sup>4</sup> But the capitalist system has not prevented an estimated 815 million people today from going to bed hungry.<sup>5</sup> Even here in Central California, the center of the world's most productive agricultural region, more than a few know the gnawing pain of hunger.

A prominent free-market economist is reported to have said, "The problem with poor people is that they don't have any money." In recent years, tens of millions of poor people have figured out that going to where the money is represents the only possible alternative to remaining in poverty in their home country. The response of these persons to Prof. Friedman's observation is to head for the industrialized world—because that's where the money is.

Migration has become a de facto, if unrecognized, economic development strategy for millions of the world's poor. Europe, the U. S., Canada, Japan and Australia have become preferred destinations. Migrants attempt to get to where the money is by every possible means: walking, swimming, and tunneling have all been tried or are in current use.

As it happens, only a few countries have an explicit policy of accepting immigrants—the U. S. is one of these important exceptions. U. S. immigration policy has a historical basis: immigrants, from the beginning, built this country.

Importantly, migrant workers were a major, albeit largely unrecognized, factor in the U. S. economic success of the 1990s. Although only one in nine U.S. workers is foreign-born, during the great economic expansion of the 1990s, foreign-born workers filled an estimated four of every ten new jobs created during this period.<sup>6</sup> Of course, the main reason for the disproportionate employment of immigrants is that a very large share of those new jobs, probably a majority, were low-paid, involving unskilled or semi-skilled labor. The most important sector in terms of job growth in the past decade was the

---

<sup>4</sup> See generally FRANCES MOORE LAPPÉ, *DIET FOR A SMALL PLANET* (Ballentine Books 1991).

<sup>5</sup> Barbara Crossette, *U.N. Official Urges Food Aid for the Poor As a Priority*, *NEW YORK TIMES*, June 9, 2002, at A13.

<sup>6</sup> In 2000, annual average U.S. employment was 135.208 million; in 1996 it was 126.818 million. Among the foreign born, annual average employment increased from 13.423 million to 16.954 million during the same period. Thus, employment increased by 8.390 million while foreign-born employment grew by 3.531 million, or 42%.

service sector: food service workers, health care aides, janitors, and laborers working for farm labor contractors. Few U.S.-born workers are seeking to do this type of work, leaving it mostly to immigrants willing to take those new jobs.

In this context, it is important to note that more than a few recent immigrants to the U.S. are highly educated, and many played important roles in the skilled and professional segments of the economy during the 1990s expansion.

Interestingly, several European nations and Japan now have negative natural rates of population growth: the annual number of live births is smaller than the number of deaths. Slowly, political leaders in these nations are realizing that immigration may be the key to a viable future. It remains to be seen whether pro-immigration policy will be widely adopted in those regions of the world.

It is the contention of this paper that large-scale migration of Mexicans to work in the U.S., and corresponding remittances back to Mexico, is simply another form of trade, though it is rarely discussed as equivalent to trade in goods. The specific focus of this paper is a case study—Mexico and U.S. agriculture—free trade and migration, and the impact on local communities. In what follows, first, post-NAFTA U.S. agriculture is examined. Next, migration of Mexicans to work in U.S. agriculture is discussed. Finally, local community impacts in the farm workers communities of California are reviewed.

## II. HOW HAS FREE TRADE IN AGRICULTURE UNDER NAFTA PROCEEDED?

Prior to NAFTA, the impact of free trade on U.S. agriculture was a major concern of labor, environmental and some commodity groups. The fear was that lowering trade barriers would disadvantage U.S. producers because of differing standards of employment, as reflected, for example, in wage rates, and because of differing levels of enforcement of laws designed to protect the environment.

Labor-intensive agriculture, notably fresh market tomatoes, became a poster child for anti-NAFTA advocates. The U.S.-Mexico wage gap was held up as the rhetorical whipping boy by these political forces.

Of course, the wage gap is well founded in fact. For example, shortly prior to NAFTA, the California Institute for Rural Studies examined costs of production for fresh market tomatoes in Mexico and three regions of California<sup>7</sup> Interviews with tomato pickers in all four

---

<sup>7</sup> DAVID RUNSTEN ET AL., *The Tomato Industry in California and Baja California*, in APPENDIX I CASE STUDIES AND RESEARCH REPORTS 3, 47 (U.S. Commission on Agricultural Workers 1993).

areas found that average earnings were \$0.88/hr. in Baja California (San Quintin, Mexico) vs. \$8.11/hr. in the Fresno production region, \$8.20/hr. in the Stockton region, and \$6.53/hr. in the San Diego region.

It was thought by many that the wage gap would result in the wholesale flight of fruit and vegetable production from the U.S. to Mexico. Food processing was also viewed as likely shift to Mexico—again because of the wage gap. In this case, advocates held up the Green Giant plant in Guanajuato as the likely model of the future.

Importantly, lax enforcement of environmental laws in Mexico was seen as a major problem as well. Environmental advocates arguing against NAFTA suggested that U.S. consumers should worry about pesticide residues in produce imported from Mexico.

Now, some seven years later, we can ask: what happened?

First, it is clear that U.S. fruit and vegetable production did not decrease in the post-NAFTA period. To the contrary, domestic continued to expand, and continued to do so at the same annual rate of increase as before NAFTA. Figure 1 shows this trend of U.S. fruit and vegetable production since 1984, expressed in metric tons (MT), where fruit, and fresh market and processing vegetables are separately reported.<sup>8</sup>

As is evident in the graph, there has been a steady rise in annual U.S. produce output, both before and after NAFTA. Using 3-year averages for making comparisons, in the pre-NAFTA period, from 1984-86 to 1991-93, vegetable production increased by 18% and fruit production by 16%. On the other hand, from 1991-93 (pre-NAFTA) to 1998-2000 (post-NAFTA), vegetable production increased by 12% and fruit production increased by about 14%. While the post-NAFTA increases are nominally smaller than those in the pre-NAFTA period, in fact, taking account of the standard error of both computations indicates that this small difference is not statistically significant.<sup>9</sup>

California is the most important state for fruit and vegetable production, accounting for roughly half of the U.S. total. Production data for California shows a 75% increase in the state's output of fruits and vegetables in just the past twenty-five years.<sup>10</sup> The rate of annual

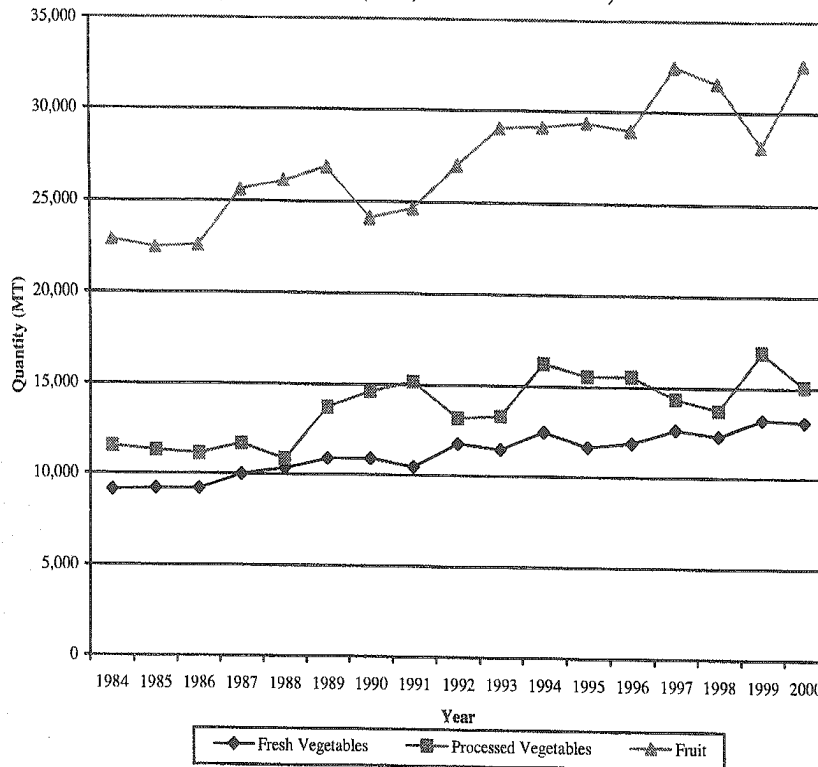
---

<sup>8</sup> U.S. Department of Agriculture, *County Agricultural Commissioner's Data*, at <http://www.nass.usda.gov/ca/bul/agcom/indexcac.htm> (visited Nov. 3, 2002).

<sup>9</sup> The pro-forma mean (with corresponding standard deviation of the mean shown in parentheses) for vegetables for the successive 3-year averages is as follows: 1984-86, 22,633,207 MT (193,364 MT); 1991-93, 27,710,359 MT (510,317 MT); 1998-2000, 33,389,948 MT (2,330,704 MT). Thus, the comparison of the two successive rates of increase yields 6.3% (8.7%).

<sup>10</sup> See generally DEPARTMENT OF FOOD AND AGRICULTURE, CALIFORNIA FRUIT AND NUT STATISTICS (1965 - 1990); DEPARTMENT OF FOOD AND AGRICULTURE, CALIFORNIA VEGETABLE CROPS (1965-1990).

FIGURE 1  
UNITED STATES PRODUCTION OF FRUITS AND VEGETABLES  
(QUANTITY (MT) IN THOUSANDS)



increase in tons of produce harvested is roughly the same as for the U.S. as a whole.

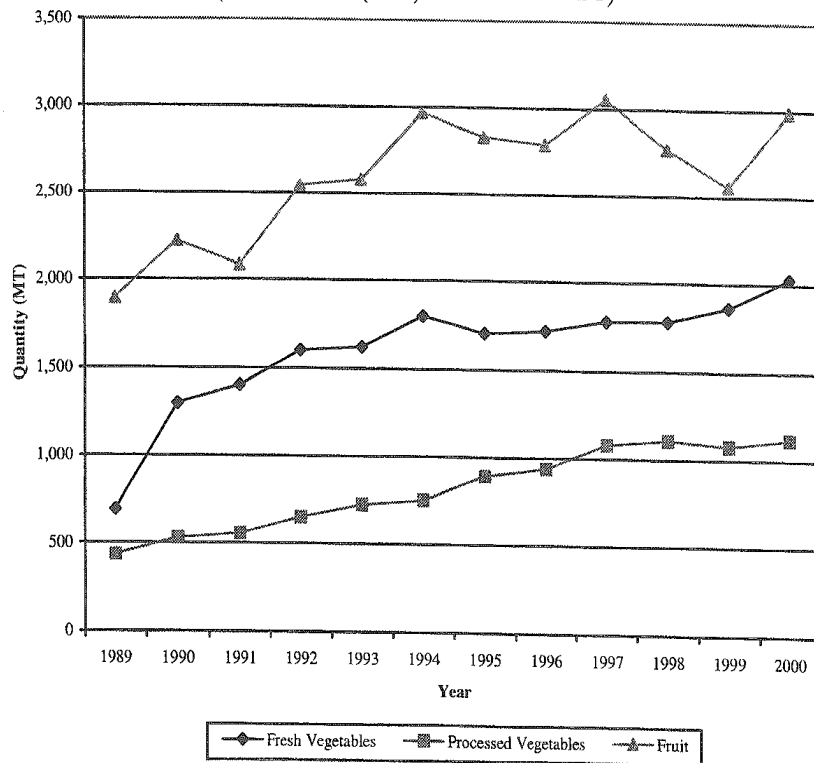
The main reason for continuing expansion of fruit and vegetable production in the U.S. is that it is demand-side driven. Over the past twenty-five or so years there has been a significant increase in per-capita consumption of fresh market fruits and vegetables in a number of important categories at the expense of consumption of processed products.<sup>11</sup>

A second factor in the increase of production of these commodities is that U.S. exports of fruits and vegetables have also been increasing, and continue to do so despite the strong dollar relative to other currencies. This is shown in Figure 2. In all commodity categories, exports are substantial and they have increased, and especially so in the fresh vegetable and specialty fruit categories. About 15.5% of U.S. fresh vegetables are exported today, up sharply from just 6.3% in 1989. California strawberries, melons, citrus and celery, to name a few

<sup>11</sup> See generally U.S. Department of Agriculture Economic Research Service, *Vegetables and Specialties Yearbook*, at <http://www.ers.usda.gov/Data> (Aug. 2001).

commodities, are today flown to destinations throughout the industrialized world.

FIGURE 2  
UNITED STATES FRUITS & VEGETABLE EXPORTS  
(QUANTITY (MT) IN THOUSANDS)



It is also now clear that overall agricultural trade between Mexico and the U.S. did not disadvantage the U.S. after NAFTA. NAFTA was intended to be a trade agreement to promote agricultural comparative advantage. "The United States would increase its exports of grains, oil seeds, and meat production that are land and capital intensive. . .Mexico would increase its exports of labor-intensive vegetables, fruits and nuts. . ." <sup>12</sup>

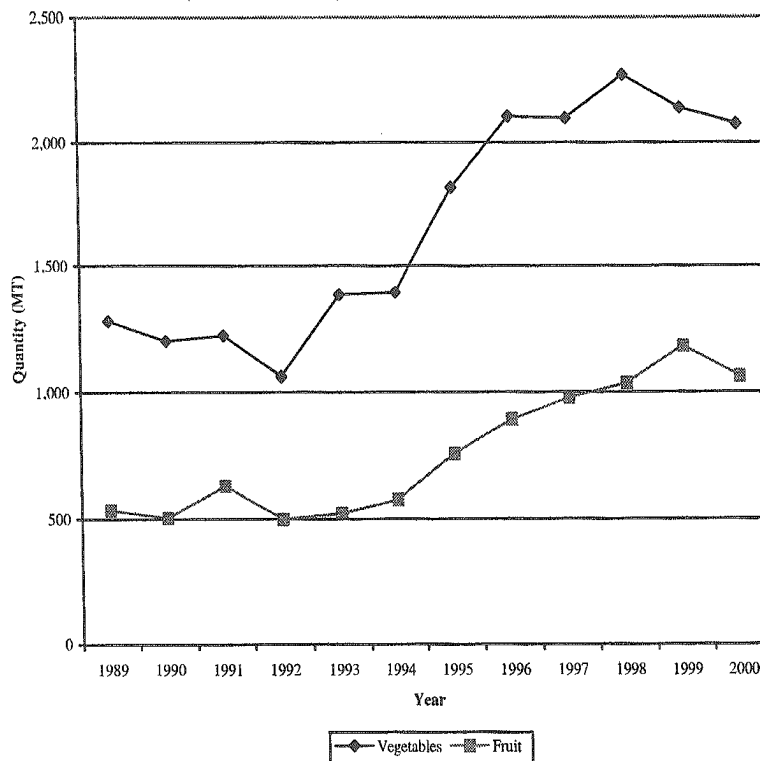
Mexican produce shipments to the U.S. increased sharply in the post-NAFTA period.<sup>13</sup> This is shown in Figure 3. The sharpest increases

<sup>12</sup> Alain de Janvry et al., *NAFTA AND AGRICULTURE: AN EARLY ASSESSMENT*, WORKING PAPER No. 807 4 (Department of Agricultural and Resource Economics of University of California, California Agricultural Experiment Station and Giannini Foundation for Agricultural Economics 1997).

<sup>13</sup> See generally U.S. Department of Agriculture Economic Research Service, *Foreign Agricultural Trade of the U.S.*, at <http://www.ers.usda.gov/db/fatus> (last modified Mar. 8, 2001).

obtained after 1994. Comparing the 3-year averages for 1991-93 with those for 1998-2000, we find a 77% increase in vegetable imports and a 98% increase in fruit imports.

FIGURE 3  
IMPORTED FRESH AND FROZEN VEGETABLES AND  
FRUIT FROM MEXICO  
(QUANTITY (MT) IN THOUSANDS)



The major factor in this trend is not the NAFTA reductions of trade barriers. The pre-NAFTA U.S. tariffs imposed on Mexican produce were already quite low, averaging only 4% during the important winter season in the case of tomatoes and a mere 1% in the case of strawberries.<sup>14</sup> Reducing these minor tariffs to zero over a period of years, as NAFTA contemplated, is hardly significant.

The 1994-95 devaluation of the peso played a more important role in U.S.-Mexico trade, effectively reducing the price of Mexican goods by 40%, a very much larger factor than the NAFTA tariff reductions.<sup>15</sup> It has also been suggested that the real origin of substantial fresh tomato

<sup>14</sup> de Janvry et al., *supra* note 12.

<sup>15</sup> *Id.*



production in Baja California for export to the U.S. was a response to the 1982 peso devaluation.<sup>16</sup>

The relative unimportance of the U.S. import duty was recently frankly discussed by a spokesperson for the Florida tomato industry. "Tariffs were immaterial. . . they were never a barrier to trade," said Reggie Brown, Executive Vice-President of the Orlando-based Florida Tomato Exchange.<sup>17</sup>

It is little understood that the U.S. is the single most important world exporter of fruit (exclusive of juices) and vegetables. In this context, it should be noted that the total of U.S. imports of fruit and vegetables from Mexico is actually *substantially less* than U.S. exports of fruit and vegetables to the world as a whole.<sup>18</sup> For example, in 2000, U.S. imports of fresh and processed vegetables from Mexico totaled 2.075 million metric tons. But U.S. exports of fresh and processed vegetables worldwide in the same year totaled 3.147 million metric tons, or 52% more than Mexican imports. For fruit, the difference was even larger, in 2000, U.S. world exports were 182% larger than Mexican imports.

During the pre-NAFTA debate, what agricultural economists noted, but most advocacy groups did not, is that the reduction of barriers for U.S. agricultural exports to Mexico, the flip side of reduced barriers to the entry of Mexican products into the U.S., would benefit U.S. producers. Thus, the overall agricultural trade balance between Mexico and the U.S. must take account of *both imports and exports*. Data on the U.S.-Mexico agricultural trade balance (nominal U.S. dollars), by year, is presented in Figure 4.<sup>19</sup> Clearly, in the post-NAFTA years, as compared with the pre-NAFTA years, the U.S. has enjoyed a favorable balance of agricultural trade with Mexico.

Of special note is that the total value of U.S. imports of Mexican agricultural products is just over \$5 billion, far less than the estimated \$9 billion in remittances sent home by Mexican migrants working in the U.S. Thus, agricultural trade with the U.S. is *less valuable* to residents of Mexico than is the economic return from migration.

Not all commodities in all U.S. production regions uniformly followed these trends. Florida's winter tomato production, directly in competition with Mexican tomato exports from the Culiacan Valley (Sinaloa) has clearly been disadvantaged in recent years. Thus, the amount of fresh market tomatoes harvested in Florida during the

---

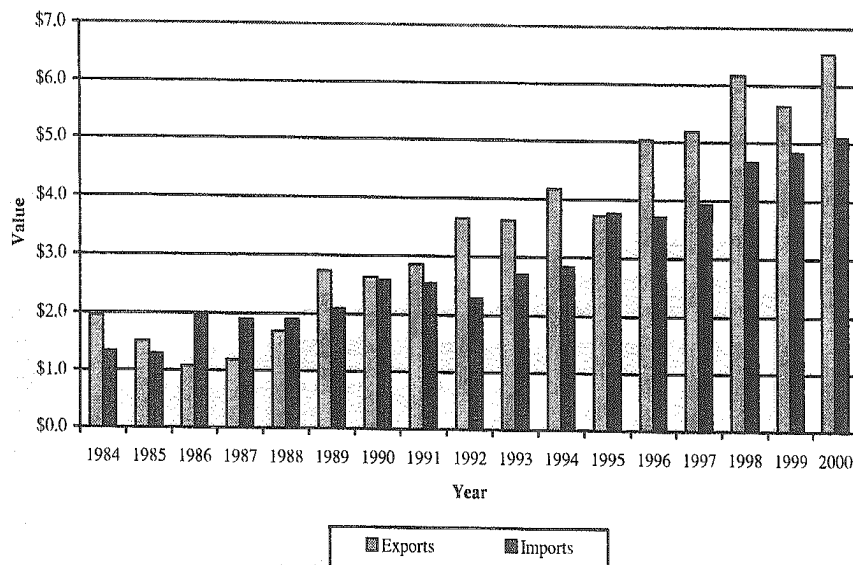
<sup>16</sup> 4 ROBERTA L. COOK ET AL., NAFTA NORTH AMERICAN FREE TRADE AGREEMENT EFFECTS ON AGRICULTURE: FRUIT AND VEGETABLE ISSUES 263-265 (The American Farm Bureau Federation 1991).

<sup>17</sup> Tom Karst, THE PACKER, Dec. 24, 2001, at A1.

<sup>18</sup> See generally U.S. Department of Agriculture Economic Research Service, *supra* note 13.

<sup>19</sup> *Id.*

FIGURE 4  
 UNITED STATES AGRICULTURAL TRADE WITH MEXICO  
 (NOMINAL \$US IN BILLIONS)



December through May cycle have experienced a significant decline.<sup>20</sup> On the other hand, the amount of California tomatoes, harvested from June through November, have not seen a decline, even though Baja California production does directly compete.<sup>21</sup> In fact, San Diego vine-ripe pole tomato acreage has expanded in recent years.<sup>22</sup> The leading shipper, Oceanside Produce Co., says it sold more than 4 million cartons last year.<sup>23</sup>

In 1996, the Florida vegetable industry formally charged Mexico with 'dumping' its tomato exports to the U.S., that is, selling below the cost of production. The Clinton administration, responding to political pressure from Florida producers, was able to negotiate a 'suspension' agreement with Mexico in late 1996, which, under ITC rules, allows the imposition, for five years, of a minimum sale price on the imported

<sup>20</sup> See generally U.S. Department of Agriculture Economic Research Service, *supra* note 11.

<sup>21</sup> The three-year average of fresh tomato output in California for 1990-1992, well before NAFTA was implemented, was 581,320 tons per year. For 1998-2000, it was 549,887 tons per year. The small decline (5%) is not statistically significant. See generally U.S. Department of Agriculture Economic Research Service, *supra* note 11.

<sup>22</sup> The three-year average for San Diego County fresh tomato acreage was 3,383 acres in 1990-1992, and increased to 3,931 acres in 1998-2000, a growth of 16%. See generally U.S. Department of Agriculture Economic Research Service, *supra* note 11.

<sup>23</sup> Harry Singh & Sons/Oceanside Produce Co., *California "Home Grown" for Best Quality and Flavor: Vine Ripe Tomato Programs*, WAVE NEWSLETTER, at [http://www.vinripe.com/page-harry\\_sons-newsletter.htm](http://www.vinripe.com/page-harry_sons-newsletter.htm) (2001).

goods, ostensibly to prevent 'dumping'. In turn, Mexico has charged Florida producers with under-cutting this minimum price in their shipments to the Boston region. The five-year suspension period has now expired and a ruling is expected on whether the ITC will have a cursory review of the problem or whether to undertake a full-scale, year-long investigation, complete with public hearings.<sup>24</sup>

Perhaps the most surprising development in the tomato business has been an enormous increase in greenhouse tomato exports from Canada to the U.S. market. Prior to NAFTA, these exports averaged 4,200 metric tons per year.<sup>25</sup> However, last year the total shipped amounted to approximately 101,400 metric tons, *nearly twenty-five times more than before NAFTA*. Since Canadian producers pay about \$6.80 per hour (Canadian dollars) in wages, it is difficult to argue that there is a significant wage gap. And no one charges that Canada ignores environmental laws.

As in the case of U.S.-Mexico trade, a central factor here is the steady decline of the Canadian dollar against the U.S. dollar, down to 1.6 in recent weeks from an average of 1.2 in the pre-NAFTA years. Owing to this effect alone, Canadian tomatoes are now 30% less expensive for Americans than they were seven years earlier. Nevertheless, the Florida producers have filed an anti-dumping suit against Canada. In turn, Canadian tomato producers filed an anti-dumping suit against U.S. producers.<sup>26</sup>

Underneath all of the rhetoric, charges, and counter-charges lies the question: why has there been so little impact of increased Mexican imports on U.S. producers? To get at this question, it is necessary to look not just at wage rates, which, of course, are important, but also at *overall production costs per unit of output*. In other words, it is not just differences in wage rates that determine relative costs, it is the overall costs that matter most.

The CIRS fresh market tomato study, conducted prior to NAFTA, found that San Joaquin Valley fresh tomato harvest costs were about \$0.78 per 25-lb carton, hauling costs (to the packing house) were about \$0.24 per 25-lb carton, and pack and selling costs were about \$2.50 per 25-lb carton.<sup>27</sup> Thus, the total harvest-haul-pack and ship cost in the San Joaquin Valley was about \$3.52 per 25-lb carton. The comparable figure for Baja California was about \$2.00. In other words, even though the

---

<sup>24</sup> Michael Doyle, *Duties on Mexican Tomatoes Attract Support*, SACRAMENTO BEE, Jan. 30, 2002, at D3.

<sup>25</sup> See generally U.S. Department of Agriculture Economic Research Service, *supra* note 13.

<sup>26</sup> Jim Steinberg, *Dispute on Tomatoes Cools Down*, FRESNO BEE, June 27, 2002, at C1.

<sup>27</sup> RUNSTEN ET AL., *supra* note 7, 32.

wage rates differed by a factor of more than nine, the total harvest-haul-pack and ship costs differed by less than a factor of two. Importantly, even taking account of the U.S. import duty,<sup>28</sup> the overall cost of producing a 25-lb carton of tomatoes in Baja California was greater than in the San Joaquin Valley.

Table 1 shows the comparative costs during the 1990-91 seasons, for Baja California (pole tomatoes), San Diego region (pole tomatoes), and for the San Joaquin Valley region (bush tomatoes). Thus, even though the wage rates differ so greatly, San Joaquin Valley tomato production had a significant cost advantage over Baja production. That is why the relatively small U.S. import duty of just \$0.52 on a 25-lb carton of tomatoes cited in the estimates shown in Table 1 was not a major factor prior to NAFTA. While the wage rate gap was large, the total labor cost gap was not.

TABLE 1  
ESTIMATED FRESH MARKET TOMATO PRODUCTION COSTS 1990-91<sup>29</sup>

Item	Baja	San Diego	San Joaquin Valley
Yield/acre (25-lb)	1,820	2,720	1,120
Pre-harvest cost/acre	\$3,564	\$5,284	\$1,015
Pre-harvest cost/unit	\$1.90	\$1.94	\$0.91
Harvest, Haul, Pack, Ship	\$2.00	\$3.78	\$3.52
U.S. Import Duty	\$0.52	\$0.00	\$0.00
Freight to border	\$0.40	\$0.00	\$0.00
Crossing & other fees	\$0.25	\$0.00	\$0.00
Total export/import cost	\$1.17	\$0.00	\$0.00
Total cost/unit	\$5.07	\$5.72	\$4.43

It is most likely that differences in overall productivity explain the fact that total harvest-haul-pack costs are very nearly a factor of five greater in Mexico than would be the case if wage rates alone determined those costs. This could only be proven by a determination of worker output per hour according to task performed. Direct measures of worker productivity are difficult to obtain in agriculture, primarily because cost study results are usually expressed only as overall labor costs in dollars (or pesos), not in hours of labor by type of task. Mamer and Willkie were the last to survey major California labor-intensive crops to determine labor coefficients.<sup>30</sup> Thus, the explanation that productivity differ-

<sup>28</sup> \$0.52 on a 25-lb carton of tomatoes.

<sup>29</sup> RUNSTEN ET AL., *supra* note 7, 32.

<sup>30</sup> See generally JOHN W. MAMER & ALEXA WILKIE, SEASONAL LABOR IN CALIFORNIA AGRICULTURE: LABOR INPUTS FOR CALIFORNIA CROPS (1990).

ences are the most important factor in explaining the relative labor costs must remain a hypothesis.

The concerns about possible pesticide contaminants in Mexican produce can be examined using residue testing inspection records of the U.S. Food and Drug Administration. Reports of results of FDA laboratory tests of produce samples have been published. Table 2 presents summary findings, for all fruits and vegetables, of residue testing of domestic produce, and of imported produce, for 1997-1999. Import samples in all three years were predominately of Mexican produce.<sup>31</sup>

TABLE 2  
DOMESTIC V. IMPORTED PRODUCE PESTICIDE RESIDUES 1997-1999<sup>32</sup>

Fruit	Percent No Residues-Domestic	Percent No Residues-Import	Percent Illegal Residues-Domestic	Percent Illegal Residues-Import
1997	44.1%	60.6%	1.2%	1.2%
1998	41.5%	61.1%	0.9%	2.9%
1999	38.8%	57.5%	0.6%	1.8%
Vegetables	Percent No Residues-Domestic	Percent No Residues-Import	Percent Illegal Residues-Domestic	Percent Illegal Residues-Import
1997	69.1%	63.0%	2.4%	2.1%
1998	70.9%	65.5%	1.4%	3.6%
1999	69.7%	64.8%	1.2%	3.9%

The FDA data are somewhat surprising in that imported fruit is found to be more likely free of any pesticide residues as compared with domestically grown fruit. This is contrary to the claims of some environmental advocates. In the case of vegetables, domestic produce tends to be slightly more likely to be residue free, although the margin is small. On the other hand, imported produce, both fruits and vegetables, are somewhat less likely to be in full compliance with pesticide residue standards, as has been contended by environmental advocates. Illegal residues, which refers both to materials not registered for use on the commodity or excessive amounts, are more likely to be found in imported produce. Overall, at least 97.1% of imported fruit was in full compliance, versus a comparable figure of 98.8% for domestic fruit. In the case of vegetables, at least 96.1% of all imported vegetables complied

<sup>31</sup> There were a total of 5,223 imported product samples in 1997. Of these, Mexican samples represented 2,056; Chile ranked second with 314.

<sup>32</sup> U.S. Food and Drug Administration, *Pesticide Program: Residue Monitoring 1997, Figures 1-2*, at <http://vm.cfsan.fda.gov/~dms/pes97rep.html> (visited Nov. 3, 2002); U.S. Food and Drug Administration, *Pesticide Program: Residue Monitoring 1999, Appendix A-B*, at <http://flouridealert.org/pesticides/FDA.Residu.Monitor.1999.htm> (visited Nov. 3, 2002).

with pesticide residue standards, as opposed to 97.6% of domestic vegetables. However, in 1997, it was found that domestic vegetables were slightly more likely to have illegal residues as compared with vegetable imports.

Largely absent from discussions of environmental concerns is workplace exposure to pesticides in both Mexico and the U.S. Wright has described in some detail the nature of hired farm worker occupational exposures to pesticides in the Culiacan Valley of Sinaloa.<sup>33</sup> Among other conclusions, Wright observes that pesticide residues to which consumers may be exposed are of relatively minor concern as compared with the dangers faced by hired farm workers.

It is well established that U.S. environmental law, and California law in particular, promises the greatest degree of protection from occupational exposures to pesticides. Nevertheless, the California Agricultural Worker Health Survey (CAWHS) in 1999 found that 42% of randomly selected hired farm workers had never received pesticide safety training required under the Worker Protection Standard of U.S. EPA.<sup>34</sup> Even in California, mass poisonings of hired farm workers continue to jeopardize their health.

A largely ignored concern in these discussions of environmental law and regulation as applied to pesticide safety is the very much larger problem of microbial contamination. The Centers for Disease Control and Prevention reports that 76 million Americans become ill each year owing to food-borne diseases, and approximately 5,200 deaths are reported.<sup>35</sup> Although precise comparative data is not available, it is well established that the great majority of these cases of microbial contamination are of domestic origin, and even domestically produced organic commodities have been found contaminated with microbial pathogens. At the same time, serious incidents of illness caused by microbial contamination of Mexican frozen strawberries and Guatemalan raspberries have been uncovered. Care must be exercised in this discussion because the evidence also shows that the overwhelming proportion of reported cases are of *domestic* origin.

The post-September 11 anthrax poisoning incident had made Americans more sensitive to the possibility of microbial contamination of food products. An expanded program of inspection has been proposed, along with mandatory screening of farm and food processing workers.

---

<sup>33</sup> See generally ANGUS WRIGHT, *THE DEATH OF RAMÓN GONZÁLEZ* (1990).

<sup>34</sup> Don Villarejo et al., *Suffering in Silence: A Report on the Health of California Agricultural Workers*, at <http://www.calendow.org/pub/publications/AgrWorkersSurveyver012301.pdf> (Nov. 2000).

<sup>35</sup> See generally Centers for Disease Control and Prevention, *National Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases*, at [http://www.cdc.gov/ncidod/dbmd/diseaseinfo/foodborneinfections\\_t.htm](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/foodborneinfections_t.htm) (2001).

### III. HOW HAS MEXICAN MIGRATION PROCEEDED UNDER IRCA?

Mexican migration to the U.S. is the single most important unresolved trade issue between the two nations. In 1986, the U.S. unilaterally changed previous policy. Under the earlier Texas Proviso, undocumented workers could be employed in the U.S. even though they were present in the country illegally. Thus, prior law focused on deporting undocumented workers and employers were essentially free to hire anyone, irrespective of immigration status.

The Immigration Reform and Control Act of 1986 (IRCA) reversed that policy.<sup>36</sup> Most importantly, millions of undocumented U.S. workers were granted "amnesty," an opportunity to regularize their immigration status. Agricultural employers were given special consideration: the Special Agricultural Worker visa program offered any person who had been employed in perishable crop agriculture for a minimum of 90 days between May 1985 and May 1986 the opportunity to apply for and obtain a "green card." No other industry received such special treatment even though there were some that had as many undocumented workers as did agriculture at that time.

Of equal importance, IRCA made it unlawful to intentionally employ undocumented workers. To enforce the new policy, employer sanctions were introduced, effectively requiring employers to verify each worker's employment eligibility, and holding the employer accountable if the worker was not documented. Form I-9 was introduced, requiring every U.S. worker to demonstrate their eligibility for employment. Subsequently, all newly hired workers are required to do likewise. Demonstration of eligibility includes producing original documents, such as Social Security cards, *micas*, passports, or driver's licenses, for inspection by the employer.

However, a major loophole was introduced into the law, reportedly as a result of a private "backroom" agreement between California farm employers and immigration advocates. In particular, the law was written so that sanctions could only be applied against employers who "knowingly" hired unauthorized workers. Thus, an employer who inspects fraudulent documents and can reasonably claim to be unable to distinguish them from authentic documents is not subject to sanctions. This loophole was good news to the massive fraudulent document industry. Reportedly, some of the alleged September 11 hijackers had obtained false Social Security cards for identity purposes.<sup>37</sup>

---

<sup>36</sup> See generally Immigration Reform & Control Act of 1986, Pub. L. No. 99-603, 100 Stat. 3359 (1986) (codified as amended in scattered sections of 8 U.S.C.).

<sup>37</sup> See generally *The Risk to Homeland Security from Identity Fraud: Hearings Before the Subcomm. on Immigration and Border Security, and Subcomm. on Crime,*

The “IRCA loophole” has made it possible for hundreds of thousands, if not millions, of undocumented workers to be hired, provided their supporting documents appear to be authentic and their employer was willing to risk the possibility of being charged with violations.

It is now clear that the employer sanctions policy has been a spectacular failure.<sup>38</sup> After a surge of workplace inspections and fines in the early years of IRCA implementation, the INS has substantially pulled back from such efforts. Both the number of employer sanctions cases and the number and amount of fines levied has fallen sharply over the past half-dozen years. At the same time, the number of unauthorized workers in the U.S. economy has surged. Most observers agree that the total number of unauthorized workers in the U.S. is now very likely greater than it was before IRCA.

Other important changes in immigration policy introduced with IRCA included: banning workplace raids unless a search warrant is obtained in advance, and adopting “family unification” as a fundamental principle of immigration policy. The latter, embodied in Sec. 245 (i), allowed immigrants with permanent legal resident status, including persons whose status was regularized under IRCA amnesty, to bring otherwise unauthorized family members into the U.S. and regularize their status.

Thus, IRCA stimulated new immigration from Mexico, both intentional (Mexican-resident but SAW-eligible persons returning to the U.S. as well as family unification) and unintentional (unauthorized). Imagine the effect of IRCA: telling all of Mexico and Central America that the working as an undocumented worker in the U.S. will result in getting a green card. Alarcón directly demonstrated that IRCA *caused* substantial new immigration.<sup>39</sup> Palerm found that long-established migration patterns were *disrupted* by the new migrants.<sup>40</sup>

Conceptually, IRCA meant a shift away from a focus on deporting unauthorized migrants to a new one: restricting employment to persons who had approved status. For political reasons, the Clinton

---

*Terrorism and Homeland, and Comm. on Judiciary* (2002) (statement of James G. Huse, Jr., Inspector General of Social Security Administration).

<sup>38</sup> Don Villarejo, *Employer Sanctions Citations in California Agriculture* (University of California, Davis Apr. 20, 2002) (unpublished manuscript on file with the author).

<sup>39</sup> See generally RAFAEL ALARCÓN, *Immigrants or Transnational Workers? The Settlement Process Among Mexicans in Rural California* (California Institute for Rural Studies 1995).

<sup>40</sup> See generally JUAN VINCENT PALERM, *Farm Labor Needs and Farm Workers in California: 1970-1989*, in CALIFORNIA AGRICULTURAL STUDIES (Employment Development Department 1991).



administration later developed and implemented a substantial program of interdiction at the U.S.-Mexican border, a program that has also failed. The Border Patrol now has more active agents than does the FBI. The para-military means utilized in this interdiction program has had tragic consequences: hundreds of Mexicans have perished seeking unauthorized entry into the U.S. Just in the past two years there have been more fatalities at the Mexican border than deaths occurred at the notorious Berlin Wall in its three decades of existence.<sup>41</sup> Interdiction efforts have been heightened following September 11, at great cost on both sides of the border.

In 1996, IRCA was modified in significant ways. Importantly, the family unification policy was terminated. And all non-citizens who had been convicted of felonies were to be deported, even though they may have satisfactorily completed serving prison sentences upon conviction. Finally, important rights of judicial appeal were stripped away. Recent court decisions have held some of these new policies to be unconstitutional, but the legal struggle to protect the rights of the foreign-born will continue for many years to come.

Over the period of the past thirty years, U.S. agriculture has become more and more dependent upon foreign-born labor. Paradoxically, as California agriculture has gained greater and greater success—for example, the state's output of fruits and vegetables has increased by 75% in the past twenty-five years, and annual dairy output, measured in amount of fluid milk produced, now leads all other states, including Wisconsin—our dependence on foreign-born labor has grown.

In 1969, roughly half of California's hired farm work force was U.S.-born.<sup>42</sup> Today, less than five percent of the estimated 700,000 hired farm workers in the state were born in the U.S.<sup>43</sup> All but a relative handful of the state's hired farm workers today say they are Mexican.

On a national basis, the percent foreign-born among hired farm workers has also increased rapidly. The most reliable national data is from the U.S. Department of Labor's National Agricultural Worker Survey (NAWS). Most significantly, from 1988, the first year of the

---

<sup>41</sup> Over 1,870 border deaths have been recorded since 1994, of which 387 were in the last year. In the 30 years of the infamous Wall separating East and West Germany, there were a total of 175 known fatalities. See generally California Rural Legal Foundation, *How many more? Stop Gatekeeper!*, at <http://www.stopgatekeeper.org/English/deaths.htm>.

<sup>42</sup> See generally CALIFORNIA ASSEMBLY COMMITTEE ON AGRICULTURE ADVISORY COMMITTEE ON FARM LABOR RESEARCH, *THE CALIFORNIA FARM LABOR FORCE: A PROFILE* (1969).

<sup>43</sup> Don Villarejo, *California's Agricultural Employers: Twenty Five Years Later*, at [http://migration.ucdavis.edu/rmn/changingface/cf\\_alra25/9\\_2000\\_villarejo.html](http://migration.ucdavis.edu/rmn/changingface/cf_alra25/9_2000_villarejo.html) (2000).

NAWS, to the present, the proportion of foreign-born increased from 60% to more than 74%.<sup>44</sup>

Of greater significance is the evidence that a large surplus of agricultural workers, whether authorized or not, has been accompanied by an erosion of wage rates and earnings of all U.S. hired farm workers. Examination of national data shows an increase in nominal wage rates for hired farm workers but, when adjusted for inflation, a serious decline has occurred both in real wage rates. Finally, hired farm worker wage rates have declined in comparison with those of production workers in manufacturing.

Additionally, a significant decline in the average number of weeks worked per worker has also been found. In other words, the average hired farm worker is now employed fewer weeks of the year even though overall labor demand has increased. This can only be explained by the fact that a larger number of workers are sharing the available jobs.

Finally, there is also evidence that hired farm workers work for fewer employers in the course of a year, on average, than was the case a decade ago. Where it was commonplace for a hired farm worker to seek and find seasonal jobs with two or more employers in the late 1980s, today most workers can only find work with a single employer.

In economics, when supply exceeds demand, price is expected to fall. The agricultural labor market is highly competitive today, and the evidence described above shows that employers have been able to bid down wages, lowering real wage rates, and the increased surplus of workers has resulted in each having fewer weeks of employment in the year.

There is another unanticipated effect of IRCA that has not yet been fully examined. Employer sanctions have had the remarkable effect of encouraging farm operators who have concerns about the immigration status of potential employees to increasingly rely on labor market intermediaries—most importantly, farm labor contractors—to supply seasonal laborers. Thus, the contractor does the hiring and is responsible for the employment verification process, relieving the farm operator of both the administrative burden associated with Form I-9 and the potential liability for hiring unauthorized workers.

---

<sup>44</sup> KALA MEHTA ET AL., *THE NATIONAL AGRICULTURAL WORKERS SURVEY (NAWS) 1997-98: A DEMOGRAPHIC AND EMPLOYMENT PROFILE OF PERISHABLE CROP FARM WORKERS*, RESEARCH REPORT NO. 8 58 (Office of Program Economics, Office of the Assistant Secretary for Policy, U.S. Department of Labor 2000); *see* 1 RICHARD MINES ET AL., *FINDINGS FROM THE NATIONAL AGRICULTURAL WORKERS SURVEY (NAWS) 1990: A DEMOGRAPHIC AND EMPLOYMENT PROFILE OF PERISHABLE CROP FARM WORKERS* 17 (U.S. Department of Labor of the Assistant Secretary for Policy, Office of Program Economics 1991).

Further, some authorities argue that IRCA made it possible for workers with newly acquired green cards to themselves become farm labor contractors. In others words, since these individuals already had personal relationships with persons in work crews where they had been employed, as well as relationships with their home village, they became ideal candidates to start a labor contractor business. Once legalized, the purchase of a van, to transport crews, was then possible, enough to get started as a farm labor contractor.

In California, the evidence is compelling that reliance on farm labor contractors and other labor market intermediaries sharply increased during the post-IRCA period.<sup>45</sup> Figure 5 shows the trend in reported annual average employment by self-identified farm labor contractors. The sharp break in the data in 1986 is evident. Comparing the post-IRCA best-fit straight line with the pre-IRCA best-fit straight line, the annual rate of increase (slope) is found to be *four times larger*.<sup>46</sup> While other factors played a role in the increased reliance on labor contracting in agriculture, both farm operators and farm labor contractors agree that IRCA compliance was significant.

Several anecdotes illustrate the phenomenon. When a major California-Arizona lettuce producer needed to find 1,200 additional workers to fill out their winter harvest crews, it was only able to find 700 work-authorized persons, despite having the highest wages in the industry and full medical insurance for seasonal employees. To solve the problem, the company turned to farm labor contractors in San Luis Rio Colorado who were able to supply the needed workers.<sup>47</sup>

Similarly, a large California Central Coast custom harvest business, unable to fill its crews with work-authorized persons, turned to farm labor contractors to obtain the needed labor supply. The company decided not to risk the liability associated with hiring unauthorized persons, and instead turned to labor contractors who were willing to take that risk.<sup>48</sup>

A final example concerns a farm that operates under a union contract. In Fall 2000, during a visit to a Napa Valley grape ranch that has had a long-standing collective bargaining agreement with the United Farm Workers of America, it was discovered that two crews were harvesting grapes. The sole UFW crew had been supplemented by a non-union crew hired through a farm labor contractor. The farm manager stated that the union contract requires him to request additional

---

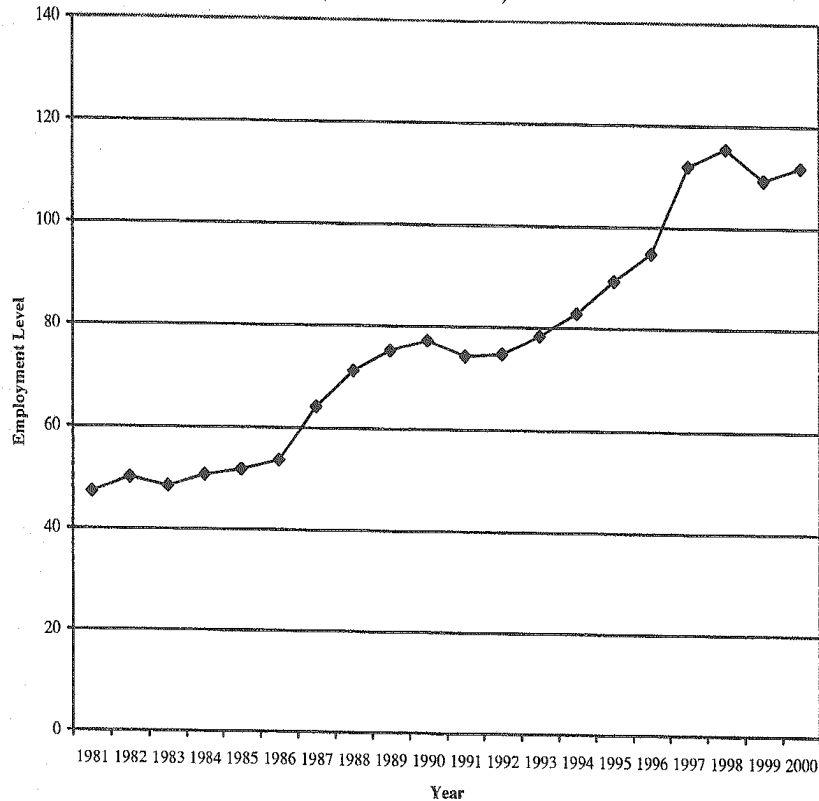
<sup>45</sup> Villarejo, *supra* note 43.

<sup>46</sup> The pre-IRCA slope (1981-86) is 1,015 per year; the post-IRCA slope (1987-2000) is 4,135 per year.

<sup>47</sup> T & A Farms (unpublished communication on file with the author).

<sup>48</sup> Mike Johnston, Teamsters, Local 890 (unpublished communication on file with the author).

FIGURE 5  
ANNUAL AVERAGE MONTHLY EMPLOYMENT OF FARM  
LABOR CONTRACTORS  
(IN THOUSANDS)



workers through the union, and to provide adequate advance notification whenever there is an insufficient supply of union harvest workers. For the previous six harvest seasons, the manager claims to have notified the UFW of the need for additional workers, but he said that the union failed to respond in every such case, and under the union contract, freed the manager to hire a labor contractor crew.<sup>49</sup> Efforts by the author to obtain a comment from the UFW regarding this matter have been fruitless.

#### IV. IMPACT ON LOCAL COMMUNITIES?

The impact of trade and migration in agriculture on local communities is important to understand. On the positive side, exports of produce from California are very substantial. In 1998, the value of agricultural exports from the state amounted to \$6.6 billion, roughly

<sup>49</sup> Sam Turner, Vista Vineyard Management (unpublished communication on file with the author Oct. 6, 2000).

twice the amount of the second ranking state (Iowa).<sup>50</sup> Since total agricultural production in that year was about \$25.9 billion, the amount exported was 25.5%. As a first guess, one might suggest that exports account for 25% of agricultural employment. However, not all commodities are exported to the same degree, and the shares of differing produce crops sold abroad vary greatly.

An estimate of the share of seasonal labor demand accounted for by produce exports can be prepared using known values of harvested crop acreage and published labor demand coefficients.<sup>51</sup> This computation finds that exports are responsible for at least 15% of seasonal farm labor demand in the state.<sup>52</sup> Thus, somewhere between 15% and 25% of all agricultural employment in California can be attributed to exports.

It is not possible to determine the impact of this export market labor demand on specific communities because the ultimate destination of a particular box of produce is not normally known at harvest time. Suffice it to say that in those communities where agricultural employment is significant, a great many jobs are tied to export markets.

Contrary to what many lay people might think, California agricultural employment has grown in recent years. According to published data from the Department of Employment Development, between 1975 and 1999, hired farm worker employment grew by about 25%.<sup>53</sup> Increased labor demand in the state is the result of substantially greater production of fruits and vegetables.

Since nearly all hired farm workers in the state are foreign-born and all but a few are migrants from Mexico, it can be said that California's important success as the nation's leading agricultural state is, in large part, due to its migrant labor force. It is impossible to imagine the state's agricultural system being able to function without migrant workers from Mexico. Conversely, many Mexican migrant workers come to California because they are aware of the opportunities for employment in agriculture, irrespective of one's immigration status.

Despite the fact that U.S. imports of produce from Mexico have increased sharply during the post-NAFTA years, both U.S. total produce output as well as U.S. produce exports have increased. Thus, there has been no measurable net job loss as a result of increased Mexican produce exports to the U.S. in the post-NAFTA years. What small job losses that

---

<sup>50</sup> See California Department of Food and Agriculture, *California Agricultural Resource Directory* (1999).

<sup>51</sup> See generally MAMER & WILKIE, *supra* note 30.

<sup>52</sup> Seasonal labor demand for principal California commodities is estimated to be 293 million hours. Using published export shares for each produce commodity, we arrive at a labor demand estimate of 45 million hours for the production of exported produce.

<sup>53</sup> Villarejo, *supra* note 42.

have occurred (Florida tomatoes) are likely to have been more than offset by increases in U.S. agricultural employment associated with increased production on a national basis.

Large-scale migration of workers from Mexico to labor in the fields of the state has transformed the face of rural California, just as it has our major urban centers. Today, there are about 108 rural or non-urbanized small cities in the state in which hired farm work is the largest share of private sector employment.<sup>54</sup> These shall be termed “farm worker communities” in what follows.

Economic and Social data from Census 2000 became available in May 2002, making it possible to provide some preliminary comments about these farm worker communities.<sup>55</sup> In what follows, we rely on Census 2000 and Census 1990 data for those communities for which summary data has been released. With just one exception, these are communities with at least 1,000 residents reported by Census 2000 and which are either Census Designated Places (CDP) or incorporated cities. There are 59 such places.<sup>56</sup> At this writing, data is not available for the 49 farm worker communities with smaller populations. Overall, an estimated 94% of the total population of the 108 farm worker communities is accounted for by the 59 for which data is presently available.<sup>57</sup>

At both the national and state of California levels, we have reported wage rate, earnings and employment data suggesting that, subsequent to IRCA, growth in the farm labor supply exceeded increases in farm labor demand. But this is a conclusion drawn by inference. In what follows, we examine the growth of the labor force and labor demand in individual farm worker communities. The purpose is to determine if there is direct evidence that the farm labor force did, in fact, grow more rapidly than farm labor demand after IRCA.

Ultimately, we find that both the size of the labor force and the number of unemployed persons in hired farm worker communities have

---

<sup>54</sup> See generally U.S. Census Bureau, *U.S. Census 2000 Demographic Profiles*, at <http://censtats.census.gov/pub/Profiles.shtml> (2002).

<sup>55</sup> *Id.*

<sup>56</sup> The communities are: Arbuckle, Arvin, Avenal, Calipatria, Caruthers, Castroville, Coachella, Cutler, Del Rey, Delano, Dinuba, Earlimart, East Porterville, Farmersville, Firebaugh, Freedom, Gonzales, Greenfield, Guadalupe, Heber, Huron, Ivanhoe, Kettleman City, King City, Lamont, Laton, Le Grand, Lindsay, Live Oak, Livingston, London, Lost Hills, McFarland, Mecca, Mendota, Orange Cove, Orosi, Pajaro, Parksdale, Parlier, Pixley, Planada, Poplar-Cotton Center, Reedley, Richgrove, Riverdale, San Joaquin, Seeley, Soledad, South Dos Palos, Strathmore, Terra Bella, Tipton, Wasco, Weedpatch, Westmorland, Williams, Woodlake and Woodville.

<sup>57</sup> See generally U.S. Census Bureau, *supra* note 54.

increased more rapidly than the number employed.<sup>58</sup> It is likely that immigration during the 1990s accounts for the largest share of these changes. As a consequence, hired farm worker communities are distinct from the remainder of California in that the rate of unemployment, already high in 1990, continued to increase during the decade that followed. In what follows, the data presented for the 59 farm worker communities is the median value. For example, when population growth is discussed, the figure quoted is the median of the population growth (percent) reported for each of the 59 communities.

First, and foremost, these are very rapidly growing communities, and especially so in relation to growth in California. Population growth in these farm worker communities amounted to 29.7% between 1990 and 2000, *more than twice as great* as the rate of growth in the state as a whole during this period (13.8%).<sup>59</sup>

These communities, as is well known to residents and visitors, are heavily Hispanic: in Census 2000, 82.5% of the total population said they were of Hispanic ethnicity. Overwhelmingly, they also identify as Mexican or Mexican-American.

The foreign-born population reported by the Census amounted to 43.6% of the population in these farm worker communities, well above the figure of some 26.2% for the state as a whole. Equally important, the number of persons who said they entered the country during the 1990-2000 interval and now reside in the farm worker communities amounted to an astounding 70.5% of the net population growth in these communities during that period! It is fair to conclude that population, social and economic trends in these communities are largely driven by immigrants from Mexico.

Just as significant as the increase of population is the growth of the labor force. In these communities, the rate of growth of this segment of the population was 22.7% between 1990 and 2000. In contrast, the state labor force grew by a much smaller figure, just 5.6%.<sup>60</sup> Thus, the work force in hired farm worker communities grew at *four times the rate* that would be expected based on overall state population trends.

The Census data for these farm worker communities also indicate that while the number of persons in the labor force grew by 22.7% and employment also increased, the number of unemployed persons surged by an astounding 46.8%. Correspondingly, the nominal rate of

---

<sup>58</sup> *Id.*

<sup>59</sup> For the 59 communities, total population in the 1990 Census was 300,361. In the 2000 Census, it was reported to be 394,096, where we have subtracted the total institutionalized population (state prisons) in four of these communities: Avenal (1990 & 2000), Calipatria (2000), Delano (2000), and Wasco (2000).

<sup>60</sup> The California Census 1990 labor force was 14,992,811 and the Census 2000 labor force was 15,829,202.

unemployment during the Census period jumped from 16.7% in 1990 to 21.1% in 2000. However, these labor force and unemployment data only refer to the work periods just prior to the April 1 Census dates and do not take proper account of persons who may be employed in seasonal jobs at other times of the year.

A more accurate measure of the change of employment and of unemployment takes account of seasonal variations, usually reported as annual average values.<sup>61</sup> California EDD reports community-specific data on labor force, employment and unemployment for many of these 59 farm worker communities.<sup>62</sup> Usable data is available for the 39 largest.<sup>63</sup> This source reports that labor force growth in these farm worker communities was 17.9% during the ten-year period 1990-2000. EDD also reports that the annual average unemployment rate in these communities during 1990 was 18.1%.<sup>64</sup> By 2000, the corresponding figure reported by EDD had increased to 21.3%. In striking contrast, the overall state unemployment rate declined from 5.8% to a record low of 4.9% during the same interval, reflecting recovery from the early 1990s recession.<sup>65</sup>

These two sources of data (Census and EDD) are in fairly good agreement: both population and labor force increased at a faster rate than did labor demand (employment) in California hired farm worker communities during the 1990s. In other words, we have found direct evidence in at least 39, and as many as 59, hired farm worker communities of California that increases in the labor supply during this period exceeded corresponding increases in labor demand by a large factor.<sup>66</sup> Moreover, the largest single factor in population growth and, by inference, labor force growth was immigration from Mexico.

---

<sup>61</sup> Actually, the annual average is the 12-month average of reported monthly employment, based on the number of persons employed during the pay period that includes the 12th day of each month.

<sup>62</sup> California Employment Development Department, Labor Market Information Division, *Labor Force Data for Sub-County Areas in California*, at <http://www.calmis.cahwnet.gov/htmlfile/sublist.htm> (visited Nov. 3, 2002).

<sup>63</sup> EDD uses county-wide labor force, employment and unemployment figures obtained from survey data, and then extrapolates each community's share according to the Census-reported share of county-wide employment. This method is necessary since the survey sample size would yield unstable results for communities with a small population. This methodology yields less reliable results at the community level than at the county-wide level, but the magnitude of the error is not known.

<sup>64</sup> Data is available for 35 of the 55 hired farm worker communities, again excluding Arvin, Avenal, Calipatria, Delano and Wasco. New prisons were built in three of these communities during the period and changing prison populations between Census 1990 and Census 2000 makes a comparison not feasible.

<sup>65</sup> See California Employment Development Department, *supra* note 62.

<sup>66</sup> In numerical terms, in the 39 hired farm worker communities for which all data can be compared, labor demand (employment) increased by 12,130, according to



Not surprisingly, Census 2000 reports that the number of persons living in poverty in these 59 farm worker communities was 30.7%, up from 28.0% in Census 1990, and more than twice as great as the figure of 14.2% for the state as a whole. Per capita income in these communities was \$8,941 in 1999, less than half of the figure of \$22,711 for all of California. Clearly, these are very poor communities and they are evidently becoming poorer.

Recent survey data in these communities underscore the degree to which Mexican immigrant farm workers have gained little during the 1990s. Table 3 shows the findings of the California Agricultural Worker Health Survey (CAWHS) conducted by the California Institute for Rural Studies, the most recent large-scale cross-sectional survey of this population.<sup>67</sup>

TABLE 3  
CALIFORNIA AGRICULTURAL WORKER HEALTH SURVEY 1999  
SNAPSHOT N=970

Characteristic	CAWHS Sample
Age—median	34 years
Gender	36% female
Place of birth	92% foreign-born
Race	91% "other"
Ethnicity	96% Latino/Hispanic/Mexican
Indigenous	8%
Marital status	59% married
Educational attainment	63%, six years or less
Literacy	51% say they read Spanish well; only 5% read English well
Income—1998 (median)	\$7,500 - \$9,999
Children	48% have children

About one-third of the CAWHS subjects were unaccompanied by any family members, that is, were either married or single workers but are alone while working in the U.S. The gap between the very low incomes reported by CAWHS subjects and California's notoriously high housing costs led 42% to share their dwelling with unrelated households. To save money, and to address the acute shortage of affordable housing in rural California, as many as 30% of CAWHS subjects reside in temporary dwellings, sometimes as informal as a garage or tool shed, labor

EDD figures. But the labor force grew by 19,170, a more than 50% larger increase. As a consequence, unemployment surged.

<sup>67</sup> See generally Villarejo et al., *supra* note 34.

camp or automobiles. Several workers reported living "under the trees."<sup>68</sup>

The primary focus of the CAWHS was health, and a comprehensive physical examination was completed for each subject, including a full blood workup. The main findings, presented elsewhere, are that more than three-fourths of all subjects were found to be without any form of health insurance. Government programs intended to provide medical insurance for the poor, such as Medical, only covered 7% of CAWHS subjects. Subjects were asked to report their most recent medical visit. Among men, one-third reported they had never been to a clinic or doctor. However, among women, medical visits were frequent, owing to excellent programs such as WIC and emergency Medical.<sup>69</sup>

Measures of indicators of chronic health conditions—high blood pressure, obesity, high serum cholesterol, anemia—showed that CAWHS subjects, in all age cohorts, had poor health status relative to all Mexican origin U.S. residents and to the general population. Of great significance was the finding that, again in all age cohorts, workers who had been here longer were in poorer health as compared with newly arrived workers of the same age.<sup>70</sup>

Another health finding was associated with the dental screening of the CAWHS. A majority of workers had at least one significant adverse dental health outcome: dental caries, missing or broken teeth, and such conditions as gingivitis were found to be widespread. Few workers had ever visited a dentist.<sup>71</sup>

Of great concern to public health was the discovery of previously undetected infectious disease among CAWHS subjects. One in every one hundred subjects had positive screenings for syphilis, a disease that has been virtually eliminated among U.S.-born persons. One in every forty workers had been told by a physician that they had tuberculosis, but screening for active TB among CAWHS subjects was not possible owing to a breakdown of the state's public health system.

#### A. *Educational attainment*

It has long been evident that farm worker communities need new and better opportunities for employment. The resident labor force has amply demonstrated its ability to perform difficult and strenuous work, and to perform well. After all, California fruits and vegetables are well known to be of the highest quality and low-priced, competitive with that

---

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> Don Villarejo et al., *Access to Health Care for California's Hired Farm Workers: A Baseline Report*, at <http://www.ucop.edu/cprc/fwaccess.pdf> (visited Nov. 3, 2002).

<sup>71</sup> See generally Villarejo et al., *supra* note 34.

grown anywhere else in the world. Yet, aside from prisons and toxic waste dumps, few employers seek to locate in or near these communities.

Census data provides an important clue as to why the shunning of farm worker communities is so difficult to change: educational attainment among adult workers is remarkably low. Among those age 25 and older in these farm workers communities, just 37.1% are high school graduates, and only 3.0% have a bachelor's or higher degree. In California as a whole, the comparable figures are 76.8% and 26.6%, respectively. Moreover, while the proportion of those with bachelor's or higher degree rose in the state from 23.4% in 1990 to 26.6% in 2000, the proportion actually fell in farm worker communities during this period.<sup>72</sup>

Other measures of academic progress are also available. For the past several years, the state of California has systematically measured the academic performance of individual public schools. The California Department of Education has made the results available in the form of a comprehensive database.<sup>73</sup>

Aside from test scores for each public school, the published data include some information about the educational attainment of parents, as reported to school authorities, and eligibility for free or reduced cost meals provided under the federal school lunch program. Also, the proportion of Hispanic, Asian, Pacific Islander, Native American, Filipino, African American and White students enrolled in each school are reported.

Usable data was obtained for 145 individual public schools. There were an additional four schools in these communities for which no data was available. The findings are quite striking.

First, the proportion of student households in which both parents have not completed high school is reported. For those schools located within hired farm worker communities, the median was 46%. That is, in half of these schools 46% or more of children lived in households where neither parent had completed high school.

For all California schools, the median proportion of student households in which neither parent completed high school is 13%, a fraction roughly three-fourths smaller than found in hired farm worker communities.

Second, the extent to which these communities are quite poor is reflected in the data on participation in the school lunch programs. The median participation rate was 77% for these 145 schools. In other words, in half the schools, at least 77% of all students qualified for the free or reduced cost lunch program.

---

<sup>72</sup> See generally U.S. Census Bureau, *supra* note 53.

<sup>73</sup> See generally California Department of Education, *Academic Performance Index*, at <http://www.cde.ca.gov/psaa/api/> (visited Nov. 3, 2001).

Participation in free or reduced cost school lunch programs is substantial in most California schools. The median for all California schools was found to be 53% participation. Nevertheless, this is well below the value found for schools in hired farm worker communities.

Finally, the extent to which language barriers are significant is reflected in the data on the proportion of students who are English language learners. The median value for the 145 schools was 45%. In half the schools, at least 45% of the students are not proficient in English.

Despite the great language diversity prevalent in California schools, the median percent of English language learners statewide is only 19%. This is well below the figure for the schools in hired farm workers communities.

The ethnic composition among students in the hired farm worker schools is expected to be heavily Hispanic, given that the communities where they are located were found to be heavily Hispanic according to Census data. The school enrollment data reveal that the median percent Hispanic is 88%, median percent African American is 1%, median percent Asian American is 0%, and the median percent White is 5%. Nearly all of the schools in hired farm worker communities are overwhelmingly Hispanic, and lack any sign of the diversity found in many of the state's metropolitan area schools. It has been said that these are among the most segregated schools in the nation.

A particularly disturbing set of findings in these data are the reported scores on the Academic Performance Index (API), a test-based measure of student achievement. For elementary schools in the hired farm worker communities, the median year 2000 API score was 529. This compares unfavorably with the median for all elementary schools in the state for which the median score was 673.

Of the 92 elementary schools, 29 ranked in the lowest decile, and another 21 ranked in the ninth decile. No elementary school in the hired farm worker communities ranked in the top two deciles in the state. For high schools, the results are equally disturbing. In the hired farm worker communities, the median high school API score was just 506, which is far below the state median score of 635. When compared with all California high schools, these results are extremely poor. None of the 24 high schools in hired farm worker communities ranked higher than the seventh decile. Nine ranked in the tenth decile, and nine more were in the ninth decile.

## V. DISCUSSION

A. *Agricultural trade*

The evidence is compelling that the U.S. produce industry, as expected by agricultural economists, experienced little impact of tariff reductions associated with NAFTA. On the other hand, Mexican exports of fruits and vegetables to the United States have increased sharply, thus fulfilling the intent of NAFTA. Trade in produce proceeds (word choice?), and both Mexican and U.S. producers appear to be benefiting from the growth in this trade.

Far more important to U.S. produce trade than tariff reductions for Mexican imports has been the increasingly stronger U.S. dollar. Both the Mexican peso and Canadian dollar are now much lower in value relative to the U.S. dollar than was the case in the early 1990s. The peso devaluation of 1994-95 was far more important than NAFTA in promoting U.S. imports of Mexican produce. The fall of the Canadian dollar has been a major contributing factor to increased U.S. imports of Canadian tomatoes, so much so that these imports are now regarded as a threat to U.S. producers.

A great many Mexican farmers have been compelled to leave their farms as a result of both NAFTA and sharp reductions in Mexican government subsidies to both private land and *ejido* farmers. de Janvry has examined data from interviews of Mexican farmers on both types of farms and concluded that much more needs to be done to assist farmers in this transition, especially to open up opportunities for small holders to share in the expanded produce export market. Assistance is especially needed to address pest control, productivity and crop yields.

In this discussion, it is important to realize that the world-wide surplus of agricultural commodities, leading to some of the lowest prices in recent decades, has adversely affected many U.S. farmers. Widespread reports of bankruptcies, or of farmers leaving their land, are regularly appearing in the U.S. press.

These developments are reminders that agriculture is quite different than manufacturing: large short-term fluctuations in market price for produce are common, and are disproportionately larger than corresponding changes in production. For example, a 15% reduction in fresh lettuce supply can result in a doubling or tripling of price.

A long-time kiwi and rice farmer in the Sacramento Valley, the late Dick Harter, once told me, "Every year, I hope to have a great crop, but secretly I wish that none of my neighbors do." That is the dilemma of free market agriculture in the world's most abundant crop region.

Policy responses to date have been mainly emergency appropriations of subsidies to producers of staple commodities: grain,

cotton, rice and soybeans, or renewed attempts to increase exports of U.S. agricultural commodities. Recently, India has agreed to allow increased imports of U.S. table grapes (California will benefit from this development), and China has agreed to allow U.S. citrus to enter that nation.

It is ironic that while using substantial government subsidies to try to increase U.S. commodity exports, farmers have become increasingly bitter about foreign competition or imports of competitive commodities.

Finally, the evidence is rather clear that concerns about possible widespread pesticide contamination of Mexican produce imported into the U.S. are greatly overblown. In fact, domestic and foreign microbial contaminants are more important causes of food poisoning and serious illness.

#### *B. Mexican migration*

IRCA changed U.S. immigration policy in important ways, most significantly by providing previously unauthorized workers with the opportunity to regularize their immigration status. At the same time, it appears that IRCA, both intentionally (family unification and migration of SAW-eligible workers to the U.S.) and unintentionally (unauthorized workers), stimulated a major new flow of workers from Mexico that continues to this day.

Migration is a cumulative process, with early migrants blazing a trail for those who follow. Unfortunately, the end of family unification has meant that a great many male migrant agricultural workers in the U.S. will find themselves increasingly without the important social and family structures of normal life. Loneliness, depression and related risk behaviors, such as alcohol and violence, will likely increase if the women are deliberately prevented from joining their men.

Interdiction efforts of U.S. authorities, such as Operation Gatekeeper, have largely failed, despite the very high cost in terms of human lives and government expenditures. However, recent data indicate that the composition of those crossing the Mexico-U.S. border has been altered by the interdiction efforts. In particular, the number of women apprehended by the Border Patrol has sharply decreased, to perhaps 5% of the total. In other words, more dangerous and expensive crossings, while not significantly altering the overall annual flow, has prevented a great many women and daughters from joining their spouses or fathers.

There are two direct economic benefits to Mexico associated with this large-scale migration. First, the movement of persons out of the country reduces the national labor supply at a time when new job creation in Mexico is unable to accommodate as many as half of those

entering the labor force each year. Thus, unemployment in Mexico is reduced as a result of out-migration and economic conditions there should be more favorable for increases in wages and benefits. However, the recession now under way will undermine that possibility.

Second, remittances sent back home by migrant workers play an important role in supporting the families who remain in the sending villages. An estimated \$9 billion in remittances is sent home on an annual basis. This is substantially more than the value of all Mexican agricultural exports to the U.S.

Also, many migrant workers participate in village or civic improvement associations while in the U.S. Among projects undertaken by these groups are water supply, sanitation and other development efforts in their home villages.

An important down side of the migration strategy to date has been the substantial over-supply of labor in agriculture. Agricultural employers have been able to bid down real wages, and workers are finding less total weeks of work, despite an overall increase in labor demand. That is, the increase in labor supply appears to have greatly exceeded increases in labor demand.

Labor contracting has boomed in the post-IRCA period, largely because of the failed employer sanctions provisions that were intended to discourage the hiring of unauthorized workers. Additionally, more than a few previously unauthorized workers were able to regularize their immigration status under the amnesty and SAW provisions of IRCA and became farm labor contractors.

Less well studied, but of great importance for labor relations in the U.S., is the ability of employers to tap the large surplus of available workers during labor disputes. Post-IRCA union organizing efforts have been seriously hampered by the availability of workers to replace strikers. In the Central Valley of California, where the labor surplus is especially pronounced, virtually every post-IRCA labor action in agriculture or food processing has been broken within a matter of days by the arrival of large number of willing workers, many supplied by labor contractors.

### *C. Local communities*

Compelling evidence is presented directly demonstrating that California's hired farm worker communities have experienced a growth in the local labor force subsequent to IRCA that greatly exceeded corresponding increases in labor demand. Despite overall expansion of labor demand in agriculture, and despite the economic boom of the 1990s, farm worker communities have experienced increasing levels of

unemployment, and of under-employment. By 2000, annual average rates of unemployment in these communities had reached 23%.

This finding correlates well with evidence showing decreases in real wages, annual earnings and total weeks of work. At present, California's hired farm workers as a whole are losing ground relative to earlier cohorts.

The failure of most agricultural employers to provide even minimal benefits, most importantly, medical insurance, has significant health consequence for hired farm workers in California. Adverse chronic health status, untreated serious infectious disease, and widespread dental health problems are found at unacceptably high levels in this work force.

Moreover, the longer a Mexican migrant worker is employed as an agricultural laborer, the worse is his or her health status. Lack of medical insurance, lack of a recent health care visits and poverty status are the fundamental causes of this deterioration of health. Considering that this is the richest agricultural region in the richest nation, this mistreatment of hired farm workers is nothing short of a fundamental violation of human rights.

Low educational attainment appears to be replicating in hired farm workers communities. All measures of educational achievement suggest that most children attending schools in these communities lag far behind students throughout the state.

Local officials and community advocates argue that securing well-paying jobs in these communities is the key to their future. However, the extraordinarily low educational attainment of current residents of these communities will likely disadvantage them in this regard for the indefinite future. Few, if any, employers seeking skilled workers today will be attracted to hired farm worker communities in comparison with hundreds of other communities throughout the state.

## VI. RECOMMENDATIONS

Ultimately, Mexico, Canada and the U.S. should become fully integrated along the lines of the European Union, allowing the free movement of goods and people across national boundaries. However, so long as the gap in per capita GDP remains so large, it will not be possible for Mexico to do so. Nevertheless, this should be the policy goal of the three nations.

The substantial and increasing export of Mexican produce to U.S. markets provides an economic development opportunity for Mexico. Strategies for developing suitable infrastructure and support services are needed to make it possible for the benefits of this expanded trade to be widely shared. As part of the increased economic integration of the two nations, the U.S. should directly provide substantial new development



assistance, just as the European Community provided for Spain and Portugal during their integration into the EU.

Migration of workers is a form of international trade. Mexico and the U.S. must formally recognize this fact and enter into agreements to address the consequences of this trade, including the development of a body of law that regularizes the immigration status of migrant workers and fully protects their rights. Violations of worker rights should be treated as causes of action, just as violations of agreements regarding trade in goods are causes of action.

Employers of migrant workers from Mexico should be required to provide a minimal package of benefits, including medical and dental insurance, but the costs should be shared with the public sector and with workers themselves. Mexican migrant workers who go to Canada each year are already provided with appropriate immigration status, full coverage by the Canadian social insurance system during their stay, and decent housing, as well as having half of their transportation costs paid by their employer. Surely, the much wealthier U.S. agricultural system can do likewise.

Educational attainment is the single most important social capital investment for an individual. Substantial new investments in education are needed if farm worker communities are to realize increased opportunities for their children. The new School of Education at UC Davis should target educationally disadvantaged Central Valley communities for special efforts to improve the attainment of their children.