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CAN SAFETY AND HEALTH ON FARMS BE IMPROVED THROUGH STRENGTHENING ETHICAL BEHAVIORS AS DERIVED FROM AGRICULTURES?

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The purpose of this paper is to explore the development of ethical principles in agriculture that directly address occupational health and safety issues. The author is grateful to the National Institute for Farm Safety, Inc., and to Dr. Barbara Lee, President of NIFS, and Larry Piercy, who invited the author to speak at the 1996 Summer Meeting.

Ethics concerns principles of appropriate conduct which guide people in their personal behavior. As applied to agriculture, Prof. Desmond Jolly, Director of the Small Farm Center at the University of California, has written an interesting and useful paper. Dr. Jolly recently spoke on the subject at the monthly seminar of the Agricultural Health and Safety Center of the University of California.

Development of ethical principles across an entire industry is not new, but most recently pertain to environmental concerns. For example, the American Forest and Paper Association announced in April 1996 through a full-page advertisement in leading U.S. newspapers that it was voluntarily adopting a statement of ethical conduct known as the Sustainable Forest Initiative. This initiative was adopted by two hundred paper and forest companies and requires them to replace every acre harvested; protect wildlife, lakes and streams; enrich the diversity of plant and animal life; safeguard forests of special ecological value; and submit their annual progress in these matters to review by a committee of independent experts. The review panel will include representatives of the non-profit Conservation Fund and forest professionals. Cynics might argue that this is simply a public relations effort without any real substantive commitment to ethical principles. On the other hand, the ability of an independent body of knowledgeable experts to audit progress does open up the possibility of real dialogue among all stakeholders.

Within agriculture, particularly in California, there already exist codes of conduct initiated by farm groups that address a wide variety of issues. These include the following organizations:

- California Beef Cattle Association - addresses humane treatment of animals;
- Lodi-Woodbridge Winegrape Commission - all six hundred farmer members made five-year commitment to transition to sustainable farming practices;
- California Certified Organic Farmers - their six hundred farmer members adopted a strict code of conduct with respect to organic cultural practices (this is the fastest growing segment of California agriculture with estimates of annual farm gate revenues ranging from \$73 million to \$200 million);
- Community Alliance with Family Farmers - their mission statement adopted by 1,200 farmer members and allies states, "To bring together family farmers and

other citizens into a movement to attain the shared knowledge and personal power necessary to establish a form of agriculture and rural culture that will protect and enhance the natural resource base; foster healthy rural communities; and establish the family farm as a viable economic unit. We will work to promote social and ecological justice, create a harmonious relationship between the rural and urban sectors, and provide a high quality, safe and abundant food supply at a fair price to the benefit of all citizens."

In all of these efforts and in seeking to develop a code of appropriate conduct that embraces occupational health and safety concerns there is an ethical dilemma. Can we actively promote the success of agriculture and of farmers but at the same time advocate a rigorous code of ethical behavior that, at times, may be contrary to the economic interest of the industry?

That this type of concern is not an idle question has been dramatically brought to the nation's attention by Secretary of Transportation Federico Peña. In response to the 1996 Value-Jet disaster, he has raised, in a press conference aimed at the national media, the question of whether the Federal Aviation Administration can actively promote the commercial success of the air travel industry, and at the same time, adequately regulate safety. Interestingly, Peña concluded that this was inherently contradictory and self-defeating. He categorically stated that it was his opinion that the FAA could not do both jobs equally well and should abandon promoting commercial air travel success and instead devote its attention to safety first.

The Changing Structure of U.S. Agriculture: A Sociological Perspective

The central question is, who bears the risk of injury, illness or death as a result of exposures associated with farming? This is broader than who does the work, as was so eloquently presented in the recent report on injuries to children on farms.

U.S. agriculture today encompasses a very broad range of farm operations. At one end of the spectrum is the agrarian (yeoman), representing a pure form of family farming. Agrarians are typically farm residents, representing a fierce independence as well as a caring (loving) of the land and the farm. The agrarian relies exclusively or primarily on family labor, often unpaid family labor (farmer, spouse, children, siblings, elders, others).

The agrarian has been celebrated as representing the Jeffersonian ideal, the core of democratic society. Historians have traced the concept back some 2,700 years to ancient Greek society - to the idea of the *polis* - where a family inherited land, grew food, and was rewarded with a life that fed and clothed their children. It was widely believed that this form of agrarianism had value beyond the confines of the farm.

Recently, Victor Hansen Davis, in his new book Fields Without Dreams, has written about the inherent merits of the agrarians, especially in contrast to the rest of society. He states, "In an age when most of us are urban and conditioned by the behavioral and social sciences - our speech, thought, education, law and religion now guided by psychology, anthropology, sociology, linguistics, and political science - it is critical to understand that this assumption was neither always the case nor often thought to be a good thing. There is a tiny

fraction of the American population whose code of conduct and outlook is still predicated on very different premises, on exactly the opposite idea of social construction, on criteria more natural yet distinct from the supporting apparatus of religion and abstract science. Staying in one place, working with one's hands, challenging nature through group struggle, passing on something better than what one received - this creed can manifest itself in peculiar ideas about the rest of us."

At the other end of the spectrum in agriculture is the large-scale farming business in which capital both augments and substitutes for the sweat equity of the agrarian. This form of agricultural enterprise relies primarily, or exclusively, on the labor of others. Today, these business rely on hired labor, but as recently as in my great-grandmother's lifetime, on the labor of slaves or indentured servants.

Instead of a single place - the farmstead - large-scale agricultural businesses today frequently operate many pieces of ground, often rented or leased, as well as owned land. Thus, the relationship of the agrarian land owner to the farm is replaced by a more distant connection to the land itself. To illustrate just how far we have gone in this direction, in 1987 CIRS found that 92% of fresh tomato crop land in California was leased or rented land.

Over the past century the mix of agrarians and large-scale farming businesses has been changing very rapidly, especially as measured by the degree of size concentration. This is illustrated in Table 1 where we examine changes in U.S. farm structure between 1964 and 1992. In 1964, for example we had more than 3.1 million farms in the U.S. and the biggest 100,000 among them accounted for about 1/3 of total farm production and 1/6 of net cash income from farm marketings. By 1992, just one generation later, we had only 2 million farms remaining, and, of perhaps greater importance, the biggest 100,000 accounted for nearly 3/5 of all farm production as well as 3/5 of net cash income from farm marketings.

Table 1 - U.S. Farm Structure, 1964-92

1964, Number of U.S. Farms = 3,158,000

Biggest 100,000 farms (based on farm cash receipts)
accounted for:

33% of farm cash receipts from commodity sales
17% of net cash return from farm marketings

1992, Number of U.S. Farms = 1,925,000

Biggest 100,000 farms (based on farm cash receipts)
accounted for:

57% of farm cash receipts from commodity sales
57% of net cash return from farm marketings

Source: U.S. Department of Commerce, Bureau of the Census,
Census of Agriculture, 1964 & 1992.

Another perspective on just how concentrated farming has become is illustrated by reflecting on the full range of farm sizes and how much production and net cash income each size group represents. This is shown in Figures 1-2, where the shares of numbers of farms and of farm production (sales of agricultural commodities) are shown for each of five size groups.

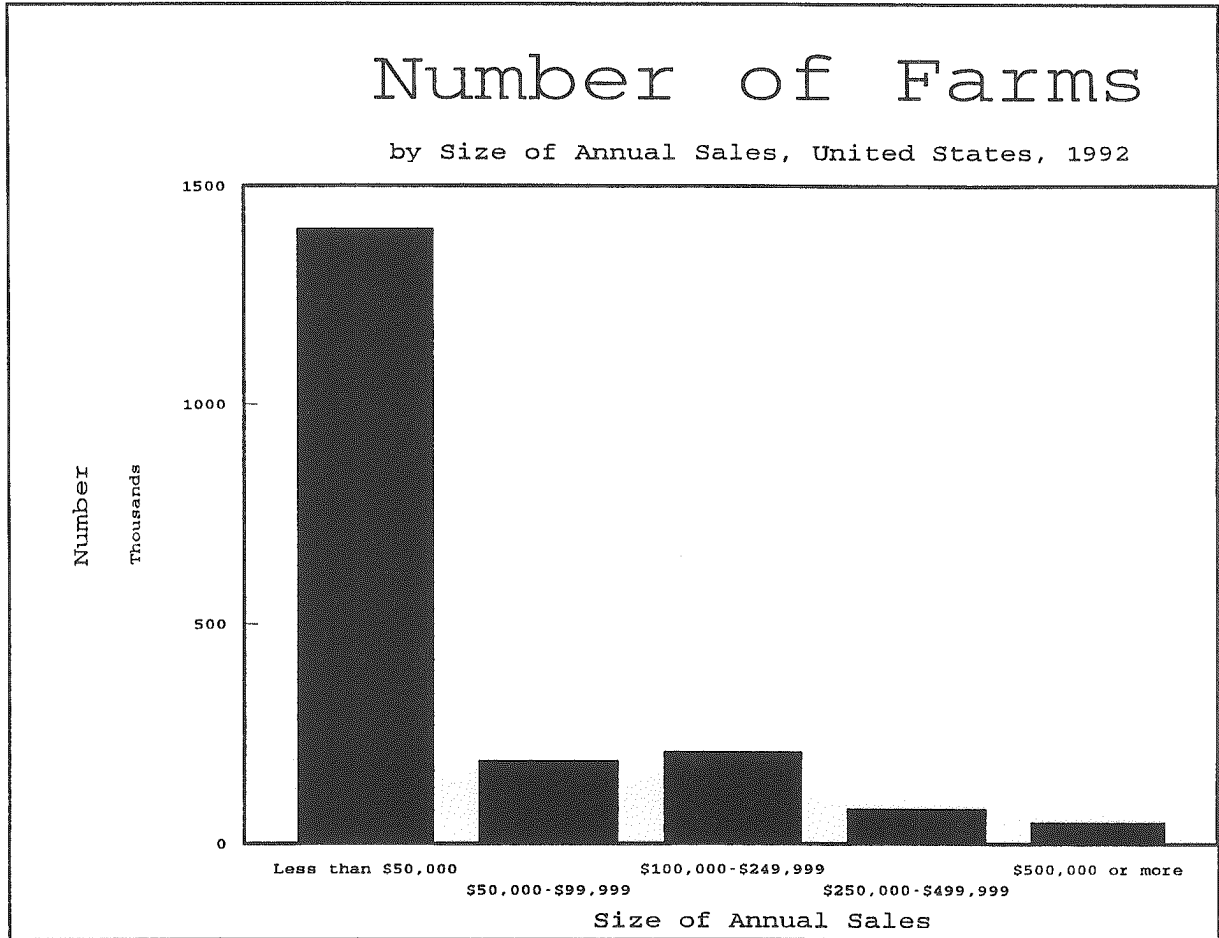


FIGURE 1. Number of farms by size of annual cash receipts from the sale of agricultural commodities, United States, 1992. Source: *Census of Agriculture*. 1992. United States.

As is clear in Figure 1, about 1.4 million of the nation's 2 million farms, or 70%, have total annual sales of agricultural commodities amounting to less than \$50,000. At the other extreme, there are about 47,000 farms with annual sales of \$500,000 or more. Roughly half a million farms have sales somewhere in between.

The smallest size group (sales of less than \$50,000) will be termed small-scale farms while the largest size group (sales of \$500,000 or more) are large-scale farms. So we have about 1.4 million small farms, half a million medium size farms and a little under fifty thousand large farms in the nation today.

Most U.S. farms, seven of every ten, are small-scale farms; only one in forty is a

large-scale farm. Medium size farms are just one in four.

Figure 2 shows the share of total farm cash receipts from the sale of agricultural commodities for each of the five size groups.

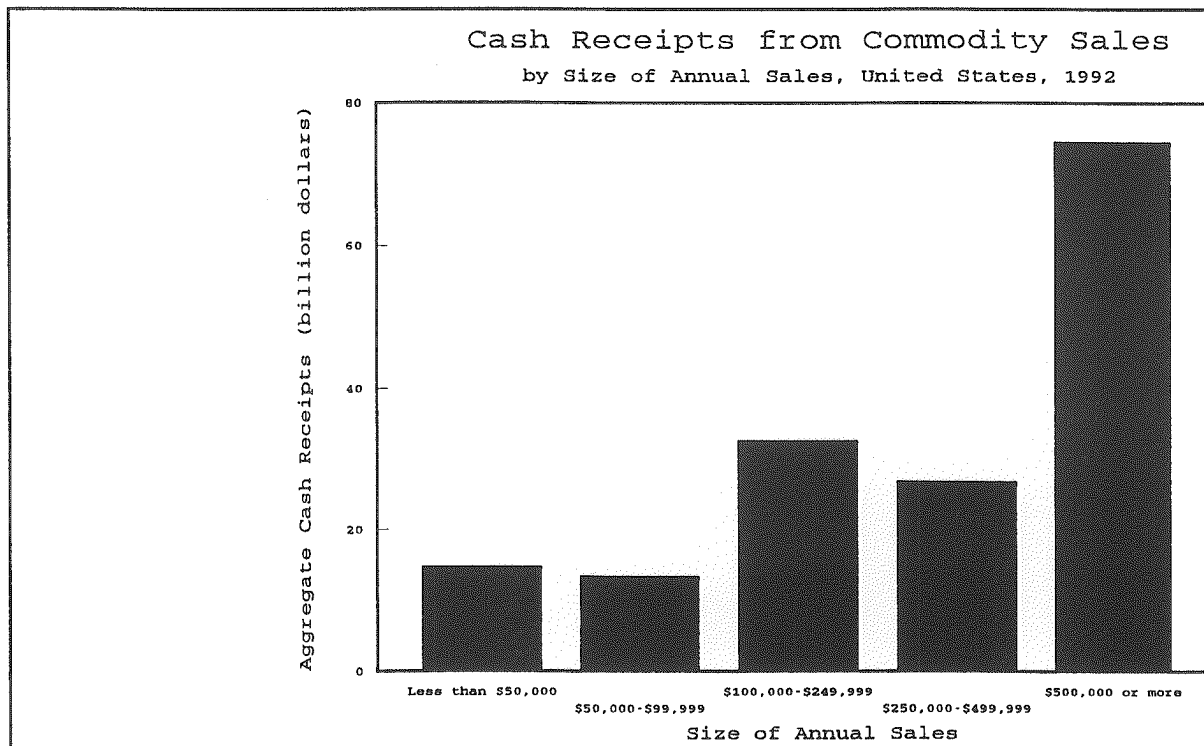


FIGURE 2. Aggregate farm cash receipts from the sale of agricultural commodities, by size of annual sales, United States, 1992. Source: *Census of Agriculture*. 1992. United States.

The size distribution of farm cash receipts is exactly opposite to the distribution of the number of farms by size. Just under half (45.9%) of all U.S. farm sales are accounted for by large-scale farms. Small-scale farms, numbering some 70% of all U.S. farms, have less than 10% of all farm sales (9.1%) today. Medium-scale farms have about 45% of the total.

The main factor driving this change in farm structure is the economic squeeze being felt by nearly all farm operators, sometimes called the cost/price squeeze. In the first fifty years of this century, farm production expenses averaged about fifty percent of farm cash receipts. In other words, farmers paid out about half of each dollar they received from the sale of their crops in the costs of production. But declining real prices for farm commodities, combined with increased production costs, especially during the inflation of the 1970s and early 1980s, put severe pressure on farm income. Today, and for the past dozen or so years, production expenses have averaged about three-quarters of farm cash receipts. The farm family today has only one-quarter of each dollar of farm sales to support itself as compared to one-half in 1950.

A major trend in U.S. agriculture over the last twenty years has been the sharply increased production of certain types of crops. There has been a rapid expansion of fruit,

vegetable and ornamental horticultural crop production that is unprecedented. This is illustrated in Figure 3 where we show the change in vegetable crop production in the U.S. since 1970.

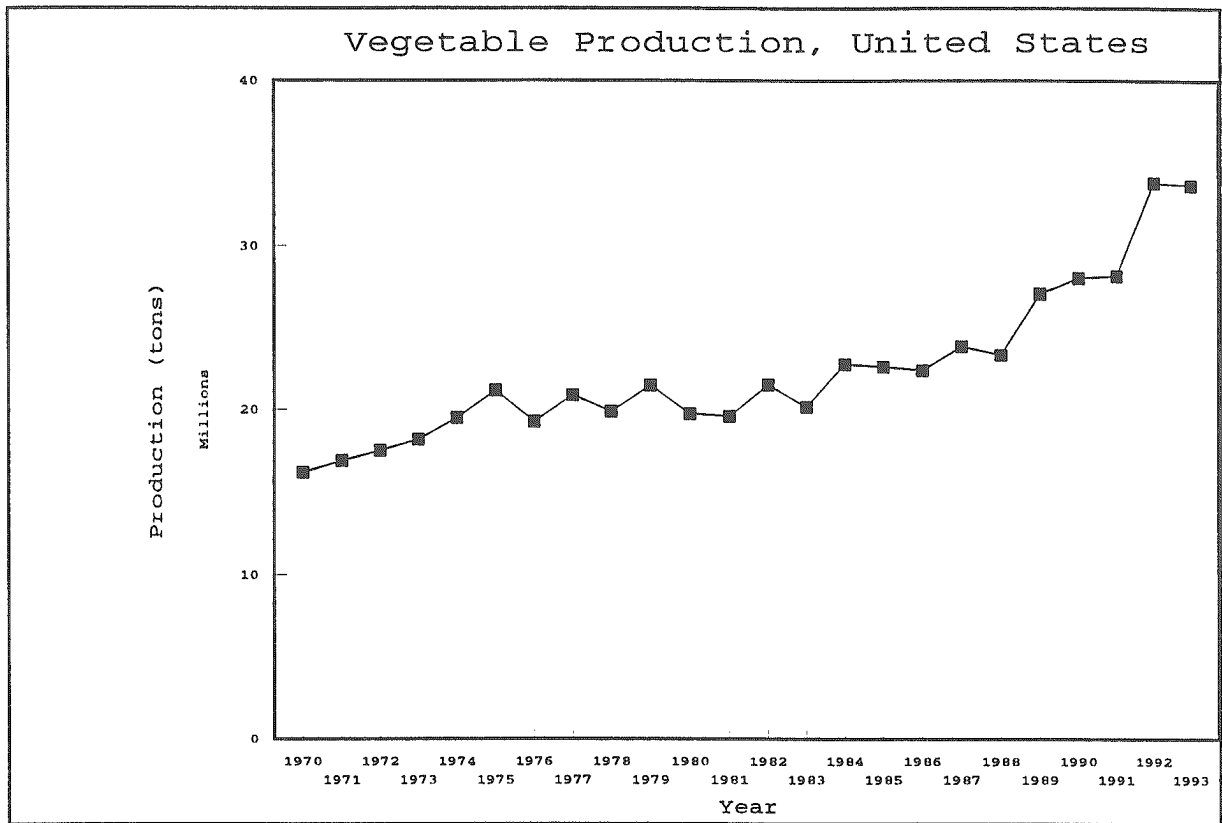


FIGURE 3. Total annual vegetable production (tons), United States, 1970-93. Source: USDA.

Contributing to this remarkable growth are increased U.S. demand - especially greater per capita consumption of fresh fruits and vegetables - as well as sharply larger exports of these crops to Asia and Western Europe. It is not well known, but for the past several years, total U.S. farm cash receipts from the sale of Nursery Crops exceeded corresponding cash receipts for wheat.

An important and little noticed aspect of this trend in fruit, vegetable and ornamental horticultural crop production is that substantially greater hand labor is needed. We find, in California, that despite improvements in technology overall labor demand has grown by about twenty-five per cent due to this trend in cropping in just the past fifteen years.

Both the shift in farm size concentration - fewer agrarians and more large-scale farm businesses - as well as the greater need for hand labor have changed the composition of the work force in agriculture. We have fewer agrarians and more hired workers. As a result, hired workers are performing an ever-larger share of total farm production.

While this is not easy to measure on a national basis, sufficient data exists in California to accurately track this trend. This is shown in Figure 4 in which the annual

average full-time-equivalent employment of farmers, unpaid family members and of workers directly hired by

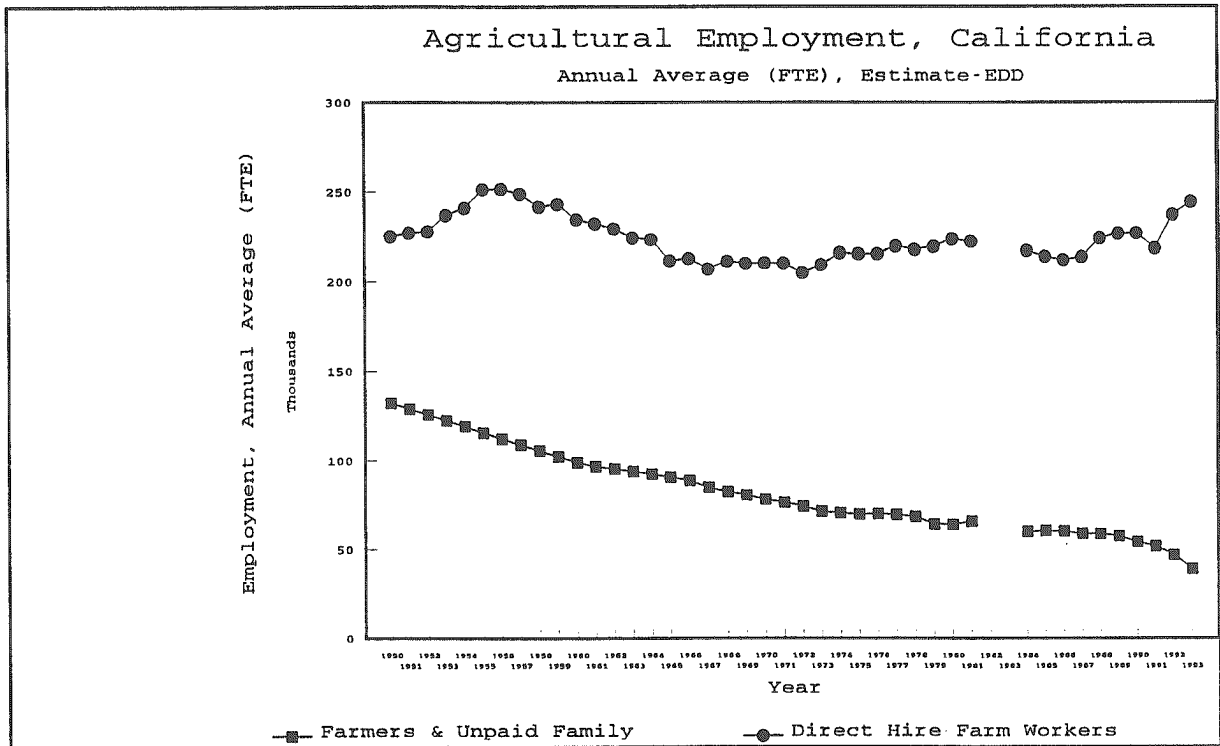


FIGURE 4. Annual average farm employment by category of worker, California, 1950-1993. Source: State of California, Department of Employment Development, Report 881-X.

farmers is shown for the past forty years. Today, less than 15% of all of the work on California farms is performed by farmers and family members, down from 40% a generation ago. Some 85% of all California farm work is done by hired workers, and the share exceeds 95% at certain times of the year. Our state's agriculture is more dependent on hired workers today than at any time in the last century.

As indicated previously, reliable data for the nation as a whole is not available because administrative records of direct-hire employment are inadequate in a majority of states. Nevertheless, in Figure 5 we show USDA estimates of the annual average employment of farmers, unpaid family members, directly hired workers and contract labor workers for the U.S. as a whole. Contract labor workers are persons who work on farms but who are employed by labor market intermediaries - labor contractors - who, in turn, contract with farmers for specific jobs.

In summary, there are fewer agrarians today, and large-scale farming is responsible for an ever-increasing share of total U.S. farm production. With each passing year hired workers are doing an ever-larger share of the work. For many farm families, off-farm income has become just as important, and in some cases more important, than earnings from farming.

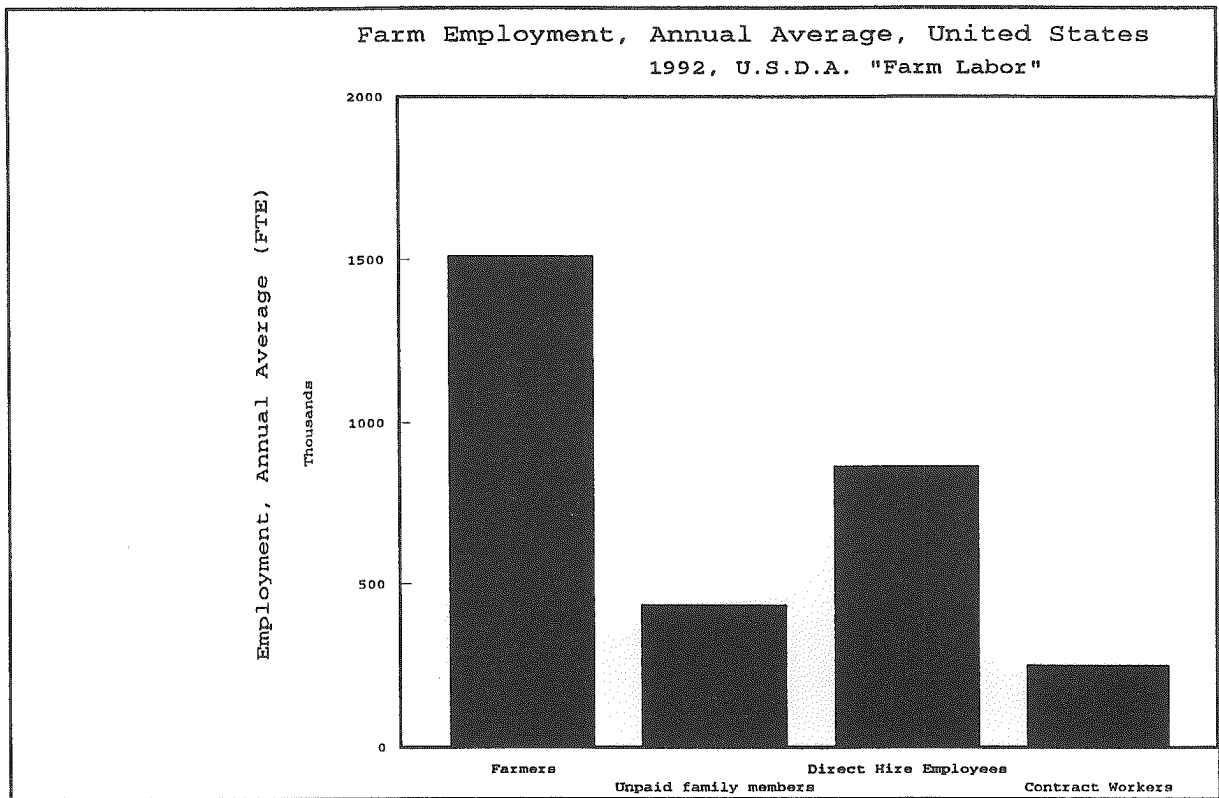


FIGURE 5. Annual average farm employment, United States, 1992. Source: USDA, *Farm Labor*.

Relation of farm structure to the pattern of agricultural injuries

In 1992, for the first time, the Census of Agriculture asked farmers to report on farm injuries that occurred on their place. The exact question reads, "Were there any injuries or deaths connected with farm or ranch work on or for this place in 1992? Report injuries that required paid medical care, or resulted in lost work time, or were fatal. DO NOT report deaths or injuries to contract workers or custom workers." Responses were requested for two categories of agricultural workers: Operator and family members, Hired Workers. Summary results for the U.S. as a whole and for California are shown in Figure 6.

Though we should be cautious about self-reports of occupational injuries, the Census data results are quite surprising. Farmers reported more injuries to their directly-hired workers than to themselves or family members. Roughly two-thirds of the injuries reported involved directly-hired farm employees, and one-fourth of these were on California farms. Just one-third involved the farmer or family members. In addition, a national total of 673 farm occupational fatalities were reported for 1992.

The Census of Agriculture findings on farm injuries can also be analyzed by farm size, as measured by farm cash receipts. This is shown in Figure 7. For medium and small-scale farms, injuries to farmers and family members equal or greatly exceed those to directly-hired workers. But for the larger farms, injuries to directly-hired workers are vastly greater in

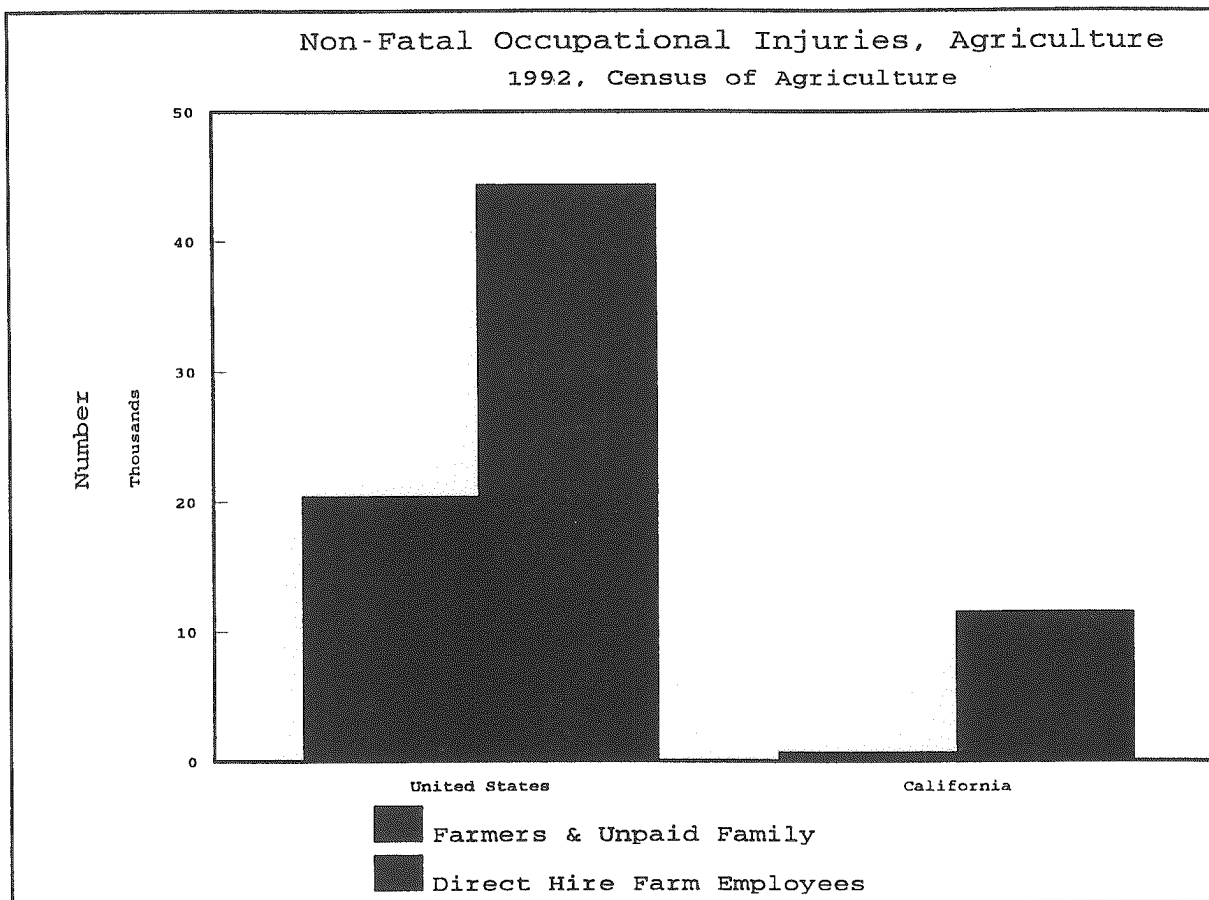


FIGURE 6. Non-fatal occupational injuries, by type of worker, United States and California, 1992. Source: *Census of Agriculture*. 1992. United States and California.

number than those experienced by farmers and family members.

Among the more significant findings in the Census data are:

- for fatalities and injuries among farmers and family members -
 - 3/5 were on livestock farms;
 - 9/10 were on medium and small-scale farms (less than \$500,000 in sales);
 - one-quarter were in just four states - Iowa, Minnesota, Texas, Wisconsin;
- for injuries among directly-hired farm workers -
 - 7/10 were on crop farms;
 - one-half were on fruit, vegetable or ornamental horticulture farms;
 - 2/3 were on large-scale farms (more than \$500,000 in sales);
 - 4/10 were in just four states - Arizona, California, Oregon, Washington.

Within California it is possible to obtain far more detailed occupational injury data because for more than seventy-five years the state as a whole has required that every employee, without exception, be protected by workers' compensation insurance. A record of every paid workers' compensation insurance claim in all agricultural classification codes has

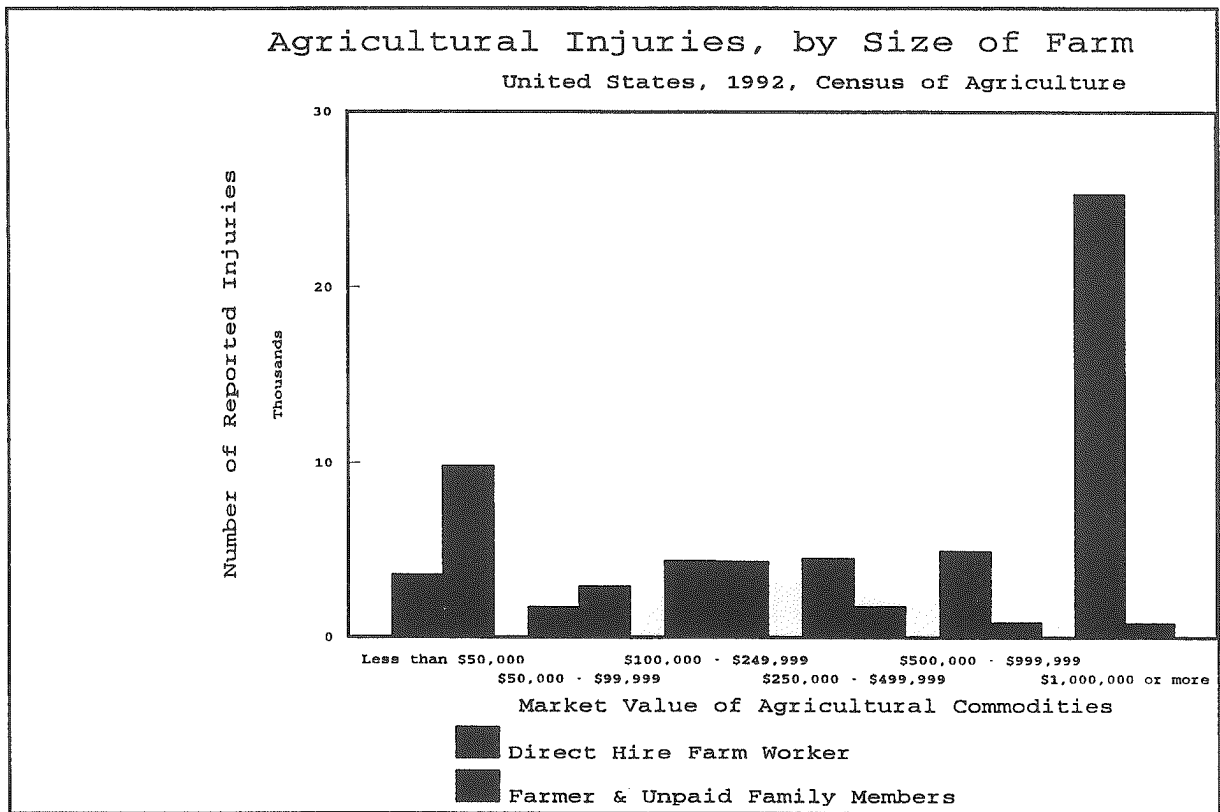


FIGURE 7. Non-fatal occupational injuries by type of worker and market value of receipts for agricultural commodities, United States, 1992. Source: *Census of Agriculture*. 1992. United States.

been compiled by CIRS from data provided by the actuarial staff of the Workers' Compensation Insurance Rating Bureau of California. These data are summarized in Figure 8.

The most striking finding is that there are roughly four times as many paid workers' compensation claims in California agriculture in 1992 than there are reports of worker injuries to the Census of Agriculture, 40,000 versus 11,000. Of course, this is a summary of all paid claims, whether for indemnity or just for medical (first aid). Also, paid claims to persons employed by labor contractors are included in this data set, but excluded by the Census of Agriculture. The difference is not nearly so great if we enumerate just those paid workers' compensation claims that resulted in a paid indemnity (corresponding to lost work time, loss of a body part, or loss of use of a body part).

There is an additional independent measure of occupational injury in agriculture. That is the 1993 mail survey of U.S. farms conducted by NIOSH in cooperation with the National Safety Council Agricultural Division and USDA. About 13,000 of 25,200 sampled farms responded (51.5% response rate) and the inquiries were made with respect to injuries involving at least one-half day of lost work time. Preliminary, unpublished results were kindly provided to us by Dr. John Myers of NIOSH. Although no specific results of his survey are presented here, it is of significance to the present discussion that the extrapolated total number of self-reported annual number of farm injuries is about three times larger than

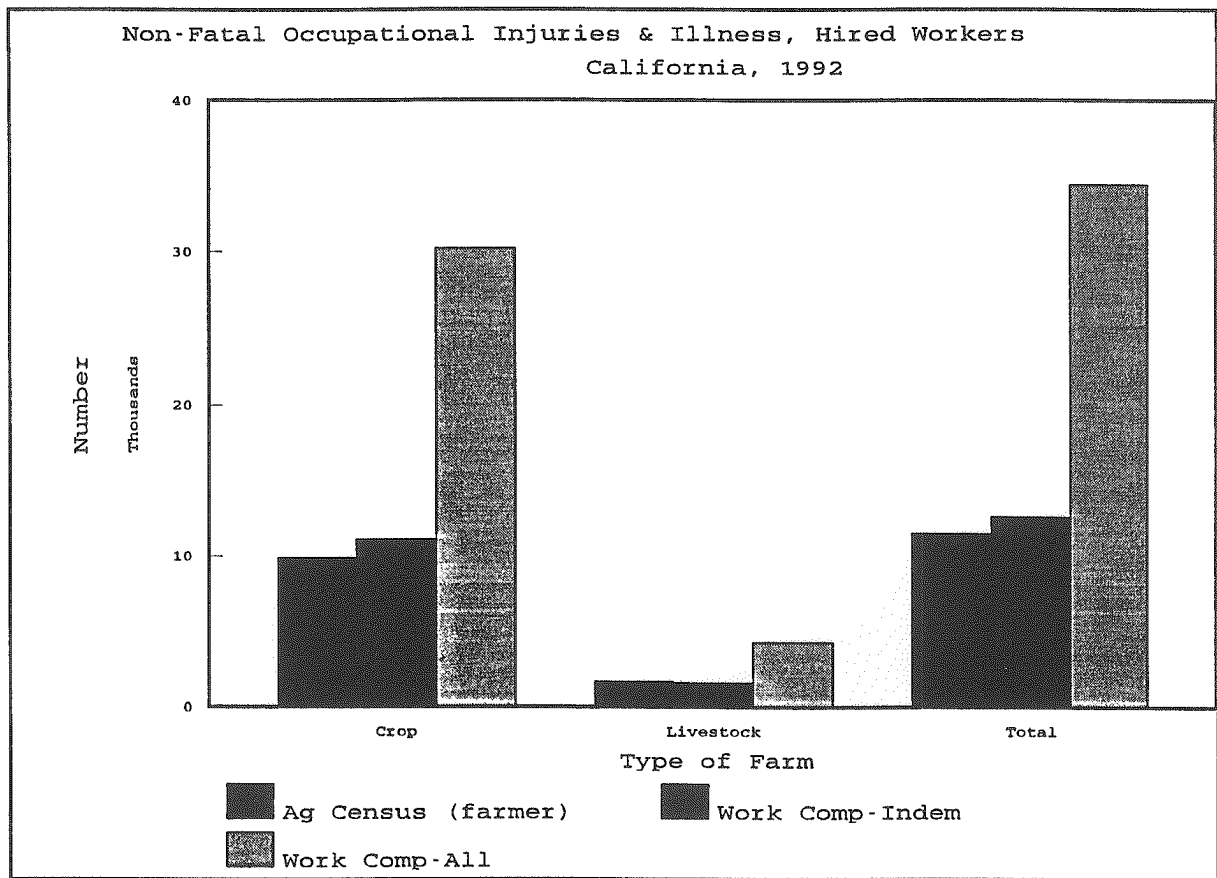


FIGURE 8. Non-fatal occupational injuries, direct-hire and contract workers, California, 1992. Source: Workers Compensation Insurance Rating Bureau of California.

was reported through the Census of Agriculture, and that the extrapolated total of farmer and family member injuries was found to be about 50% larger than the number of injuries to directly-hired farm workers. This result is diametrically opposite to the Census findings where injuries to directly-hired farm workers were twice as numerous as those to farmers and family members. Of course, great caution must be exercised in any interpretations because different questions were asked in the Census as compared with the NIOSH survey.

Of particular interest is that the 1993 NIOSH survey findings for California directly-hired farm workers were in fairly reasonable agreement with both the Census findings and the WCIRB total for workers' compensation claims with paid indemnity: 11,482 (NIOSH, 1993), 11,568 (Census, 1992), 12,800 (WCIRB, 1992). Given the very different methodologies involved in developing these three sets of data, the agreement may be fortuitous.

Interestingly, for farm operators and family members, the pattern of injuries reported in the NIOSH survey by type of farm is very similar to what was found in the Census: 65% on livestock farms (NIOSH, 1993) vs. 62% on livestock farms (Census, 1992). Preliminary data from NIOSH does not report on the dependence of injuries on farm size.

Also, comparison of the findings of the NIOSH survey for the pattern of injuries reported among directly-hired workers with Census reports shows strikingly similar patterns:

66% on crop farms (NIOSH, 1993) vs. 69% on crop farms (Census, 1992); 51% on fruit, vegetable or ornamental horticulture farms (NIOSH, 1993) vs. 48% on fruit, vegetable or ornamental horticulture farms (Census, 1992). Preliminary data from NIOSH does not report on the dependence of injuries on farm size.

An aspect of the increased importance of the farm labor force that should inform our discussion can not be found from any of the data I have described up to this point. That is, the demographic profile of the hired farm labor force can only be informed by workers themselves, not by reports from employer administrative records or by other forms completed by farm operators.

Since 1988 the National Agricultural Workers Survey (NAWS) has been interviewing farm workers to determine this crucial demographic profile. NAWS interviews about 2,200 farm workers per year, in seventy-three counties across every agricultural crop region as defined by USDA, a total of some 16,000 interviews to date. The profile that emerges is quite striking:

- most farm workers are foreign-born (2/3 of these are from Mexico and half have been in the U.S. for less than ten years);
- most are young (two-thirds are under the age of 35);
- two-thirds speak Spanish;
- one-fourth work for farm labor contractors;
- their annual earnings average between \$5,000 and \$7,500;
- nine of ten are in the labor force on a year-around basis but are only able to find farm work for about half of the year;
- eight of ten have no medical insurance of any kind (not Medicaid, not private insurance, nothing);
- fully one-fourth have four years of formal education or less;
- half live in families with total annual earnings that are below the poverty level.

It is difficult to imagine a population with a demographic profile that is more different than farmers.

I consider it presumptive to try to tell farmers and farm workers how to behave. But I do have some observations about issues that need to be addressed. First, government agencies and private non-profit organizations receiving government support need to address carefully the dilemma they face in attempting to simultaneously promote the success of agriculture as an industry while at the same time promoting greater responsibility for farm safety. Recall, if you will, the comments of Transportation Secretary Federico Peña.

Second, the greater reliance in agriculture on the labor of hired workers implies that there needs to be a corresponding shift in the allocation of resources, both financial and human. The obstacles are great: language, culture, suspicion of government. I suggest that there will be little headway among this population until this issue is directly addressed. At present, there are few in the profession who have gained the *confianza* of farm workers.

Third, we need to support a wide range of new program initiatives and learn from their experience, such as those supported by the W.K. Kellogg Foundation's Agricultural Safety Initiative. One of the finest that emerged from the Kellogg projects is the Kentucky Partnership for Farm Family Health and Safety, led by Susan Jones.

Fourth, we need to create new structures to reach the new populations that are increasingly dominant in agriculture. For example, the recruitment and training of women

from farm worker families as lay health advocates in Arizona, California and North Carolina has already proven to be an effective approach that parallels the experience of the Kentucky program among farm women. In California, some twenty-five volunteer lay health advocates (twenty-three women and two men) from the farm worker communities of the Sacramento Valley have been working for two years, and want more Spanish-language training on a wide range of health and safety issues. These *promotores de salud* have emerged as leaders in their communities. But there have been serious problems in trying to develop a healthy and respectful relationship between this program and established agencies, such as Cooperative Extension.

Fifth, we must split off safety law enforcement from promotion of agriculture and, at the same time, build a cooperative relationship between all agencies who have responsibility for this important task. In California, we have finally begun to make real headway in the area of safety law enforcement in agriculture through a cooperative relationship between U.S. Department of Labor, the State of California Labor Commissioner, and the Occupational Safety and Health Administration enforcement staff. Known as the Targeted Industries Partnership Program (TIPP), the combined resources of these agencies represent the first serious concentrated effort at law enforcement in agriculture in memory. For example, in California it makes little sense to have enforcement of pesticide safety law solely in the hands of county agricultural commissioners. While they are knowledgeable about farm practices and have a solid record of experience concerning the regulation of pesticide use, few farm workers will bring a pesticide safety law violation, even a very serious one, to the attention of a county agricultural commissioner. Making the problem even worse is that the linguistic and cultural gaps are simply not addressed by most enforcement staff. Frankly, if you can't communicate with workers at all, your effectiveness in enforcement is seriously questionable.

In conclusion, we need to recognize how changes in our nation's farm structure and its corresponding labor force can inform our work. We should welcome the opportunity to improve our effectiveness. The safety and health of all who work the land depends on it.