Migrant Enumeration Project

Draft 3 Comments (California Estimate)

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Summary: Significant errors in the Draft 3 determinations for California are described in detail. Consideration of just these errors show that the correct total of migrants and dependents is at least 876,844, and probably larger. Thus, the estimate of Larson & Colleague is too low by at least 139,346.

Detailed Comments

1. Inaccurate harvested acreage figures are used for some crops in the Demand for Labor estimate of total migrants and dependents in field agriculture in California.

     a. The most serious error is the figure used for harvested acreage of "Grapes, table." As shown below, Larson & Colleague have an estimate which is about 60% too small.
     Larson & Colleague use 46,916 acres and cite the source as the 1990 Dot Maps. This source is well-known to be unreliable for quantitative data. Rather, dot maps showing the approximate location of crops (1 dot = 1,000 acres of grapes) are intended to provide qualitative, visual representations of the various crop productions regions.
     Two other, more reliable sources estimate the total of Table Grape harvested acreage in California to be 82,800 acres,[1] or 83,800[2] acres in 1987; and both sources independently estimate the total to be 78,000 acres in 1990.[3] In either case these harvested acreage figures are very much larger (+60%) than the figure quoted by Larson & Colleague.
     Using Larson's methodology and actual values for the parameters H, W & S, we find that the contribution of "Grapes, table" to the estimated total migrants and dependents in field agriculture should be between 54,677 and 58,043, depending upon the reference year. This is to be compared with Larson & Colleague's value of 32,888. Taking the average of the two figures we find the following change in the Larson & Colleague totals. For table grapes we have:

Net Change of Total Migrants & Dependents = +23,500

     b. A major error also arises in the case of "Grapes, raisin." Here, Larson & Colleague use the incorrect 1990 Dot Map value of 251,224 acres. Correct figures are found in the sources cited previously: 274,500 acres of raisin grapes harvested in 1987 and 270,000 acres of raisin grapes harvested in 1990.[4]
     Again, following Larson's methodology and using her values for H, W & S we find that the contribution of "Grapes, raisin" to the total of migrants and dependents should be 179,300 versus Larson's 165,400, an increase of about 8%. Here we have averaged the values

for the two years. Thus, for raisin grapes we have:

Net Change of Total Migrants & Dependents = +13,900

c. A smaller error, but of significance if we are attempting to use correct harvested acreage figures, is also found for "Grapes, wine." In this case Larson's Dot Map figure of 333,818 acres is too large. The correct data, to be found in the sources cited above, are 304,100 acres in 1987 and 291,000 acres in 1990.

Following the same procedures as for the other two varieties of grapes leads to a smaller numerical contribution to the total count of migrants and dependents than that found by Larson. For wine grapes we have:

Net Change of Total Migrants & Dependents = -5,900

Note: Larson's implied combined total of 631,598 acres of grapes is actually in reasonable good agreement with the total acreage figures implied in both sources we have used. For 1990, they yield a total of 639,000 acres. However, the portions referring to table, raisin and wine grapes are very different and it is this effect which is, at root, the origin of the errors in Larson's calculations.

d. An important commodity has been totally overlooked by Larson & Colleague. That is the pre-harvest hand labor requirement in cotton. The labor demand for both sugar beets and carrots are considered but California's largest crop has been ignored.

Following Larson, the 1987 Census of Agriculture reports cotton harvested acreage to be 1,083,811. Direct observation of the labor demand coefficient for hoeing and thinning place the value of "H" at 4 hours per acre. Using W = 7.4 hours and S = 22 days we find the contribution of cotton pre-harvest activities to the count of migrants and dependents to be as follows:

Net Change of Total Migrants & Dependents = +21,476

e. The figure of 69,309 acres for peach harvested acreage is not correct. This figure, from the Census of Agriculture (1987), includes non-bearing as well as bearing acreage. However, there is also an error in Larson's demand for labor coefficient "H" for peaches, which is discussed below, so the proper calculation will be discussed at that point in this review.

f. The figure of 135,855 for plum/prune harvested acreage is not correct. This figure, from the Census of Agriculture (1987), includes both non-bearing and bearing acreage. However, as in the case of peaches, there is an error in Larson's demand for labor coefficient "H" for plums, which is discussed below, so the proper calculation will be discussed at that point in this review.

2. **Inaccurate estimates for the labor co-efficient "H" are use for several important commodities in the Demand for Labor estimate of total migrants and dependents in California field agriculture.**

a. The most significant of the errors in labor demand coefficient is the use of a single figure (H = 73 hours per acre) for all peaches in California. There are two major types of peaches produced in the state: cling and freestone. These are used in the canning and fresh markets, respectively. The labor demand coefficient is nearly three times as great for fresh market peaches as compared with cannery peaches. In essence, field workers carefully pick and then handle fresh market peaches with great care and pack them in the field. Care must be taken to avoid bruising and to be sure that the pick meets size and cosmetic standards. On the other hand cannery peaches are simply tossed into a large bin.

Larson & Colleague use a single coefficient "H" for both varieties and use a single figure for total harvested peach acreage. Their peach acreage figure attributed as harvested acres is not correct because it includes both non-bearing and bearing acreage.

Using correct individual harvested acreage figures for both types of peaches[5] and the very much larger labor coefficient figure for freestone peaches we find the total of migrants and dependents to be 36,020. This is to be compared with Larson's figure of 24,120. Thus, the net change would be as follows.

Net Change of Total Migrants & Dependents = +11,900

b. Larson has also treated plums and prunes as a single crop regarding both demand for labor coefficient and acreage. Roughly speaking, plums are a fresh market crop while prunes are a processing crop. Thus, careful picking for proper size and appearance as well as gentle handling and packing are required for plums whereas prunes (which are a variety of plum) are treated in a much more cursory fashion since they are destined for a drier. The difference amounts to at least a factor of 5 in labor coefficient.

As described previously, Larson & Colleague have incorrectly stated the total acreage figure by mistakenly including both non-bearing and bearing acreage. Taking account of both the specific harvested acreage of plums and of prunes and of the very different labor coefficients,[6] we find the total of migrants and dependents to be 42,660. Larson & Colleague find 21,353. Thus, the net change would be as follows.

Net Change of Total Migrants & Dependents = +21,300

c. Larson has used an incorrect figure for the harvest labor requirement "H" for oranges in California. Her figure of 27 hours per acre is in sharp disagreement with the figure of 78 hours per acre (harvest labor only) for Navel oranges and 76 hours per acre (harvest labor only) for Valencia oranges reported by Mamer and Wilkie.[7]

If the correct harvested acre figures for each of these two main types of oranges are used, together with the correct value of H, and Larson's values for the other parameters, we find the total of migrants and dependents to be 20,500. Larson reported 7,196. Thus, the net change would be as follows:

Net Change of Total Migrants & Dependents = +13,300

d.   Larson continues to use a badly outdated figure for the harvest labor requirement in English walnuts. Her argument that the old USDA estimate of 80 hours per acre that "...this is the best we can do," is not acceptable. The unreasonably large value for migrant and dependents for English walnuts in her computations will cause any knowledgeable reviewer to question the entire document. Independent evidence is available and could be readily obtained by speaking to Cooperative Extension specialists as Larson and Colleague have already done for other commodities.

e.   Larson's figure for the harvest labor requirement in cantaloupes is in disagreement with the 1989 direct observations by Mamer and Wilkie.[8] There are several different types of cantaloupe culture used in California. These include bed culture (Fall), slant bed culture (Spring) and plastic mulch culture. The peak harvest labor requirements vary greatly according to which type of culture is used. The largest reported figure is 180 hours per acre and the lowest is 43 hours per acre. The average of these two figures is 112 hours per acre. By contrast, Larson has used 60 hours per acre.

By simply using the arithmetic average value for "H" described above, we find the total of migrants and dependents to be 28,489. Larson reports 15,262. Thus, the amount of the correction should be:

Net Change of Total Migrants & Dependents = +13,200

3. **No consideration has been given to those farm workers who live in California but who travel to other states to perform hired farm work.**

While Larson & Colleague report that computations of migrants and dependents for both Texas and Puerto Rico have included this important factor, California has not even been considered in this context. Ample anecdotal information is available regarding the travel of California farm workers to Oregon, Washington and Idaho. In fact, this past season the California Human Development Corporation used Federal grant monies to implement a program of placing farm workers from Parlier in jobs on the islands of Hawaii! Clearly, this factor must be considered.

4.   **The methodology used to compute the number of migrants and dependents in the nursery crop industry is in error.**

Larson & Colleague use <u>statewide</u> nursery crop employment data (SIC 0181) to estimate the number of migrants in the nursery crop industry. Larson & Colleague argue that the difference between peak-season and off-season monthly employment would provide an acceptable estimate for this SIC code. However, this is quite misleading because the peak season for various nursery crops differs in different parts of California. For example, the peak season for strawberry transplants (in Northeastern California) is

October. But the peak season is May for Butte County floriculture. And in San Diego County, the poinsettia season peaks in November and December. Thus, using only statewide employment data would tend to "wash out" these important variations.

To illustrate, reported Shasta County employment in SIC 0181 peaks at 2,612 in October and the off-season minimum in the county is just 180 (March). The difference, 2,432, is larger than the number of migrant nursery and greenhouse workers which Larson has found <u>for the entire state of California</u>.

An independent determination of the number of migrant workers in the nursery and greenhouse industry in California during 1989 placed the total at 6,238.[9] Following Larson's methods, this would place the total of migrants and dependents at 9,420. Larson found 3,549. Thus, the change in the total from this sector would be:

Net Change of Total Migrants & Dependents = +5,870

5. Draft 3 seriously understates the total number of migrant and dependents in food processing.

As in the case of nursery and greenhouse crops, food processing work has very different seasons in different parts of the state. During January, for example, Imperial Valley vegetable packing for market is at its peak. But the peak in the San Joaquin Valley is not until August. By using <u>statewide</u> figures and subtracting the off-season low from the peak-season high, the method used by Larson "washes out" the regional differences associated with the timing of the peak season.

Independent determinations of the number of migrant workers in the single SIC 0723 shows the number of migrant workers to be 16,579.[10] Using Larson's methodology, this would place the number of migrants and dependents in that single SIC code at 25,032. Larson reports just 4,199. Thus, the correct figures would add the following:

Net Change of Total Migrants & Dependents = +20,800

References

1. California Agriculture. Statistical Review, 1987, California Department of Food and Agriculture, Sacramento, CA, September 1988, p. 5. This data set is primarily based upon individual county summaries prepared by County Agricultural Commissioners which, in turn, are primarily based on reports prepared by growers.

2. California Fruit and Nut Statistics, 1982-91, California Agricultural Statistics Service, Sacramento, CA, March 1992, p. 6. This data set is primarily based upon actual shipments recorded by packers, shippers and handlers. It is independent of data reported directly by growers to County Agricultural Commissioners.

3. Ibid, 1990 reports.

4. Ibid.

5. John W. Mamer & Alexa Wilkie, Seasonal Labor in California Agriculture: Labor Inputs for California Crops, California Agricultural Studies, No. 90-6, Employment Development Department, State of California, December 1990, pp. 145-154.

6. Ibid, pp. 163 ff, 172 ff.

7. Ibid, pp. 135ff.

8. Ibid, pp. 54ff.

9. Agricultural Employment Pattern Study: 1989, California Agricultural Studies, No. 92-1, Employment Development Department, State of California, February 1992, p. 35.

10. ibid, Table 4, p. 54.