

CRITIQUE OF: "MIGRANT FARMWORKERS: NUMBER AND DISTRIBUTION"  
BY PHILIP L. MARTIN AND JAMES S. HOLT

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## EXECUTIVE SUMMARY

The Legal Services Corporation charged Martin and Holt with three goals: to develop a method of using published data sources to characterize the number and distribution of migrant farmworkers in the United States; to validate this method by contrasting its results with data from the Unemployment Insurance systems of several states; and to develop a demographic and economic profile of migrant farmworkers.

The definition of migrant farmworker specified in the contract excludes employees of food processing and packing plants, migrants whose usual residence is based in Mexico, workers who must stay away from home overnight yet do not cross a state or county border, and the dependents of migrants.

Martin and Holt develop a state-by-state distribution of migrant activity by using a weighted average of three different components. This "preferred formula" does not represent the absolute number of migrant farmworkers, nor can it be used for that purpose. It does not represent the distribution of migrants either among the states where they work, nor among the states where they live, but is said to show migrant "activity," which is not defined. The three components used in the formula are standardized farm employment expenditures, the distribution of seasonal farm jobs among states, and estimates of the regional distribution of migrant farmworkers.

The standardized farm employment component makes up half of the formula. Farm employment expenses purportedly from the Census of Agriculture are presented, but the total figure is \$1 billion (15.4%) less than the actual amount of hired and contract wages for U. S. crop farms reported in the 1982 Census of Agriculture. Even if the Census of Agriculture data had been correctly stated, it would not have included the wages earned at packing houses, harvesting operations, and other firms which employ migrant and seasonal farmworkers, but do not report to the Census of Agriculture because they are not farmers. California data indicate that these firms employ as many farmworkers as farmers do. Use of Census of Agriculture wage data results in the over-representation of farm states where little farm work is done by migrant workers.

The employment expenditures were divided by farm wage rates to compensate for the differing farm wages in different parts of the U. S. It is inappropriate to standardize the wages of all direct hired and service workers by using the wage rate for only one type of direct hired worker, the field worker.

The number of seasonal jobs reported by the Census of Agriculture is the second element of the weighted formula. Again, agricultural workers employed by businesses which are not

farmers are excluded. Also excluded are farmworkers who are employed for 150 days or more by a single farm. There are many workers who are migrants who work for 150 days or more for a single farm, including workers who migrate to different production areas farmed by a multi-establishment farm. Thus, the data over-represent employment in states which have many short-term jobs or many small farmers.

The final element of the formula is the regional distribution of migrant farmworkers. This is the only element which relies on a data source which purports to directly measure migrant farmworkers, the Hired Farm Working Force (HFWF) report. The HFWF sampling method misses many farm workers. So few migrant workers are interviewed, only 120 in the entire U.S., that it is an unreliable source of information on the regional distribution of workers. Data on crop sales are used in order to divide HFWF data on the regional distribution of migrants into state by state figures. Yet crop sales do not correlate with employment of migrant farmworkers. Even if a good measure of employment were available, it is inappropriate to use data based on where all workers work to distribute the HFWF data, which reports the regions where migrants reside in December, after the season is over.

No justification is given for the 2:1:1 weighting of the three elements in the formula. A different weighting would result in substantially different results. The proposed migrant distribution cannot be updated in the future, as the HFWF and the Census of Agriculture plan to discontinue collection and reporting of data used in two of the elements in the formula.

Martin and Holt did not validate the distribution of workers generated by their formula with unemployment insurance data from several states. California unemployment insurance data were studied, and an estimate of 229,500 migrant workers was generated. Although many California migrant workers were excluded by the methods used, this estimate is more than the number of migrant workers for the entire U.S. reported in the HFWF. Rather than validating their method, the California data show the inadequacy of the HFWF report, which is the only component of their formula which actually claims to represent migrant worker numbers. When compared to survey data from Colorado, the ratio between the two independent estimates disagrees with the ratio generated by the "preferred formula" by 70%.

Martin and Holt attempt to use the HFWF and the California unemployment insurance data to profile migrant farmworkers. These sources disagree substantially with other scientific studies which have interviewed large numbers of migrants.

A number of agencies need information on the number, distribution, characteristics and needs of migrant farmworkers in the U.S. We propose that these agencies join in supporting an

independent survey of migrant farmworkers, utilizing a multi-staged stratified proportionate probability sample.

There are no significant substantive changes in the final Martin and Holt report. It is indeed unfortunate that Martin and Holt have not responded to our objections and criticisms of their preferred distribution formula nor developed an independent test of the formula's accuracy. We can only conclude that they remain undeterred in promoting their "preferred distribution formula"--despite its obvious failure to accurately predict the relative share of state-by-state "migrant activity."

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I. The Purpose of the Martin and Holt Report.

Martin and Holt's consulting contract with the Legal Services Corporation (hereinafter LSC) identified three goals:(1)

1. The report was to develop a method of using published data sources to characterize the number and distribution of migrant farmworkers in the United States. Interestingly, in the introduction to the contract, Martin and Holt admit that this goal was not achievable since "...there is no statistical source available which directly measures the number of migrant farmworkers, much less LSC-program-eligible migrants, nor which shows their state-by-state distribution." Despite this admission, the contract states that the major goal of the work was to develop a procedure "...to analyze the available statistics on the size and distribution of the migrant farmworker population ..." The contractors were to create a "distribution formula" which could estimate the number and distribution of migrant farmworkers and

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which would be "easily and economically updated as the underlying statistical sources are updates (sic)." (2)

2. The second major goal was to validate this method by contrasting its estimates of migrant numbers and distribution with those "in several states where reasonably comprehensive data on the migrant farmworker populations are available." Verification was to be done with Unemployment Insurance system data from California, Rhode Island, and Minnesota. (3)

3. The third goal was the development of a demographic and economic profile of migrants: "This profile will include data on age, education, family and legal status, earnings, housing, and other germane data." (4)

Definition of "Migrant Farmworker". The contract adopted the USDA-ERS definition of migrant farmworker and specified that a migrant farmworker is someone who, at some time during the year either: (a) leaves a usual U.S. residence, crosses a county or state border to do farm work for wages, and stays away from home over night; or (b) has no usual place of residence and does farm work for wages in two or more counties.

This definition is more restrictive than the one used by the Legal Services Corporation in its statement of policy for funding migrant programs. The LSC definition states: "Migrant farmworker" is a person who left home temporarily overnight to do hired field or food processing work with the expectation of eventually returning home.(5)

The narrower definition used by Martin and Holt excludes an

unknown number of workers who are included in the LSC definition. Excluded categories of workers include employees of food processing and packing plants, migrants whose usual residence is based in Mexico and who otherwise meet the criteria used by Martin and Holt, migrants who stay away from home overnight yet do not cross a state or county border and migrants who are unemployed.

**Failure to Define "Migrant Activity".** Although the contract states that "the distribution formula will reflect migrant activity in each state", neither the contract nor the final report define the term "activity." It is ambiguous whether state-by-state distribution of "migrant activity" constitutes a measure of where migrants work, or where they live, including where they live when they are not working or whether it is merely a convenient substitute for extrapolating the number and distribution of migrants and has no relation to the actual number and distribution of migrants.

## II. The Migrant Distribution Formula.

Martin and Holt review past efforts to develop information on the number and distribution of the migrant population and identify the many weaknesses in existing data sources on migrant farmworkers. Based on that review they abandon efforts to directly determine either the absolute number of migrant farmworkers nationally or the number of migrant farmworkers in any of the States. Thus, at the very outset, they abandon half of their first goal. Instead, they develop a "preferred distribution formula" with three components that presume to infer



state-by-state shares of migrant farmworker "activity" from published data. The calculated distribution differs substantially from that found in a prior study used by LSC, the Lillesand Study.(6) The three components used in the formula are standardized farm employment expenditures, the distribution of seasonal farm jobs among states, and the regional distribution of migrant farmworkers. It is important to realize that this weighted average does not represent a determination of the absolute number of migrant farmworkers, nor can it be used for that purpose. Instead, the preferred formula purports to yield the relative state shares of migrant "activity." Nevertheless, Martin and Holt use data from the California unemployment insurance system in an attempt to convert these percentage shares to numbers of migrant farmworkers.

As shown in the following discussion, this formula has a number of serious faults which render it wholly unreliable.

Among them:

- There is no independent determination of the accuracy of the formula's state-by-state distribution of migrant activity.
- The formula confuses data which are population-based and measure where individuals live, and data which are employer based, and measure where they work.
- Several false assumptions are made about the nature of the data and how it may be applied.
- Some data are misstated.
- No definition is provided for what is meant by migrant "activity" whether it constitutes the state of employment of migrants, their residence or something else.
- No effort has been made to estimate the effects of measurement error on the states' percentage share of migrant "activity."

--There is no scientific basis for the weighting assigned to the components of the Martin and Holt formula.

A. Standardized Farm Employment Expenditures.

This element purports to use data on farm labor costs reported in the 1982 Census of Agriculture. The data presented is represented as the state total of employment costs for workers directly hired by crop farmers, and for workers employed by crop farmers on a contract basis. The data are standardized for variations in wage rates by dividing each state's total by the average hourly farm labor wage rate for field workers reported in the U.S. Department of Agriculture's Quarterly Survey of Farm Employers.

Appendix A of this report describes how the data on farm labor costs as presented by Martin and Holt is erroneous. (See Table 4.) Inexplicably, the figures they present are \$972 million less than the actual total of hired and contract wages reported for U.S. crop farms in the Census of Agriculture.

1. Census of Agriculture Employment Expenditure Data.

Contrary to Martin and Holt's assertion that "(n)o other farm labor data source has the detail and reliability of the Census of Agriculture . . ." (7), there is substantial evidence that the Census of Agriculture systematically understates the total of wages paid to farm workers. For example, in California, the 1982 Census reported \$2.2 billion in farm employee and labor contractor expenses. In contrast, the state's Unemployment Insurance system reported \$3.8 billion in agricultural wages were paid in that same year. (See Table 1 below.)

Table 1

Agricultural Labor Expenditures in 1982  
by Crop and Livestock Farms and Farm Labor Contractors

Millions of Dollars

Employer	Census of Agriculture	California Employer Wage Reports
Crop & Livestock Farms	1,814	2,614
Contract Labor	414	*
Labor Contractors	*	263
Farm Management Companies	*	110
Other Agricultural Services	N.A.	874

\*Labor contractor wage expense is reported to the Census as Contract Labor.

U.S. Department of Commerce, 1982 Census of Agriculture. (8)

Census of Agriculture data on employment expenditures includes only those costs incurred by farmers. It excludes the many types of agricultural workers who are not employed by farmers, whether direct employees or contract labor, such as employees of fruit packing houses, custom harvesting operations, vegetable harvest companies, shipper-packing firms, and the employees of farm labor contractors who are hired by such firms.

The difference between the Agricultural Census and California Unemployment Insurance data is even greater than that shown by Table 1, for the Agriculture Census data on employment costs includes the cost of employer paid benefits, employer tax costs for Social Security and Workers' Compensation Insurance and the non-wage costs of the labor contractors hired by farmers. The California Unemployment Insurance data reflects only gross wages. These considerations suggest that the total of California

wages paid to persons performing agricultural work is actually 100% larger than the figures suggested by the 1982 Census.

Agricultural employers who are not farmers do not have equal importance in all states. In fact, those states with substantial numbers of field packing workers are likely to be states with a significant number of migrant farmworkers. Therefore, use of the Census of Agriculture employment expenditure data as a measure of farm employment will selectively understate the amount of farm employment precisely in those states where there are significant numbers of seasonal and migrant farmworkers.

The Census of Agriculture is the most accurate source of accurate information on the number of farms and acreage of farm land, but it was never designed to serve as a reliable source of information to count migrant farmworkers.

2. Wage Survey Data. There is also an error in the attempt to standardize employment expenditure data to account for different wage rates across states. The authors use the average wage rate for field workers as reported from the USDA's Quarterly Agricultural Labor Survey (QALS). The QALS survey also reports wage rates for other categories of workers directly employed by farmers, and the wage rates for workers employed in the agricultural service sector. It is not appropriate to standardize wages for all direct hired and service workers by using the wage rate for only one type of direct hired worker, the field worker, while ignoring wage rates for other types of hired workers and service workers.

While state-by-state wage estimates were available for many states in 1982, the USDA has changed its reporting categories.

Recent QALS reports provide wage rates only on a regional basis, with state by state detail for just California, Florida, and Hawaii.

B. Number of Seasonal Jobs.

The second element in the Martin and Holt preferred formula is the number of seasonal jobs reported by the Census of Agriculture. Again, since the Census of Agriculture surveys farmers, but not the non-farmer employers of agricultural workers, it misses many seasonal workers. Another problem with this data is that a worker who works 5 days for a farmer in a State with a short growing season counts just as much as a worker who works 130 days in another State with a long growing season. States with many short jobs, or many small farmers, will have artificially high numbers of seasonal workers, caused by the double counting of workers who must move from farm to farm to find enough total employment to be able to support themselves.

The count of seasonal workers as defined by the Census of Agriculture excludes from consideration migrant farmworkers who are employed for 150 days or more by a single employer; e.g., a multi-establishment farm employer. This creates an intrinsic bias against states with long growing seasons which are generally considered as "base" states for migrants.

An important problem associated with reliance on this particular data item is the fact that the Census of Agriculture has discontinued collection of all data on the number of workers hired by farmers, effective with the current (1987) Census.

C. Distribution of Migrant Farmworkers.

The final element of the Martin and Holt preferred formula is the use of data from the Hired Farm Working Force (HFWF) statistical series, adjusted by the use of data on crop sales.

1. The Hired Farm Working Force Series. This series is based on a special set of questions appended to the Current Population Survey conducted every other December. This survey excludes many farm workers. Employment information is only gathered for persons 14 years of age or older, omitting some relevant data on adolescents. Workers who are abroad in December are also not counted. The residential sampling frame of approximately 58,000 households based on the 1980 Census for the Current Population Survey (CPS) supports our claim that the CPS fails to adequately survey minorities and those who live in rural areas. (9) The number of households identified by the CPS as having persons employed in farm work are relatively small.

These deficiencies are acknowledged by Martin and Holt:

"The sampling error for the estimated 35,000 Hispanic migrants is almost as large as the estimate--a census could yield 4,000 to 66,000 Hispanic migrants. Sampling errors for the 10 multi-state regions to which migrants are assigned as also high. For example, the 7,000 migrants estimated to be in the northeastern states from Maryland and Pennsylvania northeastward have a standard error at the 95 percent level of 16,500. Migrant sampling errors in the smaller regions are usually equal to or greater than the estimate." (10)

They further state that data on the regional distribution of farmworkers is exceedingly unreliable, and may be in error by 100% or more: ". . . at the regional level, standard errors can equal or exceed the migrant estimate for 95 percent confidence." (11)

As noted by Martin and Holt, the HFWF data are based on a sample of very few migrant households. Some 120 such households were surveyed in 1983 and thus the characteristics of each household surveyed represent more than 1,000 persons.

The small sample size renders the HFWF data on the regional distribution of migrant farmworkers statistically unstable and highly suspect. For this reason, regional distribution data were not published in the 1981 HFWF report, nor will they be published in the 1985 report. (12) In future years, regional distribution data will not be available. Due to the small sample size of the CPS, the USDA is considering excluding all information on the migrant status of farmworkers in the HFWF report in the future.

2. Adjustment by Crop Sales. Since the HFWF data report the distribution of the number of migrant farmworkers by their December residence in one of 10 multi-state regions, Martin and Holt convert this regional data into a state-by-state division by assigning to each state a share of its region's number of migrants based on each State's share of the region's total crop sales. There are several reasons why this is an unacceptable way to distribute migrants among regions.

First and foremost is the fact that the HFWF data is a distribution of migrants to the various regions according to where they were living in the month of December rather than where they were employed, for example, in July.

Crop sales data are evidently offered as a surrogate for employment, yet no reason exists to assume that employment is

directly proportionate to crop sales or that the proportions are constant between commodities. For example, Census of Agriculture data show that hired and direct labor expense equal 10.7% of the gross crop sales of California cash grain farms. Labor expense is 25.2% of the gross crop sales from the State's vegetable and melon farms. (13) States which produce crops which are less labor intensive are inappropriately favored by the formula. In addition, the value of crop sales varies with the price of the commodity, which in many cases is totally independent of levels of employment; e.g., low prices are often correlated with high production, and high employment.

D. Weighting of Elements.

The three elements described above are weighted such that the "standardized farm employment expenditures" are given twice the emphasis as is given to the other two elements, which are given equal weight. Martin and Holt offer no justification for the weighting they have selected because there is no scientific basis for their chosen differential weighting of the elements. Had only a slightly different weighting system been used, such as equal weighting of all elements, then very different results would have been obtained. Table 2 contrasts the results using Martin and Holt's weighting with the results found using equal weighting of the elements in the formula for selected states.



Table 2

Effect of Element Weighting  
on Migrant Activity Distribution

	Weighting by the Martin-Holt Formula (2:1:1)	Equal Weighting to the 3 Elements (1:1:1)	Change in % Distribution Caused by Change in Weighting
Alabama	1.61%	1.88%	16.59%
Georgia	3.53%	3.97%	12.56%
Kentucky	3.27%	3.59%	9.80%
Wisconsin	1.30%	1.22%	-6.15%
New Jersey	0.72%	0.65%	-9.57%
Arizona	1.86%	1.64%	-11.41%
Arkansas	1.70%	1.44%	-15.29%
Hawaii	1.08%	0.90%	-15.97%

E. Updating the Martin and Holt formula.

As previously indicated, data for two of the three elements of the formula will not be available in the future. The Hired Farm Working Force series will no longer report regional distribution of migrant farmworkers, and the Census of Agriculture will no longer collect data on the number of workers directly hired by farmers. In addition, the USDA no longer reports data from the Quarterly Agricultural Labor Survey on a state by state basis. These changes mean that the preferred formula proposed by Martin and Holt cannot be updated.

III. Validation of The Migrant Distribution Formula.

The Martin and Holt preferred formula for the state-by-state distribution of migrant farmworkers could have been validated only by comparing its results with separate data sources which provide independent verification of the relative proportions of migrant workers in several states. Such validation is not

offered by Martin and Holt.

Instead, without any citation to existing literature or presentation of their own unpublished data, they simply state that:

"Preliminary analysis of 10 and 20 percent samples of UI covered farmworkers in Washington and Idaho...the numbers of migrants in these states appears to validate the preferred formula." (14)

This kind of sophistry is unacceptable. No scholarly journal in the field would permit the publication of assertions of this kind. That serious policy decisions could be based on such unsupported statements is beyond comprehension.

Martin and Holt present independent data for only one state, California. They interpret employers' reports concerning Unemployment Insurance and related taxes paid by agricultural businesses to suggest that there are 229,500 migrant farmworkers in the state.

We have found current data for another state, Colorado. Using techniques developed by demographers for the study of nomadic populations in various parts of the world, the Colorado Migrant Health Program (CMHP) constructed a multi-stage stratified probability sample. The sample frame was a carefully identified "migrant bed" map of the state showing the location of virtually all sleeping quarters used by migrants during the Colorado farming season. CMHP was able to determine a census headcount of the migrant farmworker population as well as such important data as income distribution, family size, home base and health data. To insure objectivity, staff of the National Center

for Health Statistics designed the survey and conducted on-site supervision. CMHP found the Colorado migrant farmworker population to be 6,950. (15)

The data for California generated by Martin and Holt and the data for Colorado determined by CMHP provide an independent determination of these two states' migrant farmworker populations and their respective shares. There are 33 times as many migrant farmworkers in California as in Colorado (based on  $229,500/6,950 = 33$ ). The Martin and Holt formula indicates that there are 19.7 times as many migrant farmworkers in California as in Colorado (based on  $23.03\%/1.17\% = 19.7$ ). Thus, the Martin and Holt preferred formula is in error by nearly 70% -- an unacceptably large error. By failing to validate their formula, Martin and Holt are not able to correct for such anomalous results.

The data on migrant farmworkers in California derived from state agricultural employer's unemployment insurance (UI) data is also in sharp disagreement with data obtained in the HFWF survey. Martin and Holt interpret the reported California UI data to suggest that some 20.3% of California's farm workers are migrants, a total of 229,500 workers. This is in contrast to the HFWF data, which state there are 55,000 migrants workers in the Pacific region, or 10% of the farm workers in that region.

The California UI data found more migrants in California (229,500) alone than the HFWF estimates are found in the entire United States (226,000). The California UI data indicate that the HFWF does not account for most migrant workers.

Moreover, data reported by Mines and Martin, based on direct

interviews with some 1,200 California farmworkers, indicate that the proportion of migrants is 36.7%. Martin has chosen to ignore his own published work on this matter in the report under review, perhaps because it disagrees so strongly with the conclusions he is offering. (16)

Instead of validating the Martin and Holt formula, the California UI data offer an independent basis for further questioning its usefulness. Moreover, the recent census of migrant farmworkers by the Colorado CMHP study indicates that the Martin and Holt formula has yielded unreliable results. This underscores the need to scientifically validate it by systematically comparing its results to other available data and census information to identify other anomalous results.

#### IV. Characteristics of Migrant Farmworkers.

The final goal of the Martin and Holt report is to provide information on the characteristics of migrant farmworkers. They rely entirely on two sources of information, the Hired Farm Working Force series, and the aforementioned study of California unemployment insurance data. As will be shown below, there are numerous problems in relying on these sources to identify the characteristics of migrant farmworkers. Moreover, these sources stand in sharp contrast to the findings made in the Colorado CMHP census.

##### A. Colorado Migrant Farmworker Health Survey.

The 1985 survey of Colorado's migrant farmworkers (CMHP) not only determined their number but also yielded important

information on characteristics such as their income, and family size. Martin and Holt are either unaware of this work or chose to ignore it. This study found that the average migrant family size was 6.2 persons; 89.7% of families reported total annual income below \$11,000; and 90.7% of single male workers reported total annual incomes below \$8,000. (17) In comparing this study to the Martin and Holt report, it is important to understand that this was an actual census and not simply a "review" of existing data. These findings conflict with Martin and Holt's report.

**B. The Hired Farm Working Force Study.**

As previously indicated, the HFWF study involves a sample of so few farmworkers that the detailed data on migrant farm workers is inherently unstable, particularly as one begins to subdivide the data to analyze the characteristics of this population.

Martin and Holt relate the most recent HFWF data which found that 24% of the nation's migrant farmworkers who are heads of households earned \$10,000 or more in 1983. This figure should be considered in the context of the HFWF's sampling error. The standard error of this estimate is plus or minus 8%. (18) Similar levels of standard error exist for all the characteristics for migrants provided by the Martin and Holt report, and they worsen at geographic levels below the national level.

A larger problem is that the HFWF study is simply not representative of the population of migrants. Philip L. Martin has sharply criticized the HFWF survey:

"The picture derived from these statistics on the work force is distorted because the 'average' characteristics

are determined by the large number of students who do a few days or weeks of farm work in the summer and are easy to find in December. Indeed, the data indicate that 34 percent of the 'farm workers' were primarily students considerably more than the 28% percent whose primary activity was hired farm work."(19)

Yet, Martin and Holt rely upon 1983 HFWF data to determine the number of workers per migrant household, migrant workers per household, and non-working dependents per migrant household. Martin and Holt conclude that the Lillesand estimates for these items are exceedingly high and determine that 1.2 migrant workers and 1.95 dependents per household are more realistic.

As discussed previously, the HFWF data misses many, if not most, migrant farmworkers. In addition, as indicated in Table 3, it is clear that the HFWF figures understate the size of migrant households when compared to Mines' and Martin's California survey or to the 1980 Census of Population figures for Mexican foreign born persons.

Table 3  
Household Size and Dependents

	1983 Mines & Martin Survey (California)	1983 HFWF (U.S.)	1980 Census Mexican Foreign Born (U.S.)
Workers per Household	1.75	1.72	1.7
Migrant Workers per Migrant Household	1.2	1.12	*
Non-Working Dependents per Household	1.85	1.95	*
Person per Household	3.6	4.0	4.21
Persons per Family	*	4.3	4.39

Reliance on household size and persons per family data is in itself flawed since it assumes that families are the common "unit" of the migrant flow. While the evidence is sparse, there is some evidence to indicate that the "economic units" which follow the migrant farmworker streams may be shifting to partial and mixed family member units. Until further surveys detect and describe the economic units that comprise the migrant stream, the data derived from residential surveys such as the HFWF can only be considered as vaguely suggestive.

C. California Unemployment Insurance Data.

The other source used to characterize migrant farm workers is the California Unemployment Insurance data. Characteristics derived from this data cannot be generalized to the rest of the United States because they do not take into consideration state and regional variations. It is also likely that inferences drawn from the UI data may exclude many migrant workers employed in California as well.

1. Migrants Excluded from the UI Data. In the "validation" chapter, Martin and Holt studied the UI data using three alternate definitions of migrant farmworker. After a review of these definitions, Martin and Holt select the definition that characterizes agricultural workers as migrants only if they hold a farm job in a county other than the California county where they had their highest earnings. Martin and Holt state that this definition is very similar to the definition of migrant farm worker in the HFWF, but there are several very important

categories of workers which this definition excludes.

Among the migrants excluded by this definition are (a) migrants who are based in another state or country who migrate to California and do farm work in only a single California county; (b) migrants who are unemployed in one California county who migrate to another California county where they do farm work; (c) migrants who migrate to or from a non-farm job in California, if the non-farm job realizes less earnings than the farm job.

The third group represents the difference between the second and third definitions of migrant offered in the Martin and Holt analysis of California UI data. Thus, their numbers can be stated explicitly. Migrants who migrated between a farm job and a non-farm job, who also earned more at the farm job than at the non-farm job, made up 3.55% of the California farm worker sample ( $23.88\% - 20.33\% = 3.55\%$ ), and account for an additional 17.5% or 40,000 migrant workers ( $23.88\%/20.33\% = 117.5\%$ ). These 40,000 workers are only part of those excluded from the definition of migrant worker by Martin and Holt.

Another category of migrants excluded by Martin and Holt's UI analysis are workers who work for employers who have a single county base, but operate in other counties. A farm labor contractor is an example of this type of employer. They describe this problem as follows:

"However, the UI data could also undercount migrants. Workers employed by an employer with a central administrative site could in fact migrate across county lines and stay away overnight but appear in the UI records as one employer and one-county farmworkers."

(20)



Martin and Holt argue that out-of-state wages are a negligible consideration because "only .26% of all farmworker SSN's (Social Security Numbers) made UI claims in California based in part on out of state wages." (21) This quantifies that at least .26% of California farm workers are migrants who worked in other states, although they are excluded from the Martin and Holt definition of a migrant in the UI study. It does not allow for any measurement of the number of workers with a base in another state, who would be more likely to make a UI claim in their home state, where they live when they are unemployed. It also does not measure the number of intrastate migrants who do not file UI claims.

A problem with the data source was that 2,074 (18.4%) of the 11,289 agricultural workers in the study sample were employed for multi-establishment firms for which there is no county code or commodity code. The migrant status of these workers is unknown, and so they are evidently excluded from the study of worker characteristics. In calculating the total number of California migrants, the authors assume that these workers are no more likely than other workers to migrate. However, as employees of firms which have operations in more than one county, they are certainly more likely to migrate than the employees of firms located in a single county.

Another problem with the UI data is that it is skewed by the use of a single social security number by several workers. Martin and Holt state that within their sample, there were two names attached to a single social security number in 4.6% of the

sample, and in 20 instances 10 or more names were attached to a single Social Security number. (22)

This implies that at least 10% of the workers were sharing Social Security numbers. (23) They do not say explicitly that they have divided these accounts up into the several workers who make them up, nor do they suggest a procedure for treating such cases in their data.

Moreover, they cannot know what proportion of workers share a single Social Security number and name. It is not uncommon for all members of a family employed in a fruit harvest on a piece rate basis to work under the name and social security number of a single family member. The sharing of a single social security number by several workers skews reported data on earnings per worker upward and could contribute to the high income data found by Martin and Holt.

2. Contrast of UI Data with Other Studies of California Migrants. There exist at least five other studies which provide independent although not entirely comparable information on migrant characteristics.

The Martin and Holt UI data analysis found 20.33% of California farmworkers to be migrants. Most of these migrants (56.8%) had non-farm employers. They averaged only 12.5 weeks of farm work and 27.2 weeks of non farm work in 1984. Weekly wages were \$203 in farm work, and \$305 from non farmwork. These data contrast with other data on migrant workers in California.

A survey of 2,028 farmworkers conducted in 1965 for the

Assembly Committee on Agriculture reported that there were 145,000 migrant workers in California agriculture, accounting for 30% of the labor force which earned more than \$100 that year. Migrants were more likely to be of Mexican origin, with 55% of them of Mexican descent. (24)

A survey of 1,286 farmworkers conducted in 1983 by the University of California and the Employment Development Department found that migrants make up 36.7% of the work force; About one in four farmworkers migrates between the U. S. and Mexico. (25) Workers who migrated in order to find work made up 18.5% of the sample, while 6.4% of the work force undertook both types of migration.

Interviews with 200 tomato sorter workers in Yolo County conducted in 1978 found that one-third of the respondents lived outside of the area for part of the year. (26) This survey shows that the movement of workers defies simple categorization as "migrant" or "local." Of those who called Mexico their permanent home, 32% had lived only in the local area during the preceding 12 months. Yet half of those who said they lived in Mexico for several months in the prior year did not consider Mexico their permanent home. Among the workers who said they were "local", 10% lived in a public migrant labor camp, which requires them, for eligibility purpose, to live at least 50 miles away for 6 months of the year.

A 1978 study of 600 Fresno and Imperial County farmworkers, two-thirds of whom were women, did not distinguish between those workers who never migrated to find work, and those who

were migrants for 4 weeks or less. (27) This study did find that workers who were away from their home base for 5 weeks or more made up 31.8% of the sample.

A study of the health practices of 472 Tulare County farmworkers conducted in 1981 found that 20.6% of the workers had jobs outside of the County for sometime in the year. (28) It found that many respondents were former migrants who had settled in that particular California county because it offered a better opportunity for a longer season of work without migrating.

These survey studies suggest that at least 30% of the California hired farm work force is migrant, in contrast to the 20% migrant figure Martin and Holt derive from the UI data. This 10% or between difference is made up of the intrastate, international, and urban based migrants and the employees of multi-county firms, who were excluded by the inadequacy of UI data. If 30% or more of the California hired farm working force is migrant and if this figure is applied to the preferred distribution formula to estimate the number of migrant farmworkers nationally, it would yield a much higher number than Martin and Holt found.

#### V. Alternatives.

The consulting contract between Martin and Holt and LSC precluded consideration of other options and, in several important ways, pre-ordained the outcome. Given the objective of determining the number, distribution and characteristics of the migrant farmworker population, it would be useful to consider a fuller range of options than those identified by Martin and Holt

and LSC.

Specific studies based on field interviews of workers comprise the bulk of existing knowledge of the characteristics of migrant farmworkers. Properly constructed, studies of this type represent the best possibility for accurately determining such important characteristics as family size and income distribution.

Recently, the Colorado Migrant Health Program conducted such a field interview based study of migrant farmworkers in that state. The survey design was developed by the staff of the National Center for Health Statistics, a highly respected federal statistical agency. The principal purpose of the survey was to determine the health needs of Colorado's migrant farmworkers; however, because the survey was based on a multi-stage stratified proportionate probability sample, accurate data on important demographic characteristics, such as family size and income, were also obtained. (29)

There are numerous programs which provide services to migrant farmworkers ranging from health, education, and job training to legal services. To a greater or lesser degree each of these programs relies on assessments of the "needs" of the population served. Migrant health programs receiving Federal funding are required to complete such a needs assessment as a condition of their funding. Such needs assessment studies can insure objectivity by relying on expertise provided by well-established organizations familiar with survey design and implementation. The Colorado Migrant Health Program survey insured the required objectivity by obtaining the services of

outside specialists.

We suggest that an important step in developing reliable data on the characteristics of the migrant farmworker population would be the formation of a multi-agency task force whose specific purpose would be the direction of field interview based surveys. Since a variety of Federal agencies already require or conduct needs assessments for program purposes, the proposed task force will meet existing needs and could well eliminate unnecessary duplication of effort.

In the case of states with relatively few farmworkers, the proposed task force might merely assist local service providers in designing and implementing a rigorous survey method. For states with large numbers of farmworkers the task force might choose to conduct its own surveys. But foremost would be the creation of a body whose primary function would be the objective determination of the characteristics of the migrant farmworker population.

The issue of where migrants live and work must be addressed by using field survey interview results, of the sort already published for Colorado, to apportion migrant farmworkers periods of residency among their various states of residency in a proportionate fashion. For example, CMHP data shows that 51.3% of Colorado's migrant farmworker population maintain their permanent residence in Texas: this fact should not be ignored when allocating legal service resources. Thus, interview-based data can be used to more properly apportion services intended to serve migrant farmworkers. Mixing regularly collected statistical

series with data extracted from properly designed surveys could make a more reliable state-by-state estimate of the number, distribution and characteristics of the migrant farmworker population.

## VI. Conclusion.

The Martin and Holt estimation of the distribution and characteristics of migrant farmworkers is flawed and unsound. The problem lies with the paucity of information about the nation's migrants. No simple, additive compilation of existing statistical source can accomplish what Martin and Holt set out to do.

Martin and Holt fail to distinguish between studies which are population based, and measure where individuals live, and those that are employer based, and measure where they work. Their methods are an over-simplification of a complex problem. They have misused and even misstated available data, made false assumptions, and generally failed to develop a scientifically founded process to achieve their stated goals. No effort was made to determine the likely errors in the components of their formula, or the cumulative error in each state's percentage share of migrant activity. Additionally, Martin and Holt have not defined migrant "activity"; it is clear, however, that this term cannot be used as a substitute for enumerating migrants on a state-by-state basis. More importantly, the preferred formula has not been "validated" notwithstanding Martin and Holt's assertions to the contrary. As evidenced by the Colorado CMHP study, it is clear that the Martin and Holt formula yields anomalous

results; however, for unexplained reasons, Martin and Holt have not made any attempt to either identify the states or areas in which such results are found or suggest a way to correct for such results.

While we are convinced that Martin and Holt's preferred formula is so seriously flawed as to be of questionable value, we believe that it would be incumbent upon the LSC Board of Directors to put the results to a rigorous, objective and independent test before it is used to redistribute funding for legal services programs. Such a test would use independent data sources to determine the number of migrant farmworkers in each of several states. The relative numbers found in those states would be compared with the relative share of migrant "activity" determined from the preferred formula. We suggest that this approach would certainly test the validity and accuracy of the formula. It would hopefully identify those states in which the formula has obtained a wrong result.

As pointed out above, the California UI data and the Colorado yield relative numbers of migrant farmworkers which seriously disagree with the Martin and Holt formula. The discrepancy is so great that it is imperative for the LSC Board to conduct the proposed assessment prior to even considering adoption of the preferred formula.

One source which has been ignored is data on the employment of packing and processing workers reported in the Census of Manufacturers.

Finally, there is a body of literature reporting direct



surveys of workers, which can help describe the percentage of farm workers who migrate on a state-by-state basis. While these studies are not comprehensive, they represent the bulk of all knowledge about migrant farm workers, and should not be ignored.

It is abundantly clear that the Martin and Holt study has not determined the characteristics, number or distribution of migrant farmworkers. Policy regarding the funding of legal services programs should not be determined on such shoddy and scientifically unsound treatment of this very important subject.

APPENDIX A

INCORRECT REPORT OF CENSUS OF AGRICULTURE  
WAGES AND LABOR CONTRACTOR EXPENSE

Martin and Holt purport to use information from the 1982 Census of Agriculture in deriving the Census Crop Farm employment expenditures in the first element of their formula. On pages 71 and 72 of their report, they state that they include in their formula direct hired labor expenses and contract labor expenses for "crop farms" (SIC codes 011, 013, 016, 017, 018 and 019). They go on to explain:

"In 1982, crop farms accounted for 65% of the \$8.4 billion in direct labor expenditures and 86% of the \$1.1 billion in contract labor expenditures."

This is clearly the total of \$6.4 billion in hired and contract labor expenses reported for U.S. crop farms in the 1982 Census of Agriculture (i.e., 65% of \$8.4 billion in direct expense, \$5.46 billion; and 86% of \$1.1 in contract expenses, or \$946 million, a total of \$6.4 billion).

Yet the total "Census Crop Wages" (Census crop farm employment expenditures) on the table of page 74a, "The Preferred Distribution of Migrants-1982", states the U.S. total as only \$5.4093 billion. There is no explanation for the missing billion dollars in wage costs. Similarly, California crop wages are reported to be \$1.6814 billion, which is less than the \$1.9503 billion actually reported in the Census of Agriculture for California crop farms.

A tally of U.S. and California crop farm data for the 1982 Census of Agriculture is found below in Table 4.

Table 4

Farm Production Expenses  
1982 Census of Agriculture Data  
(thousands of dollars)

SIC Code	United States			California		
	Hired Labor	Contract Labor	Total	Hired Labor	Contract Labor	Total
Crop Farms						
011	1,270,305	70,321	1,340,626	46,141	4,183	50,324
013	1,071,444	140,821	1,212,265	149,233	30,357	179,590
016	668,137	223,951	892,088	345,703	96,195	441,898
017	1,156,518	423,478	1,579,996	625,043	237,702	862,745
018	971,776	35,356	1,007,132	269,571	7,475	277,046
019	302,352	54,132	356,484	115,019	23,676	138,695
Crop Farms, Sub-Total						
01	5,440,532	948,059	6,388,591	1,550,710	399,588	1,950,298
Livestock Farms						
021	1,262,444	88,406	1,350,850	64,988	6,676	71,664
024	1,077,486	29,625	1,107,111	125,681	3,533	129,214
025	385,039	22,226	407,265	59,972	1,991	61,963
027	176,372	11,396	187,768	14,962	1,721	16,683
029	56,497	2,956	59,453	1,041	67	1,108
Livestock Farms, Sub-Total						
02	2,957,838	154,609	3,112,447	266,644	13,988	280,632
Total, All Farms						
	8,398,370	1,102,668	9,501,038	1,817,354	413,576	2,230,930
Crop Farms as a Percentage of Total Farms						
	64.78%	85.98%	67.24%	85.33%	96.62%	87.42%

Source: U. S. Department of Commerce, Bureau of the Census, 1982 Census of Agriculture, Table 50, Summary by Standard Industrial Classification of Farms.

## References

1. Contract dated April 1, 1986 between the Legal Services Corporation and Philip L. Martin, Inc. including Subcontract dated March 16, 1986 between Philip L. Martin, Inc. and James S. Holt (hereinafter cited collectively as Martin-Holt Contract), Schedule A, p. 1.
2. Ibid.
3. Martin-Holt Contract, Schedule A, p. 6.
4. Martin-Holt Contract, Schedule A, p. 4.
5. Legal Services Corporation, Funds for grants to programs serving migrant farmworkers, general statement of policy. Federal Register, Volume 44, No. 51, March 14, 1979, pgs. 15643-15644.
6. Lillesand, D., Kravitz, L. and McClellan, J., An Estimate of the Number of Migrant and Seasonal Farmworkers in the United States and the Commonwealth of Puerto Rico, a report prepared for the Legal Services Corporation, 190 pgs., May 1977.
7. Martin, Philip L. and Holt, James S., Migrant Farmworkers: Number and Distribution, a final report prepared for the Legal Services Corporation, April 1987, p. 66.
8. U. S. Department of Commerce, Bureau of the Census, 1982 Census of Agriculture, Volume 1, Geographic Area Series, Part 5, California, State and County Data, June 1984.  
  
California Employment Development Department "Employment by Standard Industrial Classification (SIC) Code" Monthly, quarterly and annual average wages and employment for SIC codes for farm labor contractors and farm management firms by county and region for 1978-1984, requested by S. Vaupel, 82 pgs.
9. U.S. Bureau of the Census.
10. Martin and Holt, p. 60, op cit.
11. Martin and Holt, p. 77, op cit.
12. Telephone conversation with Victor Olivera, Agricultural Labor Section of the Economic Research Service of the U.S. Department of Agriculture (202) 786-1933, March 11, 1987. Coverage of the National Population in the 1980 Census Preliminary Estimates by Demographic Analysis Report Series P-23, No. 115, 14 pgs., 1982.

13. U. S. Department of Commerce, Bureau of the Census, 1982 Census of Agriculture, Volume 1, Geographic Area Series, Part 5, California, State and County Data, June 1984.

Cash grain farms had \$50.3 million in hired and contract labor expenses, to produce \$472.4 million in gross sales; while vegetable and melon farms had \$441.9 million labor expenses to produce \$1,752.9 million in sales. If non-farmer labor expenses were included, the difference would be even more striking.

14. Martin and Holt, p. 87, op cit.

15. Littlefield, Carla and Stout, Charles L., Colorado Migrant Farmworker Health Survey, Preliminary Report, Colorado Migrant Health Program, March 30, 1987.

16. Mines, Richard and Martin, Phillip L., A Profile of California Farmworkers, Giannini Information Series No. 86-2, University of California, Division of Agriculture, July 1986.

17. Littlefield and Stout, op cit.

18. This may be calculated from Table 18 of the 1983 HFWF. With a base of 124,000 migrant worker head of households there is a 7.5% standard error for a 21% incidence rate. A 40% higher standard error is given if the persons surveyed were Hispanic.

19. Martin, Philip L., "Labor Intensive Agriculture", Scientific American 249(4): pgs. 54-59, October 1983.

20. Martin and Holt, p. 104, op cit.

21. Ibid.

22. Martin and Holt, p. 103, op cit.

23. The implication that more than 10% of the workers sharing Social Security numbers may be derived as follows:

Among two workers. Since 4.6% of numbers were shared by two workers, this implies that there were 104.6% as many workers as Social Security numbers, and that 8.8% of the workers shared a social security number with one other worker.  $(2 \times 4.6)/104.6$ .

Among nine or more workers. There were at least 200 workers (10 names x 20 instances) who shared a social security number with nine or more workers. These represent roughly 1% of the study sample.

Three to eight workers. Martin and Holt provide no information on the number of Social Security numbers which were shared by three to eight workers. Presumably these would have added at least another 1/4 of one percent to the estimate.

24. California Assembly Committee on Agriculture, The California Farm Labor Force: A Profile, A Report Prepared for Assembly Committee on Agriculture by its Advisory Committee on Farm Labor Research, with Assistance of the California Department of Employment, 154 pgs., April 1969, Sacramento, California.
25. Mines, Richard and Martin, Philip L., A Profile of California Farmworkers, op cit.
26. Thompson, O.E. and Scheuring, A.F., From Lug Boxes to Electronics: A Study of California Tomato Growers and Sorting Crews, Monograph No. 3 of the California Agricultural Policy Seminar, Department of Applied Behavioral Sciences, University of California, Davis, 55 pgs., December 1978.
27. California Commission on the Status of Women, Campeñas: Women Farmworkers in the California Agricultural Labor Force, Report of a study Project by the California Commission on the Status of Women, Sacramento, California, December 1978.
28. Mines, R. and Kearney, M., The Health of Tulare County Farmworkers: A Report of 1981 Survey and Ethnographic Research for the Tulare County Department of Health Funded by the California Department Health Services, Rural Health Division; Tulare County Department of Health Services, UC Riverside College of Humanities, Program in U.S. Mexican Studies, 32 pgs., April 15, 1982.
29. Colorado Migrant Health Program, Need/Demand Assessment for Migrant and Seasonal Farmworker Health Services, November 1986.