

WANTED— MAN POWER FOR ARIZONA FARMS



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WANTED—MAN POWER FOR ARIZONA FARMS

SEASONAL AND YEAR-ROUND FARM LABOR REQUIREMENTS, ARIZONA, 1935-42

BY E. D. TETREAU

FARM LABOR PROBLEM

This study of hired labor requirements for Arizona's irrigated farms is, on the face of it, intended to be useful to agriculture. Were the world at peace, the question of how many extra laborers are needed for the harvesting of cotton and citrus and tending truck crops would be important. But, since the world is at war, and we in the midst, and now that Arizona has undertaken the greatest production job of her life, it is undeniably necessary that facts about man-power requirements on farms be on hand and that they be put to use in advance so that enough men may be on the job when needed and where needed. Too few and too late is as fatal in agriculture as on a battlefield.

Hired labor requirements on irrigated farms in five counties are high

This study covers the hired labor requirements of farms located in Graham, Maricopa, Pima, Pinal, and Yuma counties, which in 1942 contained over 700,000 acres of crop land. The major crop acreages are: alfalfa, 182,000 acres; cotton, 274,100; lettuce and other truck crops, 61,600; citrus, 20,400; and grains and other crops, 168,300 acres.

Hired labor requirements in Arizona's five principal agricultural counties for the current year range from around 19,000 men during the slack months of March and August to around 56,000 men during the peak months of November and December. There is a secondary peak in April when over 26,000 men are required (see Table 1).

First farm labor study covered requirements for 1935

Arizona's first farm labor study was made in 1936 by the Agricultural Experiment Station. It showed in some detail the hired labor requirements of irrigated farms in the five larger valleys of the state for the year 1935. At that time labor supplies were adequate, and during the following few years they became plentiful.

Labor shortages appear in 1941

By midyear, 1941, Arizona farmers were facing the first real labor shortage they had known in many years. Total crop acreages were the highest known in the state, with greatly increased acreages of cotton and truck crops and corresponding large requirements for seasonal labor. Rubber was still available, however, and several thousand laborers came in from other

TABLE 1.—NUMBERS OF HIRED MEN REQUIRED ON IRRIGATED FARMS BY MONTHS, INCLUDING YEAR-ROUND AND SEASONAL HELP, FIVE COUNTIES, ARIZONA, 1942.

Month	Numbers of hired men required											
	Graham Seasonal	Graham Total*	Maricopa Seasonal	Maricopa Total*	Pima Seasonal	Pima Total*	Pinal Seasonal	Pinal Total*	Yuma Seasonal	Yuma Total*	Total Seasonal	Total Total*
Jan.....	2,835	3,045	17,175	21,390	950	1,210	8,840	9,700	2,155	3,270	31,955	38,615
Feb.....	2,675	2,885	10,550	14,765	680	940	1,810	2,670	1,895	3,010	17,610	24,270
Mar.....	765	975	7,995	12,210	625	885	1,180	2,040	2,345	3,460	12,910	19,570
Apr.....	175	385	14,610	18,825	360	620	2,370	3,230	2,555	3,670	20,070	26,730
May.....	950	1,160	8,975	13,190	580	840	4,400	5,260	2,045	3,160	16,950	23,610
June.....	760	970	9,150	13,365	740	1,000	3,840	4,700	2,265	3,380	16,755	23,415
July.....	585	795	6,655	10,870	800	1,060	3,320	4,180	2,305	3,420	13,665	20,325
Aug.....	580	790	6,945	11,160	780	1,040	2,250	3,110	1,620	2,735	12,175	18,835
Sept.....	1,195	1,405	21,225	25,440	1,365	1,625	10,250	11,110	1,965	3,080	36,000	42,660
Oct.....	2,305	2,515	24,530	28,745	2,445	2,705	14,140	15,000	1,085	2,200	44,505	51,165
Nov.....	3,120	3,330	26,675	30,890	2,585	2,845	16,020	16,880	1,565	2,680	49,965	56,625
Dec.....	3,015	3,225	25,845	30,060	1,460	1,720	15,525	16,385	3,465	4,580	49,310	55,970

*Each total equals the sum of the year-round and seasonal laborers. The numbers of year-round laborers in the five counties are: Graham, 210; Maricopa, 4,215; Pinal, 860; and Yuma, 1,115; while the total year-round men in the five counties amounts to 6,660.

states, the greater numbers being from California, Oklahoma, and Texas. By extending the picking season into late February, 1942, the cotton harvest requirements were met in fairly satisfactory shape.

The 1942 farm labor situation is extremely serious

It seems no exaggeration at the time of this writing to say that the farmers of Arizona are entering the fall months of 1942 faced with the greatest labor shortage they have ever known. Crop acreages are the highest on record, and very little labor is in sight. The farm operator knows that without federal assistance in obtaining labor he will be unable to harvest his cotton. Resident labor supplies are badly depleted by the draining off of men into the war industries and war construction projects, as well as by the demands of the armed forces of the country. Out-of-state laborers are many miles removed and transportation must be arranged. The situation, at this writing, is not without hope, but it is by no means promising.

Some problems in the study of farm labor are considered

Certain parts of this study deal with problems that are perhaps more interesting and useful to the student of farm labor than to the farmer.

One of these has to do with the seeming inconsistency between man-day requirements for labor as calculated from the management point of view and the actual numbers of laborers found to be necessary to deliver these man-days of work in a given period. Usually the requirements in terms of men as calculated by officials charged with the placement of labor, using authentic farm management figures as a basis, fall far short of the actual number of men used to get the job done, as men come and go. Some of the reasons for this inconsistency are taken up in this report, and the analysis of the problem also throws light upon the seeming disproportion of seasonal requirements as compared with year-round labor.

Another problem has to do with the selection of indicators of change in hired labor requirements. While quite obviously total crop acreages are related to labor requirements, by what other indicators may the first crude calculations be corrected so as to more nearly arrive at finely drawn estimates for a given year? In this study two indicators, besides total crop acreages, were selected because of their suitability in arriving at total hired labor requirements for a given year in relation to the known requirements of a base year. One of these indicators together with total crop acreages also proved to be satisfactory in estimating changes in year-round labor requirements.

Still another problem concerns a method of determining the month-by-month requirements for seasonal laborers through a given year. One method commonly used in studies that are made from the management angle, is to determine the require-

ments for each commodity, month by month, and to combine these for a county or state estimate. The method used in this study was to obtain by field inquiry the requirements for individual farm units month by month. These units were combined, corrected for disproportionate crop acreages, and the results stepped up to equal the acreage in crops in the county.

HIRED LABOR REQUIREMENTS, 1942

Pattern of hired labor requirements is shaped by farming operations

A setting forth of the hired labor requirements of individual farms shows that farm operations fall into about four categories when viewed as to their *continuity* and *duration* in time. First, there are the *year-round operations* which on larger farms are performed by regular laborers and on smaller farms by the operator and his family. These year-round operations are generally complexes of simpler operations and include such combinations as feeding beef cattle and irrigating and harvesting alfalfa; and feeding, tending, and milking dairy cows. Second, are *long-term seasonal operations* such as baling hay and picking cotton. Generally in these operations, one large farm or a number of smaller farms affords continuous employment for a crew, and the season extends over a period of from 4 to 6 months. Similar as to continuity, but of shorter duration, are the *short-term seasonal operations*, again in the case of which a large farm or a number of smaller farms affords continuous employment for one or more men for a number of weeks. Short-term operations include chopping cotton, thinning lettuce, and harvesting the various truck crops. These provide straight ahead employment for only a few weeks.

An arbitrary figure of 22 work days within a 30-day period (thus allowing for Sundays, holidays, and periods of inclement weather) was used as the minimum below which no operation was classified as long-term seasonal. A fourth category covers occasional operations of a more or less noncontinuous nature. These include such jobs as fencing, ditch-cleaning, weeding, etc. Extra hands for these operations usually work some of the year at seasonal operations.

It is important to distinguish long-term from short-term employment

The distinction between long-term and short-term seasonal operations is important, since much current, popular discussion of farm labor problems centers around short-term rather than long-term operations. Short-term fruit picking operations do not obtain in Arizona, since apples, peaches, pears, and similar products are not commercially grown in Arizona. Other short-term employments such as berry picking, hop picking, and the like are not to be found in the state excepting in the case of small areas of strawberries. On the contrary, *long-term* seasonal operations predominate and hence long-term seasonal work is readily

found. This should not be overlooked in any survey of hired labor requirements and especially so if social considerations carry special weight.

Year-round laborers rarely if ever perform certain seasonal operations

It must not be concluded from the above classification of farm operations that year-round laborers never perform seasonal operations nor do odd jobs. Such is far from the case in actual practice. Oftentimes it is by combining tractor driving, irrigating, haying, and trucking to market that an operator can keep year-round hands fully employed. Short-term seasonal operations, however, are usually performed by short-term seasonal workers who chop cotton, pick up lettuce and cantaloupes, and otherwise follow the turn of agriculture's special requirements. Practically never does a year-round laborer pick cotton or work in the lettuce fields. He may weigh the cotton, drive a lettuce truck and trailer, or operate a hay baler on a large farm, but the line of demarcation in his tasks is quite definite as distinguished from short-term seasonal tasks. On the other hand, the year-round man may do many odd jobs such as mending fences, dehorning cattle, and repairing implements and machinery. Sometimes the small operator will turn out with a family crew and pick some or all of his own cotton, but this practice is by no means general.

Trend is away from high specialization

In times of growing labor scarcity such as these the trend is away from high specialization in seasonal labor. Lettuce cutters formerly traveled from place to place working only at their special job. Now lettuce operators are training resident seasonal laborers to do this work and the same men may engage in several special kinds of seasonal employment. So it is with other special workers who formerly did one thing in many places, now they do a number of things in one locality.

An individual farm furnishes much steady employment

An example of the use of hired labor on an individual farm will illustrate. A Pima County farm of 680 acres which produces cotton, alfalfa, oats, wheat, and corn and keeps a considerable amount of livestock gives employment to seventeen men the year around. While each of these regular laborers has certain year-round responsibilities such as obtain for the chief irrigator, they take hold of whatever needs to be done during rush seasons and do many odd jobs during slack seasons. In February six extra hands are hired and they are kept at ditch cleaning, cotton chopping, hoeing, and weeding until the end of August. Extra demands for weed control and ditch cleaning during July and August call for an additional force of six men over and above the extra men hired in February. The regular laborers cut and rake the hay, but baling and hauling is done by extra hands. What

with haying and harvesting grain, from six to ten seasonal laborers are employed more or less steadily from May through September for these operations. Cotton picking requires from eighteen to twenty workers from October through December and fifteen through January. Since practically all of the seasonal work on this farm is done by Mexicans and Papagos who live close to the farm, it will be seen at once that seasonal operations and odd jobs may quite readily furnish year-round employment to a number of laborers. Such is exactly the case. These are in addition to the year-round hands.

Requirements vary with cycles of planting and harvesting

Labor requirements vary with the cycles of planting and harvesting. From April to August runs the cycle of cotton planting and cultivation, cutting and baling alfalfa hay, and planting corn, grain sorghums, and miscellaneous crops. In September, plantings of lettuce and other truck crops begin, and the cotton harvest gets under way. From then on through January and into February and March the cotton is picked, and lettuce and carrots are harvested. Soil preparation for cotton planting occurs chiefly in February and March. Heavy preplanting irrigations are made in March. April sees the first extensive balings of alfalfa, and cotton planting goes on apace, spring lettuce and other truck crops are harvested, and the rush of early summer work is under way.

Seasonal labor requirements jump sharply in April and reach peak in November

Less than 13,000 seasonal laborers are required during March (1942) but more than 20,000 must be had to meet April requirements. May, June, and July requirements taper off, and a secondary low point is reached in August, the requirements of which are only a little over 12,000. September seasonal requirements call for an increase of 24,000 laborers over August's needs, which makes a force of 36,000 besides year-round men. Another 8,000 must be added during the next few weeks, and, by the middle of November, practically 50,000 seasonal laborers are required to carry on the cotton harvest, to care for the growing truck crops, and to harvest the grain sorghums and summer forage crops. There is some dropping off in cotton picking requirements during December, but lettuce and other truck crops call for more hands as the cool winter vegetable season advances. Citrus harvest requirements continue through the winter months and on into June, and spring lettuce requirements are high in April giving way to carrots, then cantaloupes and melons which are harvested in June and July. Thus the citrus, lettuce, and vegetable crops bridge over the seasons, reaching from the midwinter months into midsummer. However, after the March trough in seasonal requirements, it is the beginning of alfalfa cutting and baling and the planting of the cotton that give the spring season its real start in labor demand (Table 1).

Some counties make extensive use of year-round laborers

Year-round laborers are distributed among the five counties in rough correspondence to their crop acreages. Almost two thirds of the 6,660 year-round laborers are employed on Maricopa County irrigated farms. In other words, this county accounts for 63.3 per cent of year-round laborers. The next largest number is in Yuma County and represents about one sixth of the total. Another sixth is found in Pima and Pinal counties taken together. Graham County contains the smallest number. These proportions only roughly correspond to the distribution of crop acreages among the five counties.

It is quite evident, on comparing counties, that the proportions of year-round laborers in some counties are greater than crop acreages would indicate. Yuma County, for example, accounts for a much greater proportion of year-round laborers than any of the other four counties. Maricopa County also employs more year-round laborers than crop acreages would indicate as required. But the excess is much less marked than that of Yuma County. The same may be said of Pima County. On the other hand, proportions of year-round laborers fall below expectation in Graham and Pinal counties (Table 2).

TABLE 2.—COMPARISON OF CROP ACREAGE DISTRIBUTION WITH DISTRIBUTION OF YEAR-ROUND AND SEASONAL HIRED LABOR, FIVE COUNTIES, ARIZONA, 1942 (PER CENT).

County	Crop acreages 1942	Year-round laborers	Seasonal laborers	Total hired laborers
Graham	4.6	3.2	5.9	5.3
Maricopa	62.3	63.3	56.0	57.5
Pima	3.3	3.9	4.2	4.1
Pinal	19.2	12.9	26.1	23.5
Yuma	10.6	16.7	7.8	9.6
Total	100.0	100.0	100.0	100.0

Seasonal laborers more extensively used in other counties

As may be expected from the distribution of year-round labor, seasonal labor is used to a greater extent in Graham and Pinal counties and to a lesser extent in Maricopa and Yuma counties than the distribution of acreages would indicate (Table 2).

Distribution of seasonal labor requirements is more important than volume

At first thought it might be concluded that crops which require the most labor per acre are largely responsible for the high labor requirements and for the excessive seasonal demands that occur in some counties as compared with others. This is only partly true. High labor requirements an acre make for high labor requirements in a county as compared with crop acreage, as also does the addition of livestock enterprise, but the *distribution* of

these requirements throughout the year determines whether or not the seasonal demands will be excessive or moderate.

Counties differ greatly in distribution of crop acreages of major crops

The weight of seasonal demands upon hired labor depends largely upon the distribution of crop acreages within a given county. Looking at crop acreages when broken down into four categories, it may at once be seen that Yuma County is very short on cotton and carries almost three times the proportional acreage of truck crops. Yuma has 253 acres of truck in each 1,000 crop acres, while in the five counties there are only 87 acres of truck in each 1,000 acres of crop. The alfalfa acreage in this county is about one and one half times its proportioned share, and field crops such as winter grains and flax are also produced in larger than even proportions. Due to insect pests as well as other reasons Yuma County has drastically cut cotton acreages. In contrast, Pinal County produces less than its share of alfalfa, truck crops, and miscellaneous field crops, and one and three fourths times its share of cotton. Its labor requirements are high but the demand for year-round labor is low (Tables 2 and 3).

TABLE 3.—COMPARISON OF MAJOR CROP ACREAGE DISTRIBUTION, FIVE COUNTIES, ARIZONA, 1942 (PER CENT).

	Graham	Maricopa	Pima	Pinal	Yuma	Total in five counties
Alfalfa	14.4	29.3	6.7	15.2	37.1	25.8
Cotton	73.1	30.1	52.0	69.7	6.1	38.8
Truck crops....	0.1	9.8	1.7	0.5	25.3	8.7
Other crops....	12.4	30.8	39.6	14.6	31.5	26.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Shift in crops may not decrease seasonal labor requirements but balance their distribution

The shift of Yuma County from 11,000 to 18,000 acres of lettuce, cantaloupes, and other truck crops since 1935 and reduction of cotton from 13,500 to 4,400 acres in the same period has resulted in an important shift in hired labor requirements. The decrease in cotton acreage has reduced the yearly requirements for seasonal labor by about 73,000 man-days, most of which were required during the months of September, October, November, and December. But, the addition of 7,000 acres of lettuce and other truck crops has increased the yearly requirements for seasonal labor by more than 112,000 man-days. The heaviest monthly requirements for these crops come during December, January, February, March, and April, while the lightest occur in August, September, and October. Moreover, the addition of some 12,000 acres of flax to the county's crops, following drastic reductions in cotton acreage, together with continued production

of alfalfa hay and seed have strengthened year-round requirements and spread seasonal requirements over many months. For example, four men are employed throughout the year on a 200-acre farm, one half in alfalfa and one half in flax; two men are added in March and employed steadily until the end of November, while two more men are hired for the flax harvest in June and July. Threshing alfalfa seed in August and September requires the equivalent of five men for 2 months on this farm. Actually twenty men are hired and custom threshing is done for neighbors. It will be seen that these shifts throughout the county have taken the load of seasonal requirements from the months of October and November and spread them through the winter and spring months, and have added considerable steady work throughout the summer months (Fig. 1).

A dominant seasonal crop makes for extreme variation in requirements

The crop acreages and hired labor requirements of Pinal County stand in sharp contrast with those of Yuma County. What with the clearing and development of much new land, some two thirds of the land in crops is in cotton. Less than one sixth is in alfalfa, and another sixth is in winter grains, flax, and miscellaneous crops. There are less than 1,000 acres of truck crops. The result is that, although this county more than doubles the crop acreage of Yuma, its year-round labor requirements fall far below. Only 860 men are required as year-round men in Pinal as compared with 1,115 in Yuma County. Furthermore, the extremes of seasonal labor requirements range from a low point of 1,180 in March to 16,020 in November. The seasonal requirements of Yuma range from 1,085 men in October to 3,465 in December. Then, too, the time of low requirements in Yuma occurs when requirements are high in the other counties, while the low point of Pinal in March comes at a time when requirements are low in Maricopa, Pima, and Graham counties. Moreover, the time of high requirements for Pinal occurs when Maricopa, Pima, and Graham county farmers are crying for help. It comes in November. True, the peak season for Yuma occurs in December, a time of high requirements everywhere, but the number of seasonal laborers needed is less than 3,500 men at that time. This comes of a more even distribution of seasonal labor requirements throughout the year. The seasonal labor requirements of Pinal County are extreme as to time and numbers (Fig. 1).

The crop acreages of Graham County, like those of Pinal, are two thirds cotton. About one seventh is in alfalfa and the remainder in winter grains and other crops. Seasonal labor requirements range from 175 men in April to 3,300 in November. The crops of Pima County show a somewhat more balanced distribution, and hired labor requirements are not so extremely seasonal.

**FARMING OPERATIONS REQUIRING SEASONAL LABOR
YUMA COUNTY, ARIZONA, 1942**

CROPS & ACRES	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	
ALFALFA 27,000 A.		MOWING, MAKING, BAILING, & HAULING							HARVESTING SEED CROP				
LETTUCE " "	PLANTING	WEEDING	HARVESTING							PLANTING			WEEDING
CANTA- LOUPES " "	PREPARATION	SEEDING	THINNING	WEEDING		HARVESTING						PREPARATION	
OTHER TRUCK " "		WEEDING	HARVESTING						SETTING OUT	CULTIVATING &	RESEEDING	HARVESTING	
FLAX 13,800 A.						HARVESTING							
WINTER GRAINS " "					HARVESTING								
GRAIN SORGUMS " "										HARVESTING			
COTTON 4,400 A.					CHOPPING	MOWING					PICKING		
CITRUS 1,400 A.	PICKING & HAULING										PICKING & HAULING		
SEASONAL MEN	2,155	1,095	2,340	2,555	2,045	2,265	2,305	1,620	1,965	1,085	1,568	3,485	
YEAR-ROUND WORK REQUIRES 1,115 MEN, MONTH BY MONTH	-a- TOTAL ACRES = 18,400						-b- TOTAL ACRES = 6,500						

PINAL COUNTY, ARIZONA, 1942

CROPS & ACRES	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ALFALFA 24,000 A.				MOWING, MAKING, BAILING, & HAULING								
COTTON 106,600 A.		PICKING					CHOPPING AND MOWING			PICKING		
WINTER GRAINS " "					HARVESTING							
GRAIN SORGUMS " "										HARVESTING		
SEASONAL MEN	8,840	1,810	1,180	2,370	4,400	3,840	3,320	2,250	10,250	14,140	16,020	15,525
YEAR-ROUND WORK REQUIRES 860 LABORERS	-a- TOTAL ACRES = 18,000											

MARICOPA COUNTY, ARIZONA, 1942

CROPS & ACRES	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	
ALFALFA 125,000 A.				MOWING, BAILING & HAULING						MOWING, BAILING, HAULING			
COTTON 128,500 A.		PICKING				CHOPPING			MOWING & WEEDING			PICKING	
WINTER GRAINS " "					HARVESTING, THRESHING								
GRAIN SORGUMS " "										HARVESTING, SILEO FILLING			
LETTUCE " "	THINNING, MOWING	WEEDING	PICKING						SOIL PREPARATION AND SEEDING			THINNING	
CANTA- LOUPES " "		SOIL PREPARATION & SEEDING		THINNING & MOWING		HARVESTING				THINNING	MOWING	THINNING	
OTHER TRUCK " "		HARVESTING				HARVESTING			SOIL PREPARATION, SEEDING, THINNING, MOWING				
CITRUS 18,000 A.		PICKING, HAULING									PICKING, HAULING		
SEASONAL MEN	17,175	10,550	7,995	14,810	8,975	9,150	6,655	6,945	21,225	24,530	26,675	25,845	
YEAR-ROUND WORK REQUIRES 4,215 LABORERS	-a- TOTAL ACRES = 81,200						-b- TOTAL ACRES = 42,000						

Figure 1.—Monthly distribution of seasonal labor requirements by crops and by operations in Yuma, Pinal, and Maricopa counties, respectively. The labor needs of Yuma County are most evenly balanced throughout the year, those of Pinal are largely concentrated in the fall and winter season, while those of Maricopa stand between.

Diversity of seasonal crops not only brings balance in seasonal labor requirements but increases year-round labor

The hired labor requirements of Maricopa County stand somewhere between those of Yuma and Pinal with respect to year-round and seasonal help. Although having less than three times the crop acreage of Pinal County, the year-round labor requirements of Maricopa County are almost five times as large. Maricopa requires 4,215 year-round hired men as compared with 860 for Pinal. Without doubt the diversity of crops in Maricopa County has much to do with its relatively high number of year-round laborers, although it falls short of the year-round requirements of Yuma. Were the requirements of Maricopa as high as those of Yuma in comparison with total crop acreages, there would be needed about 6,500 year-round men to do the regular work. The requirements for seasonal labor in Maricopa County are high, as would be expected in view of a cotton acreage exceeding 128,000, besides over 40,000 acres of truck crops. They are high but their distribution from month to month is not by any means as extreme as those of Pinal County. The extremes of seasonal requirements range from 6,600 men in July to 26,600 in November, a ratio of about one to four. This is a little above the ratio of one to three and a fraction (3.19) for Yuma but far below the ratio of one to thirteen and a fraction (13.58) for Pinal. This more equitable distribution of seasonal requirements is largely due to a diversity of special crops and the proportionally large acreage in alfalfa. Moreover, the considerable acreage of spring lettuce and cantaloupes on the one hand and of citrus fruits on the other tends to round out the seasonal labor demand during some of the months that are otherwise slack (Fig. 1 and Table 4).

Seasonal labor requirements are preponderantly long-term

As pointed out earlier in this report, many seasonal operations last for a period of months and furnish extended employment. Others are of short duration. Cotton chopping is a good example of short-term seasonal work. The growth of the cotton plant determines the time within the span of which chopping must be done if the crop is to mature satisfactorily. Strawberry picking is another short-term seasonal operation. So with lettuce thinning in the Salt River Valley. In the Yuma Valley, lettuce planting is extended through a period of weeks and thinning consequently extends over a longer period than in Maricopa County. So far as individual fields are concerned, short-term seasonality obtains, but the Yuma Valley as a whole has extended the thinning season so that it becomes long-term seasonal work. Climatic conditions make this possible. Cotton picking is long-term seasonal work as is also making and baling hay.

Analysis of hired labor requirements shows that by far the greater part of seasonal labor requirements are long-term. Seasonal labor requirements in the five major irrigated valleys of

TABLE 4.—MONTHLY VARIATIONS IN SEASONAL LABOR REQUIREMENTS, FIVE COUNTIES, ARIZONA, 1942.*

Month	Variations by months in numbers of seasonal laborers required (lowest number required equals 100)						
	Graham	Maricopa	Pima	Pinal	Yuma	Total	
January	1,620	258	264	749	199	262	
February	1,529	159	189	153	175	145	
March	437	120	174	100	216	106	
April	100	220	100	201	235	165	
May	543	135	161	373	188	139	
June	434	137	206	325	209	138	
July	334	100	222	281	212	112	
August	331	104	217	191	149	100	
September	683	319	379	869	181	296	
October	1,317	369	679	1,198	100	366	
November	1,783	401	718	1,358	144	410	
December	1,723	388	406	1,316	319	405	
Index	17.83	4.01	7.18	13.58	3.19	4.10	

*Based on seasonal labor data in Table 1.

Arizona very largely give opportunity for extended employment and thus differ from the requirements for fresh fruit and berry harvests which of necessity are definitely short-term. Yuma County furnishes the best combination of opportunities for steady employment. Almost one half of the man-day requirements are met by year-round laborers while by far the greater part of the remaining requirements are long-term. The requirements of Maricopa County are strongly of the year-round and long-term kinds (Table 5).

TABLE 5.—DISTRIBUTION OF HIRED LABOR REQUIREMENTS AS YEAR-ROUND, LONG-TERM AND SHORT-TERM, FIVE COUNTIES, ARIZONA, 1942 (PER CENT).

Requirements	Graham	Maricopa	Pima	Pinal	Yuma	Total
Year-round	18.5	32.7	29.0	17.6	47.8	30.0
Long-term	78.3	57.7	61.5	77.7	44.6	61.9
Short-term	3.2	9.6	9.5	4.7	7.6	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Must clearly define man-day requirements in terms of man-force required

A distinction rarely if ever made in discussions of farm labor requirements has to do with the definition of *numbers of man-days of work* required during a given period in terms of the *numbers of men necessary to accomplish this work* in a given period of time. There is a difference between the number of days of work that year-round laborers turn out during a month and the number that seasonal workers turn out. Year-round laborers, all in all, work 26 days a month. Some, such as milkers, work every day but have several hours of free time between morning and evening milkings. Others put in less time.

Seasonal laborers under conditions of full employment average about 15 days of work a month

Careful studies of seasonal labor in Arizona show that in no cases do they average nearly as many days a month as year-round workers. Cotton pickers average about 3½ full days' work a week or about 15 days during a month. Some pickers do a full 5½ days a week or 24 days a month. They are few. Practically none are known to pick 6 days a week or 26 days a month. Citrus workers living on or near the farms where they are employed, taking the year as a whole, do little better than cotton pickers. In the case of one 200-acre orchard and under favorable circumstances, the seasonal workers averaged between 16 and 17 days a month during the 12 months ending in June, 1942. They might have worked at least 22 days, for labor has been scarce during 1942. The orchardist described a typical break in a week's work. Only six of a picking crew of ten showed up one morning. None of the four absent men came to work that day. Explanations were in terms of bad liquor. One laborer imbibed too freely. Then he

threatened to kill his wife. Two companions, also somewhat inebriated, spent part of the night restraining the murderous one, and a fourth was injured slightly as he gave a helping hand during a resulting scuffle.

Many seasonal laborers, especially those who have no dependents, or perhaps only one or two, manage some way to get in even fewer than 15 days of work a month. There is work available, and they seem willing to work, but obstacles of one kind or another, one of the most formidable being the work habits they have formed, keep them from attaining anything like a full month's work. Then, too, some time is often lost in looking about for a higher rate of pay or more favorable working conditions. Without question, unfavorable weather accounts for some loss of time, but this factor plays a less important part in Arizona than in many other states.

The use of year-round men saves laborers

An illustration of the distinction between numbers of men required and numbers of man-days of work obtained may be had by observing the labor force at work in a given county during some month of the year. Take Yuma, for example, and note the labor force for the month of September. With 1,115 year-round laborers on the job 26 days each month there are rendered 28,990 man-days of work. In the same month it takes a force of 1,965 seasonal laborers to turn out 29,475 man-days, which is just a little more than the results from 1,115 year-round men. In other words, about 64 per cent of the laborers turn out only a little more than 50 per cent of the total man-days of work.

Poor work habits need to be corrected

An Oklahoma woman, unmistakably Irish in origin, herself a migratory laborer, when asked why it was that so many cotton pickers worked only part time without regard to weather or availability of ripe cotton, replied: "Mister, lots o' them people ain't got no guts in their stomach."

Without question, poor health, faulty work habits, and years of economic frustration have done much to reduce the capacity of thousands of farm laborers for steady and satisfactory employment. Granting these shortcomings, it is not to be forgotten that this hard-bitten woman would have none of the current mushy explanations. Her diagnosis went to the bone. Hadn't she seen men who were sound as a Missouri mule come "belly-aching" in from the field at 3 o'clock on a late October afternoon because the sun was getting too hot.

Essentially, the adjustments necessary to the improvement of this situation are not by any means all of an economic nature. High wage rates tend to aggravate rather than correct these conditions. One must cut more deeply into the kind of human nature that has been developed on a lackadaisical philosophy which has put little stress on personal enterprise, obligation to one's em-

ployer, obligation to one's dependents, and, if you please, obligations to country and to God.

Long-term employment selects suitable laborers

It seems necessary, however, taking crop requirements and the qualifications and work habits of a great deal of the available labor into consideration, to continue the employment of numbers of seasonal laborers. Nevertheless, it should be said that the greater the extent to which farm seasonal work can be organized so as to furnish long-term stretches of employment, the more effectively farm work will tend to select workers of suitable work habits. Such a tendency would probably result in an increased use of year-round laborers in place of seasonal. This seems particularly advisable in a time of real labor shortage such as farmers are now experiencing. If production programs did not interfere, many farmers would probably modify their farming operations to include more year-round help. The necessities of war, however, call for increased production of long staple cotton, among other crops. When ready to harvest, this crop cannot be allowed to stand as in the case of short-staple cotton. This is especially true of American-Egyptian cotton. Unpicked long staple deteriorates much more rapidly than short staple.

CHANGES IN HIRED LABOR REQUIREMENTS SINCE 1935

Comparison of the results of a study of hired labor requirements for 1935 and of the study here reported shows marked increases in the hired labor requirements of the irrigated farms in the five main irrigated farming counties of Arizona. A total of 1,569 man-days of hired labor is required in 1942 for every 1,000 man-days required in 1935. Year-round labor requirements as compared with seasonal have not changed materially. The figures are: 1,528 man-days of year-round labor are required in 1942 for each 1,000 man-days required in 1935, and 1,588 man-days of seasonal labor for each 1,000 in 1935. Conditions at present favor the use of more year-round men.

Factors associated with changes in requirements furnish data for interpolation

The major factors associated with the changes in *total* man-day requirements are:

1. Changes in the total acreage of principal crops.
2. Changes in the numbers of bales of cotton harvested, allowing for the extra labor required to pick long-staple as compared with short-staple cotton.
3. Changes in the number of acres of lettuce and other truck crops.
4. Technological changes, such as the substitution of mechanical for animal power in farm operations.
5. Changes in the farmer's ability to pay.



This man will pick 100 pounds of American-Egyptian cotton in a day.

6. Removal of family labor from farms in to war industries and the armed forces.

Since the results obtained in the field study of labor requirements in 1942 as compared with 1935 were practically identical with results obtained by increasing the man-days required in 1935 in accordance with the changes indicated by these factors, it seemed advisable to apply the same method in computing man-

day requirements for each year between 1935 and 1942. The results for total as well as for year-round and seasonal requirements are shown in Table 6.

TABLE 6.—HIRED LABOR REQUIREMENTS IN FIVE COUNTIES, ARIZONA 1935-42, YEAR-ROUND AND SEASONAL.

Year and kind of labor	Hired labor requirements (man-days)	Year and kind of labor	Hired labor requirements (man-days)
1935		1939	
Year-round	1,360,000	Year-round	1,600,000
Seasonal	3,040,000	Seasonal	3,805,000
Total	4,400,000	Total	5,405,000
1936		1940	
Year-round	1,546,300	Year-round	1,600,000
Seasonal	3,674,700	Seasonal	4,098,000
Total	5,221,000	Total	5,698,000
1937		1941	
Year-round	1,600,000	Year-round	1,965,000
Seasonal	4,929,000	Seasonal	4,349,000
Total	6,529,000	Total	6,314,000
1938		1942	
Year-round	1,600,000	Year-round	2,077,600
Seasonal	3,593,000	Seasonal	4,827,800
Total	5,193,000	Total	6,905,400

Year-round labor requirements were assumed to be largely determined by the following factors:

1. Changes in the total acreage of the principal crops.
2. Changes in the farmer's ability to hire year-round help, as reflected by changes in cash farm income.
3. Changes in the numbers of available year-round workers.
4. Technological changes.
5. Extent and character of crop diversification.

Year-round labor requirements for each year between 1935 and 1942 were calculated with particular attention to changes in total acreages of principal crops and changes in diversification as indicated by acres of truck crops. The difference between the number of man-days of year-round labor and total man-days represented seasonal requirements.

Seasonal labor requirements are largely determined as to volume and distribution throughout the year by:

1. Acreages in specific crops that have high seasonal labor requirements.
2. Variety of special crops and the spacing or spread of their peak requirements throughout the year.
3. Availability of laborers, particularly as this prospect affects operators' plans for planting.
4. Technological changes.

Year 1942 marked by swift change in availability of farm laborers

Practically every class of laborer usually available for farm employment during the decade of the thirties was in demand for nonagricultural employment by the spring of 1942. War industries, the draft for the armed forces, voluntary enlistments, all were drawing heavily upon the thousands of young men from Texas, Oklahoma, and Arkansas; upon resident young Mexican workers; and upon the Papagos, Pimas, and Apaches; formerly available for farm employment. The taking up of this deficiency in man power by technological adjustment is being somewhat hindered by the operation of priorities with respect to farm implements, tractor tires, pump motors, and other machinery, as well as by the hand labor required in producing war-essential crops such as American-Egyptian cotton.

CHANGES IN THE COSTS OF HIRED LABOR SINCE 1935

This study did not go into the question of farm wage rates. The rates used in calculating the costs of hired labor were those published by the Bureau of Agricultural Economics, U.S.D.A., in the *Farm Labor Report*. Figures for midyear, July 1, of each year were applied to the labor requirements for the entire year. In this way the costs of each year's labor requirements from 1935 through 1942 were determined.

Costs of hired labor advance more rapidly than cash farm income

The costs of year-round and seasonal labor on irrigated farms in Graham, Maricopa, Pima, Pinal, and Yuma counties in 1935 were \$7,800,000. Cash farm income of farmers in these counties in that year has been estimated to have been \$34,500,000. Using

TABLE 8.—COSTS OF HIRED LABOR COMPARED WITH CASH FARM INCOME, FIVE COUNTIES, ARIZONA, 1935-42.

Year	Costs of hired labor*		Cash farm income†	
	Dollars	Per cent change	Dollars	Per cent change
1935	7,852,000	100	34,500,000	100
1936	10,148,900	129	36,700,000	106
1937	13,381,400	170	44,000,000	128
1938	10,673,400	136	36,400,000	106
1939	11,498,200	146	39,000,000	113
1940	12,113,500	154	42,000,000	122
1941	14,594,000	186	57,000,000	165
1942	20,975,900	267	75,000,000	217

*Obtained by applying farm wage rates without board by the month to year-round requirements and rates per day without board to seasonal requirements.

†Estimated by subtracting the value of cattle and calves from the total estimated cash income of Arizona farms, so as to take account only of crop production, dairying, etc., in irrigated valleys. See *Agricultural Situation*, 1936, 1937, 1938, 1939, 1940, and 1941 and *Arizona Agriculture*, 1942; George W. Barr: Arizona College of Agriculture publications.

these figures as bases of comparison, it was found that the total costs of labor each year advanced rapidly through 1936 and 1937, and again in 1939, 1940, and 1941. The advance in 1942 has been sharply upward. Cash farm income in these counties made some advance in 1936, rose sharply in 1937, and fell back the next year failing to reach or surpass the 1937 lead until 1941. The increase since 1941 promises to be the greatest of any year since 1935 (Table 8).

Costs of hired labor in 1942 promise to run close to \$21,000,000, which is represented by an index of 267 points as compared with 100 in 1935. Cash farm income has risen from 100 to 217 during the same period.

Farm wage rates make greater gains during recent year than during previous 7 years

During the years 1935 through 1941, wage rates by the month without board gained 34 points, and rates by the day without board gained 28 points. Gains during the 12 months following July 1, 1941, amounted to 45 points for wages by the month and 39 points for wages by the day, both rates being without board (Table 9).

TABLE 9.—FARM WAGE RATES, ARIZONA, 1935-42.*

Year	Wage rates per month without board, July 1		Wage rates per day without board, July 1	
	Dollars	Per cent change	Dollars	Per cent change
1935	45.50	100	1.80	100
1936	53.25	117	1.90	106
1937	53.25	117	2.05	114
1938	53.75	118	2.05	114
1939	57.00	125	2.10	117
1940	57.00	125	2.10	117
1941	60.75	134	2.30	128
1942	81.25	179	3.00	167

*From *Farm Labor Report*, midyear publication, B.A.E., U.S.D.A.

Wage rates related to farmer's ability to pay

It is significant that rates of pay for farm labor by the day, by the month, or for piece work such as picking cotton have at no time been lowered but rather substantially increased during the years 1935 through 1940. These were the years during which numbers of laborers available for farm work continued to increase (Table 10). This is reliable support for the proposition that farm wage rates are more generally affected by the farmer's ability to pay (Table 8) than by the scarcity or abundance of labor. Even in times of greatest labor scarcity, ability to pay still sets the limits of wage increases, presumably set in motion by competitive bidding for laborers. In more normal times the rates of wages are more definitely affected by the farmer's willing-

ness to satisfy the reasonable living needs of the laborer than by a strictly competitive bidding. Compare R. L. Adams, "Farm Labor," *Proceedings of Western Farm Economics Association*, 1937, page 71.

CHANGES IN NUMBERS OF FARM LABORERS IN ARIZONA

Term, "resident laborers," defined

Numbers of laborers available for hire on farms in the five main irrigated farming counties shift with the change of the seasons. On or about the first of April the rush of spring work begins. This marks the end of the slack period following the close of cotton picking so that great numbers of migratory laborers who came in during the preceding October and November have gone their way. It is at this time that a count of all farm laborers on farms and in towns most nearly arrives at the number of *resident* farm laborers. Only about one third of these resident farm laborers are year-round men. The remainder are seasonal laborers and work at anything from ditch cleaning to picking cotton and harvesting truck crops.

Migratory laborers come in very largely for the cotton picking season. They supplement the resident seasonal labor supply living on farms and in small towns. In addition to these seasonal laborers, both migratory and resident, an important source of seasonal help is found in the larger towns and cities. These workers, many of them Mexican, are not *casual* for they pick cotton year after year but are otherwise employed in towns and cities at nonagricultural work. They are not included among resident farm laborers for they live in towns and cities of 2,500 or more persons and do not work steadily on farms. Strictly they are nonmigratory, one-crop seasonal workers. Mine workers who pick cotton each year are in the same classification. Another source of seasonal workers is found on the Indian reservations of southern and central Arizona. These are not counted as resident laborers unless they live on farms and in small towns off their reservations.

Numbers of resident laborers increase then decline during the years from 1935 through 1942

A field survey as of April 1, 1936, showed that there were 20,400 laborers in Graham, Maricopa, Pima, Pinal, and Yuma counties, whose usual occupation was farm labor and who lived on farms and in small towns (less than 2,500 population). Another field survey as of April 1, 1942, showed only 800 more or a total of 21,200 farm laborers. After taking account of the movement of agricultural population westward from the West South Central States and of increases in year-round and long-term seasonal labor requirements in Arizona, as well as of some natural increase in numbers of laborers, estimates of the numbers of resident laborers were supplied for the year 1935 and the years

intervening between 1936 and 1942. These estimates indicate that the slight increase of resident laborers as between 20,400 and 21,200 is not the result of a straight line trend but results from a comparison of two points in a rather flat concave curve. Increases in numbers during the years 1935 through 1940 were followed by decreases during 1941 and 1942, a loss of 1,800 occurring during the current year (Table 10).

Regardless of requirements, numbers of migratory laborers increase then decline during the years from 1935 through 1942

As has been pointed out, migratory laborers come into Arizona very largely during the season from September through November, and some stay over into the following January and February. This season is not, like fruit or berry picking seasons, short-term. It is without question long-term and may continue for individual laborers from 3 to 5 months. These migratory laborers supplement the resident seasonal labor force, and numbers of them become established in the West. Among Arizona's farm operators there are numbers of men who came into the state as seasonal laborers and, for a time, were truly migratory.

TABLE 10.—NUMBERS OF LABORERS AVAILABLE FOR HIRE ON FARMS, APRIL 1 AND DECEMBER 1, 1935-42, FIVE COUNTIES, ARIZONA.*

Year	Resident farm laborers† April 1	Migratory and other seasonal laborers‡ December 1	Total laborers available for hire on farms December 1	Total laborers required on December 1
1935	19,300	15,000	34,300	35,000
1936	20,400§	21,200	41,600	42,000
1937	22,000	23,600	45,600	47,300
1938	24,000	24,000	48,000	42,000
1939	25,300	24,500	49,800	43,000
1940	25,800	24,200	50,000	45,000
1941	23,000	22,000	45,000	47,000
1942	21,200§	?	?	56,000

*The complex migration pattern by means of which the number of farm laborers in Arizona steadily increased through the 4 years after 1936 in addition to the sharp increase of 1936 was somewhat of a dual nature. Apparently a good many migrants were to be found at any moment who had arrived during the preceding 3 or more years and who were being stabilized within the state. Other migrants might be found who came in during the preceding year and were looking westward with the idea of making another move soon. The sum of the first class of migrants plus the back flow of those who went to California and were turned back for want of a job gave rise to the steadily increasing number of laborers available for farm work in Arizona.

†Resident laborers are by definition those on farms and in towns of less than 2,500 on April 1 of each year.

‡The estimates in this column include resident seasonal laborers, laborers in larger towns and cities who work in the fields during peak seasons, Indians from reservations, and laborers from other states.

§Estimated by field survey.

How have the numbers of migratory laborers fluctuated during the past years? Regardless of requirements, the numbers of migratory laborers in Arizona on December first have increased during the years 1935 through 1940 and decreased during the years 1941 and 1942 (Table 10).

Migration of farm people westward increases numbers of seasonal laborers

It must not be concluded that seasonal labor requirements had no bearing on the numbers of migratory laborers coming into the state, but the relationship was general and numbers coming in did not follow the requirement pattern closely. They rather were closely related to the volume of farm workers migrating westward from the West South Central and other states and to the extent of the back flow from California as the tide of population movement reached the coast, backed up into the valleys of California, and settled back farther inland. Then as war industries began to soak up workers from farms and towns as well as cities, the numbers of migratory workers fell off without regard to increasing farm requirements.

Peak numbers of migratory workers in Arizona were reached on or about December 1, 1940. Total hired farm laborers on that date in the five counties studied, including resident laborers, seasonal laborers from Indian reservations, and cotton pickers from large towns and cities, as well as migratory laborers, were estimated at 50,000. This was 3 years later than the season of peak requirements which came with the bumper crop of 1937. Requirements had fallen immediately with the sharp cut in cotton acreages in 1938, which cut was continued in 1939 and 1940. Increases in other crops, however, brought requirements up again, but not until 1942 have they equaled or exceeded those of 1937. Nevertheless, the numbers of migratory laborers coming to Arizona for the fall months or remaining in Arizona throughout the greater part of the year constituted an increasing force of laborers available for employment on farms. The numbers of those remaining beyond April 1, added to the natural increases in the resident laborer population of working age, increased the total of resident laborers considerably in 1936, and more each year thereafter through 1940. Moreover, the numbers of migratory laborers coming in during the fall increased sharply in 1936. Each fall thereafter, including 1940, brought further but less spectacular increases. Not so much the crest of the wave of displaced farmers moving westward as its backwash from the West, swollen by successive but smaller waves of migrants who were following their neighbors westward, continued year by year to raise the previous high water mark of migratory labor in Arizona. California farm labor requirements were not sufficient to absorb all who wanted to work, and neither were those of Arizona (Table 10).

Farm laborers' ranks thin out in 1941

By fall in 1941 the effects of the nation's rapidly expanding war industries and growing armed forces upon farm labor supplies were plainly seen. Laborers coming to Arizona for the fall season considerably decreased in numbers. The effects of these decreases were evident with respect to resident laborers as well, so that the total resident supply on April 1, 1942, was the lowest it had been in 5 years.

PROBLEM OF MEETING REQUIREMENTS IN 1942

Ordinarily the resident labor supply takes care of all farm labor requirements from early spring until sometime in September when the ripening cotton overtakes the local pickers and calls for extra hands. This year the first evidence of an actual shortage of seasonal workers appeared at cotton chopping time in May. A considerable acreage was chopped late. Another evidence aroused much comment. Windrows of overcured alfalfa hay stood waiting the pickup baler, the succeeding crop already grown some 8 or 10 inches tall. Bales of hay stood in the fields waiting to be hauled, while the new crop grew green around them. Irrigators were scarce. A head of water went untended for hours until the operator, himself having gone the 24-hour round without sleep, could persuade a night irrigator to do with less sleep and take over part of the day.

Governmental programs complicate problem of shortages

A strong feeling prevails among farmers and small town business and professional men that many governmental programs, organized to bring relief to the unemployed during the years of recovery, are operating now to hamper the national effort. Food stamps, intended to enrich the diet of the poor, permit some of these poor to eat as usual on less work. A milker quit his job on a dairy farm 6 miles west of Phoenix because he could no longer get food stamps, while his underemployed brother-in-law who wouldn't learn how to milk could get them and eat well. An United States Employment Service employee in a county seat notified a registrant that private employment was available. The man came in and inquired, "How much can I make a day?" "Six dollars." "How much pay for overtime?" "Time and a half." "How about food stamps?" "This cuts them off." "How about getting back on W.P.A.?" "Could get back but other jobs would be waiting." "Well, guess better go home and talk it over with the wife." The job was on a new flying field.

Several agencies, not necessary to enumerate, are observed by these rural American citizens to hamper the all-out war effort and to undermine the morale of the worker himself. As one farm laborer who appeared at the Farm Placement desk in Phoenix said, referring to his emergency employment: "It isn't good for a man to stay on them there things too long."

It seems quite plain on the face of it that the government has by no means convinced the farmer and the small-town businessman that many of the agencies set up during the years 1933-35 should be continued willy-nilly and indefinitely without regard to changing conditions. These men feel that the expense of maintaining these agencies is not justified at this time and that their operation hinders the war effort. If the government must continue with these "emergency" programs, vintage of the 1930's, it should do a more effective "educational" job with its rural constituents than it has done so far.

Termites get into the foundation timbers

One of the most subtle of the difficulties facing the farmer as well as other employers in these days of labor shortage is the influence of the idea that work is a formality rather than a productive effort. Said the editor of a county seat newspaper: "I have the utmost difficulty in finding people who have even the attitude that they should work steadily and effectively at a job. Their idea is that if they report once a day for 5½ days a week they are entitled to a week's pay for a full week's work."

A small businessman said: "We have been advertising leisure and a too abundant production pretty effectively. Now it is hard to make the little fellow believe that he really should work hard, long hours, and 6 days a week. He has been taught to accept production as a matter of course. All he has to do is to consume."

An operator who is developing an orchard as well as running a business had so much difficulty in finding a common laborer who would work at digging tree holes, 8 hours a day, during a slack season early last spring that he decided "that many a man had softened up on raking instead of digging and no longer chose to work at anything hard." He agreed that many good things had been done during the past 9 years but went on to say "that some of these were now being used by the authorities to fasten the poor upon the backs of the common man, the fellow who pays his bills and meets his taxes."

A high school principal indicated that he had been more than usually successful in promoting the sale of war savings stamps among the pupils of his school. Then pointing out of the window at a crew of laborers he added the trenchant remark: "These stamps bring in just about enough cash every 15 days to meet the government's payroll for that project. Will you tell me what that project has to do with whipping the Axis?" It should be added that within 3 weeks of the date of this interview a field of American-Egyptian cotton just 5 miles away stood in need of chopping until finally the operator put a mechanical chopper to work. While the rate of pay offered would have yielded one and three fourths times the weekly pay received on the federal project, the workers would have had to make each hour count in productive effort. No leaning on handles would do it. Ap-

parently some men have sold the still vigorous years of their later maturity for a mess of pottage called "security."

Extraordinary sources of farm labor in the state¹

An extraordinary source of farm labor which has been given serious attention by farmers and officials is that to be found in the employment of older school youth. A superintendent said: "If an emergency comes this year from lack of labor for our farms, I believe it is the duty of school superintendents to adjust the daily schedule so as to allow able pupils to help with the harvest." There is nothing new about the idea of American farmers using their children when needed. Older, able-bodied boys have, in times past, done the equivalent of many a man-day's work after school. The idea of adjusting the schedule so as to facilitate after-school work is more unusual and might become a necessity in some communities.

It has been estimated that the equivalent of a force of 1,600 men working full time might be realized by using male youths in school after school hours. There are some 9,600 such youths in school in the rural communities of Arizona. This estimate takes pretty full account of available man power from this source. Some high school girls may want to work as well, but it seems unadvisable to raise the above estimate a great deal on that account.

Another extraordinary source suggested is in the larger towns and cities and consists of men and women of all ages, for some reason not fully employed, who might be induced to work in the fields during October, November, and possibly December. Some of these are floating laborers and others are resident persons who make it a practice to pick cotton every season. These include Mexicans, Yaquis, Negroes, and others. Reasonable estimates place their number at no more than 1,000 persons. These are over and above the supply of laborers to be drawn from W.P.A. and N.Y.A. projects. Numbers from the last named sources would probably not exceed 1,500.

A source of workers which could pretty well be depended upon during the 1930's and which has now practically dried up was the mining industry. Each year several hundred miners and their families took time off during the fall months and, as one miner put it, "came up from underground and worked out-of-doors to put on a little color." This year a mine worker will, first of all, find it very difficult to leave his job for any length of time and practically impossible to leave the mining industry. Then, if he does find it possible to work above ground in some other industry it will probably be at war construction or some similar kind of employment. It is not likely that he will pick cotton.

¹See Fay W. Hunter, "On the Farm Labor Front," *The Agricultural Situation*, U.S.D.A., March, 1942, pp. 21-23.

Armed forces and war industries deplete reserves of Indian labor

Careful inquiry as to the numbers of Indian laborers available from reservations in southern and central Arizona shows that at the most no more than 2,200 laborers may be expected to work on farms off of the reservations at any one time. Practically all of these will be picking cotton during September through December, but not necessarily in full force the entire time. This estimate covers the high numbers working on farms at any one time. Almost one half of these are Papagos, and the remainder are Pimas, Apaches, Yumas, Maricopas, and other southern Arizona tribes, the Pimas coming close to the Papagos in numbers. The copper mines employ many Indians. Perhaps the Papagos follow this line of employment more than any other tribe partly because of their proximity to the mines at Ajo. As many as 550 men from this one reservation have been thus employed at one time, during the past year. The Apaches furnish workmen for the lumber mills of northern Arizona and more than proportionate numbers of men for the armed forces. Since few of the Navajos work on irrigated farms, the labor force from this reservation will relieve the shortages of farm labor only indirectly and insofar as it meets local demands in competing enterprises.

Midsummer, 1942, Arizona farmers face greatest known labor shortage

Less than one half of the labor force required by November first was on hand on the fifteenth of August. Assuming that the resident laborers were as numerous as on April 1, and adding all extra laborers believed to be available within the state, a total of only 27,500 workers could be counted upon with any degree of certainty. This was in the face of an estimated requirement of over 56,000 laborers on November 1, which called for 28,500 more laborers than were available in the state on August 15.

Out-of-state labor forces immobilized by lack of rubber

Such numbers of laborers as may be available after peak seasonal requirements have passed in Texas, Oklahoma, California, and other states, are largely immobilized by lack of the necessary tires to permit them to travel any distance. That they are otherwise available seems to be a reasonable assumption. Assuming the most favorable turn of events with respect to transportation facilities, it is extremely doubtful whether more than 12,000 laborers can be made available from these out-of-state sources. Exceedingly favorable cotton picking rate differentials might attract as many as 3,000 more.²

Some Japanese labor may be recruited

Announcements have been made by the military authorities in charge of the western regions which open the way for farmers

²See Conrad Taeuber, *Rural Man Power and War Production*, B.A.E., U.S.D.A., Washington, D.C., February 13, 1942.

to recruit labor from among the Japanese *evacués*. Japanese volunteers for farm work may be employed under conditions specified by the military and civil authorities charged with the care of these people. Farmers must furnish transportation to and from the fields where they work and must pay prevailing wages. The number which may be depended upon for steady employment through the months of October, November, and December is quite uncertain at this writing.

American and Mexican governments announce arrangements for controlled flow of labor across international boundary

On August 7 an Associated Press release was circulated in Arizona newspapers announcing that on the day before an arrangement was made between the governments of the United States and Mexico providing for a controlled flow of labor across the international boundary to help cover the labor shortages during seasons of peak requirements in Arizona, California, Texas, and other states. If labor supplies materialize from these arrangements and other supplies are forthcoming as estimated, the demand for laborers from Mexico during November and December will exceed 12,000, with somewhat lower demands during the earlier weeks of the season. At the present writing it appears that even under the most favorable circumstances, the actual numbers of Mexican laborers that Arizona farmers will get from across the border will fall short of requirements by a considerable amount.

Recruiting and using Indian labor can be more effective

Following are some points for farmers to keep in mind in recruiting and using labor from Indian reservations.

1. Approach should be made through the superintendent of the reservation agency and thence the work of recruiting will normally proceed through the tribal councils. This is necessary because Indians have their crops to harvest and their livestock to look after. Arrangements to take care of these matters while furnishing laborers for employment off of the reservation have to be made with considerable care and knowledge of the local economy.

2. It is well to have among any considerable number of Indian laborers one or more of their older chiefs to keep a hand on their goings and comings as well as on their doings in general. Corresponding to this plan of leadership is the recruiting of workers from the same village or from several neighboring villages to work together.

3. Acceptable supervision of Indian laborers is essential to their successful employment. Foremen and other kinds of overseers, especially weighers in the cotton fields, should be selected with care. Especially must they give the Indian fair treatment. Weighing must be accurate and all records must be clear and understandable to the laborer. Some operators carefully observe

their crews as they first get under way and select one of the Indian workers to act as foreman or as weigher. He is often an older man who appears to have weight with the other Indians.

4. Health measures are important. Contagious diseases must be watched. Five Papago children died of measles in the cotton areas during the cotton picking season of 1941. This loss of life seemed quite uncalled for. Not only should the standard controls against contagion and infection be imposed but a certain amount of information about personal and group hygiene should be disseminated. Pure water should be easily available, and sanitary equipment provided.

5. Schooling for children at least up to 14 years of age should be provided in case entire families move into the cotton fields in considerable numbers and for any length of time. It is quite within the realm of possibility that the Indian authorities would provide teachers and classroom equipment including books and pencils. The local community or the state would provide shelter, benches, and drinking water.

6. Farmers can do much to help Indian laborers secure their necessary food supplies, shirts, overalls, hats, shoes, dry goods, and miscellaneous household goods without indulging the undesirable practice of loafing a great deal in town. Liquor and the bootlegger waylay the Indian while in town and too often rob him of his earnings. One of the reservation superintendents strongly advocates the setting up of commissaries in the open country, by farm operators of course. Thus the Indian would be able to make necessary purchases, visit with his fellow workers, and enjoy a Saturday night's relaxation without the aid of the white man's firewater.

7. Another suggestion for bettering the Indian's lot as a farm laborer has to do with his spare time gatherings for recreation. It is in many ways closely related to the idea of open-country commissaries. In a word, there might be provided an open space of an acre or so in size with hard-packed surface for outdoor dancing. Many southern Arizona Indians such as the Papagos enjoy social dancing and require only a level, hard-surfaced earthen floor as equipment. They furnish their own orchestra, usually a fiddler and guitar player, and use some really attractive adaptations of Mexican and Spanish music. If thought advisable, in the case of especially large gatherings, the assistance of the Indian police service might be requested.

8. Still another provision should be made. It would have to do with holding some of the laborer's earnings against a day of need. Some thought should be given to a sort of banking arrangement whereby a part of each day's wage would be impounded or laid away until the end of the season. When the work is finished and the Indians return to their homes they would have ready cash as well as a supply of overalls and shirts to show for their labor. To get this ready cash is one of the reasons they leave the reservations, but often, as things are, they return with

nothing to show for their labor but a few work clothes. The remainder of their earnings has been frittered away.

9. It seems advisable that a local farmer group such as the Farm Bureau labor committee should give attention to a program of satisfactory employment practices generally in line with the suggestions made above. This organization would co-operate fully with the Farm Placement Service of the U.S.E.S. and the Farm Security Administration in recruiting and placing labor but would be more especially concerned with the improvement of working conditions and the stabilization of farm labor forces.

Recruiting high school youth is a community responsibility

Recruiting and supervising workers from among the youth in high schools has been suggested by many persons from various walks of life. The following points seem worthy of careful consideration.

1. Generally speaking and especially in the large town and city high schools, recruiting should be subject to and probably carried on by the supervisory and teaching staff of the school.

2. Both boys and girls should be encouraged to volunteer to work in the fields, the nature of the work and the wages to be received being clearly set forth.

3. Classroom schedules should be so organized as to permit work in the fields a stipulated number of hours per day, such as for example, from 1 until 6 o'clock. This schedule arrangement would be effective through the season of peak requirements on local farms, as for example, the period from October 15 to December 15 in Casa Grande community.

4. Volunteers for farm employment should be organized into project groups, each group under the immediate supervision of a teacher or a group leader with a check of daily attendance, achievement, and other items made by the teacher or a group leader appointed to assist the teacher.

5. Transportation from the school to the fields and home should be arranged so as to utilize that part of the school's transportation budget normally assigned to the number of pupils volunteering. Additional expenses should be borne by the farmer employers, either individually or through their farm labor committee or other organization.

6. It is recommended, in the case of a 4- or 5-hour stretch of hard work in the fields, that the school authorities arrange for the distribution of milk, fruit juices, sandwiches, and such in the fields where their pupils are employed, the going charge for these being collected from the pupil wage earners who desire a midafternoon lunch. The point of this recommendation is that those who work in the fields might contribute their best effort each hour of the afternoon and build up both energy and achievement records.

7. The local farmer labor committee of the Farm Bureau or some similar farmer's organization and the local school board and

teaching staff probably should take the initial steps to recruit labor from the high schools. Clearance may be arranged with the county office of the United States Employment Service so as to avoid duplication of effort. However, it should be clearly and definitely announced that this labor recruiting activity is a community enterprise and that it will be handled as such. High school pupils so employed should not be required to register with the United States Employment Service. Such a procedure would unnecessarily consume the time of the U.S.E.S. employees when other demands in recruiting labor in large quantities from outside the state should occupy their attention.

RECOMMENDATIONS

1. Failure of the agencies responsible for delivering men on Arizona farms when needed to save the 1942 crops is a cold fact as this is written, October 15, 1942. There can be no denial of the evidence. American-Egyptian cotton, a basic war commodity, is stringing out of the bolls in fields that contain from one tenth to one third as many pickers as are needed to harvest the crop by Christmas time. Meanwhile the fiber strength of this cotton, much needed for parachutes and other equipment, is falling prey to wind and rain. Other crops are waiting.

2. This failure, in the face of a detailed estimate of requirements and a practical knowledge of the location of labor supplies outside of the state, cannot be laid to individuals or to a single agency. The root of the trouble is to be found in divided responsibilities.

3. One federal agency, and one *only*, should be responsible for recruiting and assigning out-of-state laborers to Arizona farms. If the farmer himself is forbidden or at least effectively discouraged from recruiting labor from outside the state, then he must look to the central authority to do the job for him.

4. With respect to importing Mexican laborers, one federal agency and one only should be delegated responsibility for action in the matter. Advice may well be sought from several agencies, but a single agency must be made responsible if effective measures are to be taken to deliver labor when and where needed.

5. Recruiting and using Indians from reservations can be made more effective: if care is given to proceed through the superintendents of the agencies and through the tribal councils; if control and supervision of Indian workers is made the subject of more attention on the part of operators; if health measures are enforced and sanitary facilities provided; if supplies for Indian workers can be obtained without too frequent contact with liquor vendors; if simple facilities for recreation are provided; if some means of banking part of the season's earnings is devised; and if satisfactory employment practices are encouraged by local farmers' organizations.

6. Recruiting and using older school youth should, after properly informing the Employment Service, be conducted as a local school and community enterprise. Older youth in school should not be required to register with the Employment Service. Teachers should supervise work crews, and the quality of the work done as well as the quantity should be made a matter of record, pupil by pupil. Compensation should be at the going rates. Transportation should be arranged as to utilize the school's bus facilities as practicable, and additional services should be provided by the farmers. In the case of 4- and 5-hour stretches of hard work it would be advisable for the school authorities to provide for lunches—milk, orange juice, etc.—in the fields, the going charges to be collected from the young wage earners.

7. Recruiting and using persons otherwise employed in larger towns and cities can most effectively be carried on by civic bodies such as Chambers of Commerce acting in co-operation with local farmers' organizations. These recruits for farm labor can, in the nature of the case, work only for limited periods of time. A central register of fields to be harvested, their location, together with numbers of men required and when needed, will serve as a guide for the assignment of volunteer workers, singly, in small groups, or in larger bodies. This sort of emergency action is most effective when its scope is community-wide.

8. It is believed that the habitually short work week of seasonal laborers can be lengthened by a county-wide closing of all saloons and of all other liquor dispensaries on Sunday. The hours of closing should extend from no later than midnight Saturday until Monday morning. Local measures of this sort are being tried. As a result, many more laborers are showing up on Monday morning in shape for work, instead of on Tuesday, after a 3-day binge.

9. The pressure of public wrath should be directed against able-bodied idlers who loaf on the street corners and are known to eat regularly and to work little or none at all. Local ordinances strictly enforced can do much to help take these men off the streets and put them in the fields. They are a plain disgrace to a community, but it must be admitted that some of them are supported in their idleness by subsidies from the public treasury. This is no reflection on men who are disabled and receiving compensation. The people of the community know the latter from the former.

10. Bonuses and awards to laborers who stay through the months of high requirements and set up a record of achievement in farm work are worthy of more attention than has been given them to date. Farmers may well give thought to the idea of cash awards to laborers who stick with them through the season or through the year. These should be in addition to the going rates of pay. Also, public officials who are responsible for the more complete use of man power in the war effort should provide

awards of honor for farm laborers who work beyond the going number of days in the season and who excel in output per day.

11. In the face of growing shortages of man power it is recommended that the farmer give careful consideration to the matter of wages. Wage rates in Arizona tend to follow farm commodity prices, while the total yearly wage bill tends to outrun total cash farm income. Evidence shows that wage cuts were not made when labor was plentiful, so long as farm income did not suffer too badly. Rather, they were maintained or increased in rough accord with the course of farm prices. It is apparently up to the farmer to pay high wages and see to it that the laborer earns his pay. Rates of pay must not be so high that they encourage idleness. It looks bad to see laborers crowding the sidewalks of small towns several days of the week when the fields cry out for laborers. On the other hand, they must be high enough to show the farm laborer that he is getting fair treatment. Likewise, wages must be such that the operator can stay in the farming industry. It seems like poor tactics to cut off enterprises that can fully utilize man power in favor of enterprises that work 40 hours a week, when food and guns are equally essential. Governmental agencies may well co-operate with the farmer in balancing wage rates to secure an effective distribution of man power as between farms and factories.

12. Without doubt farm housing for farm laborers has not been entirely satisfactory. In some cases the most meager facilities were used from year to year, the only change being a shift from bad to worse. On the majority of farms, however, housing has been improved during the past several years. Progress in setting up better quarters for migratory and other laborers has been halted due to difficulties in obtaining tents, lumber, piping, wire, and other materials. This should not deter farm operators from making repairs on existing structures and improving the living condition of their employees as much as can be done under the circumstances. In the case of a complete stoppage of tents and other equipment for sheltering laborers, it may be necessary for farmers to appeal to the Army for an allotment of used tents to shelter families during seasons when large numbers of workers are in the fields.

13. Rural people are strongly of the opinion that some of the agencies created during the thirties are no longer useful and actually hinder the nation's all-out effort. They operate competitively in the community and absorb federal funds required elsewhere. With the demand for man power reaching new peaks, it seems unnecessary to "create" employment. If these agencies must be continued in order to win on all fronts, it will take more convincing evidence than has yet been presented to reverse this opinion among farmers and small town businessmen.

14. It is recommended that farm operators and their families turn in and lend a hand in harvesting the crops for the care of which crucial labor shortages exist. This recommendation would

not apply if it were made to farmers of the Middle West and North East, but Arizona agriculture is to some extent tied in with traditions which hold to class distinctions as between the operator and the laborer. In these days of emergency it will not do for the farmer and his family to stand aloof from their own problem. Man power for Arizona farms will be more readily forthcoming, especially from the local community, if the operator bends his back too.

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