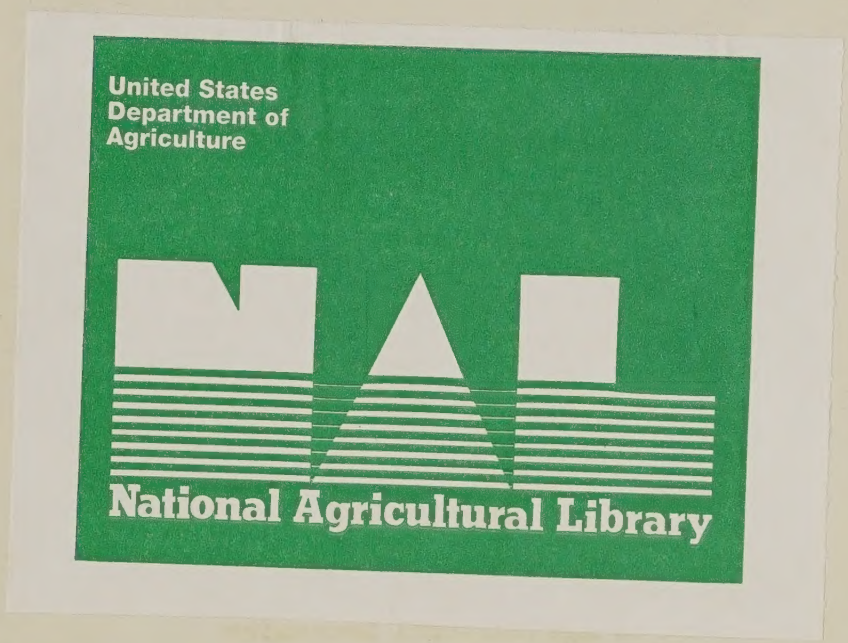
Preliminary

FARM ADJUSTMENTS IN THE SOUTHEAST TO MEET DEFENSE NEEDS

Prepared by
The Southeastern Area Office of
The Bureau of Agricultural Economics
with
Informal Participation by
State Experiment Stations and Various
Action Agencies of the Department of Agriculture

November, 1941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ACKNOWLEDGMENTS

The research, extension, and teaching personnel of the agricultural colleges in Alabama, Florida, Georgia, Kentucky, North Carolina, South Carolina, Tennessee, and Virginia, aided greatly in the preparation of this statement. In most states the work was done through the Joint Land Grant College-BAE Committees.

Representatives of regional and state offices of the Farm Credit Administration, the Agricultural Marketing Service, the Farm Security Administration, the Soil Conservation and the Forest Service participated in a series of meetings to help plan the study and to outline important phases of problems in regional adjustments. These meetings resulted in many significant improvements in both the procedure and the report itself. The Forest Service Staff, Region 8, prepared the bulk of the woodland phases of the statement.

Numerous staff members of the Bureau of Agricultural Economics contributed many suggestions used in the report. Credit is due particularly to Dr. Wm. A. Hartman, Regional BAE Representative.

Broad adjustment recommendations were developed for type-of-farming areas as indicated above. These estimates were summarized and made more specific by the Staff of the Bureau of Agricultural Economics.

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PREFACE

"Too little and too late" has been used to summarize the numerous unsuccessful counter maneuvers of the democracies in their efforts to thwart further Axis aggression. We, in the United States, have almost unlimited productive capacity, but careful plans must be made if "bottlenecks" in agricultural production are to be prevented. These bottlenecks could easily prevent our having adequate quantities of the right agricultural products at the proper time.

Providing needed grains is no problem, but the livestock situation is different. There are no huge supplies of livestock products on hand.

As a segment of a larger national report, estimates have been made of the changes in production in the Southeastern States that are expected to occur by 1943-45 and of the long-time changes that are desirable. These estimates have been prepared by type-of-farming areas within each State and summarized on a subregional basis. This report represents a revision of a preliminary report of the same title issued June 15, 1941.

The immediate production-adjustment problems of the Southeastern States arise chiefly because of the reduced market outlets for cotton and tobacco and the need for finding profitable alternative uses for a large part of the acreage and labor formerly devoted to those two crops.

The position of southern farmers is quite different from the position of producers in most other parts of the country. In general, adjustments that are needed now to meet defense needs are in the same direction as are the desirable long-time changes. However, for many southern operators to make these adjustments, will require changing their system of farming which is more difficult than simply to expand the production of commodities which they are accustomed to producing.

Agricultural policy in the Southeast can be approached in two ways as we enter into the serious business of gearing the Nation's agriculture for this world struggle. Farmers in this area could be made content and their morale retained at a high level, in view of their inherent patriotism, by liberal subsidy from the Federal Treasury, with few changes in their present systems of farming. If this approach were to be adopted, the contributions of this area to our war efforts would be much below its potential capacities, and the total increases would be negligible when compared with other production areas.

A second approach, much more difficult, would be to meet this situation squarely by policies and programs that will remove current impediments to changes in production and, by so doing, provide the openings through which farmers in the Southeast could do their utmost to adjust to changing world conditions.

Many obstacles, such as small farms, lack of capital, production and marketing difficulties, inadequate equipment, low feed grain and pasture yields, and farmer inexperience, will retard the shifts in production adjustments needed to meet changing world conditions. Changing the production pattern of Southeastern agriculture will call for strong leadership and careful guidance if the desired adjustments are to be made quickly and with minimum danger of repercussions after the emergency period.

FARM ADJUSTMENTS IN THE SOUTHEAST TO MEET DEFENSE NEEDS 1/

(Includes Alabama, Florida, Georgia, Kentucky, North Carolina, South Carolina, Tennessee, and Virginia)

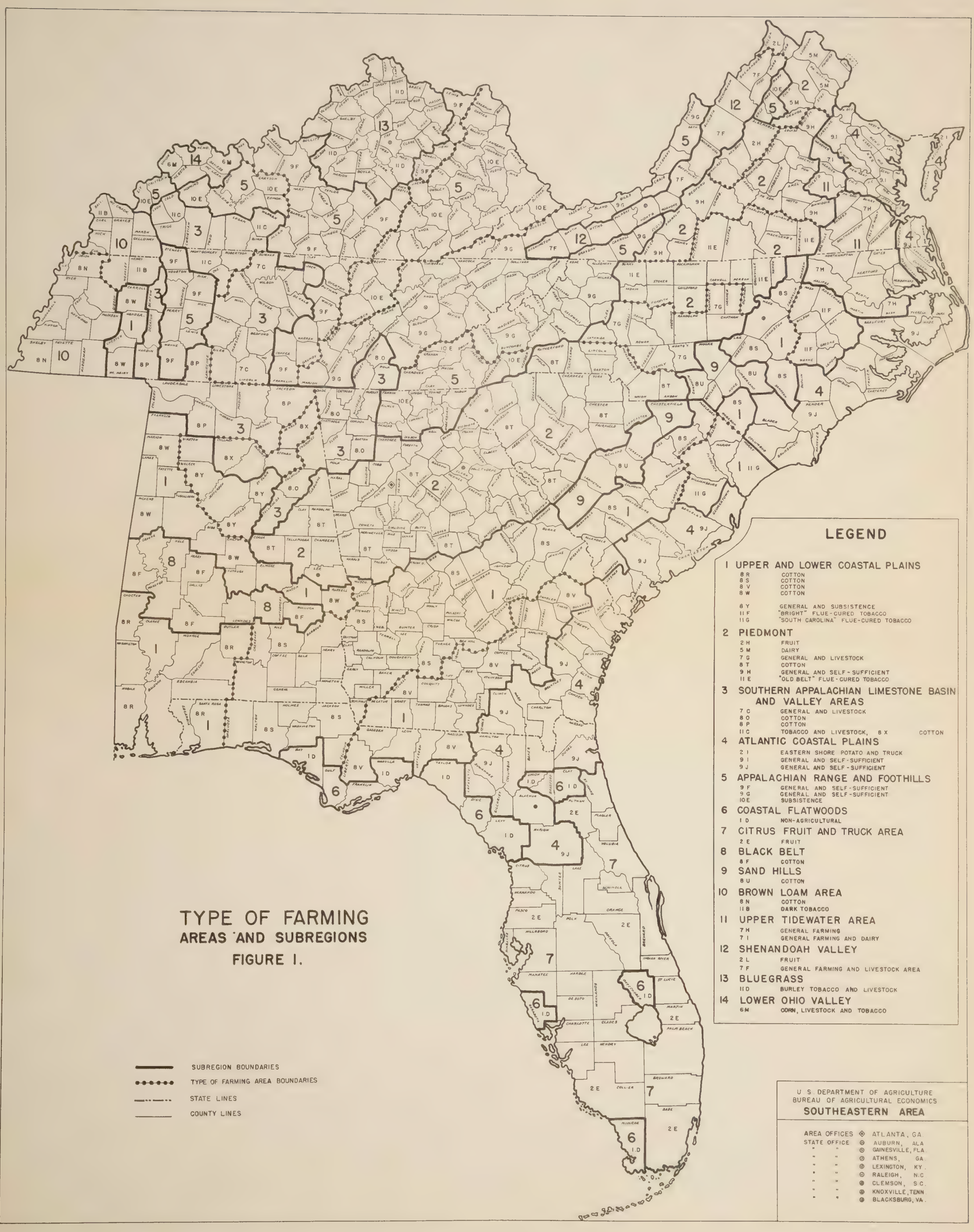
Defense Needs

Tentative or suggested production goals for the major agricultural products that are vital to the nation's defense effort were announced by Secretary Wickard on September 8, 1941. These goals present the best index of the nation's defense needs for agricultural products. The objectives are to obtain a level of production which will make it possible to maintain, and in some instances to increase, the average per capita consumption of food stuffs and other agricultural products at home, to supply products for export (including Lend-Lease operations), and to maintain agricultural stock piles adequate to allow for further increases in foreign trade and protection against periods of severe crop or livestock losses. These goals are higher than the record production anticipated for 1941 (table 1).

Milk production will need to be increased 7% over the 1941 level, egg production 9%; pork, beef, and chickens for meat from 10% to 12%; peanuts 83%; soybeans for beans 26%; and winter cover crops 57%.

What will be needed to obtain this high level of production? What areas can be expected to contribute most to supplying the defense needs? How much will farmers increase their production in response to anticipated increases in price without special programs? What are the obstacles to further increases and how may they be overcome? How do adjustments needed during the war emergency fit in with the desirable long-time adjustments for the area? These and related questions are the subject of this report.

1/ This report is a revision of a preliminary report of the same title dated June 15, 1941. Both were prepared under the leadership of C. R. Sayre, J. C. Downing, R. E. Graham, W. W. McPherson, Robert Terry and W. F. Lagrone, Area Staff Members of the Bureau of Agricultural Economics.



TYPE OF FARMING AREAS AND SUBREGIONS

FIGURE 1.

Table 1.- National production goals for 1942, production in 1941, and comparisons for products of major importance in the Southeast.

Products	Units	Estimated acreages or numbers for 1941 (1000)	Suggested goal or expected prod, 1942 (1000)	Percentage change from 1941 (Percent)
Milk	lbs.	116,809,000	125,000,000 1/	7
Eggs	doz.	3,676,000	4,000,000 2/	9
Pork 3/	lbs.	71,000	79,300	12
Beef and veal 3/	"	25,100	28,000	12
Chickens 3/	"	480,000 4/	750,000 4/	10
Lamb and mutton 3/	"	22,400	22,900	--
Corn	acres	87,363	87.5 to 90,000	2
Oats	"	38,197	40,000	5
All hay 5/	"	73,933	74 to 75,000	1
Cotton 6/	"	23,338	22 to 24,000 7/	-
Flue-cured tob.	"	748	762 8/	-
Burley tobacco	"	364	358 to 381 9/	-
Peanuts threshed	"	1,908	(1600 for nuts)	-
			(1900 for oil)	83
Soybeans for beans	"	5,550	7,000	26
Cover crop seed 10/	"	265	415	57

1/ Farm production assuming 3 billion pounds fed to calves and 2 billion pounds non-farm production, 2/ Farm and non-farm, 3/ Dressed weight. 4/ Farm sales or slaughter, excluding non-farm and commercial broiler production. 5/ All tame and wild hay, sweet sorghums for forage not included. 6/ American upland. 7/ Minimum allotment under AAA Act of 1938, with average underplanting would give about 24,000 acres planted. 8/ Same as acreage allotment for 1941. 9/ 1941 allotment 381 million acres; underplanting is desirable in 1942. 10/ Austrian winter peas, crimson clover and hairy, common, purple, Hungarian and Willamette vetch.

Total Defense and Production Adjustments 1943-45

With the passage of the Lend-Lease Act we became both the arsenal and the larder for the countries that are resisting aggression. This responsibility is broadened as each new Nazi invasion occurs, and it becomes increasingly difficult to foresee all of the changes that must be made as the nation girds itself further for "economic warfare."

In view of the fact that these needs may become still higher as the war continues and each area will need to contribute its maximum, it becomes

increasingly important to have some idea of where production changes can be made and the magnitude of these changes. With these things in mind estimates have been made of changes farmers are likely to make by 1943-45, without special programs.

These estimates were predicated upon certain assumptions. These assumptions were first outlined in April 1941 and revised slightly in July 1941. Details are outlined in appendix Section 1. In general the assumptions are:

(1) Continuation of war with "all out" defense program in the U. S.; if war ends, active participation by the U. S. in world rehabilitation sufficient to replace effects of defense program.

(2) Agricultural programs to continue about as they were July 15, 1941.

(3) Full employment, higher national incomes and general rise in price levels.

(4) Farm prices ranging between 85 percent and 110 percent of parity.

Long-Time Desirable Adjustments

Similarly, the desirable long-time adjustments that should take place in the best long-time interests of the farmers were outlined. The desirable adjustments represent the best judgment as to the pattern of production that would be compatible with increased farm incomes and conservation of resources during, say, the next 15 to 20 years.

The market outlook for various crop and livestock productions, the food and conservation needs, and the physical adaptations of the area provided the background for these estimates.

If we compare the defense needs as indicated by the 1942 goals with these factors, it is easy to conclude that these goals represent the type of adjustment that should take place. Certainly the present deficiency in diet bears evidence that such changes would be desirable. "Ill housed, ill clothed and ill fed" continues as a pertinent description of a large segment of the population in the area. No better evidence could be given than the fact that out of examinations by Selective Service Draft Boards of the Army, about one-half of the Southern examinees were rejected. In other parts of the country the rejections of the men were less than 40 percent.

Food Needs of Farm and Urban Population

The farm families of the South, in their need for more and healthier food, represent the greatest potential outlet for such products. Southern diets have been particularly deficient in dairy, poultry, and beef products. Table 2 shows the number of livestock and the acreage now producing for farm people of the South, and shows how much more of these products would be needed to achieve a minimum adequate diet for these farm families.

Table 2.- Number of livestock and acreage used to produce farm food and feed, and needed increase to supply a minimum adequate diet for farm population, 13 Southern States, 1940

Item	Unit	Used for farm food and feed	Needed increase
		(1000)	(1000)
Dairy cows	Head	3,464	1,062
Other cattle	"	1,508	2,418
Hogs	"	7,281	2,296
Hens for eggs	"	42,775	23,173
Chickens for meat	"	98,228	43,091
Direct food crops	Acre	4,682	3,475
Gains	"	28,617	4,274
Roughage	"	7,814	858
Total cropland		41,113	8,607
Pasture (present carrying capacity)	"	42,783	12,985
Total acreage	"	83,896	21,592

Population figures are for 1940; per capita food production estimates are from data secured in 1937 for eight Southern States.

Over 1 and 1/2 million milk cows would be required to supply the under-consuming portions of the urban population with a minimum adequate milk supply. Large increases in beef, pork, and poultry products would also be needed.

Table 3.- Approximate increase in number of livestock and acreages, 13 Southern States, needed to supply minimum adequate diet for urban population 1940 1/

	Unit	1000
Dairy cows	Head	1,757
Other cattle	"	3453
Hogs	"	331
Hens for eggs	"	4,131
Chickens for meat	"	11,015
Direct food consumption crops	Acres	1,013
Grain	"	1,948
Roughage	"	1,815
Pasture (present carrying capacity)	"	10,542
Total		15,318

1/ Population figures are for 1940. The per capita food estimates are from data by color and income groups secured by Bureau of Home Economics and Bureau of Labor Statistics, in 1935-36. Specifications for a "Low Cost Good Diet" is assumed to represent a minimum diet level.

The need for livestock products by Southern urban people cannot be directly realized on by southern producers because most of these families do not have sufficient income to buy these products. However, in the emergency situation an increased need for livestock products to meet unusual defense demands will offer favorable market outlets to southern farmers. In the post-war period ways to meet the minimum diet needs of urban people for food and at the same time give farmers a satisfactory return for producing the required products may have been learned. Even if that lesson is not learned, it is doubtful that prices for livestock products will fall relatively more than those for cotton and other cash crops.

Conservation Needs

When the problem of soil maintenance in the South is considered an added reason for such a shift is found. Much of the soil in these states is not naturally fertile. The loss of soil productivity has further reduced yields and lowered levels of living. The Southeast has already

suffered greatly from the loss of both soil and woodland resources. Nearly 60 percent of the total land area, exclusive of large cities, has been materially affected by erosion (table 4). To retard erosion means more careful cultural practices and, in many cases, a reduction of row crops and an increase in hay, pasture, and small grains.

Table 4.- Reconnaissance erosion survey data for eight Southeastern States

Items	Acres	Percent of total area
Total area (exclusive of large cities and water)	234,499,976	100.0
Areas with little or no erosion	100,020,362	42.7
Total area affected by sheet erosion	119,697,929	51.0
Total area affected by gullying	113,861,952	48.6
Essentially destroyed for tillage	9,691,931	4.1

Source - Report on Land Planning for National Resources Board Part V - 1935.

Recent Changes and Present Situation in the Southeast

The outlook for cotton brings up the entire mosaic of present Southeastern agriculture and recent changes that have occurred. A clear understanding of this mosaic is a necessary setting both for estimating changes that can be expected during the war emergency and the desirable adjustments in the best long run interests of the farmers.

Adjustments made in Southeastern agriculture during the past 10 years have been similar to those outlined in the goals for 1942. Farmers in the eight southeastern states reduced cotton acreage 46 percent between 1930 and 1940 and cotton production decreased 29 percent (table 5). Hay acreage increased about 54 percent, and oats acreage 110 percent. The reductions in cotton acreage and in the number of workstock has released land for increased livestock production. All cattle numbers increased over one-fourth and hog numbers increased nearly one-half. Farm population has remained about the same but the average size of farm has increased by about 9 acres, due primarily to the shift from croppers to wage hands.

Table 5.- Changes in farming in the Southeast, 1930 to 1940 [1]

Items	Unit : 1000	1930	1940	% change 1930-40
Total population	No.	19,585	21,765	11.1
Farm population	No.	8,897	9,056	1.8
Number of farms	No.	1,672	1,601	- 4.2
Average acreage per farm	A.	(76.4)	(85.2)	11.5
Farms operated by:				
Full owners	No.	693	772	11.4
Croppers	No.	387	281	-27.4
All land in farms	A.	127,767	136,481	6.8
Cropland harvested	A.	42,264	43,312	2.4
Cropland, idle or fallow	A.	9,082	7,318	-19.4
Woodland	A.	45,885	50,363	9.8
Land available for crops	A.	67,110	71,230	6.1
Workstock and colts	No.	2,730	2,498	- 8.4
Total cattle	No.	4,963	6,263	26.6
Cows and heifers milked	No.	2,357	2,555	8.4
Sheep and lambs	No.	1,874	1,824	- 2.7
Hogs and pigs	No.	4,329	6,107	41.1
Chickens	No.	47,644	47,737	0.2
Corn for all purposes	A.	17,206	19,055	10.7
Corn for grain	A.	16,436	18,514	12.6
Corn for grain	Bu.	291,556	297,705	2.1
Wheat threshed	A.	1,595	1,885	18.2
Winter wheat	Bu.	18,088	23,531	30.1
Oats threshed	A.	346	725	109.5
Oats threshed	Bu.	6,943	15,650	125.4
Oats cut and fed unthreshed	A.	989	795	- 19.6
Rye threshed	A.	147	182	23.8
Rye threshed	Bu.	1,255	1,783	42.1
Sugar cane for sirup	A.	62	80	29.0
Sugar cane for sirup	Gal.	9,281	9,419	1.5
Cotton	A.	11,859	6,455	- 45.6
Cotton	Bale	4,857	3,462	- 28.7
Tobacco	A.	1,667	1,688	1.3
Tobacco	Lb.	1,233,858	1,520,300	23.2
Irish potatoes	A.	330	347	5.2
Irish potatoes	Bu.	36,682	32,229	-12.6
Sweet potatoes	A.	383	399	4.2
Sweet potatoes	Bu.	39,823	35,328	11.3
Sorghum hay	A.	109	146	33.9
All hay exc. of sorghums	A.	5,126	7,871	53.6
All hay exc. of sorghums	T.	4,823	7,702	59.7
Sorghums for sirup	A.	70	100	42.9
Sorghums for sirup	Gal.	4,274	4,916	15.0

[1] Includes Alabama, Florida, Georgia, Kentucky, Tennessee, North Carolina, South Carolina, and Virginia.

Woodlands covering about one-half the land area were producing only 3.6 percent of the total value of farm woodland, crop and livestock products. The highest proportionate return from woodlands was 5 percent in Tennessee, and the lowest was 1.2 percent in Florida. This is much less than the potential returns from forest products.

Further changes are needed. Unutilized land, underutilized labor and low cash incomes make continued adjustments in southern agriculture imperative. In 1940 more than 7 million acres or nearly one-fourth of the harvested cropland remained idle or fallow. Production rates were among the lowest in the country and pastures were generally unimproved.

Adjustments in the Southeast 1943-45

Although estimates of production adjustments have their greatest significance in terms of homeogeneous areas, certain aspects are common to most of these areas and some generalization regarding the estimates of adjustments that are expected in 1943-45 may be made for the Southeast as a whole. The area summary clearly reveals that the potentialities for food production in the Southeastern States are only partially developed at present. Furthermore, the potentialities probably will not be fully exploited even with the price stimulus expected to accompany our efforts toward National Defense and Aid to Democracies' if left to individual initiative.

The expected increases in the production of milk, meat and eggs in the 1943-45 period represent large quantities. However, the increases in the production of these products are considerably short of quantities that would be produced if the agricultural resources of the region were being fully utilized in a balanced fashion. For example, the expected increase in milk production over the 1943-45 period is 14 percent larger than the 1939 production while the long-time desirable production is 70 percent greater than the 1939 production (table 6). If these alternative enterprises prove to be profitable over wide spread areas and the obstacles retarding the further adoption of these changes are minimized, the nation's needs for vital products may be met and the production may exceed the present estimates for 1943-45.

Sufficient breeding stock are available and enough feed could be produced to exceed the 14 percent increases in milk production by 1943-45. This would require fairly intensive utilization of land diverted from cotton and tobacco and much of the 7 million acres which were represented as idle in 1939.

When the suggested 1942 production goals for the Southeast are compared with the expected production in 1943-45 (table 7), it becomes increasingly evident that adjustments in most lines of farm production

Table 6. Summary of Production Estimates

Southeastern Area

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. and prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-'45	Long-time desirable (tent.) 4/
No. farms	No.	1,602	1,534	1.472	-4	-8
Total cropland	A.	51,617	51,558	51,807	0	0
Plowable pasture	A.	19,587	20,410	24,204	4	24
Woodland in farms	A.	50,361	49,454	47,609	-2	-5
All land in farms	A.	136,469	136,339	137,360	0	1
Corn (all purposes)	A.	19,054	19,456	17,514	2	-8
Corn (grain)	Bu.	295,781	318,629	335,353	8	13
Cotton	A.	6,455	6,010	5,875	-7	-9
Cotton	Bale	3,422	3,081	3,528	-10	3
Tobacco	A.	1,689	1,194	1,385	-29	-18
Tobacco	Lb.	1,394,568	1,019,887	1,257,116	-27	-10
Irish potatoes	A.	346	422	538	22	55
Irish potatoes	Bu.	32,466	42,024	56,014	29	73
Sweet potatoes	A.	398	477	565	20	42
Sweet potatoes	Bu.	33,723	44,481	54,152	32	61
Wheat	A.	1,884	2,153	2,692	14	43
Wheat	Bu.	23,187	26,328	36,608	14	58
Oats for grain 2/	A.	1,513	2,014	4,867	33	222
Oats for grain 3/	Bu.	31,444	40,773	110,804	30	252
Other small grains	A.	335	390	851	16	154
Total hay	A.	7,846	8,911	12,727	14	62
Total hay	T.	7,518	8,578	13,474	14	79
Peanuts for nuts & oil	A.	1,442	1,825	1,469	27	2
Peanuts for nuts & oil	Lb.	1,002,019	1,466,088	1,209,770	46	21
Peanuts hogged off	A.	941	1,072	1,466	14	56
Soybeans for beans	A.	281	351	327	25	16
Soybeans for beans	Bu.	3,093	3,729	3,732	21	21
Tomatoes	A.	96	128	125	33	30
Tomatoes	Bu.	9,997	12,312	12,591	23	26
Other com. vegetables	A.	465	551	546	18	17
Total cattle	No.	6,282	7,104	8,741	13	39
Beef & veal prod.	Lb.	837,689	945,649	1,200,394	13	43
Cows milked	No.	2,555	2,849	3,881	12	52
Milk prod.	Gal.	1,043,455	1,188,767	1,771,605	14	70
Hogs and pigs	No.	6,106	6,754	7,945	11	30
Pork prod.	Lb.	1,680,961	1,919,800	2,211,899	14	32
Sheep and lambs	No.	1,837	2,058	2,340	12	27
Mutton & lamb prod.	Lb.	112,174	127,027	154,200	13	37
Wool prod.	Lb.	8,138	9,667	12,379	19	52
Horses, mules & colts	No.	2,496	2,403	2,369	-4	-5
Chickens	No.	47,731	56,271	74,031	18	55
Egg prod.	Doz.	280,704	343,373	525,728	22	87

1/ Data for peanuts, soybeans, tomatoes, and other commercial vegetables are from Agricultural Marketing Service. Beef, pork and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.

4/ Assumes utilization of alternatives. No one change is independent of others.

will need to be stepped up. Most of the goals are near the levels expected in the 1943-45 period, if agencies' programs had continued as they were in July, 1941. For example, the goal for milk production in 1942 represents an increase of 12 percent over 1939 as compared with an increase of only 14 percent expected for the 1943-45 period. In the case of oats, soybeans, peanuts, and beef production the goals for 1942 are actually higher than the production levels expected during the 1943-45 period. If the desired increases are to be obtained farmers must be acquainted with the needs; provided guidance in making such changes; and supplied with credit as necessary. How and where these production increases may best be stepped up can best be outlined in terms of relatively homeogeneous areas.

Table 7.- Suggested production goals for 1942
(Crops, livestock, livestock products)

SOUTHEASTERN AREA

Item	Unit	Suggested goal 1942	Total production			Percentage inc. 1942 over 1939
			1941	1940	1939	
		(1000)	(1000)	(1000)	(1000)	
Corn	Acres	19,140	18,828	--	19,340	-1
Oats	"	2,328	1,758	--	1,529	+52
Barley	"	470	277	--	197	+138
Hay	"	8,970	8,508	--	8,047	+11
Wheat		1/ 1,742	2,385	--	2,268	-23
Rye	"	199	186	--	196	1.5
Irish potatoes	"	384	379	--	368	4
Sweetpotatoes	"	491	486	--	493	7/
Soybeans	"	411	--	295	281	46
Peanuts	"	2,563	2/ 1,456	--	1,445	+77
Flue-cured tobacco	"	762.0	4/ 747.7	--	1,275.9	-40
Fire-cured tobacco	"	77- 84	5/ 86.1	--	113.5	-32
Burley tobacco	"	326-346	6/ 331.9	--	387.0	-16
Cotton	"	3/ 6,287	6,615	--	6,929	-9
Truck crops	"	730.8	711.3	--	718.3	-2
Farm gardens	No.	1,581.9	--	--	1402.1	--
Milk	Lbs.	11,345,000	10,390,000	9,897,000	10,091,000	+12
Cows	No.	3,015	2,941	2,884	2,862	+5
Eggs	Doz.	442,537	398,243	--	388,667	14
Beef & veal (lvwt)	Lbs.	1,279,518	--	1,145,230	1,093,935	17
Mutton (lvwt)	"	115,550	--	113,600	115,410	7/
Pork (lvwt)	"	1,827,341	--	1,881,700	1,979,935	-8

1/ Suggested acreage goal is for 1943. Official allotment for 1942 is 1,824,000 acres. 2/ 1941 allotment was 1,279,000 acres. 3/ Expected planted acreage of cotton under 1942 allotment is 6,906. 4/ Flue-cured tobacco, 1940 allotment was 761,622 acres. 5/ 1941 allotment was 84,301 acres. 6/ 1941 allotment was 345,991 acres. 7/ Less than 1%.

Note: Agricultural Marketing Service estimates of production were used in establishing goals and production figures and are not strictly comparable with census figures which were used as a basis for estimates contained in this report.

Adjustments by Subregions

Farmers' response to changes in the agricultural situation will not and should not be the same in all parts of the Southeast. Peanut production for example cannot be expanded significantly in such subregions as the Piedmont although very large increases may be made in the Coastal Plain.

The wide variation between such subregions as the Kentucky bluegrass and the Sandhills, for example, necessitates a consideration of "war needs" in terms of the desirable expansion in terms of areas with similar opportunities to make adjustments and in terms of the best interests of farmers in the next few years and in the long run.

An illustration of the importance of considering production regions may be obtained by reviewing the trends for selected counties in the Coastal Plain and Piedmont during the past 10 years (table 8).

In comparing the agriculture of the two areas it will be seen that the largest decline in cotton and tobacco acreage and the greatest increase in cattle and hog numbers and hay production has occurred in the Coastal Plain. Largest increases in the acreage of small grain has occurred in the Piedmont.

The acreage of oats, for example, has been increased 12,496 acres in the Piedmont counties as compared with only 1,537 in the Coastal Plain counties.

In view of the wide variation in the present situation and the rate of change that has occurred during the past 10 years, the eight Southeastern States have been delineated into 14 subregions. These subregions group type-of-farming areas with similar physical resources and similar opportunities for adjustment compatible with conservation of resources and larger farm incomes.

Table 8.- Direction and rate of change, selected items in 5 Piedmont and Coastal Plains counties, 1930 to 1940.

Item	Unit	1/ Piedmont Counties		2/ Upper and Lower Coastal Plains Counties	
		Dif.	% Dif. is of 1930	Dif.	% Dif. is of 1930
No. of farms	No.	-1,645	-12.3	-2,729	-18.7
All land in farms	A.	13,216	1.4	250,020	25.7
Average size of farms	do.	11.2	15.6	21.5	39.3
Cropland harvested	do.	591	0.2	20,016	4.9
Cropland idle or fallow	do.	-19,952	- 20.1	13,244	-25.6
Woodland in farms	do.	22,910	6.6	99,909	27.6
Land available for crops	do.	16,486	3.5	47,474	8.4
Corn for all purposes	do.	7,478	6.6	62,754	35.9
Wheat threshed	do.	10,905	53.1	3,268	106.8
Oats, grain 3/	do.	12,496	132.1	1,537	8.5
Cotton	do.	-61,259	-50.2	-100,592	-55.1
Tobacco	do.	-1,594	-9.2	-7,693	-12.7
Sweetpotatoes	do.	885	43.0	682	18.4
Total hay	do.	27,665	186.9	40,214	213.2
Horses and mules	No.	-2,704	-13.3	-2,146	-9.1
Total cattle	do.	1,646	5.7	12,378	79.5
Cows & heifers milked	do.	-106	-0.6	2,778	38.3
Hogs and pigs	do.	5,519	34.8	27,783	59.6
Chickens	do.	13,775	4.4	32,144	11.3

1/ Counties in Piedmont - Greene and Gwinnett, Georgia; Cabarrus, Caswell and Gaston, North Carolina.

2/ Counties in Upper and Lower Coastal Plains - Bulloch, Houston and Sumter, Georgia; Greene and Wilson, North Carolina.

3/ Includes cut ripe and fed unthreshed.

SUBREGION 1

The Upper and Lower Coastal Plains

Expected changes in this subregion will go far in the direction of the "desirable" short-time adjustments if the assumed prices prevail. Hog production is expected to increase about 18 percent; beef, 13 percent; milk, 9 percent; poultry, 17 percent; and peanuts for nuts and oil, 27 percent. Feed for these increased livestock numbers will be obtained from increased acreages of peanuts, small grains, hay and corn. Details of changes are shown in table 9.

Peanuts for hogging-off will be expanded mainly in southern Alabama and southwestern Georgia. Peanut production for oil will be somewhat less restricted and will increase relatively more in the North Carolina sections of the subregion.

Most of the commercial vegetable production is in the Gulf Coast area of Alabama (Baldwin and Mobile counties), south-central Georgia, and the "Charleston area" in South Carolina. It appears that the labor used for vegetables in the latter area is less apt to move, in large numbers, into other occupations than will be the case in some other sections. Wages will undoubtedly increase, but a fairly satisfactory supply of labor will probably continue to be available. More family labor is used in the Georgia area than in the Florida and Virginia vegetable areas, hence the limitation from the labor supply will be somewhat less acute.

At present, livestock production in this subregion is at a low level of efficiency. In the Georgia and Florida area cattle and hogs are both turned onto open range for approximately six months with very little supplemental feed. In the Alabama areas a "new" stock law has been in force only since October, 1940. This provides a county option for cattle. Sows farrow the year round, and most of the pigs are "carried through" to peanuts each year. Regulated breeding, with a two litter system, and an increase in summer feed crops for hogs would be definite improvements. Hog production fits into the cotton-tobacco-peanut system of farming more satisfactorily than cattle, but much is lacking in present feeding practices on the general run of farms to obtain anywhere near the potential increases. Cross fences are needed on many farms to make it possible to utilize grazing crops more fully. Some farmers in the area are very careless about vaccinations. With $10.00 to $10.50 hogs, vaccination would pay large dividends.

Pasture improvement presents a particularly difficult problem in this subregion. The soils are predominantly sandy, and grasses which grow naturally are not very nutritious. Careful site selection is a necessity for successful pasture establishment. This particular obstacle will limit very large expansions of beef cattle and dairying in this section for some time to come.

Most of the long-time reduction in cotton acreage should be made in the lower Coastal Plains because of the profitable peanut alternatives and low yields of cotton there caused by boll weevil.

Over the long-time period, a general increase in livestock on farms is needed to provide more fully for home needs (table 9a). A corollary to this is that the livestock must be better fed. It would require 16 percent of the 1939 crop acreage to produce enough feed for the livestock needed to supply home needs for milk, pork, poultry and eggs.

It can be argued that farmers in this subregion should immediately increase cows sufficiently to supply minimum adequate diet needs. But many obstacles must be overcome before all families will effectively utilize milk.

Table 9a.- **Livestock products needed to produce a minimum adequate diet for farm population compared to quantity available if adjustment objectives are accomplished.** 1/

Products	Produced in 1939	Needed	Expected 1943-'45	Desirable long-time
Milk	319,500	530,000	360,000	566,000
Pork	1,493,000	869,500	1,647,500	2,414,000
Eggs	6,583,900	8,485,600	7,704,000	10,555,000

1/ Table applies only to type-of-farming areas in Subregion 1 in Alabama, Georgia, and South Carolina.

In addition to crop and livestock production, consideration must be given in this area to the vast acreage of woodlands and the way in which it may be made to contribute more effectively to farm incomes. Only half of the land in the Coastal Plains is in farms, and 40 percent of this is in woodland.

Many farms throughout the Coastal Plains could develop forest-farming enterprises by following good forestry practices, such as maintaining proper conditions for tree growth through protection from fire, thinning dense stands, chipping conservatively, planting as necessary, and harvesting worked-out timber. Essentials for such operations are the following:

(1) Two hundred to 300 acres of land, including 20 acres of tillable land, 20 acres of pasture and other land, and 220 acres of turpentine-pine timberland. The timberland would have to be fairly well stocked, with sufficient trees to afford at least 3,000 workable faces at the start and 100 or more trees per acre, 2 to 8 inches, d.b.h., to come into production later. These trees would have to produce 5,000 workable faces at the end of ten years.

Table 9. - Summary of production estimates

Subregion 1, Upper and Lower Coastal Plains

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. & prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.) 4/
No. farms	No.	358	345	350	-4	-2
Total cropland	A.	14,790	14,874	15,754	1	7
Plowable pasture	A.	1,645	1,757	2,554	7	55
Woodland in farms	A.	13,609	13,038	12,089	-4	-11
All land in farms	A.	32,357	32,426	33,031	0	2
Corn (all purposes)	A.	6,386	6,589	6,139	3	-4
Corn (grain)	Bu.	66,581	77,174	83,108	16	25
Cotton	A.	2,663	2.480	2,287	-7	-14
Cotton	Bale	1,223	1,163	1,229	-5	0
Tobacco	A.	620	398	478	-36	-23
Tobacco	Lb.	519,876	351,938	422,920	-32	-19
Irish potatoes	A.	56	63	103	12	84
Irish potatoes	Bu.	5,214	5,954	10,509	14	102
Sweetpotatoes	A.	160	188	228	18	43
Sweetpotatoes	Bu.	12,787	16,949	21,185	33	66
Wheat	A.	92	120	204	30	122
Wheat	Bu.	1,296	1,484	2,630	15	103
Oats for grain 2/	A.	577	703	1,535	22	166
Oats for grain 3/	Bu.	11,334	13,363	32,598	18	188
Other small grains	A.	12	14	33	17	175
Total hay	A.	1,586	1,923	2,934	21	85
Total hay	T.	989	1,188	2,051	20	107
Total cattle	No.	1,069	1,219	1,686	14	58
Beef and veal prod.	Lb.	126,511	142,826	235,715	13	86
Cows & heifers milked	No.	404	455	702	13	74
Milk prod.	Gal.	145,928	159,782	279,205	9	91
Hogs and pigs	No.	1,936	2,170	2,937	12	52
Pork prod.	Lb.	490,901	578,441	814,331	18	66
Sheep and lambs	No.	52	35	32	-33	-38
Mutton and lamb prod.	Lb.	1,072	951	2,080	-11	94
Wool prod.	Lb.	164	109	280	-34	71
Horses, mules & colts	No.	566	540	543	-5	-4
Chickens	No.	8,922	10,437	14,200	17	59
Egg prod.	Doz.	47,485	56,392	85,617	19	80

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.

4/ Assumes utilization of alternatives. No one change is independent of others.

(2) Families willing and able to carry on gum farming.

(3) Sufficient low-cost credit.

The cost of land, buildings, and equipment for such a farm would amount to approximately $3700. The average annual net return would increase from $180 during the first 10-year period to $665 during the fourth 10-year period (table 9b).

Table 9b.- Estimates of returns on 260-acre forest farm, from development through maturity, Lower Coastal Plains, Alabama.

Period	Woodland income (net) 1/	Other farm income (net)	Total farm income (net)	Less annual payment on loan	Net annual return
	$	$	$	$	$
1st decade	240	100	340	160	180
2nd decade	510	100	610	160	450
3rd decade	625	100	725	160	565
4th decade	725	100	825	160	665

1/ $6 per 1,000 bd. ft. for sawlogs, $1 per unit of pulpwood, 8¢ per face for naval stores operations.

SUBREGION 2

The Piedmont

The Piedmont Plateau, with its wrinkled, rolling skyline, stretches through the Southeastern States from Virginia to Alabama. Except for the "Old Tobacco Belt" which is located in the upper part of the Piedmont, the subregion is dominated by cotton production.

Present trends are toward increasing livestock numbers, greater production of food and feed for farm and home use, and more soil-conserving crops. Slow as these trends may be, they will be accentuated by a growing realization by these farmers that alternative enterprises must be found, partially to replace and partially to supplement cotton and tobacco. Reinforcing these trends are the action and extension programs directed toward making Piedmont farmers conservation conscious.

The stimulus of the assumed 1943-45 prices will undoubtedly result in shifts in the same direction, at an accelerated rate. Table 10 presents quantitative estimates of these adjustments. The chief changes

expected by 1943-45 include increases of 13 percent in beef production, 9 percent in milk, 8 percent in pork, 14 percent in sheep, and 16 percent in poultry. Production shifts are also expected in the acreages of feed crops. These include increases of 36 percent in oats, 18 percent in barley, 11 percent in hay, and 3 percent in corn (table 10).

These expected changes are very encouraging, but unless they are carried much further they will make only a minimum contribution toward meeting defense needs and an opportunity to improve the economic situation both in the immediate and long-time future will be lost.

Table 10a.--Usual net cash incomes, typical farms in selected counties, and incomes with 1943-45 prices 4/, if present organizations were continued, cotton areas, Piedmont Subregion.

Size of farm	Lee Co., Ala.		Greene Co., Ga.		Edgef'ld Co., SC		Gaston Co., NC	
	1935-39 prices	1943-45 prices	1935-39 prices	1943-45 prices	1935-39 prices	1943-45 prices	1935-39 prices	1943-45 prices
Small	90	108	94	130	120	210	103	180
Medium	282	404	184	232	240	340	421	599
Large	770 1/	1005	1/317	1/459	3033 2/	4000	781 3/	1060

1/ Operator and two cropper families
2/ Operator and five cropper families
3/ Operator and one cropper family
4/ 1943-45 prices shown in table 34

Table 10a shows the probable effects of assumed 1943-45 prices upon cash incomes for typical cotton farms, assuming no change in cotton acreage. While these show very little economic benefits from the increased prices, the incomes on tobacco farms would be affected even less and perhaps show an actual decrease, if no changes are made in the farming systems.

Recent studies made in Greene County, Georgia, indicate that a small dairy enterprise provides a good opportunity for increasing farm incomes. Judging from this and other analyses it would seem desirable that milk-cow numbers be increased 37 percent by 1943-45 instead of the expected 15 percent and that milk production be increased 34 percent. Other desirable livestock increases during the emergency, from the standpoint of increased farm income, include the following: poultry and eggs, 47 percent; beef, 25 percent; pork, 16 percent; and sheep, 25 percent. These increases in production would provide increases for marketing as well as for a more nearly adequate supply of products for home use. Desirable increases from the farmer's standpoint may be higher in some cases than will be required to meet national production goals, however.

Table 10. - Summary of production estimates

Subregion 2, Piedmont

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. & prod. Expected 1943-45	Long-time desirable (tent.)	Percentage change from 1939 Expected 1943-45	Long-time desirable (tent.)4/
No. farms	No.	326	313	294	-4	-10
Total cropland	A.	10,830	10,990	11,310	1	4
Plowable pasture	A.	3,011	3,222	3,899	7	29
Woodland in farms	A.	12,131	11,872	10,771	-2	-11
All land in farms	A.	28,632	28,476	28,079	-1	-2
Corn (all purposes)	A.	3,379	3,474	3,059	3	-9
Corn (grain)	Bu.	46,444	52,504	51,130	13	10
Cotton	A.	1,714	1,611	1,740	-6	2
Cotton	Bale	1,025	837	989	-18	-4
Tobacco	A.	334	215	232	-36	-31
Tobacco	Lb.	248,954	175,823	193,319	-29	-22
Irish potatoes	A.	38	40	44	5	16
Irish potatoes	Bu.	2,538	2,583	2,979	2	17
Sweetpotatoes	A.	78	98	113	26	45
Sweetpotatoes	Bu.	6,681	8,316	9,668	24	45
Wheat	A.	748	827	1,019	11	36
Wheat	Bu.	8,909	9,471	12,118	6	36
Oats for grain 2/	A.	571	778	1,609	36	182
Oats for grain 3/	Bu.	12,156	16,081	34,524	32	184
Other small grains	A.	73	86	218	18	199
Total hay	A.	1,217	1,356	2,803	11	130
Total hay	T.	1,116	1,326	2,671	19	139
Total cattle	No.	964	1,132	1,635	17	70
Beef and veal prod.	Lb.	127,455	143,826	186,771	13	47
Cows & heifers milked	No.	523	602	956	15	83
Milk prod.	Gal.	238,398	259,109	440,163	9	85
Hogs and pigs	No.	651	687	726	6	12
Pork prod.	Lb.	211,714	229,391	238,149	8	12
Sheep and lambs	No.	57	65	70	14	23
Mutton and lamb prod.	Lb.	3,699	4,390	5,118	19	38
Wool prod.	Lb.	255	294	332	15	30
Horses, mules & colts	No.	479	465	462	-3	-4
Chickens	No.	9,469	10,962	17,203	16	82
Egg prod.	Doz.	57,746	62,734	112,676	9	95

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.

4/ Assumes utilization of alternatives. No one change is independent of others.

The contrast between the expected and the desirable increases in grains, hay and livestock is striking. In every case the expected increase is far less than what is needed. Many factors contribute to these differences. Producing cotton or flue-cured tobacco is a highly specialized skill in which farmers in the Piedmont excel, but many of them have never inoculated legume seed, weaned nine pigs if nine were farrowed, or bucket-fed a calf when butterfat prices were high. Most of them have the latent ability to do these things, but managerial assistance--perhaps a corps of farm management consultants--will be necessary to provide this type of guidance.

The lack of good pastures tends to limit the expansion of almost all livestock enterprises. There is an all-too-common attitude that making a pasture consists of fencing in a few acres of gullied and unproductive land that is unfit for cotton, corn, or tobacco. The establishment of pastures on the uplands is difficult and costly. Bottomlands provide the best sites. Most bottomlands that are now cleared are needed for food crops, but there are thousands of acres of bottomlands covered with brush and undesirable hardwood species which could be cleared with a small input of cash and a large input of family labor when that is available.

Dairying will be retarded owing to the lack of well-developed marketing systems and the difficulty of establishing needed pastures. At present many of the farmers operating small dairy enterprises are scattered too widely to warrant the rapid development of milk or cream routes. The lack of good breeding stock limit the development of more intensive beef enterprises. Cooperative action offers a way out of both of these difficulties in some communities.

Present cash incomes on many of these Piedmont farms are so small that the operator cannot accumulate the capital for making substantial adjustments in his farming system. Credit arrangements for such adjustments will have to be made with the full realization that the returns will not be large and that a long period will be required to repay the loan. This situation is especially acute in any attempt to increase the acreages of small grain and hays, for, at present, the necessary harvesting machinery is simply not available. Finally, the usual renting arrangements do not encourage changes in systems of farming. Present agreements are based on cotton and tobacco systems and will have to be modified if stable tenure with "new" systems are developed.

It is fortunate that the long-time desirable adjustments are merely a continuation of those expected and desired in 1943-45 (table 10). Thus, the war period with its defense needs and opportunities may be looked upon as a situation that will, if advantage is taken of it, hasten the final achievement of long-time goals.

Farm woodland must not be overlooked as an enterprise that will contribute materially to the development of a stable agriculture in the Piedmont. In the lower Piedmont, woodlands were cut heavily to offset income

losses from the first inroads of the boll weevil. In spite of current woodland practices, natural reseeding has occurred and fairly rapid growth has been made. If present woodland practices are continued during the next 30 years on typical medium-sized cotton farms with 50 acres of woodland, the average cash return from stumpage sales would be about $40 per year. If fires were controlled and selective cutting practices adopted, the return during this period could be increased to $47 per year. With present practices continued, the stand at the end of the period will be badly depleted. With improved practices it would be developed to a point that a sustained yield amounting to an income of about $63 per year, assuming that stumpage would be sold, could be continued indefinitely. There is usually a large amount of free time for members of farm families on Piedmont farms from October through February. This 50 acres of woodland would provide about 10 days' work each year, with improved practices, paying about $2 per day, if the timber were sold as logs rather than on the stump.

SUBREGION 3

Southern Appalachian Limestone Basin and Valley Areas

This subregion is generally considered to be one of the more fertile and prosperous agricultural parts in the Southeast. The types of farming followed range from the production of dark tobacco in Kentucky and northern Tennessee to general farming in central Tennessee and to cotton production in northern Alabama and northwest Georgia.

A large number of farms in the subregion are now commercial producers of milk, beef, hogs, and poultry, all of which are needed in large quantities to feed the democracies. Milk production is expected to increase 16 percent by 1943-45 (table 11), with the greatest increase occurring in the Central Basin area of Middle Tennessee where dairying is now of much importance, feed is plentiful, and an efficient marketing system is developed. A 29 percent increase in egg production is expected with the greatest percentage increase to come from the Kentucky area and the greatest quantity increases coming from the present area of relatively large farm flocks in middle Tennessee and northern Alabama and Georgia. Pork is expected to increase 15 percent with quantity increases occurring in all areas, made possible by plentiful supplies of corn and ready markets. The largest increase in beef production (13 percent for the subregion as a whole) is expected to take place in the general livestock area of middle Tennessee, where beef cattle now are of importance and where this farm enterprise fits in well with other enterprises. Mutton and wool production are expected to increase 27 and 21 percent, respectively. A considerable increase of these products will take place in the Central Basin area of Tennessee, where farm flocks now provide a good source of cash income.

Peanuts are of little present importance, but they may be of future importance in the Tennessee Valley area of Alabama for hogging off. Limited increase in commercial vegetables can be expected throughout the subregion.

Table 11. - Summary of production estimates

Subregion 3, Limestone Valleys and Appalachian Plateaus

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. & prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)4/
No. farms	No.	170	159	158	-6	-7
Total cropland	A.	6,182	6,068	5,812	-2	-6
Plowable pasture	A.	2,324	2,418	3,136	4	35
Woodland in farms	A.	4,033	3,960	3,685	-2	-9
All land in farms	A.	14,048	13,898	13,978	-1	0
Corn (all purposes)	A.	2,282	2,315	1,887	1	-17
Corn (grain)	Bu.	41,152	41,145	46,696	7	13
Cotton	A.	840	776	804	-8	-4
Cotton	Bale	504	451	608	-11	21
Tobacco	A.	105	94	90	-10	-14
Tobacco	Lb.	94,908	83,260	110,110	-12	16
Irish potatoes	A.	28	37	86	32	207
Irish potatoes	Bu.	1,986	2,834	5,466	43	175
Sweetpotatoes	A.	25	31	48	24	92
Sweetpotatoes	Bu.	2,248	2,823	4,530	26	102
Wheat	A.	213	271	296	25	37
Wheat	Bu.	2,503	3,185	4,200	27	67
Oats for grain 2/	A.	61	100	603	64	889
Oats for grain 3/	Bu.	1,118	2,000	16,797	79	1,402
Other small grains	A.	63	71	174	13	176
Total hay	A.	1,228	1,462	1,765	19	44
Total hay	T.	1,305	1,542	2,489	18	91
Total cattle	No.	721	779	954	8	32
Beef and veal prod.	Lb.	72,986	82,711	118,810	13	63
Cows & heifers milked	No.	354	386	456	9	29
Milk prod.	Gal.	152,304	175,949	235,758	16	55
Hogs and pigs	No.	732	813	1,102	11	51
Pork prod.	Lb.	193,220	222,623	279,580	15	45
Sheep and lambs	No.	290	350	512	21	77
Mutton and lamb prod.	Lb.	9,007	11,417	23,465	27	161
Wool prod.	Lb.	1,127	1,368	2,826	21	151
Horses, mules & colts	No.	339	325	318	-4	-6
Chickens	No.	5,943	7,057	9,000	18	51
Egg prod.	Doz.	34,495	44,389	78,200	29	127

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.

4/ Assumes utilizati n of alternatives. No one change is independent of others.

This subregion has large acreages of productive pastures, and soil and climatic conditions are favorable to the growth of winter legumes, hays, and other cover crops. Erosion is not a serious problem in most areas in this subregion. In areas such as the Sand Mountain section of Alabama, current programs centered around terracing and winter cover crops should expand to check and prevent further soil losses.

The direction of expected adjustments in this subregion is desirable but farmers will probably not increase food production nor decrease acreage of soil depleting crops as much as might seem desirable because of familiarity with cotton and tobacco production and lack of buildings, equipment, skills, and credit required for increased livestock enterprises. Much of the reduction in cotton acreage should occur in the areas which have high feed yields and profitable alternative livestock enterprises to turn to, rather than on Sand Mountain and northwest Georgia where farms are small and cotton production is efficient. The expected reduction in tobacco production, most of which is in Kentucky and two north-central Tennessee counties, will be practically the same as is desirable. This reduction will be in dark tobacco and not in burley, since the long-time outlook is more favorable for burley tobacco. Land and other resources taken out of dark tobacco will be used for expansion of feed-crop acreages, beef cattle, milk cows, and poultry. Proper fertilization of crops, with emphasis on use of manures and cover crops will increase crop yields.

Some increase in credit may be needed to enable farmers to enlarge buildings and fencing and buy supplemental mineral and protein feeds. Farm-labor shortages, due to relatively full employment of the present farm population and some labor loss to defense centers, will result in higher wages, and increased costs, particularly in dairying and commercial vegetables.

Most of the areas in the subregion now produce large quantities of livestock and livestock products for sale to urban consumers. Livestock surpluses above home needs are lower in the Alabama and Georgia areas than in the Kentucky and Tennessee portions of the subregion. For this reason, the short and long-time desirable numbers of hogs, poultry, and dairy cows percentage increases in Alabama and Georgia. The present balance between livestock and cash crops can be improved to some extent throughout the subregion.

It is expected that the present number of farms will be reduced 6 percent through farm to city migration. No greater migration is desirable either for the short-or long-times. If migration back to the farm becomes necessary after the war, this subregion could support an increased population with less shock to the agriculture and would have a smaller relief load than would be the case in most other sections of the Southeast.

SUBREGION 4

Atlantic Coastal Plains

The farmers in the Atlantic Coastal Plains are generally self-sufficing, with crops usually consisting of corn and small acreages of cotton and/or tobacco. In certain localities, however, special systems of farming appear. Examples are the potato and truck areas of North Carolina and Virginia, and the fresh vegetable, poultry and dairy areas around urban centers, such as Jacksonville and Charleston. Forest products are a source of income in a good many sections; 55 percent of the farm land is in woods. Only 33 percent of the total land area is now in farms. The other land consists mostly of woodland not in farms, swamps, and marsh.

Soybeans, peanuts for oil, pork and eggs will all be increased markedly in response to prospective prices. Much of the increased soybean acreages in North Carolina shown in table 35 will be made in this subregion. Details as to changes in the subregion are outlined in table 12.

Small grains have not been important in this section. Varieties which are more nearly adapted to soil conditions of the subregion and agency programs have contributed to an increase in recent years. This will be further encouraged with increases in the number of combines for harvesting small grain and legume seeds.

At present the efficiency of hog production in this area is extremely low but expansion will encounter fewer obstacles than any of the other classes of livestock. Hogs fit well with the types of feed produced and require less attention. Price increases should cause farmers to care for range hogs more carefully (type-farming areas in Georgia and Florida have open range for hogs) and to vaccinate.

Most of the increase in other livestock production is expected to occur on the commercial farms around consuming centers. It is here that production is most responsive to price fluctuations. The assumed prices will not be high enough to bring in many "new" areas.

The greater part of the increase in Irish potatoes is expected to take place in the Eastern Shore section of Virginia.

The direction of expected adjustment in this subregion is desirable, but the extent of the expansion of feed crops and livestock probably will not be carried far enough. Difficulties in curing hay; lack of previous experience in growing small grains, hays, and pastures; inadequate equipment for producing crops other than corn, cotton, tobacco, and peanuts which require the producer to own only inexpensive implements; and the lack of sufficient legumes in crop rotations will all retard feed-crop increases.

Table 12. - Summary of production estimates

Subregion 4, Atlantic Coastal Plains

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. & prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.) 4/
No. farms	No.	85	82	82	-4	-4
Total cropland	A.	2,613	2,620	2,744	0	5
Plowable pasture	A.	383	411	588	7	54
Woodland in farms	A.	4,213	4,084	3,880	-3	-8
All land in farms	A.	7,731	7,620	7,766	-1	0
Corn (all purposes	A.	1,123	1,172	1,250	4	11
Corn (grain)	Bu.	17,635	18,962	21,436	8	22
Cotton	A.	81	74	59	-9	-27
Cotton	Bale	37	33	27	-11	-27
Tobacco	A.	162	98	116	-40	-28
Tobacco	Lb.	116,094	87,166	106,290	-25	-8
Irish potatoes	A.	90	125	113	39	26
Irish potatoes	Bu.	11,280	16,483	15,565	46	38
Sweetpotatoes	A.	46	60	61	30	33
Sweetpotatoes	Bu.	5,189	7,093	7,145	37	38
Wheat	A.	35	37	37	6	6
Wheat	Bu.	556	585	635	5	14
Oats for grain 2/	A.	42	47	131	12	212
Oats for grain 3/	Bu.	879	954	2,691	9	206
Other small grains	A.	13	16	23	23	77
Total hay	A.	231	236	427	2	85
Total hay	T.	238	225	416	-5	75
Total cattle	No.	308	372	464	21	51
Beef and veal prod.	Lb.	36,222	39,363	53,234	9	47
Cows & heifers mlkd.	No.	88	99	131	12	49
Milk prod.	Gal.	33,312	35,656	52,646	7	58
Hogs and pigs	No.	464	564	686	22	48
Pork prod.	Lb.	134,069	164,179	184,522	22	38
Sheep and lambs	No.	22	24	20	9	-9
Mutton & lamb prod.	Lb.	1,180	1,267	1,285	7	9
Wool prod.	Lb.	82	94	92	15	12
Horses, Mules & colts	No.	113	111	105	- 2	-7
Chickens	No.	3,036	3,429	4,798	13	58
Egg prod.	Doz.	20,932	23,520	37,540	12	79

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.

4/ Assumes utilization of alternatives. No one change is independent of others.

In South Georgia it is a common practice to turn cattle and hogs into corn with peanuts and velvet beans. In such instances it is impossible to follow corn with winter cover crops, since the stock are still in the field at seeding time.

It would be desirable for the oats acreage to be expanded. Not only can this be grazed during the winter, but threshed oats or oats hay may be used very effectively in improving the rations for workstock and cattle. On some farms it might be desirable to substitute oats for some of the corn fed to workstock, thereby releasing corn needed for hog feed.

Cropper and tenant labor, small farms, low yields of feed crops, initial cost of adding livestock, the farmers' lack of interest in and experience with livestock, and the high prices of cotton, tobacco, and peanuts are outstanding among the numerous factors that will retard livestock development.

Vegetable production in parts of the subregion are hampered by the inefficient distribution practices in many rural trade centers. Fairly large quantities of green vegetables, sweetpotatoes and Irish potatoes go to waste every year, but prices for these products stay at high levels in local stores in spite of the fact that there are large quantities close by ready to harvest. This situation arises from difficulties in getting an even quality product to the stores. If reasonable assembling and grading arrangements could be made, there are opportunities for profitable vegetable enterprises on many small farms in parts of the subregion not growing commercial truck crops at present. This is particularly true around centers of defense activities.

Extremely low yields caused by boll weevil damage makes cotton a relatively unprofitable crop in this subregion. As other more profitable crops are increased it is expected that cotton acreage will continue to decline. In certain sections--parts of South Georgia, for example--many farmers would discontinue growing cotton under the price assumptions outlined in the appendix. Tobacco acreage should increase over the 1943-45 period but remain below the abnormally large acreage of 1939, and the upward trend in feeds and livestock should be continued generally, but not on the larger commercial farms--comercial production should be kept in line with local demands.

With an effective drainage development, additional land could be brought into production. This should be carefully considered as emphasis is again turned toward expanded public works programs in the post war period. Guidance for such a development would necessitate a sound land settlement policy which would promote the establishment of economical systems and sizes of farms, and prevent intensive use of areas of low productivity.

The large woodland areas hold possible opportunities for supplementary farm income, if a suitable program can be initiated. For a medium-sized general farm in Columbia County, Florida, with 160 acres and about 100 acres of woodland, an annual net cash return of $175 could be obtained

from gum farming of 2,000 faces worked for naval stores, and $17 from sales of other forest products. In addition, about 125 fence posts, 25 cords of fuel wood and 500 board feet of lumber are used on the farm. If damages from fire, overgrazing, insects, and disease are eliminated or considerably reduced, salable material from worked-out trees might easily amount to 8,000 board-feet per acre within the next decade and gradually be increased to as much as 20,000 board-feet over a period of 15 to 20 years. By working the timber into logs, poles, piling, or pulpwood according to its merchantability and with the use of the family labor available at odd times, and/or if the farmer could work the timber himself for naval stores, income would be materially increased.

SUBREGION 5

The Appalachian Range and Foothills

The range of variations between parts of this subregion is greater than in any of the others. But all have these things in common: there is only limited opportunity for intensive crop production, except in the valleys; there is a high ratio of people to productive resources; and a high proportion of the farm families are dependent upon subsistence farming and part-time work. On the small subsistence farms no appreciable adjustments are expected with the assumed 1943-45 prices. However, increased industrial activity and expansion of the armed forces will probably absorb some of the excess population and result in a reduction of three percent in the number of farms (table 13).

On the larger and more advantageously situated farms in the broader valleys of Virginia and Tennessee, the assumed prices will probably cause production increases of 19 percent in mutton, 18 percent in beef, 17 percent in milk, and 15 percent in poultry. The production of mutton and beef will be largely for sale, and it is probable that higher prices will stimulate production in those sections where pastures are already fairly well established and on those farms whose physical and capital resources make this expansion possible. The increase in milk production will be stimulated by improved prices for dairy products and the availability of recently established condenseries in several parts of the subregion. The activities of these companies in bidding for a supply of milk and cream will provide a good outlet for those farmers to whom the plants are accessible. The 15 percent increase in the number of hens will be fairly general over the entire area and most of the products from this enterprise will go into commercial channels. On the commercial farms it will be in the form of cash sales, but on the subsistence units, the increased eggs will be "traded in." In several parts of the subregion "cross-roads" stores, now being gradually replaced by the "rolling stores" are the only outlets.

Further reductions of 8 percent in the cotton acreage and 22 percent in the tobacco acreage are assumed. A two percent decrease is expected in corn. The availability of land left idle by these reductions, the need

Table 13. - Summary of production estimates

Subregion 5, Appalachian Range and Foothills

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. & prod. Expected 1943-45	Long-time desirable (tent.)	Percentage change from 1939 Expected 1943-45	Long-time desirable (tent.)4/
No. farms	No.	357	347	314	-3	-12
Total cropland	A.	7,465	7,279	6,888	-2	-8
Plowable pasture	A.	5,726	5,842	6,569	2	15
Woodland in farms	A.	9,191	9,097	9,313	-1	1
All land in farms	A.	25,207	24,837	25,025	-1	-1
Corn (all purposes)	A.	2,890	2,824	2,432	-2	-16
Corn (grain)	Bu.	62,797	61,192	63,366	-3	1
Cotton	A.	40	37	34	-8	-15
Cotton	Bale	25	22	24	-12	-4
Tobacco	A.	156	122	156	-22	0
Tobacco	Lb.	136,106	100,784	148,002	-26	9
Irish potatoes	A.	83	89	120	7	45
Irish potatoes	Bu.	6,550	7,245	11,839	11	81
Sweetpotatoes	A.	28	32	41	14	46
Sweetpotatoes	Bu.	2,342	2,867	3,983	22	70
Wheat	A.	397	433	568	9	43
Wheat	Bu.	4,427	4,909	8,071	11	82
Oats for grain 2/	A.	127	181	466	43	267
Oats for grain 3/	Bu.	2,646	3,698	11,891	40	349
Other small grains	A.	83	88	148	6	78
Total hay	A.	1,775	1,928	2,334	9	31
Total hay	T.	1,848	1,956	2,725	6	48
Total cattle	No.	1,316	1,471	1,778	12	35
Beef and veal prod.	Lb.	142,806	167,945	206,150	18	44
Cows & heifers milked	No.	608	671	844	10	39
Milk prod.	Gal.	238,810	279,636	395,170	17	65
Hogs and pigs	No.	955	984	961	3	1
Pork prod.	Lb.	266,355	279,280	263,917	5	0
Sheep and lambs	No.	405	476	571	18	41
Mutton and lamb prod.	Lb.	26,637	31,573	42,086	19	58
Wool prod.	Lb.	1,670	2,273	2,855	36	71
Horses, mules & colts	No.	449	429	424	-4	-6
Chickens	No.	10,740	12,300	14,083	15	31
Egg prod.	Doz.	61,218	79,111	104,431	29	71

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.

4/ Assumes utilization of alternatives. No one change is independent of others.

for more feed, and the trend toward conservation farming is expected to result in an increase of 43 percent in oats, 9 percent in wheat, 6 percent in other small grains, and 9 percent in hay.

These expected changes are in line with those considered desirable for 1943-45, but, without exception, shifts are much greater than expected. In livestock enterprises the greatest difference is with dairying. On the small farms in the mountain areas the expansion will be negligible because in many cases there is not enough land suitable for the production of feed crops or pasture; capital is lacking and market outlets are poor. Obstacles to the desired increase on the better farms include a lack of capital and a lack of experience in dairying. These same factors tend to prevent the desired expansion of other enterprises on the small farms and tend to retard it on the larger ones.

The estimated long-time desirable production of all significant commodities, except hogs, would simply involve a continuation of the production trends expected for 1943-45. In general, they are in the direction of more livestock products for sale, more food and feed for home and farm use, a more soil-conserving system of farming, and a decided decrease in the number of farms.

The value of such adjustments is illustrated by the results from a recent study in Roane County, Tenn. The net cash income on a typical medium-sized farm would increase from $219 with 1935-39 prices to $265 with the assumed 1943-45 prices if the organization remains unchanged. By shifting production more in line with that indicated as desirable for this subregion, the net cash income on this farm would increase from $625 with 1935-39 prices to $820 with 1943-45 prices.

Families in the Appalachians provide this country with a reservoir of human resources. Past periods of frontier development and industrial expansion have been aided by a flow of people out of this section. There is evidence that this movement is well on its way again. As the Nation's production of "war goods" approaches full capacity, a large part of the labor in these areas will be employed in the mines and plants; but even when all of the present establishments are operated at full blast, there will still be a surplus of labor in the "mountains." With the war effort demanding complete utilization of all resources and with the Appalachian Mountain regions providing in abundance two of the most important resources -- labor and power --, the obvious answer is to locate additional plants in the subregion.

The greatest increase in the economic welfare of the people in this section can come through such industrialization. If defense plants of the proper type were located in this subregion, they could be later turned toward the production of peace-time goods. Eventually this would result in more income for many who are now barely subsisting, a reduction in the population pressure upon resources, the development of a skilled labor supply (which would migrate to sections where it is needed or would form

an inducement for still more industries there), and an improved economic position for the remaining farms.

In order to take up the slack during the post war period a system of rural works would be of tremendous value in these areas. There are many farms that are relatively inaccessible at all times and completely so in winter.

SUBREGIONS 6 AND 7

Coastal Flatwoods and the Citrus and Truck Subregions

Commercial vegetables, citrus fruits, and beef cattle are the important farm enterprises in these subregions. Dairying is important only for fluid milk production for use in the larger cities in the area.

Citrus fruit production, particularly that of oranges and grapefruit, is expected to reach such a high level that the marketing problem will become very serious--much more serious, in fact, than it has been in the recent past. This development is being brought about by two factors: (1) an increase in the average age of orchards and the consequent heavier yield and (2) an improvement in methods of fertilization involving the supplying of the rare elements such as boron and manganese in the form of dolomitic limestone. This development has made possible consistently high yields rather than yields which vary widely from one year to the next. The increase in grapefruit production may possibly provide a greater problem than will oranges. Growers have found it increasingly difficult to move grapefruit during the last few seasons. Some growers have insisted that buyers purchasing oranges also purchase a minimum of grapefruit. If, however, a system of distribution is worked out which will enable the grower to receive the price assumed for 1943-45 and dispose of his total production at the same time, returns from citrus fruits will be much higher than in recent years.

Since much of the citrus increase will be from established orchards, it would appear that the problem could be more effectively approached by improving the distribution of citrus products. This may mean greatly expanded governmental purchasing of surplus citrus for distribution to low income families. It is true that grapefruit juice consumption has increased markedly during the last few years, but this will in no appreciable measure affect the expected production increases.

Truck crop production, in general, will undoubtedly be stimulated because of the high anticipated price level. Potato production is "expected" to increase 60 percent from the 1939 base with the potato acreage increase amounting to 44 percent over the 1939 base. Tomatoes for processing are unimportant in Florida, being at a great relative price disadvantage as compared to fresh tomatoes. An increase of about 5,000 acres in tomatoes for the fresh market is expected. The acreage of other commercial vegetables, of which snap beans is the most important,

Table 14. - Summary of production estimates

Subregions 6 and 7, Coastal Flatwoods, & Florida Citrus Fruit & Truck Areas

Item	Unit 1000	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
		Actual	Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)4/
No. farms	No.	33	32	32	-3	-3
Total cropland	A.	878	878	878	0	0
Plowable pasture	A.	409	525	700	28	71
Woodland in farms	A.	1,479	1,685	1,685	14	14
All land in farms	A.	5,357	5,800	5,900	8	10
Corn (all purposes)	A.	116	126	160	9	38
Corn (grain)	Bu.	1,038	1,385	2,080	33	100
Cotton	A.	1	1	1	0	0
Cotton	Bale	2/	2/	2/	3/	3/
Tobacco	A.	2	1	1	-50	-50
Tobacco	Lb.	1,326	835	1,000	-37	-25
Irish potatoes	A.	18	26	26	44	44
Irish potatoes	Bu.	2,277	3,640	3,640	60	60
Sweetpotatoes	A.	3	4	5	33	67
Sweetpotatoes	Bu.	190	260	260	37	37
Total hay	A.	12	16	40	33	233
Total hay	T.	6	8	40	33	567
Tomatoes	A.	40	45	45	12	12
Tomatoes	Bu.	4,848	4,500	4,500	-7	-7
Other com. vegetables	A.	110	136	136	24	24
Total cattle	No.	512	642	575	25	12
Beef and veal prod.	Lb.	156,612	184,875	200,500	18	28
Cows & heifers milked	No.	48	55	100	15	108
Milk prod.	Gal.	16,380	19,700	40,000	20	144
Hogs and pigs	No.	152	179	179	18	18
Pork prod.	Lb.	38,000	44,750	44,750	18	18
Sheep and lambs	No.	4	3	0	-25	-100
Mutton and lamb prod.	Lb.	126	105	0	-17	-100
Wool prod.	Lb.	10	9	0	-10	-100
Horses, mules & colts	No.	19	18	18	5	5
Chickens	No.	989	1,100	1,550	11	57
Egg prod.	Doz.	7,726	8,800	13,200	14	71

1/ Data for peanuts, soybeans, tomatoes, and other commercial vegetables are from Agricultural Marketing Service. Beef, pork, and mutton production estimates are based on 1935 Adjustment Study. All other items are from the Census.

2/ Less than 500.

3/ No. base for calculating percentage change.

4/ Assumes utilization of alternatives. No one change is independent of others.

is expected to increase 26,000 acres or 24 percent over the 1939 base. Only 8½ percent of the total increase would be attributed to snap beans, while lettuce, with the introduction of an "adapted" iceburg type, may increase from about 1,000 acres in 1939 to 7,000 acres by 1943-45. Other vegetables are expected to increase about 15 percent over the 1939 base.

Beef cattle numbers in the subregion are expected to increase by about 110,000 head by 1943-45. This increase is relative, since there is little agreement by interested organizations concerning the number of beef cattle actually in the state as a whole. The total number of range cattle in the state at present, excluding milk cows, is estimated at 753,000 head. The practice of fencing in additional acres of pasture now considered as open range, a phase of the expanding beef cattle industry, is expected to increase total plowable pasture by about 28 percent by 1943-45 (table 14).

A slight increase in corn and hay production is expected as a result of the present upward trend in acreages of those crops. Both corn and hay yields at present are very low. The expected increase in egg production, 14 percent, will for the most part be confined to commercial poultry farms. The 20 percent increase in milk production, likewise, will be confined largely to the commercial dairy herds near Miami, Orlando, and St. Petersburg. A large part of the 20 percent increase in milk will be required by army troops and civilian aids who have come to that part of the state. Sheep numbers and mutton production will continue to decline, as the area is unsuited for sheep production.

With respect to the subregion as a whole, expected changes are desirable. Rather than increasing, beef cattle numbers should remain at their present level. The open range is probably saturated at present. Efforts to increase actual beef poundage could be utilized better through improving weights per animal by improved breeding and pasture improvement.

Long-time desirable increases over those expected include a 93 percent increase in milk cow numbers to improve diets of farm people; an increase of 57 percent in egg production, likewise for improving the diets of farm people; an expanded acreage of plowable pasture; and a slight reduction in total acreage of commercial vegetables other than tomatoes. Corn should be increased 29 percent over the expected level to provide greater quantities of feed. Part of this increase should be for silage since dairy cattle now receive very little roughage along with the concentrates. Hay production should be increased many times over its present level, but expansion will be held up until a practical hay drying process is developed. Some additional farm land will be brought into production over the long term, but it is extremely difficult to predict just how great the acreage will be. The acreage of land in farms has been increasing at a rapid rate, and may continue to do so for several years. Potentialities in the Everglades for truck crop expansion, and possibly for sugar cane production are inestimable on the basis of present information.

SUBREGION 8

Black Belt, Alabama

A transition from almost complete reliance upon cotton as a source of cash income to increased dependence upon livestock has been taking place in the Black Belt. The predominant Negro population, long familiar with cotton production, is facing acute adjustment problems with the introduction of more livestock farming. Recent emphasis in the shift from cotton has been placed on beef cattle. This change in the system of farming, requiring less farm labor, is creating an acute problem of population displacement. In 1935 there were 5.7 acres of cropland per capita; this is much too small a land base to support the present number of people with an extensive type of agriculture.

Cotton acreage was reduced 14 percent between 1935 and 1940 and the estimated "expected" 1943-45 anticipates a further 12 percent reduction from the 1939 base. It would be desirable for this reduction to go even further--to about 15 percent. Most of this reduction should be made on the lime soils of the area, which are unsuited to cotton production. The reduction in cotton acreage is accompanied by an expected increase in cattle and feed crops. The trend toward beef cattle in this area has been slowed, with more emphasis now being placed on milk production. The acreage in small grains is expected to be double the 1939 acreage and hay acreage, 24 percent more than 1939. Farmers are realizing more each year that small grains -- particularly oats -- furnish more grain per acre than corn in most parts of this subregion. Hay or pasture can be secured on the same land after the small grain is harvested. It is expected that these larger feed supplies will be used mainly to feed increased numbers of milk cows. Dairy cows and milk production will increase about 9 percent by 1943-45 as compared to increases in total cattle numbers of 4 percent and only slight increases in beef production (table 15).

Poultry numbers are expected to increase only 2 percent by 1943-45, but egg production is expected to increase almost one-fifth. Production per bird has been very low. The anticipated production in 1943-45 will still be low -- 60 eggs per hen. A considerable percentage increase is expected in Irish potatoes, tomatoes, and other commercial vegetables, although present acreages are small. Peanuts are not important in the area, and it is not likely that they will be in the future.

The AAA program is expected to cause the trend toward winter legumes and other close growing crops to continue. A recently developed improved winter pea, which produces abundant quantities of seed, should enable farmers to expand winter legume acreage.

The "expected" changes by 1943-45 are in general in the same direction as are "desirable" short-time changes. Stringent sanitary regulations for whole-milk production; a lack of credit facilities for small

Table 15. - Summary of production estimates

Subregion 8, Black Belt

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. & prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)4/
No. farms	No.	40	35	25	-12	-37
Total cropland	A.	1,254	1,254	1,154	0	-8
Plowable pasture	A.	887	900	1,000	1	13
Woodland in farms	A.	785	785	785	0	0
All land in farms	A.	3,326	3,326	3,326	0	0
Corn (all purposes)	A.	448	430	350	- 4	-22
Corn (grain)	Bu.	3,140	4,300	4,200	37	34
Cotton	A.	312	275	200	-12	-36
Cotton	Bale	76	82	100	8	32
Tobacco	A.	2/	0	0	3/	3/
Tobacco	Lb.	7	0	0	-100	-100
Irish potatoes	A.	1	2	10	100	900
Irish potatoes	Bu.	52	130	800	150	1,438
Sweetpotatoes	A.	17	18	20	6	18
Sweetpotatoes	Bu.	738	1,440	1,600	95	117
Wheat	A.	0	10	40	3/	3/
Wheat	Bu.	0	100	480	3/	3/
Oats for grain 4/	A.	21	50	225	138	971
Oats for grain 5/	Bu.	475	1,000	4,500	111	847
Other small grains	A.	2/	2	75	3/	3/
Total hay	A.	105	130	250	24	138
Total hay	T.	104	130	350	25	237
Total cattle	No.	292	305	330	4	13
Beef and veal prod.	Lb.	38,500	39,000	39,000	1	1
Cows & heifers milked	No.	69	75	100	9	45
Milk prod.	Gal.	19,188	21,000	35,000	9	82
Hogs and pigs	No.	123	125	125	2	2
Pork prod.	Lb.	18,500	19,000	19,000	3	3
Sheep and lambs	No.	5	10	20	100	300
Mutton and lamb prod.	Lb.	149	300	600	101	303
Wool prod.	Lb.	20	40	80	100	300
Horses, mules & colts	No.	56	55	56	- 2	0
Chickens	No.	688	700	800	2	16
Egg prod.	Doz.	2,950	3,500	4,800	19	63

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.
2/ Less than 500.
3/ No base for calculating percentage change.
4/ Includes cut ripe and fed unthreshed.
5/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.
6/ Assumes utilization of alternatives. No one change is independent of others.

farmers to buy fencing, building material, and breeding stock; and reluctance on the part of many to do the milking, will prevent expansion to the desirable level. Poultry production will not increase as much as it should by 1943-45, because of small corn supplies and the absence of an adequate marketing system.

In order to stimulate dairy and beef production more feed will be needed, pastures should be enlarged and carrying capacities increased. Present AAA provisions by which each farm is to have a minimum percentage of the cropland in erosion resisting or soil conserving crops should result in greater feed production. In addition, some of the soil building practices such as the seeding of lespedeza, setting of kudzu and seeding of alfalfa can with proper care result in more feed. Furthermore, assistance is provided for seeding and fertilizing winter legumes and pastures. For establishing pastures, some of these needed materials are made available to the farmer through local AAA offices with no cash outlay, deductions being made from the farm payment to cover costs of materials.

If the present general practice of breeding dairy cows to beef bulls were stopped and good quality dairy bulls were used instead, the supply of dairy heifers could be greatly increased over the next few years.

The production of pork and poultry products has been increased in the long-time desirable to furnish home needs and a small surplus for sale.

Migration into areas that have better chances for non-farm work is expected to continue at a more rapid pace. Farm-relief loads have been extremely heavy in the past and migration back into the area after the war may result in a repetition of experiences of the last two decades.

SUBREGION 9

The Sand Hills

The Sand Hills border the lower Piedmont in varying widths through the Carolinas. A tier of North and South Carolina counties are dominated by the low rolling hills and the relatively infertile coarse, sandy soils which are characteristic of the subregion. The porous nature of these soils, continuing to a surprising depth, makes it more difficult to build up and to conserve productivity than in the adjoining subregions.

The more productive parts of this subregion are rather thickly populated and farms are comparatively small. In other parts the land is submarginal for crop and livestock production under present conditions and there are few or no farms. Except for adjustments in cotton and tobacco acreage, which it is assumed will be brought about by general acreage

reductions, only minor changes are expected - (table 16). Much of the reduction in tobacco acreage has been made already. The 1939 acreage, which is used as a base, was abnormally high as there was no effective acreage and marketing control that year. The expected acreage is practically the same as that reported in 1940. Land formerly in cotton and tobacco may be left idle, as higher prices for those commodities may reduce the incentive to increase production of other crops. Rising prices with increases in local demand, especially around the Army camps and other consuming centers, are expected to stimulate small increases in production of commercial vegetables and dairy products. Activities around defense centers may continue to furnish work, thereby increasing incomes of many farm families from off-farm employment.

Because of the infertile soils it would be desirable for the decrease in number of farms to go slightly beyond the expected reduction of 3 percent. There should be a further-than-expected increase in acreages of sweetpotatoes, hay, oats, numbers of cows milked, hogs and chickens, with a large proportion of the increase in livestock on small farms for home use. Commercial milk production should be increased principally on the present commercial dairy farms rather than on farms that are not now producing milk for sale. Such increases would minimize the impacts of post-war adjustments as many of the additional farms that might be "brought in" now probably would be unprofitable with a return to normal prices.

An analysis of a family-sized farm in the Sandhills indicates the type of adjustments for this size-type farm to meet defense needs and increase farm income. Twenty-eight of the 63.5 acres are cropland. At present the cash income is chiefly from sales of tobacco, cotton, pork, and a few eggs.

Suggested adjustments would include a reduction in acreages of cotton, tobacco, and corn, and an increase in oats and truck crops. Oats and the early truck crops would be followed by soybeans or cowpeas for hay. Most of this change in tobacco acreage has already been made. These changes, plus four acres of improved pasture developed on any low ground available on the farm, should provide feed so the operator could add one milk cow, two pigs, and 25 hens to the present number of livestock and to feed the hogs to heavier weights. A winter legume would be turned under each year before corn. The present organization with normal prices returns a net cash income of $566. By reorganization, and with the assumed war period prices, the cash income could be raised to approximately $809.

Lack of capital, lack of proper rotation and treatment of the relatively infertile soils, and lack of interest in and ability to manage livestock will make it difficult for production to rise as far as desirable. At present, Department action-agency contacts, especially those involving current farm plans, are relatively few in the Sand Hills (table 22). Only 9 percent of the farmers in this subregion are included as compared to 20 and 27 percent in the Upper and Lower Coastal Plains and the Piedmont subregions, respectively.

Table 16. - Summary of production estimates

Subregion 9, Sand Hills

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
	1000	Actual	Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)4/
No. farms	No.	25	24	23	-4	-8
Total cropland	A.	982	982	965	0	-2
Plowable pasture	A.	79	85	96	8	22
Woodland in farms	A.	1,139	1,106	1,550	-3	36
All land in farms	A.	2,311	2,299	2,755	-1	19
Corn (all purposes)	A.	333	353	322	6	-3
Corn (grain)	Bu.	4,708	5,278	4,816	12	2
Cotton	A.	213	198	198	-7	-7
Cotton	Bale	153	115	115	-25	-25
Tobacco	A.	23	15	17	-35	-26
Tobacco	Lb.	20,335	12,813	14,478	-37	-29
Irish potatoes	A.	2	2	2	0	0
Irish potatoes	Bu.	129	128	141	-1	9
Sweetpotatoes	A.	8	9	10	12	25
Sweetpotatoes	Bu.	723	884	947	22	31
Wheat	A.	39	42	49	8	26
Wheat	Bu.	428	410	482	-4	13
Oats for grain 2/	A.	74	79	100	7	35
Oats for grain 3/	Bu.	1,709	1, 744	2,198	2	29
Other small grains	A.	9	9	10	0	11
Total hay	A.	101	107	155	6	53
Total hay	T.	82	88	128	7	56
Total cattle	No.	43	45	51	5	19
Beef and veal prod.	Lb.	5,000	5,360	6,500	7	30
Cows & heifers milked	No.	25	27	32	8	28
Milk prod.	Gal.	11,724	12,605	15,288	8	30
Hogs and pigs	No.	76	82	84	8	11
Pork prod.	Lb.	28,176	30,618	31,502	9	12
Sheep and lambs	No.	1	2	2	100	100
Mutton and lamb prod.	Lb.	39	53	53	36	36
Wool prod.	Lb.	4	5	5	25	25
Horses, mules & colts	No.	36	36	35	0	-3
Chickens	No.	630	693	826	10	31
Egg prod.	Doz.	3,302	3,819	4,545	16	38

1/ Beef, pork, and mutton on production estimates are based on the 1935 Adjustment Study. All other items are from the Census.
2/ Includes cut ripe and fed unthreshed.
3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.
4/ Assumes utilization of alternatives. No one change is independent of others.

Adjustment opportunities in the Sand Hills are very limited. Some of the soils in the subregion will produce tobacco of good quality if properly fertilized. In the long run it would be desirable for tobacco acreages to exceed that outlined as expected in 1943-45. By plowing under legumes to increase yields, and expanding the acreage in oats followed by summer hay, food production could be increased materially, but not enough to support much of an expansion in commercial livestock. Some of the large dairies may have to reduce their cow numbers drastically with the cessation of defense activities. This, however, should be a planned reduction with consideration given to surplus marketing operations which would meet "minimum milk requirements" for all low-income families in nearby cities.

There appear to be opportunities for small increases in the production of fresh vegetables, especially the early Spring crops in this subregion. Further, there are possibilities for farm-forestry development. To accomplish this, large areas of land not now in farms would have to be added to some of the small units found in the subregion area at present. This would necessitate special long-term finance and tax modifications if an operator were enabled to buy and to develop a successful "forest farm" on such land.

SUBREGION 10

Brown Loam Area

This subregion is generally considered to have unusual potentialities for increased livestock production. The livestock industry is already well established in the Kentucky portion of the subregion, but has developed more slowly in Tennessee because of the greater prevalence of the one-crop-cotton economy and the accompanying share-cropper system of farming. The predominance of cotton is indicated by the fact that around three-fourths of all the farms in the Tennessee part of the area are classed as cotton farms.

Both of the generalized type of farming areas in the subregion contain several rather distinct subsections. The cotton type of farming area, which includes only a part of one Kentucky county, contains four main subdivisions: (1) a cotton-commercial truck farming sub-area near Humboldt, Tennessee; (2) a cotton-livestock sub-area centering in Obion County; (3) the cotton and cash grain sub-area located entirely within the Mississippi River bottoms; and (4) the upland part of the area where cotton predominates entirely, including all or parts of Crockett, Lauderdale, Dyer, Haywood, Tipton, Shelby, and Fayette Counties.

The dark-tobacco livestock type-of-farming area is located entirely in Kentucky except for Henry and Weakly Counties in Tennessee. This area is divided into seven subdivisions, but the differences among them are not so great as is the case with the Tennessee sub-areas. Livestock have become important here because of the absence of a cash crop, as tobacco is important in only one of the seven sub-areas.

Within the general cotton type-of-farming area (which embraces the four sub-areas) livestock numbers should increase as cotton acreage decreases. This development should be encouraged as much as possible. Satisfactory yields of hay and other feed crops can be obtained. In addition, and possibly most important, good pastures can be made at reasonable cost. Due to specialization in the area in the past and the aversion of its farmers to milking cows, beef cattle will probably increase at a more rapid rate than will dairy cattle. If dairying were undertaken seriously and existing potentialities were fully developed, the area could probably become one of the chief dairy centers in the South. Adequate markets for dairy products are available at the present time.

Considering the subregion as a whole, expected trends are in the desired direction. Beef, pork, and milk production are each expected to increase about 10 percent. Mutton and eggs are expected to increase 23 and 56 percent, respectively. Most of the increase in milk will come from the Kentucky part of the subregion, where dairying is already well established. The price increase will have a very rapid effect in that area. In the past, poultry numbers have fluctuated widely in response to price changes. Sheep are relatively unimportant in most of the area, but are also expected to increase (22 percent) in numbers. Oat production (from a very small base) is expected to increase 240 percent by 1943-45, owing almost entirely to the recently introduced improved variety of winter hardy oats. Barley production, by virtue of its increasing recognition as a competitor to corn for economical feed, will increase an additional 60 percent from a small base. Wheat is expected to increase 18 percent in view of the revised "non-wheat-allotment-farm" regulation of the AAA. Increased small grain and permanent hay acreages are needed from a conservation standpoint, particularly in the hill cotton section in Tennessee, where erosion has taken a heavy toll. The expected increase of 14 percent in Irish potato production would occur in the Humboldt truck crop area. Potato production there has been at high levels in the past when prices were good (table 17).

Milk production change is perhaps the most important as far as desirable long term changes are concerned. A total increase of 84 percent over 1939 is suggested as the long term goal. Part of this goal would come from increasing the number of cows and part from increased production per cow. Accompanying this increase, pasture should be increased approximately 19 percent over the 1939 base, with most of the increase coming from cropland now classed as idle and a small part of it from woodland. Small grain and hay acreages should show additional increase over the short-term expected. Beef and veal production increases would come primarily from the increase in dairy cow numbers. Primarily through increased production per hen, resulting from heavier feeding, but with some further increase in numbers, egg production should be increased about 100 percent in the long term over the 1939 base.

A sizable proportion of "expected" and "desirable" production increases should be used to improve the diet of the farm people, since deficiencies here are much greater, relatively speaking, than in some other

Table 17.- Summary of production estimates

Subregion 10, Brown Loam Area

Item	Unit 1000	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
		Actual	Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)4/
No. farms	No.	73	70	68	-4	-7
Total cropland	A.	2,626	2,589	2,312	-1	-12
Plowable pasture	A.	992	1,038	1,180	5	19
Woodland in farms	A.	946	923	985	-2	4
All land in farms	A.	5,112	5,068	5,068	-1	-1
Corn (all purposes)	A.	862	859	698	0	-19
Corn (grain)	Bu.	16,883	18,410	20,308	9	20
Cotton	A.	499	474	471	-5	-6
Cotton	Bale	347	337	386	-3	11
Tobacco	A.	32	32	30	0	-6
Tobacco	Lb.	26,832	24,598	26,195	-8	-2
Irish potatoes	A.	7	8	13	14	86
Irish potatoes	Bu.	424	539	1,306	27	208
Sweetpotatoes	A.	20	22	25	10	25
Sweetpotatoes	Bu.	1,663	2,396	3,132	44	88
Wheat	A.	34	40	52	18	53
Wheat	Bu.	398	523	855	31	115
Oats for grain 2/	A.	5	17	64	240	1,180
Oats for grain 3/	Bu.	105	357	1,910	240	1,719
Other small grains	A.	5	8	26	60	420
Total hay	A.	480	533	604	11	26
Total hay	T.	563	601	782	7	39
Total cattle	No.	295	323	406	9	38
Beef and veal prod.	Lb.	24,298	26,768	37,660	10	55
Cows & heifers milked	No.	130	141	212	8	63
Milk prod.	Gal.	54,053	58,854	99,335	9	84
Hogs and pigs	No.	332	336	364	1	10
Pork prod.	Lb.	80,117	87,590	85,600	9	7
Sheep and lambs	No.	51	62	68	22	33
Mutton and lamb prod.	Lb.	3,099	3,800	4,900	23	58
Wool prod.	Lb.	253	288	327	24	40
Horses, mules & colts	No.	157	150	148	-4	-6
Chickens	No.	1,765	2,564	2,818	45	60
Egg prod.	Doz.	9,659	15,058	19,724	56	104

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut and fed unthreshed.

4/ Assumes utilizati n of alternatives. No one change is independent of others.

nearby subregions. Within the subregion, conditions with respect to diet are probably poorest in the Tennessee portion of the area.

Existing credit facilities should be arranged to provide terms lenient enough to allow small farm operators to obtain capital necessary to expand milk and egg production. Capital will be needed by these farmers for pasture establishment, fencing, additional livestock, and haying equipment. Considering the potentialities and existing market facilities, such loans should be a good risk and would constitute a permanent contribution to the area. This area promises much in the way of gain if well developed programs, designed to increase the production of "defense" commodities, are attempted.

SUBREGION 11

Upper Tidewater

The higher prices and the assumed reduction in cotton and tobacco acreages will stimulate relatively rapid adjustments in the Upper Tidewater because of the numerous alternative cash enterprises. Chief among the changes will be a 35 percent increase in numbers of hogs and pigs, 30 percent in chickens, 33 percent in acreage of both sweet and Irish potatoes, a sharp rise in production of peanuts and soybeans for oil, and decreases of 8 percent in cotton acreage and 34 percent in tobacco acreage, (tables 18, 40, and 43). A large part of the increases of soybeans and peanuts for oil in Virginia and North Carolina, will be made in this subregion. Increased corn production will be fed to hogs. Increased milk production will occur chiefly in the milk sheds of Richmond and other cities of Virginia in or near the subregion. A small increase in cropland is also expected.

Further increases in production of feed for farm use, milk mainly for home use, pork, eggs, and soybeans for sale would be desirable. The desired numbers of hogs and pigs is about the same as 1934 actual numbers. The lack of interest in dairy cows by the farmers will hinder the increase in numbers of milk cows, except on the present dairy farms. Recent downward trends in hog and poultry production will retard increases in these two classes of livestock. The present marketing system for soybeans and peanuts for oil should be investigated thoroughly, and if adjustments are needed these should be made immediately in order to handle the increased production efficiently. Present practices in feeding, breeding, and care of hogs result in low rates of gain and high mortality rates involving poor quality breeding stock, improper feed, and cholera. Adequate veterinary service at a reasonable rate and intensive field work to instruct farmers in swine production are needed badly.

Price conditions in the long-term may be such as to warrant a further reduction in cotton in this area which frequently has low yields. Under post-defense conditions it may be desirable to make a sizeable reduction from the 1943-45 production of peanuts and soybeans for oil, and the numbers of hogs and pigs kept for sale. Beef cattle should continue

Table 18 - Summary of production estimates

Subregion 11, Upper Tidewater

Item	Unit: 1000	1939 1/ Actual	Estimated acreages or nos. & prod. Expected 1943-45	Long-time desirable (tent.)	Percentage change from 1939 Expected '43-45	Long-time desirable (tent.) 4/
No. farms	No.	32	31	30	- 3	- 6
Total cropland	A.	1,113	1,123	1,174	1	5
Plowable pasture	A.	92	100	113	9	23
Woodland in farms	A.	1,546	1,538	1,496	- 1	- 3
All land in farms	A.	2,875	2,878	2,900	0	1
Corn (all purposes)	A.	365	385	384	5	5
Corn (grain)	Bu.	7,701	8,129	8,573	6	11
Cotton	A.	91	84	80	- 8	- 12
Cotton	Bale	32	42	47	31	47
Tobacco	A.	44	29	35	- 34	- 20
Tobacco	Lb.	32,100	25,137	30,376	- 22	- 5
Irish potatoes	A.	9	12	12	33	33
Irish potatoes	Bu.	884	1,097	1,284	24	45
Sweetpotatoes	A.	9	12	12	33	33
Sweetpotatoes	Bu.	962	1,273	1,378	32	43
Wheat	A.	11	13	31	18	182
Wheat	Bu.	153	172	442	12	189
Oats for grain 2/	A.	10	11	31	10	210
Oats for grain 3/	Bu.	220	247	701	12	219
Other small grains	A.	6	9	9	50	50
Total hay	A.	302	325	402	8	33
Total hay	T.	226	256	352	13	56
Total cattle	No.	54	60	81	11	50
Beef and veal prod.	Lb.	5,249	5,695	10,975	8	109
Cows & heifers milked	No.	30	33	48	10	60
Milk prod.	Gal.	13,126	14,729	21,980	12	67
Hogs and pigs	No.	170	229	252	35	48
Pork prod.	Lb.	61,979	87,106	91,954	41	48
Sheep and lambs	No.	8	9	9	12	12
Mutton and lamb prod.	Lb.	443	525	588	18	33
Wool prod.	Lb.	30	39	42	30	40
Horses, mules & colts	No.	60	58	54	- 3	- 10
Chickens	No.	1,164	1,509	1,892	30	63
Egg prod.	Doz.	7,419	10,269	13,656	38	84

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut and fed unthreshed.

4/ Assumes utilization of alternatives. No one change is independent of others.

to increase but the many small farms restrain rapid and widespread increases in this class of livestock. Where it is practicable to develop a sequence of grazing crops to supplement pastures without taking out a large acreage of cropland, the larger farms will probably find it profitable to develop beef cattle enterprises to utilize available roughage.

SUBREGION 12

The Shenandoah Valley

Farmers in this area are advantageously situated to contribute to the defense program, and, at the same time, to improve their own economic position by merely expanding their present lines of production. Existing systems of farming in the subregion are such that assumed 1943-45 prices will react favorably upon them and result in increased production.

For example, an analysis of a typical small subsistence farm shows that, with no change in organization and assuming long-time normal yields, cash farm income will increase from $448 with 1935-39 prices to $657 with the 1943-45 prices. Under the same conditions the cash farm income on a representative medium-sized general farm would increase from $1116 to $1860. Prices, such as those assumed for the period 1943-45, would increase cash farm income in the area from 50 to 60 percent with no expansion in production. Undoubtedly, 36 cent butterfat, 11 dollar beef, 45 cent wool, and 30 cent poultry, as assumed, would provide very definite stimuli for expansion of these enterprises. The production of milk is expected to increase 31 percent with only 13 percent increase in the numbers of cows. Higher feeding rates will cause these increased production rates. Cows of the quality found in this subregion will respond favorably to increases in the present feeding rates. Beef production will probably expand 3 percent; egg production, 33 percent; and mutton production, 7 percent. A decrease of one percent is expected in pork production. The small increase in beef production is due to the relative profitableness of dairying as compared to further beef expansion. Present trends are away from feeder and stocker cattle to cow-calf herds. This will retard increases in beef production. Details of expected and desirable changes in this subregion are shown in table 19.

The 33 percent increase in egg production and 36 percent in chicken numbers will develop very easily. Commercial poultry production is common in the area at present, and the poultry efficiency is high.

In spite of the fact that the region is well-adapted to sheep, the expected increase is little more than a stopping of the present downward trend. The dog menace is so great that the trend has been downward for the last 8 years even though prices have been favorable. Hogs are expected to decline very slightly because of the relative advantage of other enterprises.

To provide feed for the expansion in livestock the production of oats is expected to increase 56 percent; hay, 28 percent; and rye and barley,

Table 19 - Summary of production estimates

Subregion 12, Shenandoah Valley

Item	Unit: 1000	1939 1/ Actual	Estimated acreages or nos. & prod. Expected 1943-45	Long-time desirable (tent.)	Percentage change from 1939 Expected 43-45	Long-time desirable (tent.) 5/
No. farms	No.	31	30	24	- 3	- 23
Total cropland	A.	856	873	814	2	- 5
Plowable pasture	A.	919	970	1,045	6	14
Woodland in farms	A.	747	824	828	10	11
All land in farms	A.	2,881	2,886	2,831	0	- 2
Corn (all purposes)	A.	215	220	193	2	- 10
Corn (grain)	Bu.	7,088	7,150	7,240	1	2
Tobacco	A.	4	4	2	0	- 50
Tobacco	Lb.	5,134	4,100	3,125	- 20	- 39
Irish potatoes	A.	5	8	8	60	60
Irish potatoes	Bu.	439	594	725	35	65
Sweet potatoes	A.	2/	2/	2/		
Sweet potatoes	Bu.	33	38	50	15	52
Wheat	A.	178	206	206	16	16
Wheat	Bu.	2,918	3,246	3,544	11	21
Oats for grain 3/	A.	18	28	33	56	83
Oats for grain 4/	Bu.	543	850	1,095	56	102
Other small grain	A.	49	56	56	14	14
Total hay	A.	221	275	302	24	37
Total hay	T.	243	312	399	28	64
Total cattle	No.	223	240	224	8	0
Beef and veal prod.	Lb.	50,835	52,300	52,670	3	4
Cows & heifers milked	No.	79	89	82	13	4
Milk prod.	Gal.	34,862	45,743	48,060	31	38
Hogs and pigs	No.	107	106	105	- 1	- 2
Pork prod.	Lb.	47,816	47,242	39,495	- 1	- 17
Sheep and lambs	No.	148	156	218	5	47
Mutton and lamb prod.	Lb.	11,073	11,886	16,670	7	51
Wool prod.	Lb.	700	822	1,308	17	87
Horses, mules & colts	No.	48	48	46	0	- 4
Chickens	No.	1,570	2,140	2,912	36	85
Egg prod.	Doz.	11,284	14,980	24,139	33	114

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.
2/ Less than 500.
3/ Includes cut ripe and fed unthreshed.
4/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.
5/ Assumes utilization of alternatives. No one change is independent of others.

14 percent. The need for feed, the introduction of "cold proof" oats, increased consciousness of the values of soil conservation, and increased prices will function as the motivating causes of these increases. The wheat acreage is expected to increase 16 percent because of the change in AAA rules which will allow some expansion on the non-wheat-allotment farms. The value of wheat as a chicken feed will also be a factor.

Many of the expected changes fail to reach that considered desirable. A decrease of 23 percent in the number of farms would be highly desirable in the long-term if such a change was brought about by retiring those small subsistence farms that rim the valley. Poultry and sheep numbers should be increased considerably, but the fear of a price collapse in poultry products will prevent this increase in the former, and the dog menace will prevent sheep numbers from increasing as much as they should. On the other hand, the valley is fairly well stocked with beef cattle and it is expected that beef production will exceed the desirable by about 3 percent. Milk-cow numbers will also exceed the desirable by the same figure and milk production will be only 3 percent less than is desired. Corn is the only commodity in which the expected and the desirable actually move in opposite directions. A 5 percent decrease in corn by 1943-45 would be more desirable than a 2 percent increase, especially if this decrease were effected in that corn acreage now being planted too far up the side of the hills bordering the valley. This recommendation is also dependent upon the increases in other feed crops.

In general the long-term "desirable" is in line with the production "expected" for 1943-45. To achieve more soil conservation, the corn acreage should be further reduced and replaced by small grains and hay. Milk production per cow should continue to increase with numbers remaining slightly above the 1939 level. The sheep and poultry enterprises should be expanded further, with the latter aided by the establishment of a viscerating plant. More attention should be paid to the improvement of pastures. They are suffering from sheet erosion and are rapidly losing their productivity.

SUBREGION 13

The Bluegrass Region of Kentucky

The Bluegrass Region has long been known for its good pastures, good livestock, and high-quality burley tobacco. Relative to many other subregions of the South, its farmers are prosperous and its agriculture is balanced.

There are three distinct type-of-farming subareas in this subregion, namely, the Inner Bluegrass, with its splendid pastures, livestock specialties (race horses and pure bred cattle, sheep and hogs), and high quality tobacco land; the Intermediate Bluegrass Area, with its steep productive land and smaller farms; and the Outer Bluegrass, with its balanced crop and livestock economy.

Production changes in this subregion will be confined primarily to those lines of production now being followed, and are "expected" to be in the same direction as are the desirable long-term changes. Increased emphasis during the emergency period will undoubtedly be placed on producing those commodities most needed for defense purposes -- particularly milk, mutton, wool and eggs (table 20).

Recent trends with respect to livestock production have not been in the "desired" direction. Poultry, hogs and dairy cattle numbers, for example, showed decided decreases between 1930 and 1940. Sheep numbers declined between 1935 and 1940. As already indicated, this trend is expected to be reversed during the emergency period because of the higher price level anticipated for livestock and livestock products. Generally speaking, the expected prices and existing agricultural programs should accomplish the greater part of the "desirable" production changes without special programs.

Inducements over and above the "expected" 1943-45 prices are not needed to secure the following changes: milk production up 23 percent, mutton production up 9 percent, and egg production up 28 percent. Most of the increased egg and milk production will be produced in the Intermediate and Outer Bluegrass subareas. Milk will be marketed in the form of sour cream. There are sufficient pasture and feed supplies to make this possible. Oats are expected to increase 67 percent in acreage, thus continuing the trend already in evidence. The present upward trend in barley is expected to result in an additional 25 percent acreage increase. Feeding qualities of barley are being recognized in this subregion. Wheat acreage, from a much larger base than the other small grains, is expected to increase 10 percent because of changed AAA regulations and the price increase. The small grain acreage increases are desirable from the standpoint of improved rotations and their substitution for corn.

One dark spot in the crop picture is the lower net return over direct cash costs to be expected from tobacco. This lowered return over cash costs will probably amount to $15 or $20 per acre as a result of higher labor costs and the 1 cent per pound price reduction indicated by the assumed price. Total burley tobacco acreage will probably remain at a level about 15 percent below the 1939 acreage, that being the reduction made when burley was put back on an allotment basis in 1940.

Long term desirable changes are confined to an increase (over expected) of 10 percent in hay acreage, a 33 percent increase in wheat acreage, a 389 percent increase in oats acreage (from a small base) and a 14 percent increase in chicken hen numbers. Irish potatoes should be increased an additional 125 percent to meet home-use requirements and supply a growing urban market. Other changes are minor in character. In the interest of higher quality livestock and more balanced utilization of feed and pastures, hog and sheep numbers should be decreased slightly in the long-term. It is desirable that in the long-term some yield increases of crops and livestock be made. The use of improved rotations, greater quantities of fertilizer and improved varieties will make this possible.

Table 20 . Summary of production estimates

Subregion 13, Bluegrass

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
	1000	Actual	Expected 1943-45	Long-time desirable (tent.)	Expected '43-45	Long-time desirable 4/ (tent.)
No. farms	No.	62	60	60	- 3	- 3
Total cropland	A.	1,519	1,519	1,500	0	- 1
Plowable pasture	A.	2,842	2,842	2,900	0	2
Woodland in farms	A.	445	445	445	0	0
All land in farms	A.	5,590	5,590	5,590	0	0
Corn (all purposes)	A.	442	450	435	2	- 2
Corn (grain)	Bu.	13,994	13,500	15,400	- 4	10
Tobacco	A.	183	156	183	- 15	0
Tobacco	Lb.	173,363	130,872	183,300	- 25	6
Irish potatoes	A.	8	10	20	25	150
Irish potatoes	Bu.	639	722	1,700	13	166
Sweetpotatoes	A.	1	2	2	100	100
Sweetpotatoes	Bu.	149	124	150	- 17	0
Wheat	A.	105	115	150	10	43
Wheat	Bu.	1,183	1,725	2,550	46	116
Oats for grain 2/	A.	9	15	50	67	456
Oats for grain 3/	Bu.	218	360	1,500	65	588
Other small grain	A.	20	25	50	25	150
Total hay	A.	491	500	550	2	12
Total hay	T.	664	800	880	20	33
Total cattle	No.	417	438	438	5	5
Beef and veal prod.	Lb.	40,200	40,100	41,100	0	2
Cows & heifers milked	No.	178	195	195	10	10
Milk prod.	Gal.	77,203	94,965	95,000	23	23
Hogs and pigs	No.	301	310	300	3	0
Pork prod.	Lb.	69,902	77,500	69,600	11	0
Sheep and lambs	No.	781	850	825	9	6
Lamb and mutton prod.	Lb.	54,684	59,500	57,750	9	6
Wool prod.	Lb.	3,765	4,250	4,538	13	21
Horses, mules & colts	No.	146	140	140	- 4	- 4
Chickens	No.	2,462	3,000	3,350	22	36
Egg prod.	Doz.	14,311	18,300	23,000	28	61

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.
2/ Includes cut ripe and fed unthreshed.
3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.
4/ Assumes utilization of alternatives. No one change is independent of others.

Market arrangements for all classes of farm products are entirely adequate. Credit facilities, likewise, are sufficient to care for the needs of the large majority of farmers in the Inner and Outer Bluegrass subareas. There is a possibility that a number of small-farm operators within the Intermediate Bluegrass area will need more than the usual assistance from credit agencies if they are to make changes in their farm enterprises.

SUBREGION 14

Lower Ohio Valley Area

The farming system in this subregion closely resembles that found in the better parts of the Corn Belt. Cattle and hogs, the chief farm enterprises, are fed out with corn grown on the bottomlands. In the past, a sizable proportion of the corn has been sold out of the area, but with the expected increase in pork and beef prices, more will be fed within the area, which in turn will involve bringing in greater numbers of stocker cattle and increasing hog numbers. Tobacco and commercial truck crops are important in some parts of the subregion.

Expected production increases will be confined to the present enterprises, since the agriculture of the area is comparatively well balanced at present. It is believed that prices slightly above the assumed would bring about changes as outlined in table 21. Comparatively large proportional increases are expected in "defense commodities". Milk production will be increased 28 percent by better feeding and by increasing the number of cows 15 percent. Mutton production, even though relatively unimportant, is expected to increase 30 percent because of the higher price expected for wool and mutton. Poultry and egg production will increase 15 percent. Farmers of the subregion will place primary emphasis on expanding other important enterprises relatively more than poultry. In line with the trend already in evidence and because of the improved varieties, oats and barley are expected to increase 100 percent in acreage from a comparatively small base. Corn acreage will expand about 23 percent in response to greater food demands. Hay acreage will be increased approximately 12 percent primarily by harvesting a higher proportion of lespedeza now commonly left on the land.

From the standpoint of desirable short-term changes, it appears that milk production could be expanded over "expected" increases, since adequate feed supplies and market facilities are available. Egg production likewise could be greatly expanded. Both beef and pork production could be expanded through feeding out additional numbers of hogs and cattle, since feed will be available. Hay increases and smaller increases in corn would be desirable in the interest of conservation. The decreased corn acreage would be from corn now grown on the uplands.

With a return to normalcy after the emergency, pork production should be decreased an estimated 14 percent under the "expected" quantity. Oats and barley should be increased further, while corn could easily be reduced

Table 21. - Summary of production estimates

Subregion 14, Lower Ohio Valley

Item	Unit 1000	1939 1/ Actual	Estimated acreages or nos. and prod. Expected 1943-45	Estimated acreages or nos. and prod. Long-time desirable (tent.)	Percentage change from 1939 Expected 1943-45	Percentage change from 1939 Long-time desirable (tent.) 5/
No. farms	No.	10	10	10	0	0
Total cropland	A.	512	509	500	-1	-2
Plowable pasture	A.	292	300	325	3	11
Woodland in farms	A.	97	97	97	0	0
All land in farms	A.	1,043	1,043	1,043	0	0
Corn (all purposes)	A.	211	260	200	23	-5
Corn (grain)	Bu.	6,619	6,500	7,000	-2	6
Tobacco	A.	22	22	22	0	0
Tobacco	Lb.	19,534	17,680	18,000	-9	-8
Irish potatoes	A.	1	1	2	0	100
Irish potatoes	Bu.	59	75	120	27	103
Sweetpotatoes	A.	2/	2/	2/		
Sweetpotatoes	Bu.	18	18	40	0	122
Wheat	A.	32	40	40	25	25
Wheat	Bu.	413	520	600	26	45
Oats for grain 3/	A.	3	6	20	100	567
Oats for grain 4/	Bu.	40	120	400	200	900
Other small grain	A.	3	6	30	100	900
Total hay	A.	107	120	160	12	50
Total hay	T.	136	144	192	6	41
Total cattle	No.	68	80	90	18	32
Beef and veal prod.	Lb.	14,400	17,280	18,080	20	26
Cows & heifers milked	No.	20	23	28	15	40
Milk prod.	Gal.	8,596	11,040	14,400	28	68
Hogs and pigs	No.	108	140	125	30	16
Pork prod.	Lb.	40,213	52,080	46,500	30	16
Sheep and lambs	No.	14	18	18	29	29
Lamb and mutton prod.	Lb.	966	1,260	1,350	30	40
Wool prod.	Lb.	76	99	99	30	30
Horses, mules & colts	No.	27	23	20	-15	-26
Chickens	No.	348	400	600	15	72
Egg prod.	Doz.	2,176	2,500	4,200	15	93

1/ Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.
2/ Less than 500.
3/ Includes cut ripe and fed unthreshed.
4/ Bu. threshed and bu. equivalent for that cut and fed unthreshed.
5/ Assumes utilization of alternatives. No one change is independent of others.

an estimated five percent below the 1939 level. This shift would permit badly needed improvements in rotations on the bottomlands. Other long-term desirable changes, over and above expected short-term changes are minor in nature and involve principally the long term yield increases resulting from a balanced program, improved varieties and increased use of lime and phosphates.

Floods during the growing season are a constant menace to areas of this type where the greater part of the food is produced on the bottomlands. One flood during a given year could easily upset all production plans for that year, and would drastically reduce the amount of livestock produced. Research studies are needed which would indicate how the cropping system on the low bottomlands might be changed to lessen the flood risks.

Ways to Facilitate Adjustments

Steps Which Could Be Taken Immediately

Unfortunately, there was not an abundance of winter legume and grass seed available this Fall to enable Southern farmers to take full advantage of their first opportunity to modify their crop programs to meet the changed situation which has developed since Spring. Low yields and reduced imports seriously affected the supplies of Austrian peas, vetch, crimson clover, lupine, and rye grass available in 1941 as compared to 1940. Table 22 outlines the details of the seed situation based upon preliminary reports. Importation of lupine seed was reported in 1941. This crop is in an experimental stage in parts of the Southeast. So far the results have been satisfactory. It seems to withstand unfavorable weather conditions, and seed can be harvested locally.

Table 22. Relative Availability of Winter Legume and Grass Seeds in the United States, 1940 and 1941

Crop	Domestic Production			Imports		
	Thousands of pounds		Per-cent change	Thousands of pounds 7/1/40 to 6/30/41	Thousands of pounds 7/1/39 to 6/30/40	Per-cent change
	1941 1/	1940				
Winter legumes						
Austrian peas	35,300	53,700	-34	3/	3/	3/
Vetch	55,859	50,540	11	27	3,002	- 99
Crimson Clover	2,800 2/	2,957 2/	- 5	0	5,446	-100
Lupine	3/	3/	3/	667	3/	
Total	93,959	106,197	-12	694	8,448	- 92
Winter grasses						
Ryegrass, common	22,000	27,500	-20	294	953	- 69

1/ Estimated
2/ Tennessee production only
3/ Data not available.

If similar seed situations arise in the future it may be desirable, as a conservation measure, for farmers to include a high proportion of winter grains in mixtures with legumes and grasses. Such mixtures would not be strong "soil builders", but they would provide good winter cover. Winter grain, particularly oats and barley, could be used as green manure or for feed depending upon the needs on the particular farm. New varieties of these grains have shown much promise in subregions from the Piedmont on North. If the adapted strain cannot be obtained in some areas it may be more desirable to use wheat for a green manure or grazing crop than to "import" some poorly adapted strain at a high price.

Our experience this Fall raises the whole question of the "war period" seed supplies for minor crops -- including peanuts and soybeans. It is doubtful that private seed companies or farmers will take the risk of increases above the normal supply in sufficient quantities to insure an adequate "safety margin." Consideration should be given Government agreements with reputable seed firms for a 35 to 50 percent seed reserve [illegible] crops.

for such crops. This might be done by an agreement to remove the unsold volume at a fixed price, and to have delivery as directed by the Government at a given date. Seed distribution facilities are available through the local AAA office. The procedure for handling soil building crops is already well established.

In an effort to stimulate local production of vetch, bur clover and other legumes, soil building assistance is provided for seed patches.

One difficulty which is encountered in local seed production in this area is the present lack of satisfactory seed storage facilities on the general run of farms. In the present emergency it may be more effective in many areas to use community storage facilities.

Controlled Breeding and Supplemental Feeding Needed.-- Most of the hogs in the Southeastern Area, except in the Coastal Plains and the Lower Ohio Valley subregions, are produced for the home meat supply. Market increases will be limited mainly to the Ohio Valley and the peanut sections. Pigs are farrowed in the Coastal Plains in Alabama, Florida, Georgia, and South Carolina in about equal numbers at all seasons of the year, with some concentration during the late spring. Hogging off peanuts in the fall provides most of the feed. By breeding in late November or early December for late spring litters, the amount of summer feeding could be reduced, yet the pigs would be in better shape when turned into the peanuts. Controlled breeding will require more fencing and taking the sows off open range. Supplemental feeding would profitably increase the daily gain. In addition, experience in the region indicates it would materially reduce the losses. In 1940 these losses were great.

Cholera Losses. -- Another step which could be taken to increase hog production during the next few months would be to vaccinate. In some communities in which veterinarians are not available, it might be possible to arrange for the cooperation of southern schools for veterinary college students and others to go into these areas for a month or 6 weeks to vaccinate and to teach local people how to vaccinate properly. If Coastal Plains communities adopted a program for 100 percent vaccination, hog losses could be reduced materially. Reduction of cholera losses and effective parasite control would greatly increase the South's contribution to the pork supply needs in the "food for freedom" campaign.

A "Refugee" Dairy-calf Program.--It will take about 3 years to make substantial increases in cattle numbers, whereas our need for increases is immediate. Many of the large dairies around cities and defense centers have scoured the outlying sections for cows and heifers during the past few months. This, coupled by farmers attempting to increase their milk production, has resulted in an acute shortage of cows. Unfortunately, many large dairies now purchasing cows continue to kill day-old calves or sell them as veals. This method of disposing of heifer calves will continue until cow prices reach a very high level, unless some action is taken immediately to place them in the hands of farmers in sections where they are needed.

It would appear feasible to establish a standard purchase price at least for the heifer calves, and to distribute them to farmers who can feed them at the purchase price plus a low delivery cost. For a number of years, we have depended to a large extent upon farmers in the Piedmont and "hill" sections as a source of dairy replacements. As mentioned above, the tendency now is for dairymen to buy not only the heifers but the breeding stock as well. This means that the supply of dairy replacements will probably decline at an increasing rate if some provision is not made for movement of these calves back into areas in which there is a supply of low-quality roughages. Some arrangement could perhaps be developed whereby county agents or FSA supervisors could superintend the buying of the calves, to be held until there is a pick-up truck load, and with the State offices acting as a clearing house, the load could be sent into counties in which there are applications for these "refugee" calves. The purchase price and a "minimum" transportation cost could be charged to the farmers. The total supply of such calves could easily be overestimated, but as prices for dairy products and feed rise, there will be a noticeable increase in the practice of liquidating them.

Some of the larger "dry lot" dairies, particularly in Florida, have been selling their cows for slaughter as soon as they go dry. If the calf program were set up the local representative could pick over these "cast-offs" and handle them through the same facilities established for handling the calves.

The Farm Food Supply -- Another immediate opportunity for farm families to contribute to defense needs will be to go the limit in protecting the remaining parts of their fall and winter gardens. Straw, leaves, and other types of mulch put on to avoid frost and light freezes may mean many more meals from the garden. If some families have an over-supply of vegetables which cannot be saved for their own use or marketed, it would be highly desirable that they give them to their neighbors, particularly to families that are in need.

All possible precautions should be taken to prevent the winter's supply of home canned goods from freezing. A thick wrapping of paper around each can would be one worthwhile measure.

Production Changes in Localized Areas of Defense Activities.-- A large proportion of southern farmers, faced with difficult adjustments, are on "dead center." They are growing their present allotments of cash crops, but they are making only partial use of the rest of their resources. In some areas the increased number of consumers brought in by defense industries, civilian aids in camps, and the camps themselves, offer a local market of growing size. It is true that many obstacles decrease the attractiveness of these markets as outlets for small operators. Immediate reconnaissance surveys around such centers might provide a suitable basis for an appraisal of these chances to develop more diversified farming in such areas.

Care of Farm Machinery.-- Farm machinery may continue to rank high on the priorities list of the Office for Production Management, but as the need for war materials becomes more acute, farm machinery may be pushed downward. Every turning plow, disk, and planter should be pulled in this year, working parts should be greased, and some shelter provided. Perhaps the Department should sponsor a "National farm machinery repair week."

Local Farm Labor Shortages.-- The fact that the labor excesses in many communities have disappeared will become increasingly apparent during 1942. Some will have moved away; others will be living in the community but working "steady" now in a defense industry. Others will have moved from the country into town to take the place of the filling station boys who may have gone to the Army or possibly to the city to work. To the farm operator this will mean higher wages than he had counted on. The question, "Can experienced labor be brought in?" will arise. It can, but only in small numbers at higher wages. Could more young boys and girls and older people be employed? They can, but it will take higher wages to attract them and they will be less efficient. We are reaching a period in which a surplus of labor which has been dammed up on the farm is going into other lines, and wage rates will no longer be based upon the level that could be obtained on some other farm in the neighborhood, but instead the wages that can be obtained in other lines of production, with continued differentials for skills, will govern farm wages.

In many instances the continued welfare of the community will depend upon getting the crops harvested. Loans will be outstanding. Store bills will be accumulating. These, other bills, and taxes will go unpaid if harvesting is not done. Perhaps it will be necessary for the community to realize this and to gear itself accordingly. In some communities it may be necessary to close stores three afternoons a week and to dismiss school two week-day afternoons. The Farm Bureau, the Chamber of Commerce, the Lions Club, a nd the church organization in Buffalo Ridge may have to see to it that everyone pitches in, at a fair wage, and picks apples or cotton, with cash on hand for the workers every Saturday night. The seasonal elasticity in the labor supply in most southern communities would be startling if it actually became a civic and patriotic duty to see that the crops are harvested. Much could be done to stimulate people in rural areas as to the seriousness of the situation if they are called upon to take a part. "Business as usual," if continued, will result in a persistent lethargy. Such a community effort would not solve all of our immediate farm labor problems. But it would help.

Suggested Measures for 1943-45

In general, changes "expected" by 1943-45 in most of the subregions are in the same direction as those considered desirable but the adjustments will not be carried far enough. The reason for this is found in the many obstacles to production changes, including small operating units,

lack of capital, tenure arrangements, the difficulties arising from inadequate marketing facilities for many commercial enterprises other than cotton, inefficient equipment, low yields of feed grains and pasture, erosion, and inexperience with needed feed and livestock enterprises.

Farm Plans Needed.-- Many farmers, particularly in the more critical adjustment areas, will need to make a well-balanced farm plan if they are successful in making significant changes in their systems of farming. From an over-all viewpoint, agriculture is fortunate in this emergency in having functioning agencies equipped to facilitate production adjustments. Practically all of the 1.6 million farmers in this region are cooperating in the AAA program, and the FSA, SCS, and FCA are assisting more than 400,000 farmers in the region (table 23). This assistance is of various forms, including credit extension, technical assistance, and service functions. Many farmers are cooperating with these agencies on the basis of a farm plan. Table 24 presents the number of farm plans made by the SCS and the FSA in selected counties in the various subregions, and the ratio of the number of plans to the operating units in the county. The ratios of the number of farm plans to total operating units indicate that, with the exception of the Sand Hills and the Appalachian Range and Foothills, a sizable proportion of the farmers in the critical adjustment areas now have the assistance of these agencies in making their farm plans. This aid will need to be expanded materially if wise adjustments are to be made on most of the farms. The old adage, "a stitch in time saves nine" fits the current need for expanding this service. Much can be accomplished towards bringing changes more nearly in line with "desirable goals," and the readjustment after the war period can be minimized greatly if more individual farmers can have guidance in the organization of their farms to fit local problems, the circumstances of the family, and the type of production which seems likely to be most in demand.

Managerial Assistance Needed.-- Unfamiliarity with problems involved in new ways of farming will limit the extent of changes even on farms where funds or credit are available. An approach during the emergency would be the employment of qualified persons in each county as farm consultants. Local agency representatives and these farm consultants could work together with the farmers in a particular community. The farm consultants would be locally available and on call for advice and counsel. The intensity with which managerial assistance is needed in the Southeast is such that a consultant could be very helpful in a majority of the communities in most of the subregions.

Table 23.- Number of various types of loans and agreements, Southeastern Region by States, 1940

	South Carolina	Georgia	Alabama	Florida	Kentucky	Tennessee	Virginia	North Carolina	Total
Types of loans:									
Rehabilitation loans	11,385	21,727	24,312	7,629	13,674	9,655	9,551	14,841	112,774
Tenant purchase loans	729	1,756	1,641	115	283	561	313	787	6,188
Rehabilitation projects	407	539	693	191	37	347	277	506	3,047
Land bank loans	6,798	12,675	1/	4,483	12,453	13,580	10,581	12,028	72,598 1/
Land bank com. loans	9,002	14,870		5,357	10,199	10,550	4,582	13,283	67,843 1/
Production credit loans	10,586	12,456		2,628	6,708	5,344	3,859	18,333	59,914 1/
Feed and seed loans	14,132	13,948		783	366	312	29,190	12,505	71,236 1/
Total loans	53,039	77,971	26,646 1/	21,186	43,773	40,349	58,353	72,283	393,600
Types of agreements:									
District agreements	4,049	4,624	2,578	363	0	19	1,226	5,437	18,296
Camp agreements	2,170	852	2,070	0	1,147	366	1,524	3,424	11,553
Project agreements	1,471	1,141	966	244	482	232	894	2,850	8,280
Total agreements	7,690	6,617	5,614	607	1,629	617	3,644	11,711	38,129

1/ Farm Credit Administration data not available for Alabama and is omitted in totals.

Table 24.- Contacts with farmers by F.S.A., S.C.S., and F.C.A. in selected counties, by Subregions, January 1, 1941

Subregion	Selected counties	Total operating units (Approx.)	Type of contact: Current farm plans 1/		Loans for individual farm operations	
	Number	Number	Number	% total	Number	% total
Piedmont	5	8,322	2,216	27	2,792	34
Atlantic Coastal Plains	5	6,711	755	11	1,582	24
Appalachian Range and Foothills	9	21,349	1,422	7	2,394	11
Coastal Flatwoods and Citrus Fruit and Truck	2	3,950	258	7	773	20
Black Belt	1	2,280	498	22	2/	2/
Sand Hills	2	4,957	469	9	1,520	31
Brown Loam Area	2	5,002	368	7	859	17
Upper Tidewater Area	2	3,895	281	7	1,203	31
Shenandoah Valley	1	2,319	299	13	361	16
Bluegrass	1	2,146	160	7	376	18

1/ Farm plans made in cooperation with the Soil Conservation Service and the Farm Security Administration

2/ Data not available.

Dairy Responses 1943-45.-- Total milk production on farms in 1939 was 108.6 billion pounds. About 9 percent of this milk was produced in the Southeast. By 1943-45, with $2.45 milk and $0.40 butterfat (assumed average prices) production in the Southeast can be "expected" to be about 10.2 billion pounds. This is appreciably below the production which would result if farmers in the Southeast would respond in line with the desirable dairy expansion for the various subregions. Table 25 outlines the estimated increases for the period 1943-45 and the long-time.

Table 25.- Relative contributions of Subregions in the Southeastern Area toward dairy production increases 1/

Rank 2/	Subregions	Percentage increases over 1939			Percent of total increase expected	Percent of total farm land in area
		Expected '43-'45 3/	Desirable '43-'45 4/	Long-time desirable 5/		
1	Shenandoah Valley	31	34	38	7.5	2.1
2	Lower Ohio Valley	28	56	68	1.7	.8
3	Bluegrass	23	23	23	12.3	4.1
4	Coastal Flatwoods and Citrus Fruits and Truck Areas	20	33	144	2.3	3.9
5	Appalachian Range & Foothills	17	30	65	28.2	18.5
6	Sou.App. Basin & Valley Areas	16	29	55	16.3	10.3
7	Upper Tidewater Area	12	51	67	1.1	2.1
8	Black Belt, Alabama	9	41	82	1.2	2.4
9	Upper and Lower Coastal Plains	9	41	91	9.6	23.7
10	Piedmont	9	34	85	14.3	21.0
11	Brown Loam Area	9	17	84	3.3	3.7
12	Sand Hills	8	48	30	.6	1.7
13	Atlantic Coastal Plains	7	40	58	1.6	5.7

1/ Not necessarily in exact agreement with 1942 production goals.
2/ According to percentage increase in production "expected," 1943-45 over 1939.
3/ Total "expected" increase - 145 million gallons.
4/ Total "desirable" 1943-45 increase - 341 million gallons.
5/ Total "desirable" long-time increase, 729 million gallons.

The subregions are ranked, based upon the extent of expected increase. It is obvious from the table that farmers in some subregions will increase their milk production about as far as is desirable with the price stimulus alone. In other areas, for example, the Ohio Valley, the increase is only about one-half as much as would be desirable. Based upon these data and the available information concerning the various subregions, groups have been made with reference to the need for "special programs" for milk production increase. The groupings are as follows:

Group I - Subregions in which the "expected" production is nearly equivalent to the 1943-45 "desirable." (Price incentives alone will probably accomplish as much of an increase as will be "desirable" based upon the assumptions in this study).

study)

Subregions: 13, Bluegrass
12, Shenandoah Valley
10, Brown Loam Area

Group II- Subregions in which the expected production is appreciably less than would be desirable. (Price increases, if supplemented by special measures would bring about relatively large increases in dairy production.)

Subregions: 3, Southern Appalachian Limestone Basin and Valley areas
5, Appalachian Range and Foothills
14, Lower Ohio Valley (Ky.)
8, Black Belt, (Alabama)
11, Upper Tidewater Area
2, Piedmont

Group III-Subregions in which the expected production with price incentives alone would be low. ("Special programs" would probably not bring about appreciable increase in commercial production.)

Subregions: 1, Upper and Lower Coastal Plains
4, Atlantic Coastal Plains
9, Sand Hills
6 & 7, Coastal Flatwoods and Citrus Fruit and Truck Area

In Group I subregions, commercial dairy production would expand nearly as much as would be desirable with price incentives alone. About 23 percent of the expected increase for the Southeast as a whole, with the assumed prices, would come from these subregions.

Group II subregions offer the greatest opportunities for appreciable increases in commercial dairy production with a minimum of danger from over expansion. Four of these subregions: the Southern Appalachian Limestone Basin and Valley areas; the Black Belt (Alabama); the Upper Tidewater area; and the Piedmont all have acute adjustment problems. Most of the dark tobacco production is in the Limestone Basin and Valley areas. The other three are largely dependent upon cotton.

Milk production should be expanded in the Group III subregions but the response for commercial production would be considerably less in relation to the effort expended. Further, much of the commercial expansion which would be obtained would not be on the general run of farms, but a high proportion of it would come from further increases on very large production units. Additional efforts should be made to increase production for home use in these areas. It is doubtful whether efforts to establish dairying as a supplementary cash enterprise on many farms or to establish

processing plants to take care of whilo milk or sour cream would be successful in these subregions.

Fertilizer and Production in Southeast.--Tobacco and cotton farmers in the Southeast normally use a large quantity of the fertilizer supply. It is one of the main cash cost elements in the production of these two crops. Under most conditions the fertilizer practices followed are a major determinant of both the yield and quality of the crop produced. Corn and small grain production is also partially dependent upon fertilizer, in most parts of the area, but the rates used per acre on these crops are appreciably smaller.

The general shifts expected under the conditions as outlined for the study will be toward reductions in the high fertilizer consuming crops toward low fertilizer consuming crops. Table 26 compares estimates of consumption in 1939, applying average rates for each crop per state to estimates of the consumption with acreages expected in 1943-45. These shifts would reduce the fertilizer needs by about 8 percent if the same intensity of production were continued.

Table 26. Use of fertilizer by States for selected crops, 1939, and the acreage expected 1943-45.

Item	1939		Expected 1943-45		Difference	Item	1939		Expected 1943-45		Difference
	Acres 1000	Tons 1000	Acres 1000	Tons 1000	Tons 1000		Acres 1000	Tons 1000	Acres 1000	Tons 1000	Tons 1000
Alabama						Florida					
Corn	3450	117	3477	118	1		704	31	763	33	2
Wheat	5	1/	22	2	2		0	-	0	-	-
Cotton	1931	284	1773	261	-23		58	7	55	7	0
Tobacco	1	-	1	-	-		28	12	16	7	-5
Georgia						Kentucky					
Corn	4233	178	4254	179	1		2532	68	2610	70	2
Wheat	153	12	184	15	3		328	18	378	21	3
Cotton	1856	273	1734	255	-18		16	1	14	1	0
Tobacco	118	60	67	34	-26		361	45	304	38	-7
N. Carolina						S. Carolina					
Corn	2458	253	2645	272	19		1762	166	1844	173	7
Wheat	387	39	426	43	4		182	19	196	20	1
Cotton	710	151	666	142	-9		1177	228	1103	214	-14
Tobacco	775	375	613	248	-127		127	52	82	34	-18
Tennessee						Virginia					
Corn	2584	52	2490	50	-2		1331	91	1373	93	2
Wheat	339	19	393	22	3		490	68	554	77	9
Cotton	677	36	638	34	-2		30	6	27	5	-1
Tobacco	118	18	107	17	-1		161	65	104	42	-23
Oats							86	9	104	11	2

Total 1939 2,753 thousand tons
Total 1943-45 2,538 " "
Reduction 215

1/ Less than 500.

Encouragement from action agencies in the growing of leguminous cover crops which supply nitrogen to the soil as substitutes for fertilizer should help to alleviate the fertilizer shortage. Defense industries and agricultural fertilizer compete for the same raw materials. Further, shipping limitations may make it difficult to obtain the normal supply of natural nitrates. These circumstances may make it necessary to carefully allot a limited supply of plant food nutrients. If this occurs and a rationing system is devised, consideration must be given to variations between systems and size of farm operations and the most effective utilization of available materials. The following is suggested as a system of rationing in cotton and tobacco areas. Each operating unit would be issued a fertilizer ration card, with which purchases of plant nutrients could be made from any dealer or dealers up to the basic fertilizer allotment for the farm.

The normal fertilizer consumption for each county would be approximated by multiplying the acreages of crops usually fertilized by the usual application rates for the area. This total would be adjusted by the ratio of a weighted average yield of the major fertilized crops in the county to a weighted average yield for the area. The adjusted normal consumption would be reduced by the ratio of the anticipated national supply to the average supply available during the period 1937 through 1939 to establish the county base allotment.

The normal fertilizer consumption for each farm would equal the normal acreage of each crop multiplied by the usual fertilizer rates for the area. This would be adjusted by the ratio of a weighted average yield of the major fertilized crops on the farm to a weighted average yield of these crops for the county. This adjusted normal would be reduced by the percentage reduction for the county as a whole. No farm would be allotted more fertilizer than the total of the normal consumption as defined above. The total of the farm allotments could not exceed the total county allotment. The allotments would be developed in terms of plant nutrients.

Better Tenure Relationships.- The high rate of mobility from farm to farm by tenant farmers has retarded the development of a stable agriculture in the South. It would expedite progress in agricultural phases of the defense effort if tenants and their present landlords would make every attempt to continue to work together for the duration of the emergency. 1/ Table 27 indicates that more than one-third of the tenants changed farms from 1929 to 1930.

1/ This should, of course, continue after the emergency as well as during it. If landlords and tenants accomplish more stable tenure relationships during the emergency, there is no reason why they should not continue afterward.

Table 27. Percentage Distribution of farm operators, by color of operator, term of occupancy and tenure, 16 Southern States, 1930 1/

Item	Percentage of farmers occupying their farms for various periods					
	Less than 1 year		1 year		15 years and over	
	Owner	Tenant	Owner	Tenant	Owner	Tenant
White	6.1	40.1	6.0	20.6	40.3	3.4
Colored	4.2	28.6	4.7	19.8	46.2	6.2
Total	5.9	35.6	5.9	20.3	41.0	4.5

1/ Adopted from "Farm Tenancy," Report of the President's Committee, February 1937

Agency programs have made some progress during the past 10 years in increasing length of tenure, but almost half (43 percent) of the tenant farmers in the Southeast continue to move each season. Farming tools, furniture, canned goods, and other valuables are damaged or lost with each move. Often, the operator does not know the conditions on the new farm and his crops suffer accordingly. Livestock enterprises with long production periods, such as beef cattle and dairying, cannot be developed satisfactorily when the operator moves often.

Perhaps arrangements could be made for the new County Farm Debt Adjustment Committee, now being organized in each state, with additional duties relating to tenure relations, to assist tenants and landlords to work out ways to solve their problems. In addition, the committee could bring "good" landlords and "good" tenants together as a clearing house function, if changes seemed necessary. Of course some mobility is necessary to provide for adjustments in families and farms. Further, many farm families are needed in industry. It is expected that these shifts would be continued. Such a development might have many beneficial effects in both the defense and post defense periods.

Expansion of Cooperatives Needed.-- On many farms the shifts from strictly cotton farming will require the availability of new machinery, storage facilities, and group services. The experience of the FSA in cooperative service work indicates that there are many types of services, equipment, and facilities needed by individual farmers, which no one individual can afford to own and operate for his sole use even though he had or could obtain the funds. The necessity for group services is still more evident if a farmer is reorganizing his farm program to change from a cash-crop program to a livestock economy, or some other program requiring new equipment or livestock.

Within the past year the FSA has established 31 land-leasing associations serving 1,550 families. These associations provide a means whereby families can obtain control of land resources. They permit the subleasing of family-sized tracts by the association. In many instances they also permit the operation of large tracts by tenant farmers instead of sharecroppers. The additional income to the family as a third-and-fourth operator at times provides a sufficient amount to give the family a more satisfactory living.

Care of Farm Woodlands.-- Farm woodlands would be more profitable if better care were taken of present stands. Also, in many areas the stands are seriously understocked. Further study should be given to the possibility of allowing farmers the alternative of using the present assistance for planting and caring for forest trees or for the care of trees already planted.

Increasing Feed Production.-- More feed and pasture will stimulate increased livestock production. Present provisions of AAA under which each farmer is to have at least a minimum acreage of erosion resistant and soil conserving crops should result in more feed. In addition, persistence in seeding of winter legumes, lespedeza, kudzu and alfalfa and the establishing and fertilizing of permanent pastures is provided. Assistance is also provided for application of fertilizer to legumes. Fertilizer, seed, and other conservation materials are made available to the farmer with no cash outlay, deductions being made from the farm payments to cover the cost of materials. Increased acreages of small grains might be stimulated if the conservation assistance program is expanded to include those seeds. This is particularly true in areas such as the upper and lower Coastal Plains and the Black Belt where winter cover crops are valuable for grazing.

Low Cost Financing for Development Programs.-- On the farm itself, starting a development program will call for considerable new investment in many cases. Barns, fences, and a place to store an adequate feed supply will need to be built. Consideration might be given to providing loans at very low interest rates for the purchase of materials for fences and storage spaces. Such loans should be based on actual needs of the farm and amortized over a long enough period to permit the operators to repay them from the proceeds of the enterprises to which the improvements contributed.

Adjustment Measures in the Post War Period

Experimental-demonstration farms.-- The farm adjustments needed in the long run will mean material changes in prevailing farm production organizations and methods. Uncertainties involved in making changes and lack of experience in new enterprises will call for effective guidance if these adjustments are to be made with a minimum danger of money losses. Action agencies in cooperation with county planning committees and research and extension groups are in a position to supply that guidance. One of the means of doing this effectively is actually to try out systems of farming recommended by the county committee and research groups for particular commodities. This could be carried out as part of the FSA program on a client's farm, or on a representative farm on which the operator would be willing to cooperate. Participation in the action agency programs would insure to the operator of the "experimental-demonstration" farm an income not below what he otherwise would have obtained. Widespread interest and publicity would be insured by making the project an integral part of the cooperative agricultural planning work. Simple farm records would be kept on the selected farm in order to appraise correctly the results and to publicize the work. Consideration might also be given to the possibility

of hiring the operator of the farm on a part-time basis as farm consultant as described above to assist other operators to make needed changes in their farming systems. These farmers could assist Government agency representatives and receive pay for their time just as farmers now are paid to check compliance.

Meeting Diet Needs.-- Inadequacies in diet will not be eliminated during the current emergency. Higher prices for eggs, butter and other livestock products may result in more sales and less home consumption on some farms. Expansion in livestock production, however, should eventually result in greater supplies for home consumption. Intensive educational activities and farm and home managerial assistance will be required for many years to overcome inertia and existing food habits which currently limit the production and conservation of food on many low income farms.

Loss of soil productivity means lower standards of living and contributes toward a continuation of poverty. The Southeast has already suffered greatly in the loss of both soil and woodland resources. Estimates of the land area damaged by erosion are shown in Table 28, which follows:

Table 28.- Reconnaissance erosion survey data for eight Southeastern States 1/

Items	Acres	Percent of total area
Total Area (Exclusive of large cities & water)	234,499,976	100.0
Areas with little or no erosion	100,020,362	42.7
Total area affected by Sheet erosion	119,697,929	51.0
Total Area affected by Gullying	113,561,952	48.6
Essentially destroyed for Tillage	9,691,931	4.1

Source - Report on Land Planning for National Resources Board Part V - 1935

1/ Alabama, Georgia, Florida, North Carolina, South Carolina, Tennessee, Kentucky, Virginia.

Changes which are desirable during the war period are in the same direction as will be needed for conservation, a prerequisite of a stable agriculture.

If a rural-works program is inaugurated in the post defense period, perennial hay establishment, mulching of gall spots, and planting of trees should rank high on the priorities list of work which might be done on private land. It is not a necessity that conservation farming should always result in a reduced land base for intensive crops. True, there are thousands of acres that should go out of row-crop production. But there are thousands of acres which could be brought in which are just as good as the first three grades of cropland being cultivated now. Preliminary results from land use capability surveys in the Brown Loam subregion indicate that land in cultivation could be expanded to include an additional 29 percent of the total land area if intensive conservation practices were used. A similar survey in Greene County, Georgia, (in the Piedmont)

indicates that land in cultivation could be expanded from less than one-fifth up to about one-half of the total land area. These conditions do not prevail all over each of these subregions but it is evidence that conservation measures could include increasing the land base as well as decreasing it.

Woodland Resource Is Greatly Underutilized.-- In 1936 the Forest Survey showed a timber volume of 613,195,000 cords on 61,549,000 acres in Alabama, Georgia and Florida, or nearly 10 cords per acre. In these three States 60 percent of the total land area is in woodland. About 51 percent of the area of the other five States is in timber. For all eight States, about 46 percent is pine and 54 percent hardwood. The annual forest growth is estimated at 21,400,000 cords or 0.35 cords per acre. Offsetting this annual growth is a commodity drain of 0.30 cords per acre. If good woodland practices were instituted on both a community and individual farm basis the growth rate could be doubled. Farm value of woodland products is less than 4 percent of the total value of crops, livestock and woodland products added. A more complete picture of the importance of the woodland-products industry in the region is shown in Table 29.

As timber volumes increase and a larger number of forest product industries are located in the Southeast, the number of workers employed can be increased greatly. Farmers can expect increased returns if they give as much proportionate attention to their woodlands as they do to their crops and livestock. Much additional research is needed if guidance is to be provided as to economical farm woodland production and utilization.

Table 29. Value of products, number of wage earners and wages paid in the forest products industry, Southeastern States - 1937

	Value of Wood products 1/	Wages paid in wood industries	Numbers of wage earners
Virginia	$83,408,000	$17,049,000	25,249
Kentucky	34,020,000	8,117,000	10,417
North Carolina	96,318,000	23,242,500	37,178
Tennessee	64,721,000	13,985,000	25,719
South Carolina	29,660,000	7,295,000	14,451
Georgia	59,454,000	8,931,000	18,926
Alabama	51,448,000	10,591,000	21,240
Florida	54,339,000	11,891,000	21,228
TOTAL	$473,368,000	$101,101,500	174,408

1/ Includes the value of wooden baskets, boxes, caskets, cooperage, furniture, lumber and timber, planing mill products, turpentine and rosin, wood preservatives, wood turned and shaped, and pulpwood and other fibers.

Fire is the greatest single factor preventing woodlands from producing their maximum. Florida and southeastern Georgia constitute the most serious fire section in the area. Much of the woodland in the Upper and Lower Coastal Plains, which is mostly longleaf and slash pine, is burned over frequently. Next in order of importance is the Piedmont. Fires are less common in the hardwood sections of the mountains. The estimated per-acre cost of protection is 6 cents for the longleaf-slash areas, 5 cents for the loblolly shortleaf area, and 4 cents for the hardwoods in the mountains. Cost estimates of expenditures which would be necessary for adequate fire protection as compared to the present expenditure is shown in Table 30.

Fire control and reforestation of "idle" land will do much towards improving the rural South. Current estimates are that 11 million acres are in need of reforestation. Up to the present, plantings have been made on only 209,000 acres.

Table 30. - 1938 Area and cost estimates of providing adequate fire protection for all State and private forest lands vs. funds actually spent C. Y. 1940

State	Total State and private forest area 1/ needing fire protection (acres)	Cost of adequate fire protection	Total funds spent during 1940
Alabama	18,176,950	785,000.00	219,277.70
Florida	20,684,060	1,241,000.00	415,278.48
Georgia	20,561,916	1,026,000.00	195,673.00
North Carolina	20,029,400	912,000.00	130,039.75
South Carolina	12,187,301	627,000.00	203,386.06
Tennessee	12,892,558	516,000.00	63,250.18
Kentucky	8,590,000	275,000.00	33,000.00 2/
Virginia	13,775,000	440,000.00	140,334.00 2/

1/ The forest areas in this table are those compiled by the States and approved by the Forest Service in June 1938 for area and cost estimates for cooperative fire protection.
2/ C. Y. 1939 - 1940 figures not available.
Source of information: U. S. Forest Service.

Farm Buildings.-- A recent survey of about 25,000 farm families in northeast Alabama showed that two-thirds of these families live in unsatisfactory dwellings. Further, food and feed storage facilities were entirely inadequate. Similar circumstances exist in many parts of the Southeast, notably the Appalachian subregions, the Coastal Flatwoods and the Sand Hills.

Millions of man days of labor could easily be used in improving farm buildings in this region. Rather than approaching the problem from the standpoint of a "new house" campaign, it is believed that more real good for more families could be accomplished with a given amount of money by improving existing houses and placing more emphasis on such facilities as sanitary privies, wells (such as coverings or pumps), low

cost food cooling systems, storage cellars, and feed and seed barns. Most families need these facilities more than they need a new dwelling.

Comparison of Desirable Long-Term Production Adjustments, By Subregions

The extent of needed long-term production shifts varies a great deal between subregions, as indicated by table 51. The need for shifts also varies somewhat between type-of-farming areas within subregions. A knowledge of the differing extent of needed shifts should provide a basis for adjustment programs to fit conditions within the various subregions.

Corn acreage in the long-term should be reduced considerably in nearly all subregions, with greatest reductions being made in the Southern Appalachian Limestone Valley and Basin Areas and in the Black Belt. Increases were indicated for subregions 4, 6, 7, and 11 (fig. 1) since topography in those sections is generally good, erosion is at a minimum, and considerable acreages of undeveloped land exist. Furthermore, greater acreages of corn would help provide feed needs in those areas.

Recommended reductions in cotton acreage are generally greatest in sub-marginal cotton producing areas. Even in the recent past these subregions have been planting far under their acreage allotments. Virginia and Florida, together with the Black Belt of Alabama, contain most of these areas. Most of the tobacco reduction suggested as a change from 1939 took place in 1940 when tobacco production was again placed on an acreage allotment basis. Most areas could easily produce much larger acreages of tobacco if market conditions permitted.

Of all small grains, oats should be expanded the greatest extent. The large percentage increases indicated for each subregion should be considered, however, in light of the fact that the base acreage on which the oats increase was calculated is usually small. Greatest increases are indicated for the Brown Loam subregion, the Lower Ohio Valley, and the Southern Appalachian Limestone Basin and Valley Areas. Other small grain increases pertain largely to barley, for which a large increase is indicated. Barley, like oats, provides a good source of feed to replace or supplement corn. A part of the wheat acreage increase would be used to supply food needs.

Hay acreage increases are greatest in subregions 6 and 7 (in Florida) because of the great need for hay there. Hay can be grown but at present cannot be properly cured.

In accordance with the desired shift, all classes of livestock have been increased in most areas. Dairy-cattle increases in most subregions would, if accomplished, fulfill diet needs for milk, but little would be left for sale. In subregions such as the Bluegrass and Southern Appalachian Limestone Valley and Basin Areas, much of the increased production could be sold. A quantity equivalent to or exceeding that sold from these subregions, however, would need to be absorbed by the other subregions of the Southeast in addition to what they can produce if enough milk for adequate diets is to be available.

Table 31.- Summary comparison, by Subregions, of tentative long-time production objectives (expressed as a percentage change from 1939 production)

Item 2/	Unit	Type of farming subregion number 1/												
		1 %	2 %	3 %	4 %	5 %	6 & 7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %
Corn	Acres	-4	-9	-17	11	-16	38	-22	-3	-19	5	-10	-2	-5
Cotton	Acres	-14	2	- 4	-27	-15	0	-36	-7	- 6	-12	--	--	--
Tobacco 3/	Acres	-23	-31	-14	-28	0	-50	--	-26	- 6	-20	-50	0	0
Wheat	Acres	122	36	37	6	43	0	--	26	53	182	16	43	25
Oats	Acres	166	182	889	212	267	0	971	35	1180	210	83	456	567
Other small gr.	Acres	175	199	176	77	78	--	--	10	420	50	16	150	900
Hay	Acres	85	130	44	85	31	233	138	53	26	33	37	12	50
Beef & Veal	Lbs.	86	47	63	47	44	28	1	30	55	109	4	2	26
Cows	No.	74	83	29	49	39	108	45	28	63	60	4	10	40
Mutton	Lbs.	94	38	161	9	58	-100	303	36	58	33	51	6	40
Eggs	Doz.	80	95	127	79	71	71	63	38	104	84	114	61	93
Pork	Lbs.	66	12	45	38	10	18	3	12	7	48	-17	0	16

1/ See type-of-farming map, Fig. 1. Type of Farming Subregion names are as follows:
No. 1 - Coastal Plains
No. 2 - The Piedmont
No. 3 - Southern Appalachian Limestone Basin and Valley Areas
No. 4 - Atlantic Coastal Plains
No. 5 - Appalachian Range and Foothills
No. 6 & 7 - Coastal Flatwoods and Florida Citrus and Truct Area
No. 8 - Black Belt
No. 9 - Sand Hills
No. 10 - Brown Loam Area
No. 11 - Upper Tidewater
No. 12 - Shenandoah Valley
No. 13 - Bluegrass Region
No. 14 - Lower Ohio Valley

2/ Other items can be compared by referring directly to the subregion tables

3/ Reductions indicated were made in 1940 in most cases when tobacco production returned to an acreage allotment basis

Mutton production could well be expanded in most areas with the production of increased quantity of feed and pasture. The greatest absolute increase, however, would be in the Southern Appalachian Limestone Valley and Basin areas, of which the Central Basin of Tennessee is perhaps the most important segment from the standpoint of size. Generally speaking, sheep are not considered a suitable enterprise for subregions other than those which are able to furnish good native pasture.

Fairly uniform increases in egg production should take place, both for subsistence and for market. Subsistence increases would be relatively more important, however, in most subregions.

Greatest pork increases are indicated for the Upper and Lower Coastal Plains, particularly the Lower Coastal Plains part of the subregion where greater acreages of peanuts for hogging off should make such an increase possible.

Appendix Section I

Assumptions

To plan for the contingencies that may arise during the war period, it is essential that definite assumptions be made. These assumptions must take into account the impact of the war upon the whole economy and the probable changes in the agricultural situation. The latter had to be interpreted in terms of price changes for commodities bought and sold in order to outline quantitatively the production responses which would be "desirable" and those which can be "expected". The general assumptions upon which this report is based are as follows:

(1) Continuation of war, with "all-out" defense program in the United States; or, if war ends, active participation of the United States in world rehabilitation, with loans or gifts of industrial as well as agricultural goods to foreign countries sufficient to replace the effects of defense program on our agriculture.

(2) Increase in capacity to produce steel and other essential materials sufficient to bring about full utilization of labor.

(3) Full utilization of available nonfarm labor, except 1 million for turnover and 1½ million for military.

(4) No increase in taxation sufficient to absorb increase in national income payments to individuals.

(5) Continuation of agricultural programs and loans at 85 percent of parity.

The levels of industrial production, income payments, wholesale prices and living costs for the United States outlined in Table 32, for the period 1943-45, are based upon the above assumptions.

Table 32.- Index of industrial production, income payments, wholesale prices and living costs, United States, 1939-41, and assumed, 1943-45.

Item	Unit	1939	1940	1941	1943-45
Industrial production ...	Index 1935-39=100	108	122	148	175
Income payments, total ..	Billion dol.	70.1	74.3	85.3	112.0
Nonagricultural	" "	63.7	67.6	77.8	101.5
Agricultural	" "	6.3	6.7	7.5	10.5
Farm cash income	" "	8.7	9.1	10.0	14.0
Wholesale prices	Index 1926=100	77.1	78.6	84.0	95.0
All, excl. farm and food.	" "	81.3	83.0	88.4	100.0
Farm	" "	65.3	67.7	74.4	86.5
Food	" "	70.4	71.4	76.0	86.5
Prices paid by farmers ..	Index 1910-14=100	121	122	128	141
Prices paid, int. & taxes	" "	127	127	132	144
Cost of living, urban....	Index 1940=100	99.3	100.0	102.9	115.0

The rate of increase in industrial production between 1939 and 1941 has been extremely rapid with the added stimulus of defense activities. The estimated index of 148 for 1941 would mark a 40-point increase. If industrial production reaches 175 by 1944 it will mean an average increase of 7 points every six months, until that time. This is a startling rate of increase when it is considered that we will be reaching the limits of our present plant capacity in many lines of production near the end of this year. Further expansion means more plant capacity, more labor shifts, and a more effective utilization of plants with small capacity.

It is estimated that by 1944 we will not only have become a "100 billion dollar country" but will have exceeded this by 12 billion dollars. The rate of increase in agricultural income almost keeps pace with the non-industrial income. Cash farm income, it is estimated, would rise almost 50 percent.

Prices paid by farmers would increase an additional 13 points above the 1941 level on a 1910-14 base. Using 1940 as a base, it is estimated that urban living costs would increase about 15 percent.

Based upon the above indices pertaining to dominating phases of our economy, it is assumed that by 1943-45 the average farm prices in each of the Southeastern States will reach the levels outlined in Table 34. Table 35 outlines prices received by farmers during the period 1935-39.

Special attention must be called to the 1943-45 prices for cotton and wheat. Adjustments outlined on the assumed prices for these commodities would not be reasonable without rigid assumptions of national acreages. Total cotton acreage harvested, it is assumed, will not exceed 20 to 22 million acres and the total seedings of wheat will not be more than 55 million acres.

This report is based primarily upon the 1940 census, which shows a total of 22.8 million acres of cotton (harvested). Reductions for the period 1943-45 range from 6 to 8 percent in areas in which there is a high proportion of small farms and few production alternatives. In areas in which there is a higher proportion of large farms and relatively greater opportunities to shift to other lines, acreage reductions are between 7 and 9 percent. Exceptions are made for areas in which cotton production has become very difficult, for example, in the Black Belt of Alabama. Reductions in the "long-time" in many sections are not as great as probably will be warranted eventually. However, greater success must be obtained from alternatives to cotton in many sections before it will be safe for producers to give up more of their cotton base.

It should be noted that the 1939 tobacco acreages were substantially in excess of those in 1940 and 1941. Therefore, a large part of the change in tobacco acreages outlined in this report have already been made.

The wheat acreages were not limited to the usual proportions of the assumed 55,000,000 acres of wheat which would be grown in the Southeast. An exception was made to provide for increases, mainly for home use, which can be expected with the revised AAA ruling for "non-wheat-allotment-farms".

Cost items for the period 1943-45 are outlined in table 33. It is assumed that the costs of farm building materials, for items other than those used in the house, and farm machinery would increase 22 and 30 points respectively compared to the 1940 level on the basis of a 1910-14 index. It is assumed that prices of fertilizer would increase about 12 points from the 1940 level. This change in fertilizer prices is based on the further assumption that shipping facilities will be available so we can import nitrates from Chile to partially offset the demands of the defense program for these materials.

Farm wages will develop a greater range of variation during the next 4 years. The attraction of off-farm work is going to be received differently in many producing areas. Using a 1910-14 base, the index of farm wages in 1943-45 is estimated at 175 compared to 126 in 1940. It should be kept in mind that seasonal-labor wages in some areas will go far above this level and in other areas they will not reach it.

Estimates headed "expected 1943-45" are approximations of the average production resulting from changes farmers "will" make if prices are increased to the levels outlined in table 29. It is assumed that present agency programs will be continued about as they were functioning July 15, 1941. Any further changes in action-agency programs, therefore, might bring further production changes not accounted for in this report.

Assumptions concerning long-term adjustments

Implicit throughout this statement is the assumption that changes which would be desirable and profitable in meeting the needs of the defense program during the next 4 years will be made in such a way that the foundation for a more stable agriculture in the Southeast will have been laid.

The recommendations headed "long-time desirable" should be consistent with good management, resource conservation, and the development of a more stable agriculture.

Table 33.- Index numbers for major cost items, United States, actual 1940, average 1935-39, and assumed 1943-45. (1910-1914=100)

Item	1935-1939 (Actual)	1940 (Actual)	Assumed 1943-1945
Prices paid by farmers	124	122	141
Fertilizer	100	98	110
Farm machinery	154	153	183
Building materials 1/	149	150	172
Wages paid to hired labor	118	126	175

1/ For other than house

Table 34.- Assumed prices, received by farmers by States (Southeastern) and for the United States, average 1943-45 1/ (in dollars)
(Not for publication)

Product	Unit	United States	Va.	N.Car.	S.Car.	Ga.	Fla.	Ky.	Tenn.	Ala.
		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Wheat 2/	Bu.	1.10	1.24	1.35	1.30	1.34		1.16	1.28	1.33
Rye	do.	.72	1.17	1.38	1.66	1.57		1.09	1.25	
Corn	do.	.85	1.06	1.03	.97	.92	1.03	1.03	1.04	1.01
Oats	do.	.45	.76	.84	.79	.84	.99	.70	.75	.90
Barley	do.	.60	.80	.97				.83	.89	
Rice	do.	1.00								
Flaxseed	do.	1.90								
Beans (dry edible)	Cwt.	3.70								
Soybeans	Bu.	1.50	1.88	1.70	2.92	3.75		2.02	2.31	1.71
Seed alfalfa 3/	do.	19.00								
Hay:										
All classes	Ton.	9.50	14.82	16.53	15.77	12.82	12.35	12.06	11.97	12.82
Alfalfa	do.	10.50	17.96	19.74	20.90	19.95		15.22	16.17	18.06
Sugar beets	do.	6.00								
Peanuts	Lb.	.05		.055	.07	.05	.945		.055	.045
Tobacco										
Flue-cured	do.	.22	.22	.22	.21	.20				.18
Burley	do.	.21	.20	.22				.21	.22	.16
Southern Maryland	do.	.23								
Fire-cured	do.	.100	.110					.088	.106	
Dark air-cured	do.	.09	.116					.089	.085	
Cigarfiller & binder	do.	.140				.155	.155			
Cigar wrapper	do.	1.000				.82	.88			
Potatoes	Bu.	.80	.92	1.05	1.12	1.16	1.40	1.01	.82	.86
Sweetpotatoes	do.	1.05	.86	.96	.92	1.13	1.20	1.11	.97	1.11
Apples	do.	.95	.90	.94	1.29	1.23		1.13	1.26	1.25
Peaches	do.	1.00	1.45	1.44	1.30	1.37	1.09	1.22	1.14	1.08
Oranges	Box	1.65					1.52			2.13
Grapefruit	do.	.55					.58			

Continued

Table 34 Continued - Assumed prices received by farmers by States (Southeastern) and for the United States, average 1943-45 1/
(Not for publication)

Product	Unit	United States	Va.	N.Car.	S.Car.	Ga.	Fla.	Ky.	Tenn.	Ala.
		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Cotton	Lb.	.15	.15	.16	.16	.15	.15		.15	.15
Cottonseed	Ton	40.00	42.00	41.60	40.40	39.52	34.34		41.53	38.73
Hogs	Cwt.	12.00	12.24	12.36	11.40	10.44	9.72	10.32	11.64	10.32
Beef cattle	do.	11.00	10.89	9.02	7.81	7.37	8.25	11.00	9.57	6.93
Veal calves	do.	14.00	15.12	13.02	11.06	10.36	11.54	14.56	13.30	10.22
Sheep	do.	7.00	5.39	7.98	7.63	7.28	6.93	5.81	5.18	6.58
Lambs	do.	13.00	14.04	12.61	10.14	10.14	10.14	14.95	13.65	11.44
Wool	Lb.	.45	.53	.49	.50	.47	.47	.53	.50	.43
Chickens	Lb.	.26	.30	.273	.30	.27	.31	.26	.26	.25
Eggs	Doz.	.33	.33	.34	.34	.34	.42	.30	.30	.33
Butterfat	Lb.	.40	.36	.36	.36	.34	.40	.34	.36	.34
Milk (wholesale)	Cwt.	2.45	2.06	3.72	3.80	3.58	4.29	2.35	2.65	2.82

1/ The average State prices in this table have been computed by applying the ratio between the average 1935-39 U. S. farm price and the respective 1935-39 State farm prices to the average 1943-45 U. S. farm prices.

2/ The prices of cotton and wheat, even more than the others in this table, are based on special assumptions with respect to acreage and loan programs. They are not forecasts of what prices will be.

Table 35.- Prices received by farmers by States (Southeastern) and for the United States, average 1935-39 1/ (in dollars)

Product	Unit	United States	Va.	N.Car.	S.Car.	Ga.	Fla.	Ky.	Tenn.	Ala.
		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Wheat	Bu.	.52	.93	1.01	.97	1.00		.86	.95	.99
Rye	do.	.51	.83	.98	1.19	1.11		.77	.88	
Corn	do.	.63	.80	.76	.72	.68	.76	.76	.77	.75
Oats	do.	.29	.49	.54	.51	.54	.64	.45	.48	.58
Barley	do.	.48	.64	.78				.66	.71	
*Rice	do.	.73								
Flaxseed	do.	1.68								
*Beans (dry edible)	Cwt.	3.43								
*Soybeans	Bu.	.83	1.10	1.00	1.72	2.21		1.25	1.36	1.01
Seed, alfalfa	do.	10.97								
Hay:										
* All classes	Ton	8.31	13.00	14.49	13.79	11.20	10.83	10.56	10.51	11.18
* Alfalfa	do.	9.54	16.32	17.90	18.94	18.14		13.80	14.68	16.44
* Sugar beets	do.	5.30								
* Peanuts	Lbs.	.033	.036	.036	.046	.033	.030		.036	.030
Tobacco										
* Flue-cured	do.	.21	.20	.21	.19	.18	.19			2/ .17
* Burley	do.	.22	.21	.230				.22	.23	2/ .17
* Southern Maryland	do.	.21								
* Fire-cured	do.	.11						.09	.11	
* Dark air-cured	do.	.09	.12					.09	.09	
* Cigarfiller & binder	do.	.12				.13	.13			
* Cigar wrapper	do.	.79				.69	.69			
Potatoes	Bu.	.65	.75	.85	.91	.94	1.14	.82	.66	.70
Sweetpotatoes	do.	.78	.64	.71	.69	.84	.89	.83	.72	.83
*Apples	do.	.78	.74	.77	3/1.06	1.01		4/ .93	1.04	3/1.03
*Peaches	do.	.88	1.26	1.27	1.14	1.21	.96	1.07	1.00	.95
*Oranges	Box	1.18					1.08			1.52
*Grapefruit	Box	.62					.66			

Continued

Table 35 Continued - Prices received by farmers by States (Southeastern) and for the United States, average 1935-39 1/

Product	Unit	United States	Va.	N.Car.	S.Car.	Ga.	Fla.	Ky.	Tenn.	Ala.
		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Cotton	Lb.	5/ .10	.102	.104	.104	.102	.100		.099	.100
Cottonseed	Ton	25.31	26.63	26.37	25.65	25.07	21.77		26.37	24.45
Hogs	Cwt.	8.27	8.42	8.52	7.88	7.22	6.68	7.12	8.06	7.12
Beef cattle	do.	6/ 7.25	7.21	5.92	5.18	4.88	5.47	7.27	6.32	4.58
Veal calves	do.	7/ 8.60	9.25	8.01	6.81	6.33	6.97	8.97	8.21	6.24
Sheep	do.	8/ 4.00	3.10	4.57	4.35	4.17	3.98	3.33	2.95	3.74
Lambs	do.	9/ 8.00	8.64	7.75	6.21	6.21	6.23	9.17	8.43	7.07
Wool	Lb.	.24	.28	.26	.27	.25	.25	.28	.27	.23
Chickens	do.	.15	.17	.16	.17	.16	.18	.14	.14	.14
Eggs	Doz.	.21	.21	.22	.23	.22	.26	.19	.19	.20
Butterfat	Lb.	.29	.26	.26	.26	.25	.29	.25	.26	.25
Milk (wholesale)	Cwt.	1.79	1.51	2.72	2.77	2.61	3.14	1.71	1.94	2.06

1/ Computations based on calendar year averages except where marked by asterisk, in which case crop-year averages were used.
2/ Only 1937, 1938 and 1939 included.
3/ Only 1935, 1936, 1937 and 1938 included.
4/ Only 1935, 1936, 1937 and 1939 included.
5/ Adjusted from arithmetic average of .099 cents per lb., with proportionate adjustments being made in state prices.
6/ Adjusted from arith. average of $6.52 per cwt., with proportionate adjustments being made in State prices.
7/ Adjusted from arith. average of $7.75 per cwt., with proportionate adjustments being made in State prices.
8/ Adjusted from arith. average of $3.89 per cwt., with proportionate adjustments being made in State prices.
9/ Adjusted from arith. average of $7.78 per cwt., with proportionate adjustments being made in State prices.

Table 36.- Summary of production estimates
Alabama

Item	Unit	1939 1/ Actual	Estimated acreages or nos. & prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.) 6/
No. farms	No.	232	220	215	-5	-7
Total cropland	A.	8,224	8,218	8,618	0	5
Plowable pasture	A.	2,174	2,215	3,166	2	46
Woodland in farms	A.	7,009	6,996	6,032	0	-14
All land in farms	A.	19,143	19,095	19,238	0	0
Corn (all purposes)	A.	3,450	3,477	2,953	1	-14
Corn (grain)	Bu.	31,028	41,445	50,246	34	62
Cotton	A.	1,931	1,773	1,754	-8	-9
Cotton	Bale	773	786	1,149	2	49
Tobacco	A.	1	1	35	0	3,400
Tobacco	Lb.	293	302	35,000	3	11,845
Irish potatoes	A.	48	54	118	12	146
Irish potatoes	Bu.	4,285	5,283	12,204	23	185
Sweetpotatoes	A.	79	98	146	24	85
Sweetpotatoes	Bu.	5,810	9,115	14,172	57	144
Wheat	A.	5	22	113	340	2,160
Wheat	Bu.	53	228	1,354	330	2,455
Oats for grain 2/	A.	109	202	1,039	85	853
Oats for grain 3/	Bu.	2,306	4,026	28,468	75	1,135
Other small grains	A.	0	7	135	4/	4/
Total hay	A.	819	948	1,786	16	118
Total hay	T.	605	740	2,003	22	231
Peanuts for nuts & oil	A.	270	360	270	33	0
Peanuts for nuts & oil	Lb.	128,250	252,000	189,000	96	47
Peanuts hogged off	A.	255	270	433	6	70
Soybeans for beans	A.	18	22	16	22	-11
Soybeans for beans	Bu.	108	132	96	22	-11
Tomatoes	A.	5/ 3	6	7	100	133
Tomatoes	Bu.	5/ 270	540	630	100	133
Other com. vegetables	A.	19	24	35	26	84
Total cattle	No.	890	967	1,542	9	73
Beef and veal prod.	Lb.	137,792	150,020	219,730	9	59
Cows & heifers milked	No.	327	367	598	12	83
Milk prod.	Gal.	126,855	143,059	265,295	13	109
Hogs and pigs	No.	752	825	1,440	10	91
Pork prod.	Lb.	121,834	136,895	265,350	12	118
Sheep and lambs	No.	32	26	53	-19	66
Mutton and lamb prod.	Lb.	394	576	1,372	46	248
Wool prod.	Lb.	112	94	360	-16	221
Horses, mules & colts	No.	354	349	374	- 1	6
Chickens	No.	5,951	6,769	9,597	14	61
Egg prod.	Doz.	33,473	39,660	78,622	18	135

1/ Data for peanuts, soybeans, tomatoes, and other commercial vegetables are from Agricultural Marketing Service. Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census. 2/ Includes cut ripe and fed unthreshed. 3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed. 4/ No base for calculating percentage change. 5/ Acreage and production for 1939 are estimated. 6/ Assumes utilization of alternatives. No one change is independent of others.

Table 37. Summary of production estimates

Florida

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
		Actual	Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)
	1000					
No. farms	No.	62	60	60	- 3	- 3
Total cropland	A.	2,212	2,234	2,156	1	- 3
Plowable pasture	A.	642	798	1,244	24	94
Woodland in farms	A.	2,650	2,847	2,761	7	4
All land in farms	A.	8,338	9,020	9,020	8	8
Corn (all purposes)	A.	704	763	803	8	14
Corn (grain)	Bu.	5,191	7,296	10,730	41	107
Cotton	A.	58	55	49	- 5	- 16
Cotton	Bale	11	17	18	55	64
Tobacco	A.	28	16	16	- 43	- 43
Tobacco	Lb.	20,222	12,385	15,800	- 39	- 22
Irish potatoes	A.	22	33	33	50	50
Irish potatoes	Bu.	2,628	4,220	4,220	61	61
Sweetpotatoes	A.	15	20	24	33	60
Sweetpotatoes	Bu.	913	1,232	1,430	35	57
Oats for grain 2/	A.	9	9	11	0	22
Oats for grain 3/	Bu.	99	110	138	11	39
Total hay	A.	84	91	222	8	164
Total hay	T.	49	55	222	12	353
Peanuts for nuts & oil	A.	85	113	100	33	18
Peanuts for nuts & oil	Lb.	37,400	70,625	65,000	89	74
Peanuts hogged off	A.	242	290	303	20	25
Tomatoes	A.	41	49	49	20	20
Tomatoes	Bu.	4,949	4,900	4,900	- 1	- 1
Other com. vegetables	A.	133	166	166	25	25
Total cattle	No.	721	911	837	26	16
Beef and veal prod.	Lb.	186,648	218,803	240,965	17	29
Cows & heifers milked	No.	90	106	173	18	92
Milk prod.	Gal.	29,491	35,350	65,540	20	122
Hogs and pigs	No.	481	576	576	20	20
Pork prod.	Lb.	120,750	142,750	142,750	18	18
Sheep and lambs	No.	21	17	11	- 19	- 48
Mutton and lambs prod.	Lb.	734	600	415	- 18	- 43
Wool prod.	Lb.	61	52	33	- 15	- 46
Horses, mules & colts	No.	56	54	51	- 4	- 9
Chickens	No.	2,029	2,330	3,150	15	55
Egg prod.	Doz.	14,513	17,140	25,520	18	76
Grapefruit prod.	Box	15,800	30,970	23,975	96	52
Orange prod.	Box	27,800	47,278	31,200	70	12

1/ Data for peanuts, soybeans, tomatoes, and other commercial vegetables are from Agricultural Marketing Service. Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census.

2/ Includes cut ripe and fed unthreshed.

3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed.

4/ Assumes utilization of alternatives. No one change is independent of others.

Table 38 . Summary of production estimates

Georgia

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
		Actual	Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)
	1000					
No. farms	No.	216	206	202	- 5	- 6
Total cropland	A.	10,177	10,298	11,140	1	9
Plowable pasture	A.	1,513	1,677	2,380	11	57
Woodland in farms	A.	10,175	9,477	7,965	- 7	- 22
All land in farms	A.	23,684	23,727	24,186	0	2
Corn (all purposes)	A.	4,233	4,254	4,000	0	- 6
Corn (grain)	Bu.	37,604	42,550	40,190	13	7
Cotton	A.	1,856	1,734	1,690	- 7	- 9
Cotton	Bale	865	793	827	- 8	- 4
Tobacco	A.	118	67	91	- 43	- 23
Tobacco	Lb.	93,510	56,855	77,265	- 39	- 17
Irish potatoes	A.	23	26	36	13	57
Irish potatoes	Bu.	1,542	1,805	2,436	17	58
Sweetpotatoes	A.	99	114	117	15	18
Sweetpotatoes	Bu.	7,329	8,994	9,190	23	25
Wheat	A.	153	184	296	20	93
Wheat	Bu.	1,505	1,930	3,160	28	110
Oats for grain 2/	A.	432	684	1,632	58	278
Oats for grain 3/	Bu.	7,598	12,455	30,990	64	308
Other small grains	A.	0	0	0	0	0
Total hay	A.	960	1,283	2,448	34	155
Total hay	T.	533	742	1,600	39	200
Peanuts for nuts & oil	A.	650	845	650	30	0
Peanuts for nuts & oil	Lb.	341,250	591,500	455,000	73	33
Peanuts hogged off	A.	423	480	700	13	65
Soybeans for beans	A.	13	13	20	0	54
Soybeans for beans	Bu.	79	79	160	0	103
Tomatoes	A.	6	7	6	17	0
Tomatoes	Bu.	330	385	330	17	0
Other com. vegetables	A.	108	130	115	20	6
Total cattle	No.	803	974	1,110	21	38
Beef and veal prod.	Lb.	61,325	74,747	91,096	22	49
Cows & heifers milked	No.	305	340	456	11	50
Milk prod.	Gal.	117,838	125,766	185,500	7	57
Hogs and pigs	No.	1,125	1,241	1,622	10	44
Pork prod.	Lb.	283,368	341,400	481,538	20	70
Sheep and lambs	No.	17	14	10	- 18	- 41
Mutton and lamb prod.	Lb.	243	225	205	- 7	- 16
Wool prod.	Lb.	45	39	30	- 13	- 33
Horses, mules & colts	No.	351	327	315	- 7	- 10
Chickens	No.	5,871	7,430	9,185	27	56
Egg prod.	Doz.	31,616	40,190	51,510	27	63

1/ Data for peanuts, soybeans, tomatoes, and other commercial vegetables are from Agricultural Marketing Service. Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census. 2/ Includes cut ripe and fed unthreshed. 3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed. 4/ Assumes utilization of alternatives. No one change independent of others.

Table 39. Summary of production estimates

Kentucky

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)
	1000	Actual				
No. farms	No.	253	240	219	- 5	- 13
Total cropland	A.	6,509	6,459	6,023	- 1	- 7
Plowable pasture	A.	6,703	6,787	7,240	1	8
Woodland in farms	A.	4,592	4,587	4,594	0	5/
All land in farms	A.	20,294	20,104	19,929	- 1	- 2
Corn (all purposes)	A.	2,532	2,610	2,147	3	- 15
Corn (grain)	Bu.	61,052	61,590	64,235	1	5
Cotton	A.	16	14	14	4/ - 12	- 12
Cotton	Bale	16	14	14	- 12	- 12
Tobacco	A.	361	304	357	- 16	- 1
Tobacco	Lb.	324,518	236,640	328,045	- 27	1
Irish potatoes	A.	37	39	69	5	86
Irish potatoes	Bu.	2,768	2,963	5,824	7	110
Sweetpotatoes	A.	14	14	16	0	14
Sweetpotatoes	Bu.	1,095	1,180	1,590	8	45
Wheat	A.	328	378	455	15	39
Wheat	Bu.	3,658	4,594	6,615	26	81
Oats for grain 2/	A.	53	69	237	30	347
Oats for grain 3/	Bu.	945	1,286	5,019	36	431
Other small grains	A.	45	70	180	56	300
Total hay	A.	1,533	1,655	1,970	8	29
Total hay	T.	1,857	1,930	2,474	4	33
Soybeans for beans	A.	15	30	30	100	100
Soybeans for beans	Bu.	180	300	450	67	150
Tomatoes	A.	5	8	8	60	60
Tomatoes	Bu.	452	690	750	53	66
Other com. vegetables	A.	8	12	15	50	87
Total cattle	No.	1,130	1,272	1,466	13	30
Beef and veal prod.	Lb.	107,018	128,080	156,200	20	46
Cows & heifers milked	No.	515	570	672	11	30
Milk prod.	Gal.	208,971	254,330	323,275	22	55
Hogs and pigs	No.	1,053	1,151	1,030	9	- 2
Pork prod.	Lb.	328,436	367,473	320,740	12	- 2
Sheep and lambs	No.	1,001	1,118	1,163	12	16
Mutton and lamb prod.	Lb.	70,273	78,460	84,350	12	20
Wool prod.	Lb.	4,769	5,566	6,258	17	31
Horses, mules & colts	No.	456	442	435	- 3	- 5
Chickens	No.	8,185	9,900	11,729	21	43
Egg prod.	Doz.	45,372	60,970	83,353	34	84

1/ Data for peanuts, soybeans, tomatoes, and other commerical vegetables are from Agricultural Marketing Service, Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census. 2/ Includes cut ripe and fed unthreshed. 3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed. 4/ Rounded from 15,700 acres in 1939 and 14,300 acres in 1943-45. 5/ Less than one-half of one percent. 6/ Assumes utilization of alternatives. No one change is independent of others.

Table 40. Summary of production estimates

North Carolina

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
			Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)
		1000	Actual			
No. farms	No.	278	267	259	- 4	- 7
Total cropland	A.	7,192	7,202	7,197	0	4/
Plowable pasture	A.	1,230	1,299	1,454	6	18
Woodland in farms	A.	9,093	9,007	19,140	- 1	110
All land in farms	A.	18,445	18,795	19,140	2	4
Corn (all purposes)	A.	2,458	2,645	2,480	8	1
Corn (grain)	Bu.	48,897	51,241	48,114	5	- 2
Cotton	A.	710	666	648	- 6	- 9
Cotton	Bale	458	387	376	- 16	- 18
Tobacco	A.	775	513	584	- 34	- 25
Tobacco	Lb.	590,951	445,169	506,491	- 25	- 14
Irish potatoes	A.	81	88	86	9	6
Irish potatoes	Bu.	8,326	8,337	8,043	0	- 3
Sweetpotatoes	A.	69	89	104	29	51
Sweetpotatoes	Bu.	6,725	8,832	10,351	31	54
Wheat	A.	387	426	577	10	49
Wheat	Bu.	4,758	4,745	6,465	0	36
Oats for grain 2/	A.	225	248	515	10	129
Oats for grain 3/	Bu.	4,449	4,930	10,210	11	129
Other small grains	A.	56	58	126	4	125
Total hay	A.	957	1,000	1,556	4	63
Total hay	T.	832	868	1,350	4	62
Peanuts for nuts & oil	A.	255	295	250	16	- 2
Peanuts for nuts & oil	Lb.	290,700	333,350	282,500	15	- 3
Peanuts hogged off	A.	10	15	15	50	50
Soybeans for beans	A.	161	180	165	12	2
Soybeans for beans	Bu.	2,012	2,178	1,996	8	- 1
Tomatoes	A.	2	4	3	100	50
Tomatoes	Bu.	88	164	141	86	60
Other com. vegetables	A.	62	65	62	5	0
Total cattle	No.	540	607	777	12	44
Beef and veal prod.	Lb.	51,600	59,370	90,675	15	76
Cows & heifers milked	No.	310	344	474	11	53
Milk prod.	Gal.	143,429	151,658	207,652	6	45
Hogs and pigs	No.	709	840	880	18	24
Pork prod.	Lb.	271,734	322,062	337,645	19	24
Sheep and lambs	No.	46	59	60	28	30
Mutton and lamb prod.	Lb.	1,866	2,391	2,450	28	31
Wool prod.	Lb.	137	272	279	99	104
Horses, mules & colts	No.	374	369	363	- 1	- 3
Chickens	No.	7,315	8,060	10,050	10	37
Egg prod.	Doz.	41,847	46,680	57,575	12	38

1/ Data for peanuts, soybeans, tomatoes and other commercial vegetables are from Agricultural Marketing Service. Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census. 2/ Includes cut ripe and fed unthreshed. 3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed. 4/ Less than one-half of one percent. 5/ Assumes utilization of alternatives. No one change is independent of others.

Table 41 . Summary of production estimates

South Carolina

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
	1000	Actual	Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)
No. farms	No.	138	132	132	- 4	- 4
Total cropland	A.	4,926	5,071	5,241	3	6
Plowable pasture	A.	604	638	757	6	25
Woodland in farms	A.	4,863	4,772	5,075	- 2	4
All land in farms	A.	11,239	11,239	11,606	0	3
Corn (all purposes)	A.	1,762	1,844	1,761	5	0
Corn (grain)	Bu.	23,527	25,802	24,824	10	6
Cotton	A.	1,177	1,103	1,078	- 6	- 8
Cotton	Bale	850	648	634	- 24	- 25
Tobacco	A.	127	82	95	- 35	- 25
Tobacco	Lb.	118,963	75,587	87,560	- 36	- 26
Irish potatoes	A.	22	22	22	0	0
Irish potatoes	Bu.	2,302	2,302	2,315	0	1
Sweetpotatoes	A.	54	57	61	6	13
Sweetpotatoes	Bu.	4,938	5,320	5,667	8	15
Wheat	A.	182	196	231	8	27
Wheat	Bu.	2,122	2,030	2,383	- 4	12
Oats for grain 2/	A.	519	548	879	6	69
Oats for grain 3/	Bu.	12,109	12,089	19,447	0	61
Other small grains	A.	24	25	53	4	121
Total hay	A.	519	547	1,025	5	97
Total hay	T.	405	462	931	14	130
Peanuts for nuts & oil	A.	16	23	20	44	25
Peanuts for nuts & oil	Lb.	11,840	15,778	13,720	33	16
Peanuts hogged off	A.	6	7	10	17	67
Soybeans for beans	A.	20	20	20	0	0
Soybeans for beans	Bu.	130	130	130	0	0
Tomatoes	A.	7	9	8	29	14
Tomatoes	Bu.	350	585	520	67	49
Other com. vegetables	A.	66	70	66	6	0
Total cattle	No.	275	313	576	14	109
Beef and veal prod.	Lb.	32,404	34,605	65,585	7	102
Cows & heifers milked	No.	143	170	336	19	135
Milk prod.	Gal.	58,800	70,478	137,882	20	134
Hogs and pigs	No.	439	482	737	10	68
Pork prod.	Lb.	131,506	144,314	215,727	10	64
Sheep and lambs	No.	7	8	9	14	29
Mutton and lamb prod.	Lb.	251	279	307	11	22
Wool prod.	Lb.	26	30	32	15	23
Horses, mules & colts	No.	201	202	201	0	0
Chickens	No.	3,376	3,711	7,384	10	119
Egg prod.	Doz.	17,234	19,459	38,918	13	126

1/ Data for peanuts, soybeans, tomatoes, and other commerical vegetables are from Agricultural Marketing Service. Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census. 2/ Includes cut ripe and fed unthreshed. 3/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed. 4/ Assumes utilization of alternatives. No one change is independent of others.

Table 42. Summary of production estimates

Tennessee

Item	Unit: 1000	1939 1/ Actual	Estimated acreages or nos. & prod. Expected 1943-45	Estimated acreages or nos. & prod. Long-time desirable (tent.)	Percentage change from 1939 Expected 1943-45	Percentage change from 1939 Long-time desirable (tent.)
No. farms	No.	248	240	228	- 3	- 8
Total cropland	A.	7,612	7,309	6,689	- 4	- 12
Plowable pasture	A.	3,543	3,704	4,493	5	27
Woodland in farms	A.	5,219	5,095	5,245	- 2	0
All land in farms	A.	18,493	18,197	18,675	- 2	1
Corn (all purposes)	A.	2,584	2,490	2,072	- 4	- 20
Corn (grain)	Bu.	54,905	55,150	59,323	0	8
Cotton	A.	677	638	616	- 6	- 9
Cotton	Bale	436	424	488	- 3	12
Tobacco	A.	118	107	103	- 9	- 13
Tobacco	Lb.	109,418	106,305	114,690	- 3	5
Irish potatoes	A.	42	50	72	19	71
Irish potatoes	Bu.	3,204	4,170	8,044	30	151
Sweetpotatoes	A.	38	45	59	18	55
Sweetpotatoes	Bu.	3,104	4,432	6,428	43	107
Wheat	A.	339	393	456	16	35
Wheat	Bu.	3,886	4,872	7,491	25	93
Oats for grain 2/	A.	80	150	431	88	439
Oats for grain 3/	Bu.	1,445	3,101	12,960	115	797
Other small grains	A.	97	94	189	- 3	95
Total hay	A.	1,852	2,103	2,300	14	24
Total hay	T.	2,068	2,409	3,184	16	54
Peanuts for nuts & oil	A.	5	4	4	- 20	- 20
Peanuts for nuts & oil	Lb.	3,404	2,850	3,300	- 16	- 3
Peanuts hogged off	A.	--	--	--	--	--
Soybeans for beans	A.	29	36	36	24	24
Soybeans for beans	Bu.	209	230	300	10	44
Tomatoes	A.	12	18	21	50	75
Tomatoes	Bu.	1,080	1,725	2,100	60	94
Other com. vegetables	A.	14	17	25	21	79
Total cattle	No.	1,109	1,188	1,479	7	33
Beef and veal prod.	Lb.	98,001	107,986	145,890	10	49
Cows & heifers milked	No.	508	566	727	11	43
Milk prod.	Gal.	204,564	239,478	364,390	17	78
Hogs & pigs	No.	1,062	1,102	1,150	4	8
Pork prod.	Lb.	223,150	239,982	254,392	8	14
Sheep and lambs	No.	358	426	536	19	50
Mutton and lamb prod.	Lb.	11,195	14,264	24,610	27	120
Wool prod.	Lb.	1,368	1,664	2,897	22	112
Horses, mules & colts	No.	451	416	403	- 8	- 11
Chickens	No.	8,013	9,621	10,819	20	35
Egg prod.	Doz.	46,606	62,688	85,921	35	84

1/ Data for peanuts, soybeans, tomatoes, and other commercial vegetables are from Agricultural Marketing Service. Beef, pork, and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census. 2/ Includes cut ripe and fed unthreshed. 3/ Bu. threshed and bu. equivalent for that cut ripe a nd fed unthreshed. 4/ Assumes utilization of alternatives. No one change is independent of others.

Table 43. Summary of production estimates

Virginia 2/

Item	Unit	1939 1/	Estimated acreages or nos. & prod.		Percentage change from 1939	
	1000	Actual	Expected 1943-45	Long-time desirable (tent.)	Expected 1943-45	Long-time desirable (tent.)
No. farms	No.	175	169	157	- 3	- 10
Total cropland	A.	4,765	4,767	4,743	0	- 5/
Plowable pasture	A.	3,188	3,292	3,470	3	9
Woodland in farms	A.	6,760	6,673	6,520	- 1	- 4
All land in farms	A.	16,433	16,162	15,566	- 2	- 5
Corn (all purposes)	A.	1,331	1,373	1,298	3	- 2
Corn (grain)	Bu.	33,577	33,555	37,691	0	12
Cotton	A.	30	27	26	- 10	-13
Cotton	Bale	13	12	22	- 8	69
Tobacco	A.	161	104	104	- 35	- 35
Tobacco	Lb.	136,693	86,644	92,265	- 37	- 33
Irish potatoes	A.	71	110	102	55	44
Irish potatoes	Bu.	7,411	12,944	12,928	75	74
Sweetpotatoes	A.	30	40	38	33	27
Sweetpotatoes	Bu.	3,809	5,376	5,324	41	40
Wheat	A.	490	554	564	13	15
Wheat	Bu.	7,205	7,929	9,140	10	27
Oats for grain 3/	A.	86	104	123	21	43
Oats for grain 4/	Bu.	2,493	2,776	3,572	11	43
Other small grains	A.	113	136	168	20	49
Total hay	A.	1,122	1,284	1,420	14	27
Total hay	T.	1,169	1,372	1,710	17	46
Peanuts for nuts & oil	A.	161	185	175	15	9
Peanuts for nuts & oil	Lb.	189,175	199,985	201,250	6	6
Peanuts hogged off	A.	5	10	5	100	0
Soybeans for beans	A.	25	50	40	100	60
Soybeans for beans	Bu.	375	680	600	81	60
Tomatoes	A.	20	27	23	35	15
Tomatoes	Bu.	2,478	3,323	3,220	34	30
Other com. vegetables	A.	55	67	62	22	13
Total cattle	No.	814	872	954	7	17
Beef and veal prod.	Lb.	162,901	172,038	190,253	6	17
Cows & heifers milked	No.	357	386	445	8	25
Milk prod.	Gal	153,507	168,648	222,071	10	45
Hogs and pigs	No.	485	537	510	11	5
Pork prod.	Lb.	200,183	224,924	193,757	12	- 3
Sheep and lambs	No.	355	390	498	10	40
Mutton and lamb prod.	Lb.	27,218	30,232	40,491	11	49
Wool prod.	Lb.	1,620	1,950	2,490	20	54
Horses, mules & colts	No.	253	244	227	- 4	- 10
Chickens	No.	6,991	8,450	12,117	21	73
Egg prod.	Doz.	50,043	56,586	104,309	13	108

1/ Data for peanuts, soybeans, tomatoes, and other commercial vegetables are from Agricultural Marketing Service. Beef, pork and mutton production estimates are based on the 1935 Adjustment Study. All other items are from the Census. 2/ Independent cities not included. 3/ Includes cut ripe and fed unthreshed. 4/ Bu. threshed and bu. equivalent for that cut ripe and fed unthreshed. 5/ Less than one-half of one percent. 6/ Assumes utilization of alternatives. No one change is independent of others.