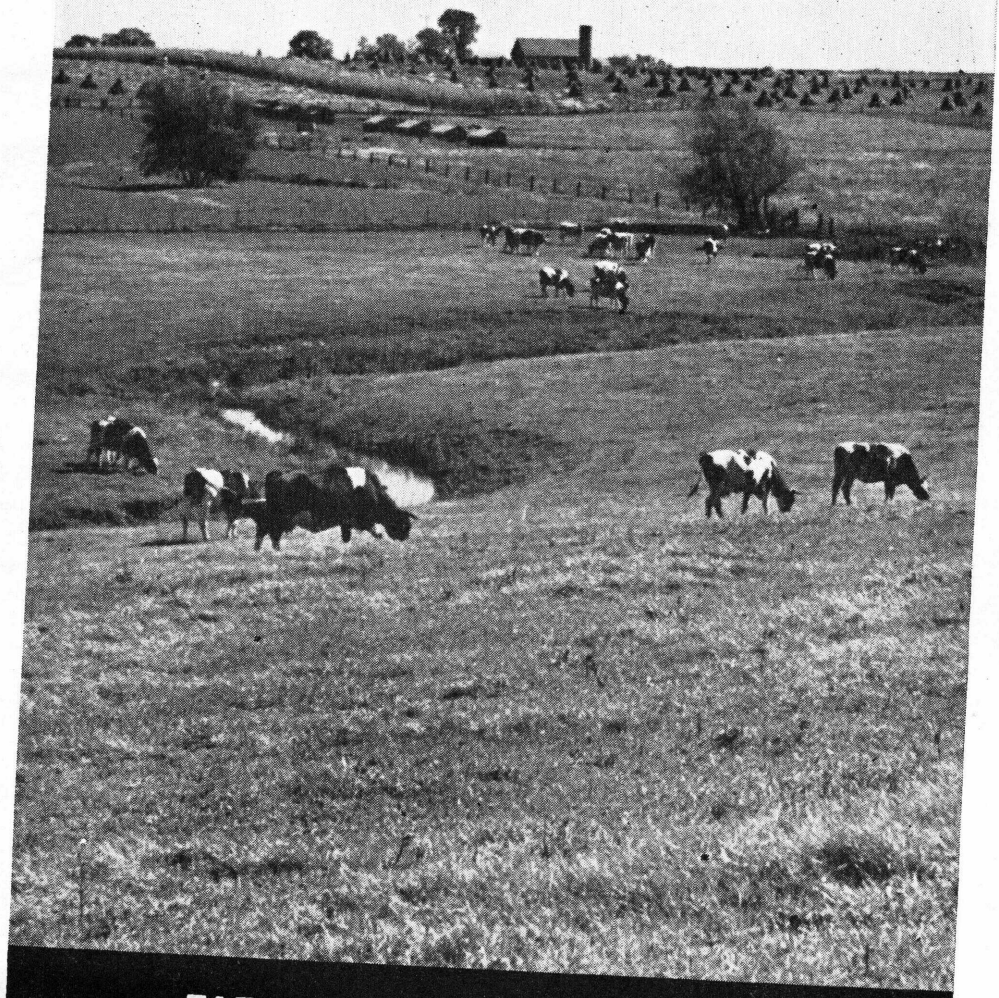
Planning the Farm FOR Profit and Stability



FARMERS' BULLETIN NO. 1965
U. S. DEPARTMENT OF AGRICULTURE

WORLD WAR II is over, but its effects will be felt for many years to come.

Under the stimulation of war and relief needs, of patriotism, and of price, farms have been undergoing rapid changes. Some of these have accelerated desirable changes that we shall want to build upon in coming years. Others involve cropping systems that, if long continued, would permanently damage the land and the welfare of the families closely associated with it. This in turn would damage the welfare of the Nation as a whole.

These changes come because of decisions being made by the operators of some 6 million farms in this country. Further decisions will be in the right direction only if farmers give careful thought to planning their production programs for next year and for the years ahead in ways that will tend to maintain or improve soil fertility and stabilize farm income.

This bulletin makes use of farm budgeting and includes physical as well as economic considerations in planning for the farm. It is designed to help those who want to organize a profitable farm business that will weather periods of adversity as well as prosperity.

A sound basis for developing a system of farm bookkeeping is found in Farmers' Bulletin 1962, Useful Records for Family Farms.

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PLANNING THE FARM FOR PROFIT AND STABILITY

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IMPORTANCE OF ADVANCE PLANNING

THE WORD "PLANNING" greets the eye on the pages of every newspaper and periodical these days—planning for a better postwar world, planning to avoid unemployment and deep depression, planning for better roads, better schools, better nutrition, better business, better something in every aspect of life. On the farm, planning involves taking stock of the resources that are available to the individual farmer and deciding on the best way to use them to gain certain future ends.

These ends or goals may consist in nothing more than giving thought to ways of obtaining the largest possible farm income right now. The accumulated result of such year-by-year planning is likely to fall far short of yielding the income, satisfaction, and security that could have been had by thinking a little farther into the future.

At the outset it is well to visualize as well as we can the income possibilities of the farm when it is fully developed under a stabilized system of farming. This would be a system in which the soil resources are being maintained or improved, in which crop yields and livestock production are sustained or increased, and which provides for continuing the farm as an income producer. Once this desirable long-time goal has been established, the year-by-year planning can be aimed at (1) the largest possible current farm income (compatible with a stabilized system of farming) and (2) the steps to be taken annually in the direction of the long-time goal to develop the farm as a stabilized income producer.

This job of organizing the farm business and planning how to carry out the tasks of each day is exceedingly important. It gives a farmer the chance to rely on his abilities as a good manager—using his brains as well as his muscle—and to bring into full play the qualities that make the difference between the farm hand and the farm operator or manager.

Farm planning should include those things which provide the greatest day-to-day satisfaction from farming as a way of life. Arranging fields to save labor and conserve soil, laying out farm buildings so that the chores may be done with a minimum of effort after the day's work, landscaping the home surroundings, planting shade trees and shelterbelts, all bring lasting satisfaction, though they bring only

indirect money benefits. In farming more than in any other occupation the home is closely linked with the business. "Man does not live by bread alone," and the song of the lark in the fragrance of a calm sunny morning may outweigh in the farmer's book of debits and credits the metallic clink of a few extra dollars.

TAKING STOCK OF RESOURCES

LAND RESOURCES

Farms frequently include varying proportions of rich land, poor land, stony land, sandy land, clay land, wet land, well-drained land, level land, and rolling land. Some land may be suitable only for permanent pasture, some may be suitable only for woodland, and the rest can be safely tilled. Much lost motion will be saved if at the outset these physical resources are carefully appraised as to both present conditions and future possibilities. Mother Nature is most rewarding when we work with rather than against her. If the land has been farmed before, it is already laid out in fields, and croplands have been set apart from pastures and wood lots. But these boundaries, like Topsy, may have "just growed" and they may not indicate the best use of the land (figs. 1 and 2).

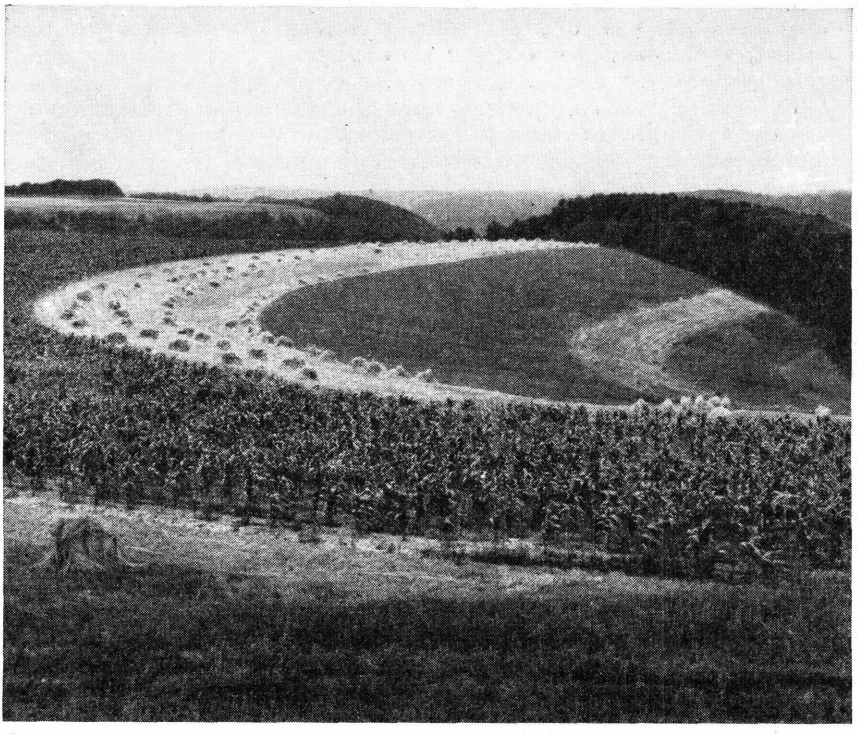

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FIGURE 1.—Here is farming neatly fitted to the land. Contour strip cropping with corn, small grain, alfalfa, small grain, alfalfa. Farmers are coming to take as much pride in these gracefully curving fields as they formerly did in plowing straight furrows. This scene is eloquent testimony of a farm being operated under a plan—planning for tomorrow as well as today.

A great deal is now known about the physical properties of soils, the type of uses to which they are best adapted, and their surpluses or deficiencies in minerals and plant foods. Rather definite prescriptions can now be made that include tillage methods, cropping patterns, and additional use of lime and fertilizer to bring soils to a high degree of sustained productivity. It is not necessary that each farmer know all these things for himself. The county agricultural agent, the local representative of the Soil Conservation Service, or the county or community committeeman of the Agricultural Adjustment Agency can help. In special cases, the agronomy department at the State agricultural college also stands ready to assist through the county agent's office.

By one means or another, then, it is necessary to have a clear idea of both the amount and the location of the land that may be safely cultivated, its present state of productivity, and the crops to which it is best adapted. The farmer also should know the total acreage and condition of the land that is suited only to sod crops for feed and pasture and the degree of flexibility in the possible use of land for any of several purposes.

Taking stock of the land resource can be much more specific and helpful if a rough map of the farm is made, field by field as it is now, and if another map is made showing the farm as it should be arranged eventually so that each kind of land will be put to its best use. Notes

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FIGURE 2.—The usual up-and-down-hill farming brings instability and insecurity and aggravates the ups and downs of life. Here there is silting-in of furrows near the bottom of the hill and other evidences of soil washing.

on the map, or with it, could indicate the present condition of each field, the plan of rotation, and the supplemental treatments needed to bring it to the desired productivity. Having at hand at least a rough picture of the farm as it is now and another of it as it should be, one's first step in each year's planning would be to sketch a new map of the farm, showing any changes in field boundaries, in uses of the fields, or in improvements such as draining, contouring, fertilizing, or liming the land (figs. 3, 4, and 5).

A farmer need not be a real draftsman in order to make these year-by-year "blueprints" of his farm operations. The maps may be drawn to scale with the greatest of care or they may be roughed out as simple pencil sketches. In either event they will help decidedly in current operations and, if kept, will form a record of the past uses of each field. This in itself is an important aid in indicating what is needed to maintain productivity.

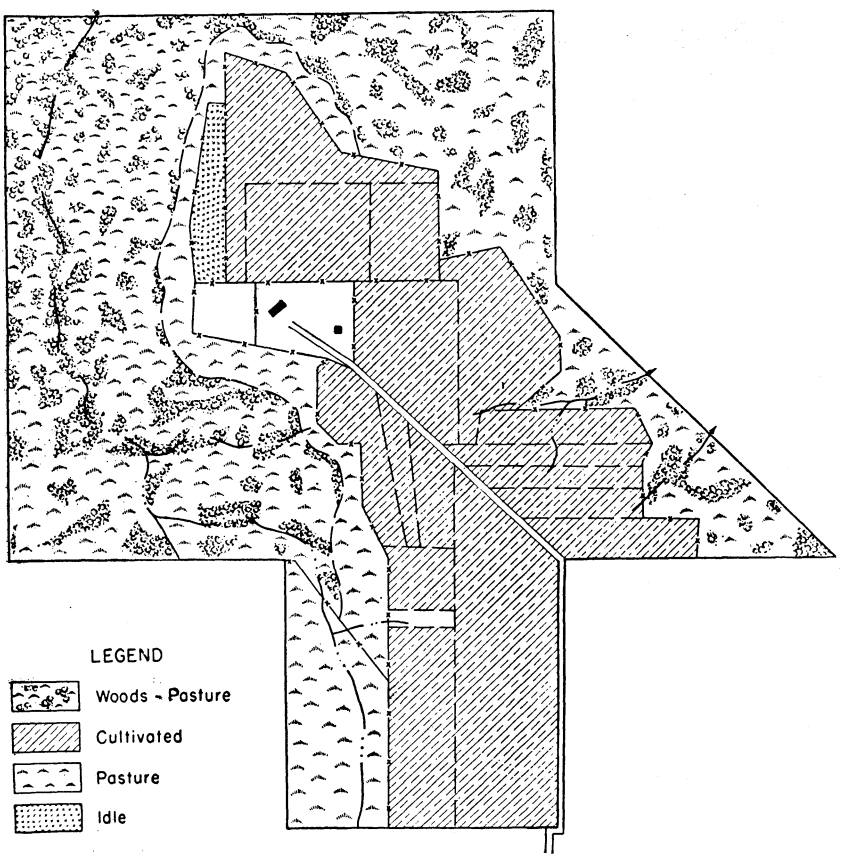

FIGURE 3.—Map of a Minnesota dairy farm as it was operated in 1938. Only the gentler slopes were being cultivated but the up-and-down-hill farming was causing erosion that could not be ignored. The woods-pasture nearly surrounding the farm was relatively unproductive of either grass or timber.

The status of tenure under which the land is held should be fully considered when planning the farm. A farm operator who has little security of tenure is not likely to plan in the same way as an owner who looks forward to realizing in the more distant future on improvements made today. There is great need for more widespread adoption of farm-lease contracts that will enable the tenant farmer to plan for his longer time security while still maintaining the productivity of the land resource.

LABOR RESOURCES

When taking stock of the labor resources, the farmer should not fail to include himself. Very few family farms can afford to hire full-time managers. Successful operators of these farms are the mainstays

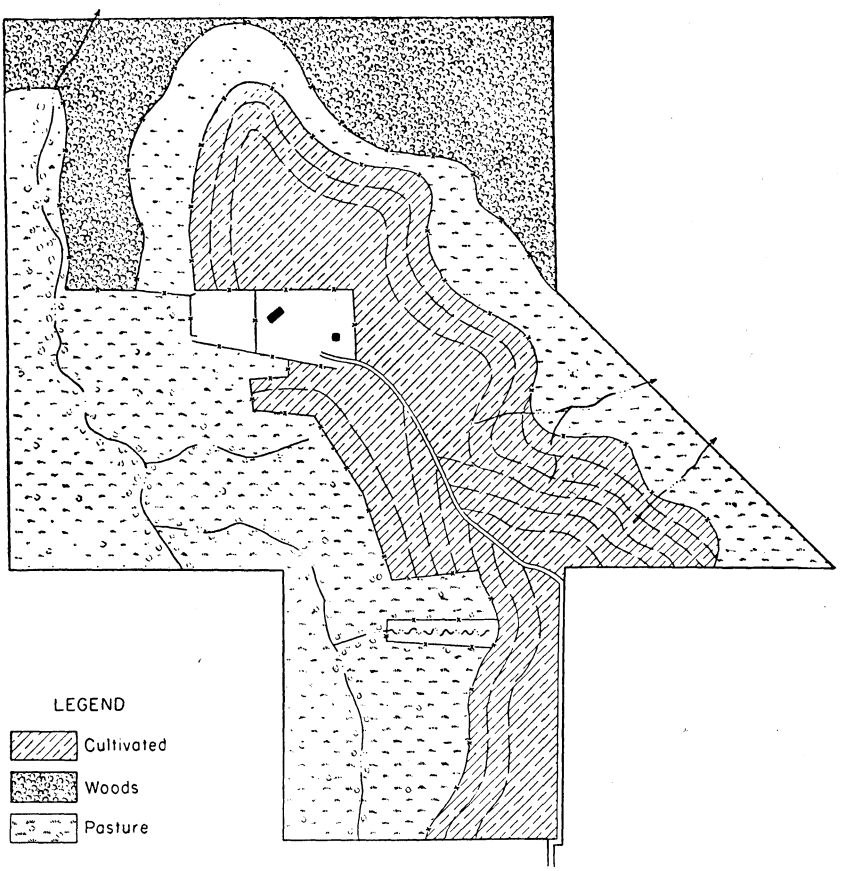

FIGURE 4.—This long-time farm plan has been developed for the farm shown in figure 3. Strip cropping on the contour will hold the soil in place. Some of the woods will be cleared and all the pasture land improved. The livestock will be fenced out of the woods, which will then be developed as a source of income. Less land is in cultivated crops than formerly but more cows can be kept because of increased crop yields and additional carrying capacity of the pasture.

of the farm labor force as well as the ones who plan both the organization and the operation of the farm.

Here, as with land, it will pay to appraise the present conditions, trying to make the most of the strong points and to improve the weak points. This may take the form of physical examinations for the entire family and the correction of health conditions that would impair labor efficiency. Most types of farming call for spending a full day in the field and what city folks might consider half a day more in doing the morning and evening chores. City people, however, sometimes spend as much time just going to and from their work as farm people spend on chores.

The total amount of labor at hand is very important, but so is the amount of skill that is brought to each job. A good milker can get all a contented cow has to offer—a poor milker can cause the same cow to give less milk and give it grudgingly. In some areas of the Western States where sheep raising is common, the number of Spanish names in the telephone directory is surprising. Basque sheepherders are known the world over for their skill with sheep and they have migrated

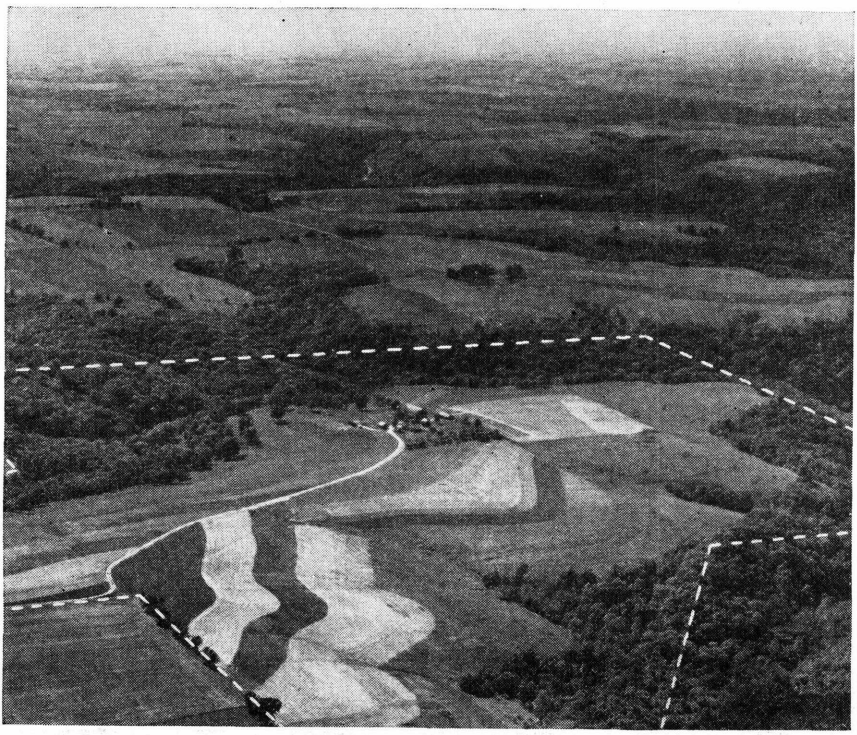

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FIGURE 5.—This air view shows progress in putting the long-time plan of figure 4 into effect. The fields in the foreground are now being strip-cropped on the contour and the road to the farmstead has been relocated. The fields in the distance show the traditional rectangular pattern of field lay-out. The contouring job for the long-time plan to be carried out during a period of years has not been completed.

to this country to carry on the same job. While growing up on the farm, boys acquire many of these skills. What they like best then—working with different kinds of livestock, with field crops, with truck crops, or with fruits—may decide later the type of farming they select as a life work. There are other ways of learning farm skills. They range from getting all possible assistance out of the county agent, through taking a short course at the State agricultural college, to obtaining a full 4-years' training there.

The kinds of crop and livestock enterprises selected, and the emphasis given to each, will add up to a certain total labor requirement. Equally important, they will dictate how this labor is distributed throughout the year. Farm planning should give special consideration to the full use of the labor of the farmer and his family throughout the year and to ways of economizing on hired labor. In farm planning it will pay to draw up some such table as the following, which makes it easy to compare the labor needs month by month with the supply of home labor; the remainder indicates when help must be hired and about how much.

The items used in table 1 have been adapted from information drawn from a small cotton-livestock farm in Texas. Although the estimated total needs (2,810 hours), are 310 hours less than the available family labor (3,120 hours), it is still necessary to hire 520 hours of labor. In the months of peak work demands the farmer's son is in school. Thus we see the need for comparing the labor available each month with the needs for that month. To figure on the yearly basis alone could be misleading.

TABLE 1.—*Man labor needs in farm enterprises*

Month	Estimated man labor needs for—							Source of labor	
	Cotton (16 acres)	Corn (10 acres)	Oats (7 acres)	Cane (3 acres)	Rotation pasture (12 acres)	Livestock [1]	Total needs	Family	Hired
	Hours	*Hours*	*Hours*	*Hours*	*Hours*	*Hours*	*Hours*	*Hours*	*Hours*
January	25	10	10	5	15	125	190	200	
February		15	10			120	145	200	
March		25			10	135	170	200	
April	40	15			20	110	185	220	
May	175	60	30	25	10	120	420	260	160
June	120	35	35			85	275	360	
July	30					50	80	360	
August				80		50	130	360	
September	370	10				100	480	240	240
October	220	40				100	360	240	120
November	15	10				115	140	240	
December	45	35	10	5	25	115	235	240	
Total	1,040	255	95	115	80	1,225	2,810	3,120	520

[1] 2 mules, 4 dairy cows, 3 hogs, and 150 hens. About half the total hours spent on livestock are devoted to the cows and about a third to poultry.

Farming systems that include livestock furnish the most steady work for the operator and his family. The extremely specialized one-crop farming systems, on the other hand, are likely to demand much more labor than the farm family can supply during the planting and harvesting seasons and to need very little work at other times of the year.

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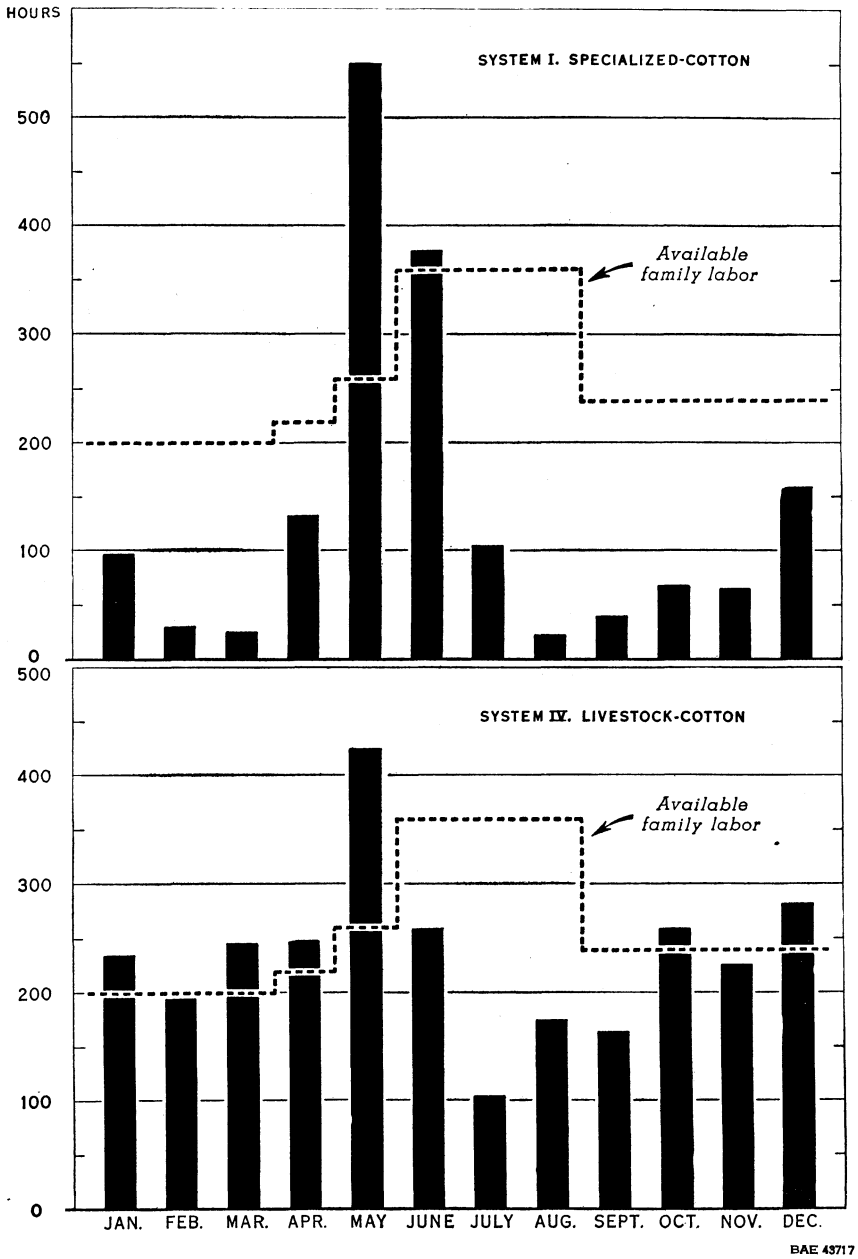

FIGURE 6.—Needs for man labor by months on a 50-acre farm in Texas and their relation to the amount of family labor used under specialized and diversified systems of organizing the farm. (See table 4, p. 23, for details of organization.) System I used 1,668 hours of man labor as compared with 2,814 hours under System IV.

In taking stock of the labor resources we should remember that they are subject to change. If there are young boys in the family, will the long-time farm plan furnish worth-while work for them later? What will be the situation when the farmer grows gray and the main brunt of the work must fall on younger, sturdier shoulders? Farms can be planned to increase or reduce the labor load over a period of years. Thought given now to these longer time considerations can make the shift easier when what seems so far away eventually catches up with us.

CAPITAL INVESTMENT

The farmer's capital investment takes several forms. It includes that in land and buildings as well as that in livestock, in equipment, in various kinds of supplies, and in cash to meet the day-to-day farm expenses. The relative importance of these items varies widely on farms of different types and sizes. Here we must appraise what is now available with a view to using it to the best advantage in planning the farm business.

The investment in land should be in line with the income possibilities that will come from its ownership. Farms may be large in acreage, yet small in productivity. A hillside farm of 320 acres with 50 acres of tillable land may be much less desirable as an income producer than 60 acres of bottom land, 40 of which can be cultivated. Furthermore, the tillable acres may vary widely in fertility and in adaptability to different uses. For most farming types the present and potential productivity of the land is the most important factor in the value of the investment. Other factors such as nearness to market, availability of purchasable feeds, and good roads may partially compensate, however. For some types of farms, such as those on which poultry is raised, these latter factors may be more important and the land may represent only a small part of the total investment.

The investment in livestock may vary tremendously between farms of different types. Some highly specialized wheat producers buy eggs, butter, and evaporated milk at the country store and may not even have a dog or a cat. An opposite extreme is found in the occasional sheep producer in the West who may own no land at all. He leads a roving life, grazing his flocks on abandoned farm land, on the public domain, or in the national forests, wintering where the weather is not too rigorous and where hay can be bought if necessary. No farm plan should be completed without considering the possibilities of investing part of the farm capital in livestock—if only to the extent of supplying the family table more adequately.

The investment in productive livestock can be started in a small way and built up to a major source of farm income over a period of years. Some of the finest herds of purebred cattle can be traced back to a 4–H high school boy and his purebred calf. A tendency common to us all is to want to *go* into a particular business rather than to *grow* into it—the office boy wants to start as vice president, etc. Carefully chosen grade dairy cows will respond well to good feeding and good care and, when bred to purebred bulls, offer a sure means of increasing the quality of the herd at much less original outlay than is involved in buying purebreds. Artificial insemination is making it increasingly easy to build up high-quality stock at modest expense.

Then, too, if the farm operator is relatively unskilled in the handling of livestock, the quality of his experience grows along with the quality of the herd without so much risk of ruining purebred animals through poor handling and management.

Although some may think that the horse and the mule are on the list of "vanishing Americans," there are still large areas of hilly lands, small farms, and small fields where they are the chief source of farm power. Despite the tendency toward farm mechanization, the relative cost of horse and tractor power should be considered very carefully before a shift is made. A horse or mule can be fed mostly from feeds raised on the farm at little out-of-pocket cost. But the acres now producing feed for farm power could be used for cash crops if the farm were mechanized. Animal power may represent a smaller investment than is involved in the purchase of a tractor and all the implements to go with it. On the other hand, when a change to tractors has been made, farmers often hesitate to sell their horses or mules and find themselves with an overload of capital tied up in power equipment that is only partially used.

It is true that farm operations can be more timely if tractor power is used, but it hardly pays to invest in a tractor on some of the smaller acreages and with some types of farming. In such a situation a farmer may be able to trade work with his neighbors, or perhaps he can even afford to hire the heavier work done, rather than have a heavy investment in farm power that is used only a little. Alternatives, of course, are to own the equipment in partnership with other small operators, or to do work at custom rates for others.

A prime principle of success in farming requires that a high proportion of the total investment be in factors that are directly productive, such as cropland, dairy or beef cattle, hogs, sheep, or poultry. Livestock must be adequately housed, of course, but modest and substantial buildings are more likely to contribute to farm success than heavy overinvestments that cater to the pride but not to the pocketbook. All too frequently farms are bought because they have an unusually good set of farm buildings when this is about all they do have to offer.

The investment in supplies is usually only a small part of the total capital, which includes such items as stocks of purchased concentrate feeds, seeds, insecticides, wire and lumber for repairs, milk cans, egg crates, stock medicines, and motor fuels. For the items that do not deteriorate in storage the farmer may well consider the substantial savings he can make by buying in large quantities. Sometimes several farmers can club together to buy a carload of feed or lumber at much lower costs that when it is bought in a hand-to-mouth way. This is one of the main reasons why farmers' cooperative organizations come into being.

It is important to reserve a part of the capital to meet the day-to-day operating expenses. A farmer who overlooks this point may find himself running the farm according to the dictates of whoever finances the production. It may be good policy to get along for a few years with second-hand machinery or some makeshift building rather than have this happen. After all, one of the main compensations in farming as a way of life is the independence of being one's own boss.

The need for sizable reserves of operating capital varies markedly with different types of farming. A farmer who produces a single prod-

uct that is harvested only once each year is the most likely to need reserves. Specialized growers of cotton, apples, or wheat are examples. In growing apples in the West, for instance, there is a major labor peak in early summer when the crop must be thinned if the growers want to have high-quality, large-sized fruit. Thinning should be done rather quickly and it frequently calls for much more labor than the family can supply. Spray materials must be bought at times throughout the season, and it may also be necessary to hire help to do the spraying. Box shook must be bought and made up ahead of the harvest, which brings its own demands for cash for picking the crop, for washing, sorting, and packing the fruit, and generally getting it ready for market. Relatively few apple growers are able to finance all these operations. Cooperative or independent marketing agencies customarily make conservative cash advances on the prospective crop to assure themselves a sufficient volume of business when the marketing time comes.

This is a decided contrast to dairy farming, with its monthly pay check and its relative independence from outside help in financing. In general, a higher degree of managerial ability is required if a farmer is to be financially independent in the highly specialized one-crop systems of farming.

CHOOSING THE CROP AND LIVESTOCK ENTERPRISES

Those who have farmed for a number of years in the same area are already familiar with the local possibilities in crop and livestock production. This part of this bulletin is therefore especially for the man who is just getting started in farming or who is about to start again under unfamiliar conditions.

Physical, economic, and personal considerations come into play when a man is deciding upon the crop and livestock enterprises that are to make up his farm business. In taking stock of his own abilities and inclinations, he usually has already considered the more personal factors. Through the development of a farm map he also knows the strong points and the limitations of the soil on his farm. What then are the crops that should be grown? A good starting place is to find what crops the neighbors are growing successfully and what ones generally are emphasized locally. These are the crops that have stood the test of time—the ones that farmers have learned by trial and error are most reliable.

This guide is most dependable in a well-established farming community. In new areas the pioneering farmers are likely to be still trying to transplant the crops and ways of farming with which they were familiar in some other locality and perhaps under totally different conditions. Although many crops will grow, after a fashion, under widely different conditions of soil and climate, each has its own requirements if best results are to be obtained. It is no mere accident that we have a Corn Belt, a Cotton Belt, and large areas where wheat is almost the only crop.

PHYSICAL FACTORS

What are the physical factors that limit the farmer's selection of crops? Those of greatest significance are soil, topography, and

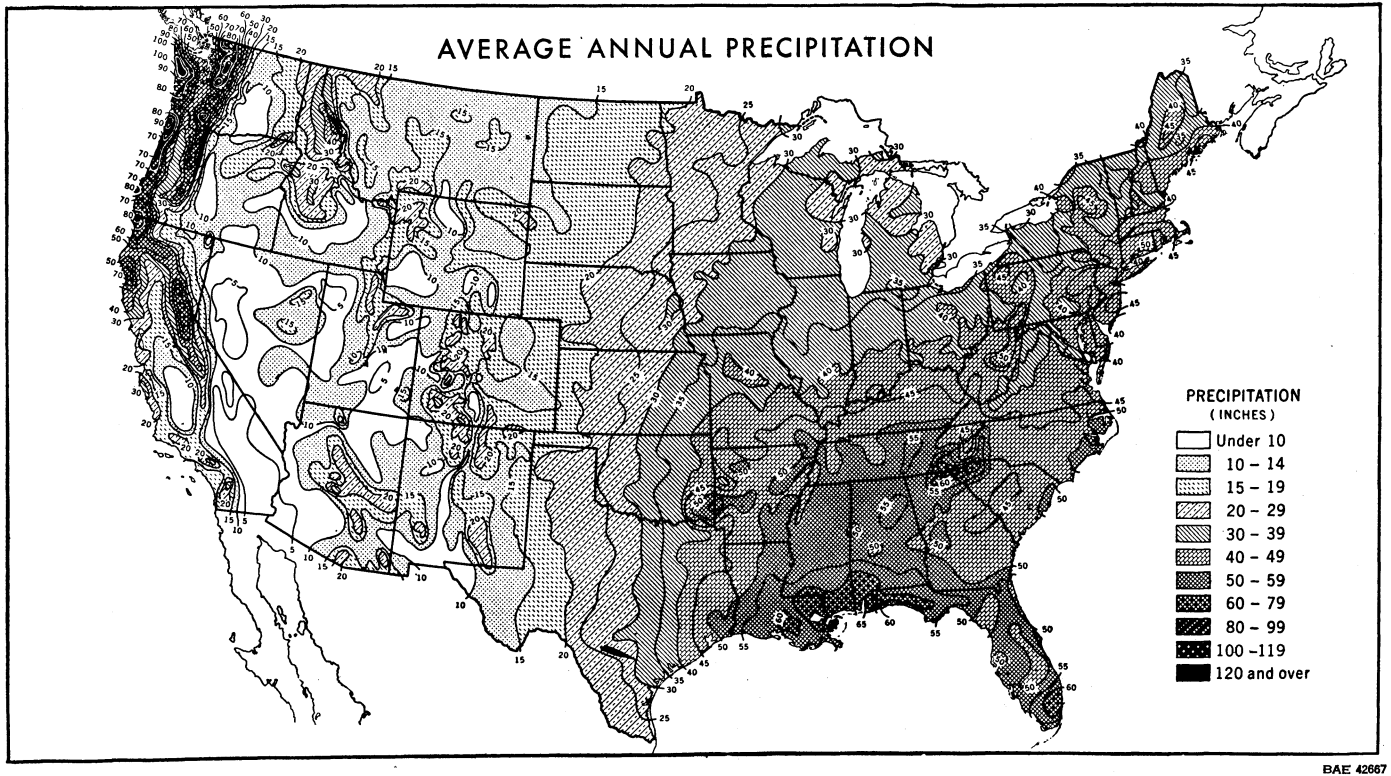

FIGURE 7.—East of the rough line indicating 20 inches of average annual precipitation, as shown above, there is generally enough precipitation to permit diversity in the choice of crops. West of this boundary, in a vast area extending to the eastern slopes of the mountain ranges of the Pacific States, diversified farming is mostly limited to irrigated valleys, with dry farming limited mostly to small grains and producing these only by using various moisture-conserving practices.

precipitation. Soil and topography have been discussed in connection with taking stock of the land resource. Precipitation records need to be carefully examined to determine the annual distribution of rainfall and snow, the dependability of precipitation from year to year.

In some of our important irrigated areas in the West, precipitation may be only that received as light snowfall during the winter. This is totally inadequate for dry farming; in fact it can support only very sparse desert growth. Most of the irrigated area of the Snake River Valley in Idaho, for instance, has an average precipitation of less than 10 inches; the Yakima Valley in Washington has about 7 inches; and parts of California have less than 5 inches annually.

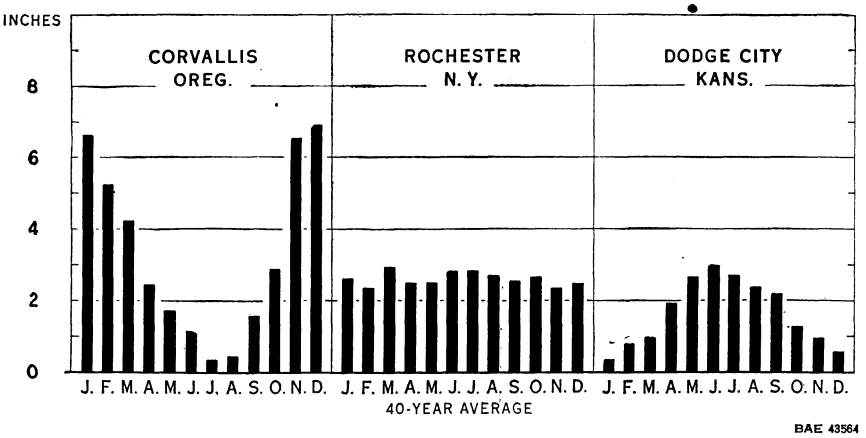

FIGURE 8.—Average monthly precipitation. The way precipitation is distributed throughout the year has a great deal to do with how effectively it is used by growing crops. There are many variations from the three clear-cut distribution patterns shown here. The total amount of precipitation, the capacity of the soil to store moisture, the daily temperatures, and the degree of humidity are important considerations in determining the amount of precipitation that is available for plant growth.

Some of the better range grasses can make a modest growth with 12 to 15 inches of rainfall and even wheat is grown where farmers have learned to store moisture in the soil by using the summer-fallow system—taking a crop from the same acre once in 2 years, 2 years out of 3, or some other combination that utilizes previously stored moisture and plant food. The production of small grains is further encouraged in the Great Plains because as much as two-thirds of the year's precipitation may occur from April 1 to September 30, in the period when it can be most fully used by growing crops.

In some areas, such as the Corn Belt, there is seldom a serious drought. In the Great Plains, however, the farmer and rancher must always be prepared for one. A 33-year record in northeastern Montana, for instance, showed 8 years having less than 10 inches of annual precipitation, 12 years of 10 to 15 inches, 10 years of 15 to 20 inches, and 3 years of 20 to 25 inches. Figures 7 and 8 indicate the wide variability in the United States in average annual precipitation and in its pattern of distribution throughout the year.

Such precipitation maps can serve as general guides, but a new farmer should inquire closely into the local situation, asking the weather station that is closest to his farm. To take an extreme example, on the western slope of the Olympic Mountains in Western Washington, the annual precipitation averages about 120 inches; on the sheltered eastern slope, relatively few miles away, 17 to 20 inches is normal.

Likewise of great importance in deciding upon the choice of crops is the number of days between killing frosts. In some mountain valleys heavy frosts and even snow have been recorded in every month of the year, and the growing season may vary in important farming areas from 3 months at high elevations to 9 months and more in some of California's important agricultural valleys.

The following list indicates the wide variation in the number of days needed to mature important crops:

	Days		*Days*
Corn (Northern States)	90–120	Bush beans	60
Corn (Corn Belt)	130–150	Sweet corn	75
Corn (Southern States)	170–190	Peas	65
Grain sorghums	100–120	Radishes	30
Cotton	180–200	Winter squash	100
Sugar beets	160–200	Carrots	65
Sugarcane	240–270	Cabbage (late)	120

Closely allied to the length of the growing season are the range in temperature and the amount of heat. Some crops, such as field and canning peas, do best in areas of mild summer temperature and cool nights. Corn, on the other hand, does best under humid conditions and warm nights. Varieties of the same crop differ in their adaptability to the environment. Some of the Corn Belt's best corn hybrids would fail to mature in northern Minnesota and are not well adapted to conditions in the Southern States. Plant breeders are constantly at work to widen the adaptability of high-yielding strains and to develop new strains suited to specific conditions.

In addition to these general factors, a farmer should investigate the particular farm for its own peculiar reflections of climatic conditions. In some areas there are rather well-defined hail belts, and a farm located in these storm paths may be much more subject to hail damage than one only a few miles away. Air drainage is as important as water drainage for some crops. An orchard planted in a frost pocket may never set a satisfactory yield.

These physical factors affect livestock production as well as crops. In the range country there are wide variations in the length of the winter feeding period. This in turn influences the quantity of hay that must be put up per head and thus has an important bearing on how the ranch is organized and operated. The rigors of the winter and the violence of spring storms have their effect on death losses and calf and lamb crops. Even the presence or absence of shelter in the form of brush along creek banks is significant. Cold winters may necessitate heavy investments in farm buildings to protect valued breeding stock; they may also make advisable feeding of more concentrates. But these disadvantages may be offset by economic advantages.

ECONOMIC FACTORS

The physical factors and the skill of the operator largely determine the yield to be expected from crops and livestock on a given farm. The economic considerations tell us whether the effort will be profitable. It costs nearly as much to feed and care for a dairy cow that produces 3,000 pounds of milk annually as one that produces twice as much. An acre that yields 100 bushels of corn can be cared for and harvested at much less cost than 2 acres that yield only 50 bushels each. These statements reflect the economic advantage that comes from carefully adapting crop and livestock enterprises to their physical surroundings and then giving them proper care.

Labor, wear and tear on various types of equipment, and supplies such as seeds, feeds, fertilizers, and insecticides enter into the expense of producing crops and livestock. In one area hired labor may cost 50 cents an hour, in another 25 cents. Concentrate feeds may need to be carried long distances at high cost for conversion into meat, while in other places they may be bought direct from the processor in a nearby town at low cost. Of 2 quarts of milk for sale in a store in Miami, Fla., one may have been produced a few miles from the city limits, while the other quart, under the stress of wartime need, may have been poured from a milk can into a tank truck in New York State and, in spite of shortages of gas, oil, and rubber, brought the length of the coast.

Here is a northern city with land close by that is suited to producing truck crops. Some are grown, to be sure, but the great bulk of the fresh garden produce is shipped from areas much farther south. Nearby farmers have discovered that the edge of peoples' appetites for fresh vegetables wears off long before the local, late-maturing crops are ready for market and that this is quickly reflected in the price. Lower prices are also the result of an abundant supply or an oversupply.

When all these pros and cons are added up, some areas in the United States are shown to have an advantage over all others in the production of certain farm products. The economic and the physical forces may combine to leave a wider margin of profit than is had in other places. Or it may be found that these products pay better than anything else that can be produced in the area, even though returns are comparatively low. There will then be a tendency to make the most of this situation by specializing in the production of a favored product or combination of products. Economists speak of this as the principle of comparative advantage. The same principle operates when considering the relative emphasis to place on different crop and livestock enterprises on a specific farm.

SPECIALIZATION VERSUS DIVERSIFICATION

One consideration in the choice of crops and livestock is the decision between emphasis on a single major enterprise and emphasis on several—a specialized system of farming as contrasted with a diversified system. Where the physical and economic factors combine to indicate the overwhelming superiority of a single crop or kind of livestock it may be folly not to take advantage of the situation. An old proverb warns against putting all our eggs in one basket. That

idea was excellent if confined to a risky situation for eggs. The modern idea is, "If you put all your eggs in one basket, take good care of the basket."

Over the long pull the Nation will be better off and its resources will be most productively used if the bulk of each product is produced in those areas and on those farms that have the greatest income advantage in producing it. This does not mean that specialization should be carried to an extreme that leaves the farmer with nothing to fall back on in case of crop failure or disastrously low prices.

A question that should influence such decisions is, "How well is my family going to live?" A good garden, fresh eggs, milk, fruits and berries, and a home meat supply add much to the satisfaction of farm life. These enterprises can cushion the shock of a bad year. Especially desirable too is a winter's supply of canned fruits and vegetables. When expanded somewhat beyond the family needs, they may even provide additional income. In recent years cold-storage lockers have been established in many farm communities. These can be obtained at a small annual rent. In them farm families can keep for future use many kinds of farm produce that formerly went to waste or had to be used at once.

A farmer soon learns that the battle is only half won when the crop is produced. There still remains the problem of marketing to advantage. This involves many considerations besides the prices he receives. It may start with problems in harvesting or in the availability of local facilities for assembling, cleaning, packaging, storing, or transporting the crop. In certain areas where the production of sour-cream butter is an important side line, the farmer is prevented from selling whole milk or sweet cream because he lacks the all-weather farm-to-market roads that permit frequent delivery.

If a farmer intends to produce livestock, tree fruits, or nuts he will do well to look a little way ahead. Full returns will not come in for several years. A farmer should not only do a little thinking for himself as to probable future market outlets but should ask the advice of marketing specialists at his State agricultural college before he goes too far. Many an apple grower has gambled 7 or 8 years of his life in bringing a young orchard into production only to find that his varieties were no longer in popular demand.

Other factors entering into decisions regarding the desirable degree of specialization or diversification are the farmer's peculiar abilities in varied lines of production, the amount of his capital reserve, and his sources of credit. These have all been discussed in the section, Taking Stock of Resources.

COMBINING CROPS AND LIVESTOCK IN A BALANCED FARM PLAN

Having decided upon the crop and livestock enterprises that are adapted to his area, a farmer is faced with the question of the relative emphasis to give to each in building the organization of his farm. This means a simultaneous consideration of the factors previously discussed. It is not unlike the job of a juggler who must keep half-a-dozen balls in the air at the same time. The result the wise farmer seeks is the farm plan that rings up the most sales on the cash register, with due regard to stability in the farming venture—a plan that not

only fits the bank account but the soil resource and the farming type and home of his choice.

Two further kinds of considerations will help in developing a balanced farm plan.

FULL UTILIZATION OF RESOURCES

We have already taken stock of the tools available in farming—a certain acreage of crop and pasture land, a certain quantity of labor, livestock, buildings and equipment, supplies, and operating capital. It generally pays to plan so that all these resources are kept in active use. In the early farm-management studies this was vividly illustrated by a wooden barrel each stave of which represented a factor in the farm organization. The staves, however, were of unequal length and the farm-profits liquid in the barrel was pouring out over the shortest stave. Perhaps the farmer's special interest was represented by one of the longer staves (for example, purebred dairy cows) but the farm profits as a whole were not likely to increase until the short stave was lengthened—perhaps that stave was pasture improvement.

The barrel illustration probably oversimplifies the problem as it usually is found on farms. There are so many interrelationships between the different farm enterprises that what is done to one is likely to influence several others. Closer study might show that for any significant increase in farm income, *several* of the shorter barrel staves should be raised at the same time. The pasture improvement in the example might permit adding a few head of beef cattle or sheep. The forage supply might be increased so much that a part of the land that was formerly in pasture could now be used in producing cash crops. These changes would influence the labor needs of the farm, its cash operating expenses, and finally the income for the year. The good farm manager, then, will visualize the direct effects of any change in the organization or operation of his farm. He will study also the indirect effects and take advantage of what he finds there.

RELATIONSHIPS BETWEEN ENTERPRISES

As with people, some farm enterprises get along especially well together, whereas others are in open conflict. When we know the requirements of each crop and kind of livestock we are in a position to know how compatible they will be. The economists classify these relationships as complementary, supplementary, and competing. The words almost explain themselves.

In the *complementary* relationship the product of one farm enterprise becomes the supplies of another—the corn crop is fed to hogs; the alfalfa hay is the mainstay of the dairy enterprise; etc. In some instances there is a two-way relationship; that is, the corn is hogged off and the hogs return manure to the cornland (fig. 9).

Supplementary relationships, on the other hand, are those that make possible a fuller use of the production resources. The wheat farmer may add a few head of beef cattle as a supplemental enterprise. He hires no more labor and buys little if any additional feed—he just uses the resources at hand more fully, adding to the farm income and reducing the risk of one-crop farming at the same time. An undeveloped wood lot on a farm offers the chance for a supplemental

FIGURE 9.—A complementary enterprise in action. This field of high-yielding corn is being obligingly harvested by the farmer's hogs, which in turn will go to market on the hoof. The harvesting costs are greatly reduced and manure is returned to the soil.

FIGURE 10.—The farm wood lot can be a good source of supplemental income. Relatively little labor is needed to maintain the productivity of this wood lot and the wood can be cut during the winter when work in the field is over.

enterprise in getting out fence posts and cordwood in the slack winter months (fig. 10). A farmer may do custom plowing with a tractor that would otherwise stand idle or do custom hauling with his truck.

Competing relationships, on the other hand, are about the opposite of supplementary. They are the ones that cause a piling up of labor demands at peak seasons, so that more help must be hired and so the margin of profit is reduced (fig. 6). Cotton, corn, and tobacco compete for the farmers' labor in certain areas of the South. Sugar beets, field beans, and potatoes make simultaneous demands on the farmers' time in some irrigated valleys of the West. A little "pencil pushing" on a table such as that shown on page 7 will help in organizing the farm so as to avoid too much competition between enterprises.

Many considerations grow out of our knowledge of the techniques of producing crops and livestock to the best advantage. Crops must be rotated in ways that will help to maintain soil fertility, keep weeds down, and combat certain soil-borne crop diseases. This is so important that in many areas farmers have developed rough guides to indicate the desirable proportions between the acreages of intertilled, close-growing, and sod crops. Good crop rotations go a long way toward conserving the soil and when they are used in connection with desirable methods of tillage and proper supplemental practices they lay the groundwork for a permanent and prosperous agriculture.

This process of physical planning necessarily involves consideration of the uses of each field over a period of several years and the ultimate effect on the productivity of the farm. The objective of permanence and stability in the farming program cannot be achieved without considering these longer time effects. Fortunately, in most areas there are a number of alternative ways in which the land may be used to maintain or increase soil fertility and combat erosion losses. The problem then becomes one of comparing the quantities of produce from alternative ways of organizing the farm, estimating probable expenses and receipts and, by this means, determining the plan most likely to achieve the main objective of a satisfactory income and level of living.

Most cropping systems will include both cash crops and feed crops—those to be sold direct and those to be marketed through livestock. Their significance varies with the type of farming. In most instances, however, the points to think about are relating the feeds raised to livestock numbers, the utilization by livestock of crop aftermath and other low-grade farm produce, the possible need for buying feeds other than those raised on the farm, the value of farm manures in keeping up soil fertility, and related factors. In other words, the cropping pattern and the livestock program need simultaneous consideration if the objective of a well-balanced farm plan is to be attained.

PLANNING FOR THE FARM AS A WHOLE

A page full of figures carries a certain air of authority. Too often they are accepted at face value. But sometimes they can be very misleading. Nowhere is this more likely to be true than in farm accounting. This is particularly true when we try to learn the profits or losses from a single farm enterprise. It has often been demonstrated that an acre of pasture is the most profitable acre on the farm. Relatively little goes into it in terms of labor or expense, but the re-

sulting forage, when calculated at current market prices, brings a handsome profit. If this is true, why doesn't the farmer close out all his other farm enterprises and put the entire farm into pasture?

Another example is the small acreage of oats grown for horse feed. On paper it is likely to appear just as unprofitable as the pasture seemed profitable. In the face of this, why do farmers raise oats when it would be cheaper to buy them?

These distortions arise because it is difficult to apportion the costs of production between each of the farm enterprises, and the tendency is to credit an enterprise with market values that do not actually exist. Neither the pasture nor the oats are marketed directly—they are fed to the livestock. So there is likely to be a less distorted picture if a farmer figures the probable net income for his farm as a whole instead of trying to isolate the profits on its different parts. Cost accounting for a certain farm enterprise can, of course, be done in a way that will reflect a true picture, but the process involves more knowledge of bookkeeping than most of us have.

It is very important to know which of the major farm enterprises is paying best; which should be given further emphasis, and which should be curtailed. Truck farms and many types of diversified farms must continually watch their markets and shift resources among enterprises to take advantage of changing demand. Fortunately a farmer does not need to use cost-accounting methods to discover this. In any given year many of the farmer's obligations must be met regardless of the changing emphasis on different lines of production. Unless more land is bought or rented the farm acreage is fixed. Interest on the mortgage and payments for taxes will in most instances remain the same. Expenses for upkeep of buildings and machinery are not likely to be very different.

Under these conditions a farmer can take a short cut by confining his figuring to the *cash* costs and *cash* returns that are reasonably sure to be realized in the coming year. This involves setting up a tentative production plan for the new year that will carry his thinking through about these steps:

1. Indicate the number of acres of each crop to be grown and the number of head of each kind of livestock to be kept.
2. Estimate the total production of each crop and each kind of livestock, assuming normal yields.
3. Calculate how much of each product will remain for sale after taking care of quantities used on the farm for feed, for seed, and in the household.
4. Estimate the cash receipts from the sale of these products, using good judgment regarding prices that will prevail. Set down also cash receipts from any other sources such as custom work with the tractor.
5. Think through the steps in the production process and set down the cash items of expense, including such things as farm taxes and the cost of operating the farm car that are chargeable against the whole farm business.
6. Subtract total cash expenses from total cash receipts to arrive at an estimate of the probable net cash income.

The figures derived from these steps could be set down in any number of ways. The whole process is illustrated in very compact form in the work sheet for farm planning, table 2 (p. 21). The figures shown by way of illustration in this work sheet are for a small cotton-

TABLE 2.—*Work sheet for farm planning*

Item	Acres or head	Production			Amount kept for—			Cash income			Farm expenses	
		Unit	Per acre or head	Total	Feed	Seed	Household	Amount sold	Price (dollars)	Value (dollars)	Cash operating expense	Value (dollars)
CROPS											CROP EXPENSE	
Cotton:											Seed	30.30
Lint	16	Pound	208	3,328				3,328	0.16	532.48	Fertilizer and lime	
Seed	16	Pound		5,568	3,556	461		1,551	.015	23.27	Other supplies	16.26
Corn	10	Bushel	25	250	249	1					Seasonal labor	185.75
Oats	7	Bushel	35	245	224	21					LIVESTOCK EXPENSE	
Cane	3	Pound	6,000	18,000	18,000							
Rotation pasture	8										Purchased feeds	86.31
											Other supplies	19.75
											Veterinary	
LIVESTOCK AND LIVESTOCK PRODUCTS											Service fees	
											Seasonal labor	
Work stock	2										GENERAL EXPENSES	
Dairy cows	4											
Butterfat		Pound	250	1,000	[1] 52		237	711	.36	255.96	Monthly labor	
Cull cow	½	Pound	560	280				280	.04	11.20	Machinery repair	68.00
Veal		Pound		300				300	.08	24.00	Building and fence repair	68.00
Hogs (sows)	3										Gas and oil	60.00
Pork		Pound		600			450	150	.09	13.50	Automobile, tractor, and truck	20.00
Poultry	150										Property insurance	
Eggs		Dozen	8⅓	1,250		[2] 45	182	1,023	.27	276.21	Cash rent	
Meat		Pound		600			250	350	.216	75.50	Current interest	
											Farm taxes	21.00
OTHER FARM INCOME											Irrigation and drainage charges	
Total cash income(a)										(a) 1,212.12		
Total cash operating expense (b)												(b) 575.37
Net cash income(a−b)												636.75

[1] Calves allowed to suck cows to equivalent of 52 pounds butterfat.
[2] Used for hatching.

livestock farm in Texas and represent pre-war levels of prices and costs.

YEAR-TO-YEAR AND LONG-TIME PLANS

In earlier pages the importance of planning next year's farm operations in the light of a well-thought-out long-time farm plan has been emphasized. Each tentative plan that is considered for possible adoption in the new year should be subjected to these test questions: Are we still "on the beam" that will carry us toward an eventual goal of a well-balanced, well-organized farm? What can we do next year in the way of farm improvement that will have lasting value?

A long-time farm plan can be especially helpful as a direction finder in correcting wartime maladjustments. As a result of wartime needs, farmers in parts of the Corn Belt, for instance, now have too high a proportion of their acreage in soil-depleting crops in general and in soybeans in particular. Wheat in the Great Plains has been extended to acreage that, from the long-time standpoint, should remain in grass. This keeping of one eye on the long-time results of what it is proposed to do next year is not listed above as a separate step—instead it should influence the thinking throughout all the steps.

BALANCING LIVESTOCK AND FEED

Where livestock enterprises are or will be significant in the farm business, it is especially important that adequate provision be made for the feed supply throughout the year. Where home-grown feeds are depended upon, livestock and feed crops must be kept in reasonable balance. A simple form, such as that shown as table 3 below can help a farmer to visualize surpluses or deficiencies in needed feeds for the coming year.

TABLE 3.—*Work sheet for balancing home feed supply with feed needs*

Kind of livestock	Number head	Grains (list kinds)			Roughages		Protein supplements			Pasture
		Corn	Oats	Chick feed	(Cane hay)	Other	Bran	Cotton seed meal	Meat scraps	
		Bushels	*Bushels*	*Pounds*	*Tons*		*Hundredweight*	*Pounds*	*Pounds*	*Acres*
Work stock	2	70	60		3.0			600		1.5
Young work stock										
Dairy cows	4	24	56		5.4		22.4	2,480		6.0
Beef cows										
Young cattle										
Feeder cattle										
Sows and boars										
Pigs	3	36						120		.5
Ewes and bucks										
Native lambs										
Feeder lambs										
Poultry [1]	150	120	105	600					134	
Amount needed for feed		250	221	600	8.4		22.4	3,200	134	8.0
For seed and household		1	21							
Total needed		251	242	600	8.4		22.4	3,200	134	8.0
Total produced		250	245		9.0			3,195		8.0
For sale										
To purchase				600			22.4		134	
Price per unit				$0.035			$1.75		$0.045	
Value of purchased feed				$21.00			$39.20		$6.03	

[1] 1,050 pounds of oystershells ($15.75) and 214 pounds of shorts ($4.33) are also purchased. If the poultry business is large, this form can be modified to include columns for "mixed feeds" and "miscellaneous feeds."

This form needs little explanation. It does assume, however, that the farm planner knows the kinds and quantities of feeds per head to be fed during the year. By writing the kinds of feeds in the spaces provided at the top of the form and multiplying (on scratch paper) the per head requirements by the number of head to be fed, he arrives at the total quantities needed for each kind of livestock. It is assumed that the quantities of feeds on hand at the beginning of the new year will be about balanced by those on hand at the year's close, and so can be ignored. If this is not the case, surplus feeds can be included on the form with those listed under the item "Total produced."

ALTERNATIVE PLANS

By changing the number of acres in a given crop or the kinds or numbers of livestock kept and correcting for the changes in the cash costs and returns involved, a new work sheet or budget can be developed and its probable net cash income can be compared with that of the first. Any number of these comparisons can be made and the one can be selected that gives promise of yielding the highest cash return consistent with maintaining the farm plant in good condition. The keeping of simple accounts for at least the more important farm enterprises will help to indicate those that should be considered for possible expansion as well as those that can be decreased to permit this.

Information of this sort reduces the number of alternative plans that might otherwise be considered for the new year. Table 4 shows the same small cotton-livestock farm in Texas organized in five different ways and the estimated net cash income that would result from each.

TABLE 4.—*Different ways of organizing a small cotton-livestock farm in Texas and the probable resulting cash income from each system* [1]

Item	Plan in use	Alternative plans			
		I	II	III	IV
Acres in crops:	*Number*	*Number*	*Number*	*Number*	*Number*
Cotton	16	44	22	11	6
Corn	10	----------	8.5	12	14
Oats	7	----------	5	7.5	8
Cane hay	3	----------	2.5	3.5	4
Sudan pasture	8	4	6	10	12
Permanent pasture	4	----------	4	4	4
Total	48	48	48	48	48
Livestock:					
Work stock	2	2	2	2	2
Dairy cows	4	----------	3	5	9
Hogs	3	----------	3	7	1
Poultry	150	20	100	150	150
Net cash income (dollars)	637	600	622	654	568

[1] Data given are adapted from a study in the Black Waxy Prairie Belt of Texas. Prices and costs are at pre-war levels and are not indicative of current income expectations.

Is the farmer safe in making a choice on the basis of the differences in cash income from alternative plans for this small farm? The answer is, No—especially for changes that require new investments. Certain supplemental considerations must at least be reviewed. Confining the analysis to changes in cash receipts and cash expenses leaves out several of the items that should be considered. For example, the labor

and management contributed by the farmer himself, the unpaid work of members of his family, and depreciation on buildings and equipment are charges that are here ignored. Settlement of some of these can be postponed, but in the year that a new tractor is bought an unusually heavy cash outlay must be made or a new debt must be contracted with its financing costs and interest charges. The labor and management contributed by the farmer and his family have not been considered as costs, but rather as claims on the net cash income.

Similarly, no credit has been recognized for returns such as farm produce used in the home. In Plan I for the Texas farm, for example, cotton is almost the sole income producer, and less than $100 worth of produce would be contributed to the family living as contrasted with about $250 worth under the alternative plans.

Changes in investment may be necessary if marked shifts are made in the farm organization. Plan IV of the Texas farm, with its livestock enterprises, calls for an investment in livestock, buildings, and equipment of more than $1,600 as compared with less than $600 for Plan I. Furthermore, additional emphasis may have been given to enterprises that make heavy demands on farm labor and, as indicated earlier, we need to visualize the size of these demands and when they will occur. The importance of these supplemental considerations is emphasized in the Texas illustration when the data are arranged in tabular form (table 5).

This Texas farm has been introduced to show alternatives that vary so widely that they amount to drastic changes in the type of farming. Such wide explorations have their place in discovering the long-range possibilities of a farm before it is bought or when unexpected pressures make drastic change necessary. They are part of the figuring that should be done in developing the long-time farm plan.

TABLE 5.—*Investment needed in dollars and labor under different farming plans for the same Texas farm*

Item	Plan in use	Alternative Plans			
		I	II	III	IV
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Value of land	7,000	7,000	7,000	7,000	7,000
Value of farm buildings	450	180	350	470	500
Value of farm machinery	280	110	270	290	300
Value of livestock	665	265	555	755	820
	Hours	*Hours*	*Hours*	*Hours*	*Hours*
Man labor on crops [1]	1,035	1,320	1,108	983	930
Man labor on livestock	1,240	180	930	1,440	1,630
Total labor	2,275	2,500	2,038	2,423	2,560
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Value of products used in the home	250	94	250	250	250

[1] Exclusive of picking cotton, which is included as a cash expense.

For the more common short-range, year-by-year farm planning, however, the cash-cost and cash-return basis will serve very well, and it may not be necessary to figure many alternative plans to get the guidance that is needed. The experience of the current year as one basing point and one or two possible alternative plans (keeping in mind the long-time farm plan) should be adequate. That Texas

farmer, for instance, would be doing the more usual kind of farm planning if Plans II and III were all he compared with his present system.

For the sake of making a very important point, the following figures for a representative large-sized cotton-tobacco-peanut farm with 130 acres of cropland (adapted from a similar study made recently in Bulloch County, Ga.) are shown in table 6. The suggested changes that resulted in these figures are not given in detail. The figures are presented to show how widely returns can fluctuate on the same farm under different levels of prices and costs. Comparisons like these are especially valuable as an aid in the purchase of a farm if a farmer is trying to gage its upper and lower limits of income possibilities over a period of years. The differences in net cash income between alternative plans for this larger farm are much greater at any income level than are those on the small Texas farm.

TABLE 6.—*Estimated variations in net cash income on the same Georgia farm organized in different ways under prices and costs prevailing in selected years*

Net cash income	Pre-war plan	Alternative plans			
		I	II	III	IV
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1932 prices and costs	774	1,317	1,266	1,159	988
1940 prices and costs	1,298	2,057	1,982	1,757	1,392
1942 prices and costs	1,720	4,027	4,235	4,122	4,963

AIDS TO FARM PLANNING

In this farm-planning process it is evident that a farmer "counts his chicks before they are hatched." In fact, he goes much farther back to consider seriously the kinds of eggs to put under the hen. Because of the uncertainty in any look into the future, it is essential that mature judgment be used in estimating the probable yields, probable costs, and probable returns for a new year. We are kidding no one but ourselves if our enthusiasm leads us astray—and it is well to allow some margin for error in such calculations. A pleasant surprise is better than a disappointment.

Principal aids for farm planning are available from three major sources: (1) Records or recollections of the past performance of the specific farm; (2) bulletins, farm papers, etc.; and (3) the personal assistance to be had from representatives of State and Federal agencies. Experience of other farmers in the area is also of great importance. The farm plan is likely to be most reliable when it is built with aid from all these sources.

PAST PERFORMANCE OF THE FARM

As one might guess, what is put into farming in the way of seed, feed, fertilizer, elbow grease, etc. (the "inputs"), and what results in the way of production (the "output") vary widely from area to area and even from farm to farm. As a consequence, the farm-planning job is much easier and much more trustworthy if the information can come from records and experience on the farm in question. The

average per acre yield of wheat for the United States as a whole reached the unparalleled height of 20 bushels in 1942; yet certain small areas in the best wheat-producing areas consistently average more than 55 bushels. The same principle applies to State or county average yields.

Farm planning may count for little unless the farmer knows whether his own wheat acreage is capable of 20-bushel or 55-bushel crops. Yield per acre and per animal can be increased within rather wide limits, but it may mean extra labor, fertilizer, and expense. It is necessary, therefore, to find out whether it will pay to strive for the higher yields. Usually a little extra attention to the principal operations increases the income much more than it adds to the expense.

Even the keeping of farm records can be useless in answering some of these questions unless the records are designed to furnish guidance in planning the farm business and in its day-to-day management. *The final goal, of course, is the highest profit combination of crop and livestock enterprises that is consistent with maintaining the farm plant in a good state of fertility.* Farm planning, however, is dependent on many more things than the dollar-and-cents profit on each farm enterprise. Consider, for example, some of the questions that arise in connection with planning for the farm crops:

1. When do we prepare the land for seeding?
2. How much seed do we sow per acre?
3. Of the several varieties of seed we have used in the past, which has been most satisfactory from the standpoints of yield, quality, and resistance to drought, disease, insects?
4. When do we cultivate, irrigate, harvest?
5. What will be our peak labor needs and when will they occur?
6. Is the farm labor supply ample or must we hire help?
7. What insecticides, fungicides, and containers will be needed and what quantities of each?
8. What grades of fertilizer and what rates of application have given the best results?
9. What are the purchased items likely to cost?
10. Considering what has been planted on these fields before and assuming normal weather conditions, what is a reasonable expectation of yield per acre?
11. How much of the crop will remain for sale after we have made conservative deductions for the quantity to be retained on the farm for seed, feed, and home use?
12. What is a reasonable expectation with regard to the quality of the crop?
13. What has been the degree of variability in past years in planting dates, harvest dates, yields per acre, date of last frosts in the spring and first frosts in the fall?

Here are some of the questions that farm records should help to answer when livestock is being planned for:

1. Which of the dairy cows are paying their way and which should be culled out as boarders?
2. How much of each kind of grain, roughage, protein supplement, and pasture must be reserved per head for each kind of livestock in the new year?
3. Is the pasture program adequate to provide pasture throughout the season?
4. What are the total quantities of the different feeds that will be needed?
5. How much of these feeds will we raise and how much will have to be bought?
6. What is likely to be the price per hundredweight or ton for purchased feed?
7. Where and when can these feeds be bought to the best advantage?
8. How should the breeding program be timed so that livestock will utilize the cheaper feeds and pastures as fully as possible and yet have it possible to market their products to advantage?
9. What variations in calf crops and lamb crops have been experienced through the years, and what are the reasons for them?

10. What variation has there been in death loss and what were the causes?
11. What marketing weights and what degree of finish have generally been most profitable?
12. How much expense should be figured on for such items as stock medicine, salt, sheep dip, veterinary fees, service fees?
13. What is the relation of number of young stock to breeding stock and is it in line with our plans for expansion or contraction of the enterprise?

Rough answers to some of these questions can be given from the general knowledge most farmers carry in their heads, but the guesswork can be eliminated and more reliance placed in the resulting farm plan when the information can be drawn from carefully kept farm records. The value of such records increases with the number of years they cover. Almost any farmer can remember a certain exceedingly good year or that year of crop failure. But the normal expectancy of yields, costs, and returns is most reliable when it is based on recorded experience covering a span of years, including the more nearly normal conditions as well as the extremes.

Perhaps some of the questions listed above are those the reader had not thought of as capable of being answered by keeping farm records. By figuring in advance the types of information that would be helpful in operating the farm efficiently it is possible to design or procure the type of record that will supply such information. (See Farmers' Bulletin No. 1962, Useful Records for Family Farms.)

If a man is just starting to farm in a strange community where information is not available for the specific farm, he will still find it helpful to make farm plans. Perhaps a friendly neighbor or the county agricultural agent will be glad to go over the farm, field by field, discussing its possibilities and its limitations, thus providing the basis for rough approximations that can be trued up as experience is gained.

AIDS FROM PUBLICATIONS

Farm planning is most reliable when it leans heavily on the records of past years for the specific farm. In periods of instability, however, a farmer is sometimes at a loss to know what hired labor and supplies are likely to cost in another year and what prices he should expect for his products. It is always unwise to count on high returns in the new year just because returns were high this year. He needs to know something about the forces that influenced prices or costs this year and whether they are likely to continue.

Newspapers and farm periodicals of different kinds are one source of information. But he should not be satisfied that he has the best possible advance information without double checking it in every way possible. Most of the agricultural colleges have specialists who make a business of analyzing the agricultural situation from time to time. Results of their analyses can usually be counted on as coming from a reliable, unbiased source. On request, the State agricultural extension service will put the farmer's name on its mailing list to receive free from time to time the items of current agricultural interest and the future outlook for various farm products.

The State agricultural colleges continually carry on research work—developing improved varieties of crops, breeding more productive types of livestock, discovering more effective ways of combating pests and diseases, pioneering with new types of machines and with new ways of organizing the farming business for greater profit and

stability. Results of this work are usually reported in bulletins. A farmer's name can be placed on mailing lists to receive items of special interest. The progressive farmer will be incorporating some of these new ideas in his current farm planning.

The United States Department of Agriculture, particularly the Bureau of Agricultural Economics, is continually making available economic information that will have a bearing on probable prices and costs for the year ahead. The Agricultural Situation, a monthly publication of this Bureau, can be obtained from the Superintendent of Documents of the Government Printing Office, Washington 25, D. C., for 50 cents a year. This reviews the outlook for production and prices of important commodities, carries comparative statistics, and contains articles of general interest to farmers. Several of the State agricultural colleges issue similar publications, adapting the national information more closely to the situation within the State.

The Bureau of Agricultural Economics also issues a series of monthly situation reports covering important commodities or groups of commodities in more detail. Some of the titles in this series are as follows: The National Food Situation, The Fats and Oils Situation, The Cotton Situation, The Dairy Situation, The Livestock and Wool Situation, and The Poultry and Egg Situation. These can be obtained upon request from the Bureau of Agricultural Economics, Washington 25, D. C.

The Agricultural Research Administration, the Soil Conservation Service, the Forest Service, and many other branches of the United States Department of Agriculture issue technical information that is valuable in the organization and operation of a farm. Perhaps the wise thing for a farmer to do is to mail a post card to the Department and another to the State agricultural college, mentioning his type of farming and asking for lists of the published aids that are available for distribution. The items he wants can then be requested.

In recent years several State agricultural colleges have issued guides to assist in planning the farm business, and they even provide forms for making the job easy. A post card mailed to the director of the State agricultural extension service should bring useful information on how to approach the job of farm planning.

PERSONAL ASSISTANCE AVAILABLE

There are slightly more than 3,000 counties in the United States. Almost all are served by county agents, and many have home demonstration agents. These local representatives of the State agricultural extension service can give technical assistance on almost any phase of the farm business and on homemaking, or can put a farm family in touch with those who can. Their offices are generally located at the county seat, but they make occasional visits to local communities. In a few areas the extension service has sponsored the organization of local farm business associations. These are voluntary associations of neighboring farmers who employ a farm-management specialist to help them in making farm plans.

In many localities field representatives of the Soil Conservation Service are available, particularly where farmers have established soil conservation districts. These representatives will be glad to go over the

farm, field by field, assisting the farmer in developing a long-time farm plan that will adapt each type of land to its proper use, conserve the soil, and build toward a stable and prosperous agriculture (fig. 11). Some of the farm land may be so steeply rolling or the soil composition may be such that farming on the contour or the use of terraces is advisable. In most instances the Soil Conservation Service can provide the technical assistance needed for the change-over and perhaps can make available the heavy equipment needed in the construction of terraces.

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FIGURE 11.—A technician aids a farmer in developing a long-time farm plan, while the younger generation, who will reap the ultimate benefits, looks on.

The Farm Credit Administration, the life insurance companies, and the local banker stand ready to extend financial aid to the commercial farmer who has security for his loan. These agencies will usually draw up a tentative plan for the farm as a basis for judging the size of the loan and the length of time for which it should be advanced. Such agencies are generally concerned more with the possibilities of immediate revenue from the farm than with plans for the long-time pull. This is particularly true if the credit is advanced for a relatively short period.

The local county Agricultural Conservation offices (AAA) advise on year-to-year production problems. Information can be obtained about the soil conservation practices that the AAA program helps carry out on individual farms. These offices are also charged with the local administration of commodity loans made available through the Commodity Credit Corporation. They have been administering such special wartime programs as the rationing of farm machinery, the distribution of feed supplies, and the certifying of eligibility for essential farm construction.

The Farm Security Administration, designed to assist farmers who are unable to obtain credit through regular channels, offers aid in both finances and management. FSA assistance leans heavily upon complete farm and home plans, worked out by the family with the help of the local representative.

The personal services that can contribute to the planning of a farm and its day-to-day conduct are many and varied. Farmers will do well to learn about them through the office of the county agent.

Relatively few farmers make a formal plan by the methods described in this bulletin. More frequently they produce about the same quantity of each commodity each year and trust that in the long run the returns from the farm will average out fairly well. In the better farming areas and in periods of stable prices and costs, this system works rather well, but in areas where nature is not so bountiful and in periods of great instability, like the present, it would pay most farmers to examine their farm business more closely and make the adjustments that seem to be indicated.

Farming in the United States is being placed increasingly on a business basis. The great majority of our farmers produce primarily for sale in the markets and depend in turn on goods and services that are supplied by others. Farm machinery, fuel oils, fertilizers, concentrate feeds, seeds, insecticides, containers, lumber, and fencing are only a few of the items they must buy. Cash expenditures for items used by the farm family far exceed the small outlays our forefathers made for salt, tea, and yard goods. Consequently, a knowledge of the simple principles of business management is becoming as essential a part of the farmer's "stock in trade" as his familiarity with modern techniques of crop and livestock production.

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