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Emergency Farm Adjustments in the Wheat Area of South Dakota

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Emergency Farm Adjustments in the Wheat Area of South Dakota



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In Cooperation With
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Washington, D. C.

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Summary

This circular tells briefly the story of some farmers in the Spring Wheat section of South Dakota. It shows the strenuous effort being made by these men to reduce expenses or to shift their production so that their income will equal their expenses.

It illustrates certain adjustments that are being followed on some of the farms and suggests some changes that might be profitable on these and other farms.

The most serious difficulty arises from the effort to pay the fixed charges—interest, taxes, and payments on indebtedness. On nearly all farms some adjustments are being made to obtain a farm income large enough to meet the immediately pressing expenses.

These adjustments have taken the form of:

1. Reducing cash expenses as much as is possible, sometimes to the extent that production is restricted or is carried on at greater risk. The effort to reduce expenses has in most cases led to a lower standard of living for the farm family.

2. Reducing capital assets to meet payment demanded on indebtedness even though this means the abandonment of a practical long time system of farming.

3. Family labor and the equipment is used to the limit of its capacity in an effort to increase the livestock enterprises and the acreage of crops so that the cash income can be increased.

4. In some cases the acreage of cash grain has been increased at the expense of feed grains, legumes, or a cropping system that would be advantageous over the long period of time.

5. In other cases, herds of stock cattle have been shifted to dairy production. In others, the practice of selling cattle as feeders has been changed to sale as finished or "warmed up cattle".

6. Farmers with low priced feed surplus have sometimes found it necessary to shift from a conservative production program to the more speculative one of feeding livestock.

7. In extreme cases, the operators have found it necessary to relinquish title to their farms and to continue operation as tenants to preserve their working capital and continue farming.

8. Only farmers relatively free of debt can reduce operations and wait for an improvement of prices.

Emergency Farm Adjustments

in the Wheat Area of South Dakota

by

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The Present Situation in the Wheat Area

The Need for Changes in Farming

Three years with very low farm prices, accompanied by one year of crop failure, have forced many farmers in central South Dakota to make radical changes in their farming systems and to reduce drastically their personal budget. The financial condition of many is critical. Credit in the form of open accounts and chattel loans is practically exhausted. The outgo has exceeded the income, debts have increased and reserves of cash and life insurance have been used. Farm operating expenses have come down slowly, but interest and payments on indebtedness require as many dollars in 1932 as in 1929. To aggravate a bad situation, unpaid interest and expenses have accumulated to increase liabilities and to make the burden of debt still heavier. In many instances the low prices have reduced the value of the chattel originally given as security so much that the creditor has demanded additional security or has foreclosed.

A number of the farms had been purchased during the period of relatively high farm prices, while farms purchased before 1917 had been capitalized on the basis of prices prevailing from 1923 to 1929. The investment in equipment had been adjusted to the higher level of prices on rented as well as on owned farms. The size of the business, the methods of production, the farmers' standard of living and the amount of the farm indebtedness were all based on prices of dollar wheat and eight cent hogs. A drop to thirty cent wheat and two and one-half cent hogs so reduced the farm income that many farmers have been unable to meet the cash outlay for interest, taxes, farm operating expenses, and family living. With an increasing deficit the farmers were forced to make some changes in production either to reduce the farm expenses, to increase the quantity of the product for sale or to do both. Such changes, however, have been insufficient in most cases to eliminate the operating deficit and the personal expenditures had to be curtailed.

Some adjustment to meet expenses with income is necessary. An individual farmer can do little to influence either the price of the product sold or the cost of things purchased. Yet, he can do something to increase income or to decrease expenses by making changes in production and by drastically reducing expenses. In many instances the products sold or the money paid out can be controlled sufficiently to make the cash income cover the cash expenses during this critical period. The possible adjustments depend on the circumstances of the individual and on his type of farming. This circular, based on business records of farms in the Spring Wheat area of South Dakota presents some of the changes which have al-

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ready been made on actual farms and suggests some further changes to meet the existing emergency situation.²

The suggestions for changes in farming have been made in view of the present prices rather than the prospects for a future recovery of prices. These suggestions are based on adjustments already made on some of the farms. The application to other farms will depend largely on the financial condition of the farm business. At low prices a farmer free of debt, with some reserve capital has an opportunity to make changes cheaply or to expand his farming operations. At the other extreme is the farmer so deeply in debt that no changes requiring additional capital can be made. For many farmers the only hope to continue as owners and the only hope of their creditors to receive full payment on loans is for an immediate and substantial rise in prices. The farm owner with a low indebtedness can adjust his business more readily than can the owner of a heavily mortgaged farm. A share renter has a lower fixed charge against his business and consequently an advantage over the heavily mortgaged owner. However, he probably pays higher interest rates on the money borrowed and has short term loans that require frequent refinancing. Furthermore, changes in the production program of a tenant may be limited by restrictive clauses in the lease agreement as well as by a lack of capital.

Reduction of Expenses

Few of the farmers in this area are in a financial position that will permit them to reduce their numbers of cattle or acres of crops and still meet their expenses. Only those having low indebtedness, low fixed cash charges and who are in no danger of foreclosure can cut down the size of their enterprises and hold on until farm prices do improve. The farmer cannot allow interest to accumulate unpaid or short term loans to mature with no provision for repayment. To continue in business some provision must be made to meet interest payments and operating expenses. For those who have no chance to save their farm from foreclosure through conservative operations a speculative chance to increase income may offer the only hope for survival. A man with necessary equipment may best take such a chance by increasing his acreage of cash crops. One with feed and experience in feeding livestock may gamble with feeder cattle or sheep as his only alternative.

Expenses, in most cases, have already been reduced. Purchases of breeding stock, needed equipment and improvements are being postponed. Less labor is hired and more of the farm work is done by the operator and members of the family. Family living expenditures, and in some cases farm operating costs, have been cut by producing less for market and more for the maintenance of the family and the farm. Such economies can be made only in the operating costs by restricting such

2. The farm business records used here to illustrate possible shifts in farm production were obtained as a part of a study of farm organization and management in the Spring Wheat Area of South Dakota. The study is being made by the South Dakota experiment station in cooperation with the Bureau of Agricultural Economics, United States Department of Agriculture, and is under the general supervision of S. E. Johnson and C. M. Hampson of the Department of Agricultural Economics and R. S. Kifer of the Bureau of Agricultural Economics. The authors acknowledge the assistance given in preparation of the manuscript by Professor Hampson of the experiment station and by L. K. Mossing and T. S. Thorfinnson of the extension service. The material used in the study and the suggestions for farm reorganization came primarily from the records of the farmers cooperating in the study.

purchases as fuel and feed, and by hiring less labor. Some of the heavier items of expense as taxes and interest on indebtedness are fixed and must be met if the present operator is to continue in the business.

Adjustments in Farming

Any change in crops or livestock must be made in view of the individual situation. One must consider the fertility of the soil, quality of the livestock and whether or not the crop or the kind of livestock is suited to a particular farm. The relation between the expenses and the income of the farm will show whether a change is needed, and any new enterprise should be one with which the operator is familiar.

In addition to operating as cheaply as possible with no change in the quantity or kinds of things produced, other savings may be made through adjustments in the kind or quantity of products. Production may be expanded along one line and reduced in another so that less cash will be required to operate the farm. By selling some of the farm assets, the debt and interest charges may be reduced. Either change would probably reduce the income but in some cases might reduce the cash expenses still more.

The changes made will probably fall in one of two general classes. The first is an effort to obtain more money income from the present equipment either by farming more acres, by keeping more livestock or by handling crops and livestock to produce more surplus for sale. A second class includes shifts to crops or livestock requiring less working capital or a change to methods that require less working capital. The latter type of change may be profitable, even though it reduces the extent of the operations, if some reduction of debt and decrease in interest charges can be obtained.

Adjustments to Reduce Expenses

Illustrated by Farm "A"-A Livestock Farm

One example of the possible changes to meet conditions can be taken from a farm in the western section of the area. The specific problems on other farms will not be the same as on this farm nor will they be met in the same way. However, the suggestions given may apply in a general way to other farms and the method of estimating the return from different adjustments will be the same. In this example, as in other instances, consideration is first given to the financial situation of the operator and the income necessary to meet all cash expenses. From the available land, livestock, and equipment the production is estimated and some judgment formed as to the value of the different ways of adjusting the farm business.

The operator of this farm has the opportunity to choose among a number of possible changes in his farm business. Instead of selling long yearlings from grass, he can sell as finished young stock, and then by releasing some land now rented for cash, he can reduce his fixed farm expenses. He can, if prices favor the change, reduce the number of hogs produced and grow more cash grain for sale. He also has an opportunity to cut the amount of his personal expenses by converting his life insurance policy. Other shifts are possible of course and may be preferred by the operator but the changes suggested will be considered briefly here.

Financial Condition

The farm taken for this illustration is somewhat larger than the average in the section. The operator owns 700 acres of land, and in 1930 and 1931, rented 490 acres more. The total investment in the owned farm business was approximately \$44,000 in 1930, but at the close of 1932 this had been reduced by depreciation and by lower livestock and grain prices to about \$36,800. Changes in the value of the land itself have not been considered in this reduction of assets. At the same time the total indebtedness increased about \$1300 to a total of \$17,000. The apparent net worth of the business had decreased considerably, but more significant from the standpoint of financing the farm was the narrowing margin of security for short term indebtedness.

The mortgage on the real estate was not excessive, but the short term indebtedness was almost equal to the value of the working equipment and livestock. Of the \$7900 of short term indebtedness as of January, 1933, \$2600 was secured by a chattel mortgage on cattle, \$2300 were bank notes, open accounts, accrued interest and rent; and within the last two years a loan of \$3000, secured by the cash value of the operator's life insurance policy, was used to reduce the original chattel mortgage. If this loan on life insurance is considered as a use of accumulated savings and not as a liability, the balance of the short term debt is still equal to half the estimated value of the working capital, and almost equals the value of the crops and the livestock on hand. That is, if the payment of the debt maturing in 1932 had been forced as of January, 1933, the sale of marketable property on the farm would hardly have met the payment.

Due partly to short crops, partly to the increasing interest charges, but more to low prices; the cash income of the farm in 1931 lacked \$380 of meeting the cash paid out. The result was an increase in the debt and a further increase in the interest requirements for the following year. The cash payments include the expense for running the farm and the cost of the family living, but makes no provision for the repayment of a depre-

TABLE I.—Recent Adjustments in Livestock Production, Farm "A"

Livestock on the Farm and Heads Produced	1930	1931	1932	1933
	Number	Number	Number	Number
Milk Cows, January 1 -----	5	5	5	4
Stock Cows, January 1 -----	37	42	53	58
Young Stock, January 1 -----	28	41	43	48
Bulls, January 1 -----	2	2	2	2
Calves, Saved -----	34	43	51	48
Sows, Farrowed -----	36	36	30	25
Pigs, Saved -----	235	195	200	160
Hens -----	65	75	125	125
Chicks, Saved -----	400	400	350	400
Horses -----	6	7	7	7

citation charge on machinery and buildings amounting to \$1237. In 1932 the deficit seemed likely to be still greater. Apparently the cash farm income would lack at least \$650 of meeting the operating expenses and cost of family living. Unless a marked increase in the prices of the farm products can be obtained, some further adjustments in the farm enterprises or in the debt are necessary if the farm is to continue in operation.

Present Farm Organization

The leading enterprise on this farm is the herd of stock cattle. In recent years marketings have been postponed with the hope that cattle prices would rise and in three years as shown in Table 1, the number of cows increased from 42 to 62 head and the number of other cattle from 30 to 50.

After the season of 1931, some adjustment was made in the cropping system. A part of the land previously rented for cash, 114 acres of crops and 278 acres of pasture, was dropped but at the same time the number of cattle on the farm was increased and more of the cattle were carried by the month on outside pasture. In addition to the cattle about 200 head of hogs were raised annually and a flock of 125 hens maintained.

The equipment on the farm is in good condition and is ample to care for the crops. For power the operator has two tractors and 7 horses. The operator hired regular help for the crop season together with about 30 days of extra labor. This labor force in 1931 cared for the livestock, about 220 acres of corn, 300 acres of small grain and 190 acres of hay including 60 acres of alfalfa. In 1932 no regular hired help was employed but the day labor amounted to the equivalent of 60 days and 150 acres of small grain was harvested with a hired combine.

Reducing Operating Expenses

Changes made in the cropping system in 1932 helped to reduce the amount of money necessary to meet the operating expenses of the farm. The principal saving was in the cash rent for crop land. The amount expended for breeding stock, feed, and veterinary services was less in 1932. The cost of machinery repairs, fuel and oil was also somewhat less in 1932. By employing more day labor and doing more of the work himself the operator reduced his labor bill by \$200, a saving that was offset by a cost of \$278 for custom combining. Personal living expenses were also reduced by \$300, but even with these savings the deficit for the year's operations was greater in 1932 than it had been for the year previous. There seems little chance to reduce the expenses of operating the farm still further with the present organization and more drastic changes must be made in the farm organization if the farm budget can be balanced with 1932 prices.

Planning for 1933

An estimate of the expenses that must be met in 1933 is given in Table II. Of the expenses the fixed charges, such as the interest, taxes, and the pasture rent must be met in cash or through added indebtedness. The operating expenses depend on the cost of materials used, the wages of hired labor, and perhaps to a still greater extent on the amount and kind of work that must be done. The operating expense is not likely to be less

than the \$1185 estimated. This added to approximately \$1500 of fixed cash expenses means that a cash income of \$2685 will be needed to meet the expense of operating the farm.

TABLE II.—Expenses of Operating Farm "A"

Fixed Expense that Must be Met in Cash		
Interest on Indebtedness	\$975	
Taxes	275	
Pasture Rent	240	
		\$1490
Fixed Cash Expense		\$1490
Operating Expense, Minimum for year		1185
Personal Expense		
Insurance	\$513	
Living Expense, reduced to	712	
		1225
Total Personal		1225
Estimated Annual Depreciation		1160
Payments to Reduce Debt		405
		\$5465
TOTAL		\$5465

As a last resort the cost of insurance could be reduced considerably. Over \$500 of the budget for personal expense goes to pay the premium on the life insurance policy already used as security for a loan. The annual premium could be reduced to \$400 by converting the policy to one of straight life insurance, without materially changing the amount of protection. Living expenses have already been cut and little further reduction is to be expected.

If no change were made in the insurance policy, the products of the farm would have to yield a cash income of about \$3900 to meet the required cash outlay, and should be \$1565 more if the depreciation on machinery and buildings is fully met and some payment made to reduce the outstanding obligations. The equipment on the farm is in good condition and no new machinery should be needed immediately. The short term debt can probably be renewed if the interest is paid so it is likely that only the \$3900 cash expense would have to be met next year.

The chances of obtaining the required income from the farm as it was operated in 1932, or from any alternative system of operation will depend to some extent on the yields of the crops. Crop yields in 1932 were higher than average. In 1931 the yields were much below average. Calculations of future production should be based on conservative yields and if average yields for the area are obtained, the crop acreage for 1933 shown in Table III would supply the feed needed for livestock and leave some cash grain for sale. At 20 bushels of corn to the acre, the 95 acres of corn for grain would produce 1900 bushels. At 1½ tons of corn fodder to the acre, the 45 acres would provide 67 tons of feed for the stock cat-

tle. Seventy-five acres of oats at 25 bushels an acre and 75 acres of barley at 18 bushels would produce sufficient small grain for hogs, horses and poultry. At 1½ tons to the acre, 60 acres of alfalfa would produce 90 tons of hay and at one-half ton to the acre, 80 acres of prairie hay would produce 40 tons. The wheat for sale from 122 acres yielding 12 bushels an acre would be about 1350 bushels.

TABLE III.—Crop Acres on Farm "A" 1930 to 1932 and Estimated for 1933

Crop	1930	1931	1932	1933
	Acres	Acres	Acres	Acres
Corn for Grain	116	147	100	95
Corn for Fodder	71	70	50	45
Small Grain	137	146	154	150
Wheat and Flax	202	163	108	122
Alfalfa	59	59	59	59
Prairie Hay	83	128	80	80
Pasture	255	430	152	152
Other	44	44	45	45
TOTAL ACREAGE	967	1187	748	748

The feed produced would be sufficient for the livestock and with the feeding methods of 1932 should produce about 35,000 pounds of feeder cattle and 30,000 pounds of pork. The poultry flock and the milk cows would supply more products than are needed for the house and at 1932 prices the surplus would bring an income of approximately \$335.

Prices Necessary to Meet Expenses

With the quantities of products for sale, prices much higher than those obtained in 1932 would be required to meet the total charges for operating the farm. With a price scale of 60 cents for wheat, 6 cents for feeder cattle, 5.75 cents for hogs, 12 cents a pound for poultry, 12 cents a dozen for eggs and 20 cents a pound for butterfat the returns from the salable products would equal \$5475. This amount would equal the total expenses given as Table II, but lower prices would mean that some of the charges could not be met.

The immediate need for cash outlay as shown in Table II could be met with an income of \$3900. This sum needed to pay the fixed charges, minimum living expenses and the cash operating costs could be obtained with a price scale of 50 cents for wheat, 4.8 cents for feeder steers, and 4 cents a pound for hogs. This calculation shows that unless prices are higher than they were in 1932, some further adjustments in the farm business would be necessary for the cash income to meet expenses.

Change in Life Insurance

One suggestion that would not require a change in the operation of the farm but which would reduce the cash outgo would be to allow the cash value of the insurance policy to cancel the \$3000 note secured by it and thus eliminate the interest on this note. Then by converting to a straight life policy or by reducing the amount of the policy, the annual payment for insurance would be reduced. With this saving of approximately \$280, the minimum cash expense to operate the farm and meet the living expenses of the family could be met by a price of 45 cents for wheat, 4.5 cents for feeder cattle and 3.7 cents for hogs. Even these prices are higher than were received in 1932 and still greater changes in the business must be made if the farm is to pay the immediate expenses.

Change in Cattle Enterprise and Chattel Mortgage

A second suggestion to reduce further the fixed costs is to sell off part of the cattle herd, reduce the chattel mortgage secured by the livestock, and to shift the remaining cattle from the production of feeder cattle to finished beef. One factor that favors this change on this particular farm is the quality of the breeding herd. By finishing the calves as baby beef instead of selling them as long yearling feeders the operator could take advantage of the quality of the cattle on the farm. This shift would also mean a more rapid turnover of the cattle enterprise and would still provide a means to utilize the cheap grain.

The change in the cattle enterprise could be made by selling on some bulge in the cattle market about 25 cows and 41 yearlings. These cattle should bring enough to reduce the chattel mortgage by \$2000, the annual interest payment by \$200, and at the same time satisfy the demand of the creditors for a payment on the chattel loan. A further reduction of cash outgo in this case would follow from the saving of pasture rent, taxes and cost of vaccination amounting in all to about \$255. Altogether the saving in expenses would be about \$455.

The calves, from the remaining 30 cows, not needed for herd replacements, could be fattened and one carload of baby beefes sold each year. Instead of having approximately 35,000 pounds of grass cattle for sale the output would be 4 culled cows and 24 head of young grain finished beefes. Fat cattle should sell at a price somewhat higher than grass cattle, and if a margin of 2 cents a pound is obtained, the total return to the enterprise will not be greatly changed.

Some other minor changes in the farm organization would follow. A part of the pork would be produced by hogs following the fattening cattle. To meet the additional need for grain and to avoid a surplus of hay the acreage of alfalfa would be reduced by about 30 acres and the acreage of corn for grain increased as much. As fewer cattle would be on the farm during the winter, more of the corn would be used for grain and less cut for fodder.

As a result of the changes in the organization coupled with the saving from the conversion of the life insurance policy, the cash required to meet expenses should be reduced by approximately \$735. Of this reduction, about \$280 can be attributed to the saving of interest on the insurance debt and on the premium of a converted, reduced policy. Approximately \$455

can be attributed to the change in the cattle enterprise and the saving in interest by reducing the chattel mortgage. The interest alone would be reduced \$380.

The income of the farm would be affected to some extent depending on the relative prices of feeders and finished cattle. Under the present system of selling there would probably be 35,000 pounds of grass beef for sale, which, at 4 cents would bring \$1,400. With the baby beefs an estimated production of 20,400 pounds at 6 cents a pound would bring \$1,224. In addition there would be 4 cull cows for sale which would bring the estimated return from the cattle enterprise to about \$50 less than the return from the stock cattle herd. The net increase due to the change from stock cattle to finished beef would be about \$405.

Prices Necessary to Meet Expenses

This change, with the prices quoted above, would provide income almost sufficient to cover the cash outlay but would still fall short of meeting the charges for replacement of equipment and buildings. The total charges against the farm in 1932 including the operating expenses, living expense of the family, interest on debts, depreciation of equipment and a small allowance for amortization of indebtedness would be approximately \$4730 annually and to meet this sum the price scale should be 65 cents for wheat, 7.5 cents for finished beef, 3 cents for cows, and 6.2 cents for hogs.

TABLE IV.—A Comparison of Prices Needed to Meet Expenses
With Different Possible Adjustments in Farming

	Wheat	Grass Cattle	Fat Cattle	Hogs
	Cents per bushel	Cents per pound	Cents per pound	Cents per pound
Prices to Meet Cash Expenses				
No change from 1932 system	50	4.80	---	4.00
Reduction in insurance cost only	45	4.50	---	3.70
Reduction of insurance cost plus change in cattle enterprise	42	3.00	6.00	3.00
Prices to Meet Total Charges				
No change from 1932 system	75	6.50	---	6.20
Reduction in insurance cost plus change in cattle enterprise	65	3.00	7.50	6.20

Under the revised system however, the immediate cash expense of \$3165 could be met with a price scale of 6 cents for finished beef, 42 cents for wheat, and 3 cents for hogs, a range of prices not greatly different from those obtained in 1932.

The success of any plan will depend to a large extent on the relative prices of the products. The choice of one of two alternatives could well be

made on the operator's forecast of prices of two products. In the examples discussed, no estimate is given of the effect of changed price relations on the farm income. Table IV shows the prices of the different products necessary to meet the farm expense with a normal volume of production. The suggested system has an advantage as an emergency measure by giving a better chance of breaking even at the current low price levels.

The farmer's budget might be balanced at the lower prices, but there is at the same time some disadvantage in the system. The change can be made only by sacrificing a large number of well bred cattle. But if the price of cattle should recover and create a demand for breeding stock, the highest returns would probably be obtained by keeping the breeding herd intact. With the number of cattle now on farms in the United States the prospects for an immediate increase in the demand for breeding stock are not favorable. The nucleus for a breeding herd would be retained, however, and with an increase in the price of cattle the herd could again be shifted to one producing breeding stock.

Changes From Livestock Production to Cash Grains

Other adjustments are possible on this farm, and might be made in place of the change just outlined or could be made in addition to it. A third suggestion which depends for its success on the more rapid recovery of the price of wheat as compared to the price of pork would reduce production of corn and hogs and increase the production of cash grain. After making the change in the cattle enterprise, the number of sows could be reduced from 25 to approximately 14. In place of the 30,000 pounds of pork included in the previous plan only 12,000 pounds would be produced. With this decreased demand for farm grown feed the acreage of corn for grain could be reduced by 22 acres and the acreage of small grain feed crops reduced by 75 acres. The acreage of wheat could then be increased 97 acres. On this particular farm such a change in crops would allow the adoption of a three year cropping system now in use on some farms in the area. The corn would be on spring plowed land followed by small grain the second year. Small grain would be on stubble land the third year. This system would give a good seasonal use of labor. The second year of small grain could be seeded in stubble, on disked land, or on fall plowed land according to season and the condition of the soil.

The above change in the cropping system would not require the use of additional equipment or labor, nor would it affect materially the farm expense for fuel and oil. Compared to the other systems the change would produce 18,000 pounds less pork and 1050 bushels more wheat. Total farm expenses would not be changed much. The substitution of wheat for corn and hogs would reduce the expense for vaccine, veterinary services, tankage and minerals for the hogs but would increase somewhat the expense of twine, threshing, and seed treatment. At 1932 prices or about 35 cents for wheat and 2 cents for pork, the net income to the farm would not be materially affected by the change.

One feature in favor of the shift to wheat as a cash crop is that in this section wheat is considered to be a surer crop than corn or the feed grains and that the hail risk can be met by insurance. The risk in hog production can be met through vaccination and good management but the enterprise cannot be insured against loss. On this particular farm some

advantage might lie in the wider distribution of the sources of income given by the increased wheat acreage, but the preference should be given to the enterprise most likely to benefit from a recovery of prices.

Adjustments to Use Equipment and Labor

Illustrated by Farm "B"

The case just considered is one in which, by making adjustments in the financial organization and by reducing the numbers of productive livestock, the operator could reduce his fixed expense so that he would have a better chance to meet the cash outlay with income. On other farms the problem of adjustment may be to make a more complete use of the facilities available.

In one instance, Farm B—a heavily mortgaged farm—the operator in 1932 had already increased his cash crop acreage by renting land for wheat. On this farm 480 acres of the land is owned. A part of the farm is not suited to cultivation and 150 acres are in pasture. In past years the livestock production has been based upon hogs and a herd of general purpose cattle. The farm income has come from the sale of livestock and butter fat.

Crops on the owned land in 1932 were 120 acres of corn, 120 acres of small grain, 30 acres of alfalfa and 41 acres of wheat. In 1932, additional land was rented for wheat bringing the acreage of cash grain to 170 acres. Higher than average yields in 1932 enabled the operator to meet cash expenses when, if yields had been only normal, he would have operated at a loss.

The operator has been farming in this area for 30 years and has owned his own land since 1905. The heavy indebtedness now carried is not the result of purchasing at peak prices but was incurred to make improvements. The original mortgage of \$9000 has been decreased through amortization to \$8400. In addition to the mortgage, unsecured indebtedness amounted to \$2000. A seed loan of \$200 was added in 1932.

Adjustments Made

An effort has already been made to increase returns by making full use of equipment and labor, and by increasing returns from livestock. A herd of good milk cows has been developed from a small cattle enterprise. At the beginning of 1931 only 7 cows were in the herd, but freshening heifers were retained and 14 cows were milked in 1932. The number of brood sows is kept at a minimum. In 1932 both spring and fall litters of pigs were obtained from 6 sows, a change from the year previous when only spring litters were produced.

As on other farms in this area the operating and the living expenses cannot be reduced much below the amount spent in 1932. The fixed cash expenditure for interest, amortization and taxes is \$950 annually. The direct operating expenses were approximately \$600 and the family living required about \$480. The expenses which must be met in cash from the year's income total \$2030 and in addition the depreciation of equipment amounts to about \$800 more, making \$2830 which should be covered by the sale of farm products. In 1932 the income of the farm just

about equaled the cash required to operate the farm and to meet the expense of family living.

Changes in the enterprises on this farm are made possible by an addition to the regular family labor force. In 1932, the return of a son formerly employed away from home enabled the operator to increase his crop acres and spend more time with livestock without an increase in cash paid out for labor.

This farmer, because of the adjustments already made, has a chance better than many operators of heavily mortgaged farms to weather the depression. The indebtedness as compared to the value of the assets is heavy, but the personal property is clear of encumbrance, and there is no immediate danger that the operator will be crowded by his creditors. The seed loan will have to be paid and some payment on the unsecured notes may be necessary. Even with the unusually high crop yields of 1932, the farm paid little more than operating and living expenses, and with a carry over of feed grains some temporary changes in the cropping system for 1933 will probably be made. A conservative policy would make some change in production to offset the lower yields that must be expected.

Further Adjustments

Two possible adjustments for 1933 suggest themselves. The first is to maintain the livestock production at its present level and to take advantage of the surplus feed grains produced in 1932 by increasing the acreage of cash grain crops. With the quantity of grain on hand the acreage of wheat could be increased by approximately 60 acres without increasing the operating expenses of the farm but would provide grain for sale and increase the chances for an adequate cash income.

The second means of increasing production would be to increase the hog enterprise for 1933 to make use of the barley not sold in 1932. Quicker returns from this grain might be obtained by feeding out a small bunch of calves or feeder pigs during the winter of 1932-33. This last means would involve the purchase of livestock and a consequent risk that an operator in his position might not care to take.

Prices for wheat and hogs that seem to offer equal chances for profit were discussed under the preceding farm organization. In any case the choice of a shift to either cash crops as wheat or flax, or to livestock as hogs, cattle or sheep, would depend on the prospects for favorable prices of the different products at the time they were ready for market. Cash grain offers less risk and perhaps as good a chance for higher prices as any of the classes of livestock. In a case of this kind, which permits equal opportunity for an expansion of a number of products, the preference of the farmer for one line of production and the prospects for prices as indicated by the Outlook should guide in making a choice.

Unless Some Changes in Production Are Practicable, an Effort to Adjust Indebtedness May be Desirable

Illustrated by Farm "C"

On one of the farms previously considered the operator, by clearing up a part of his short term indebtedness, could reduce some of his fixed charges. The quick assets of the farm were sufficient to meet the part of the debt pressing for payment, and after making this payment, the operator could still maintain the production on his farm. The operator of the second farm was able to extend the acreage cultivated with no increase in fixed charges and even at 1932 prices could more nearly balance his financial statement for the year.

No such opportunity was open to the operator of Farm C. This farm, already operated intensively, could not clear the pressing debt and, because the time of the operator with the machinery available was already occupied, he could not expand the acreage. Measured by crop acres this farm, which is located in the eastern part of the wheat area, is less than average size. It was purchased by the present operator at \$90 an acre during the period of high prices. The high acre value was due to the location of the farm near to market, the value of improvements on the farm and the productivity of the soil. Ninety of the 366 acres in the farm are not suited to crops and are in permanent pasture.

Cost of Retaining Title in the Land

The indebtedness against this farm is particularly heavy. A first mortgage of \$11,000 or \$30 an acre is held by the former owner. The rate of interest on this mortgage is only 5 per cent. The mortgage holder has granted some concession to the operator by reducing the debt slightly and not pressing the payment of interest during the past unfavorable years. The short term indebtedness, however, is only about \$1000 and consists of notes given for the purchase of machinery, bank debt, and about \$2400 secured by life insurance. The chattel mortgage is small but some payment of a part of the short time loan will undoubtedly be required to take care of the decrease in value of the security.

A complete financial record on this farm is not yet available, but estimates of the income for 1932 and operating expenses for the same period will give a picture of the financial situation of the farm. The fixed cash expense for interest and taxes amounts to about \$950. This includes the taxes and building insurance on the farm of about \$200, and interest amounting to \$750. A minimum of \$500 would be required for operating expenses and at least \$515 are needed to meet the cost of family living, including \$220 for insurance premiums. The total cash outlay with no provision for the replacement of machinery would amount to approximately \$1965.

Under the present organization the income is primarily from the sale of hogs, butterfat and alfalfa. Of the 366 acres in the farm in 1932, there were 131 acres of small grain, 61 acres of corn and 51 acres of alfalfa. The operator has a special although limited market for alfalfa hay. The livestock consisted of 12 milk cows, 16 head of other cattle, 13 sows and gilts. With some of the sows farrowing twice, 90 pigs were

raised in 1932. The cash income at 1932 production and prices is not likely to exceed \$1250. Even with normal yields and thus a surplus of feed grains for sale, the gross income of approximately \$1600 would not be sufficient to equal the demand for cash paid out.

The small surplus of feed grain in 1932 may be kept for reserve until 1933. Some of the land ordinarily in feed grain could then be seeded into wheat or flax for a cash crop. But even with some cash crops for sale either higher prices or a larger than usual yield would be needed to balance the cash expense with cash income.

At present prices the operator is paying to retain ownership of the farm \$310 more than it would cost him to rent other land. The interest on the remaining mortgage on this farm is greater than the sale value of one-third of the crop at current prices. If the farm had been rented with the usual one-third crop share lease and the rent share of the crop sold at 25 cents a bushel for corn and 20 cents for small grain, and a further payment of \$160 cash rent for the buildings and alfalfa land, the rent would have been only \$440. The payment actually made to meet interest and taxes amounted to \$750.

Debt Revision

Under the circumstances, it may be to the advantage of the mortgage holder either to reduce the amount of the mortgage still further, to reduce the rate of interest, or to waive the payment of interest entirely until such time as the operator can resume payment. With little chance to increase the production of the farm the operator cannot expect to meet his interest and payments on the principal unless prices improve considerably. Rather than to assume ownership of the land the mortgage holder could make some further revision downward that would be advantageous to both parties. Payments of interest might be based on the share of crops produced. The operator might surrender title to the farm with the option of repurchasing before some future date and continue to operate the farm as a tenant. Whatever adjustment is made, the farmer cannot be expected to deplete his working capital so much that he would be handicapped for future production. Neither can the creditor afford to assume the payment of taxes with the prospect of having a transient tenant operate the farm. Even if the farm were received from foreclosure in good condition, operation under the usual tenant system would probably result in depreciated improvements and the fouling of the soil with weeds through careless cultivation.

Such changes in organization as seem practicable on some farms are not suited to this particular farm. Without additional labor it would not be desirable to increase the acreage of crops even if accessible farm land could be rented. A reasonable production is now obtained from the dairy herd. A part of the income depends on a special limited market for alfalfa hay and this market could not be expanded to use more hay at the price paid even if land suited to the raising of more alfalfa could be obtained.

Such a situation illustrates the need for scaling down the debt on some of the farms where the present earning capacity will not take care of the living costs of the operator, interest, taxes and the expense of operating the farm.

A Possible Adjustment

The advantage of alfalfa pasture in producing hogs might be used by the operator to expand his hog enterprise. Such a change in production would be speculative in nature. An increase to 30 brood sows with a production of 180 head of hogs annually would provide an income sufficient to meet expenses and make some payment on the farm mortgage only if prices of four cents or more for hogs could be obtained. Success of the scheme would depend on freedom from diseases, good corn crops, and a recovery of the hog prices. The enterprise offers a long chance for the operator to meet his obligations, but under the circumstances could hardly be undertaken unless the creditor would waive his claim to interest payments for one year until the productive program would be under way. A feeding enterprise based on purchased grain would add another speculative element to the farm business, but one which should not be undertaken unless the operator is an experienced feeder.

Changes in Ownership and Adjustments on a Rented Farm

Illustrated by Farm "D"

Changes that have been made in the financial or physical organization of the farm enter into the present problem of adjustments only when they explain the need for further changes or when they illustrate changes that can be made on other farms. Farm C presented the case of a farm on which some revision of debt seemed essential. Farm D presents a case in which the farm is now operated as a rented farm after the transfer of the deed. The holder of the mortgage has assumed the payment of taxes and has granted to the operator the option of repurchase in a limited time.

Until 1931, the operator owned 340 acres of the land he is now renting. This acreage is now rented for one-half of the crop with the owner furnishing seed, one-half of the twine, and paying his share of the threshing bill. The renter provides all equipment and labor. By surrendering title to the land, the operator reduced his indebtedness \$9500, and the annual cash outlay to meet taxes, interest on the mortgage and the amortization of principal was reduced by \$1050. Personal notes and chattel mortgages amounting to \$2850 are still to be paid but the fixed cash expenses for interest, payments on the principal and taxes have been reduced from \$1300 to \$250. In 1931, the income of the farm was not equal to the required expenses and the transfer of title to the land followed.

Through the change in ownership the problems of the farmer became those of a tenant. Some further adjustments were made in his farm organization and, favored with higher than usual yields, the operator was able to meet his 1932 expenditures. At 1932 prices, the rent share of the crops from the formerly owned land was considerably less than the taxes and interest on the mortgage. The new owner of the 340 acres received \$575 for his share of the products delivered from the machine. This amount, less the cost of seed, twine, and threshing, replaced the fixed payment of \$1050 formerly made by the operator for the interest, amortization of debt and taxes.

Increase in Crop Acres to Make Use of Equipment

In addition to renting the 340 acres previously owned, and the 380 acres which has been rented for a period of years, the operator rented 320 acres more land during 1932. This change required the employment of some hired labor during most of the crop season, but due to a favorable condition of the fields following a dry year, it did not require additional equipment. The operator as a renter is now farming 770 acres of land in crops, has 250 acres of pasture, and 20 of wild hay—a total of 1040 acres.

The present organization of the farm could be criticised as a permanent system of farming because of the large crop acreage to be handled with the equipment at hand, and because of the number of small enterprises included in the business. The farm is over-diversified. There are too many small livestock enterprises without adequate facilities to care for all of them. Some of the enterprises are so small that they are likely to be neglected and production is not large enough for quantity marketing.

Considering the amount of labor and the equipment used, crop production in 1932 was on an extensive scale. The crops, 370 acres of wheat, 175 acres of small grain, 205 acres of corn and 20 acres of alfalfa were handled with the same equipment used on 450 acres of crops in 1931. The additional acreage rented on one-fourth share was prepared for crops with little work, but due to a favorable season and the condition of the fields, the average yield of wheat obtained was 19 bushels. The additional 170 acres of wheat land rented, gave the operator 2215 bushels for sale.

Nearly all of the field work was done with a general purpose tractor, although a small amount of work was done with horses. The operator has a one-third share in a small thresher, but to save time half of the wheat was cut with a hired combine. The corn was harvested with his own one-row corn picker. Milking is done by machine. Much of the equipment is not in good condition and some of it will have to be replaced soon.

Previous to 1932, little extra labor was hired, but to care for the added crop acres in 1932, the operator hired one man regularly during the cropping season.

The increase in the acreage of wheat and the high yields obtained in 1932 enabled the operator, even with the low prices received, to meet his operating and living expenses. The change in crop acres increased the cost of using machinery, hired labor and custom work, but the increase in income more than offset the added cost. Income from the farm in 1932 totalled about \$2800. The cash expenses to operate the farm, pay interest on short term loans and meet living expenses was about \$2640.

Because of a shortage of feed the livestock production was below normal in 1932. During the year, 15 cows were milked but because no grain was available for feeding the early part of the year production was low and the butterfat sold averaged only 70 pounds per cow. The other cattle on the farm included four stock cows, 14 heifers and 15 calves. Five calves were lost during the year. The small sheep flock was likewise unproductive. Two of the 22 ewes died and only 16 out of 21 lambs were saved. The lack of grain before harvest retarded the growth

of the spring pigs. Although 52 head of pigs were saved from 10 sows, only 11,000 pounds of pork were produced during the year.

The income from the farm as operated in 1932 was abnormal in three respects. The crop yields were much larger than can be expected over a period of time. The rented land required little preparation for seeding and the cost of fuel and repairs for machinery was less than normal because of the small amount of work in preparing the land for crops. The livestock production was somewhat less than would have been obtained if the grain for feeding had been available the entire year. Much of the added income was due to high crop yields. Another year might not give the same high yields or the same advantages for low cost of operation.

Prices Necessary to Meet Expenses Under Normal Conditions

To estimate the permanent value of the increase in crop acres, returns should be adjusted to a normal production. Over a period of years, crop yields would average lower than in 1932, the livestock production would be higher, and expenses somewhat higher also. On this land the operator estimates that wheat should average 12 bushels, barley 20 bushels, and corn 20 bushels an acre. He expects, too, an average production for sale of 150 pounds of butterfat per cow, and a death loss of the other livestock much below that of 1932. With no more than normal production, the \$2500 for farm and living expenses could have been met with wheat selling at 40 cents, corn at 20 cents, butterfat at 16 cents, beef and mutton at 3.5 cents and hogs at 2.25 cents a pound. Even with the low prices of 1932 and a normal production, the essential out-of-pocket expenses could have been paid.

Because he was forced to work with a minimum of cash, the operator took greater risks in 1932 than he would consider most desirable. If he had insured the wheat against hail loss and if he had vaccinated the hogs and cattle, operating expenses would have been increased approximately \$170. With other products selling for the prices prevailing in 1932 and a price of 40 cents a bushel for wheat this added cost could have been met with normal crop yields.

In the case of this particular farm, some of the machinery must be replaced soon. New machinery will probably be purchased during some profitable year, but the annual charge for depreciation should be approximately \$500. With normal yields from the acreage farmed in 1932, prices higher than those of 1932 will be needed to meet this cost. The total cost of running the farm, replacing the machinery, and meeting the expenses for family living would be nearly \$3300. These total charges could be met with prices of about 50 cents for wheat, 22 cents for corn, 20 cents for butterfat, 4.25 cents for cattle and lambs, and 2.75 cents for hogs. It is evident that a small increase above the prices received in 1932 would enable the operator to continue farming as a renter.

If the present acreage is continued, the operator would have the further opportunity of increasing the numbers of livestock for sale and could expand the cattle or sheep enterprise to a point where they can be handled to a better advantage than is now the case.

Advantage Over the 1931 System

The farm as now operated, with perhaps some further increase in the production of livestock, has a good chance to succeed. The next question is whether or not the increase in acreage will under normal conditions, return an income greater than the added expense. The returns from the farm operated as it was in 1932, can be compared with the probable returns from an organization similar to that of 1931. Unless the number of livestock were also reduced, a return to the 1931 acreage would result in a reduction in the wheat crop from 370 to 70 acres. The estimated production from both systems is shown in Table VI. Expenses would be reduced by saving about six months of the labor regularly hired. The change would save the expense of custom combining as the small grain acreage could be handled by the operator's own threshing machine. There would be a smaller expense for preparing the seed bed, and somewhat smaller depreciation on the farm machinery. Altogether the saving would be approximately \$600. This saving would be made at the expense of producing a normal crop of 2120 bushels of wheat and 575 bushels of barley and corn. Even at the low 1932 prices the additional grain would have a value of about \$700. The net income was increased in 1932 and with higher grain and livestock prices, chances for success would be greater if the 1932 acreage of grain were continued.

TABLE VI.—Changes in Crops Grown on Farm "D" and Probable Effect on Farm Expenses

		Acreage in 1932		Acreage in 1931	
		Net Production to Operator		Net Production to Operator	
Crops Grown	Acres			Acres	
Wheat	370	2680 Bu.		70	560 Bu.
Oats and Barley	175	2415 Bu.		165	2085 Bu.
Corn Grain	140	2105 Bu.		120	1800 Bu.
Corn Fodder	65	49 T.		55	41 T.
Hay	20	20 T.		20	20 T.
Items of Expenditures					
Operating Expenses	\$1575			\$1000	
Personal Expenses	950			950	
Interest on Debt	275			275	
Total Cash Expense		\$2800			\$2225
Depreciation on Equipment		500			400
Total Costs		\$3300			\$2625
Grain for Sale					
Wheat		2680 Bu.		560 Bu.	
Corn		1000 Bu.		810 Bu.	
Barley		810 Bu.		425 Bu.	

The Farm With No Indebtedness

Illustrated by Farm "E"

Among the farms from which records were obtained are a few with no indebtedness and a number with an indebtedness small enough so that the financial position of the operator is relatively secure. These farmers are free from the necessity of meeting interest and debt payments and consequently have cash charges much lower than their heavily mortgaged neighbors. The farm enterprises on several of these farms could be expanded safely at this time.

The situation on Farm E will be described briefly to show how the farm problems are affected by the financial condition. None of the owner-operators previously discussed had an opportunity, at present prices, to make any return on his equity in the farm business. The problem on all of these farms was primarily that of preserving the equity.

The unincumbered example designated as Farm E is a well improved farm of 800 owned acres with an estimated value of \$32,000. Livestock on the farm were inventoried in 1932 at \$3600 and the value of equipment and supplies brought the total value of the farm property to \$42,000. In addition to the acres owned, 800 acres of hay and pasture land are rented. The production of the farm in the past has been centered about cash grain and hogs.

In 1932 the livestock consisted of 17 cows, 12 of which were milked, and 25 head of young cattle. The young stock sold was finished for market. The hog enterprise was based on 36 sows bred to farrow in the spring. The poultry enterprise was limited to 50 hens.

Three characteristics distinguish this particular farm from the usual one. The operator is using his own capital and does not have an annual fixed charge for interest. The rented land is leased from the state at a lower figure than farmers could obtain deeded land. The operator has the advantage of competent family labor to work the farm. Two sons on the farm for the entire year and the owner spent about three-fourths of the time at the farm work. Partly because the family labor was available, much of the work was done with horses. A general purpose tractor and 13 horses provide the power for the farm work.

Taxes and rent amounting to \$560 constitute the only fixed farm expenses. This, plus about \$1240 for operating expenses, makes a total of about \$1800 to be met in cash. The depreciation on equipment and buildings is estimated at \$1000 and the going wages for the unpaid family labor \$500 more. The total charges for operating and maintaining the farm were about \$3300 and the amount expended for family living expenses in 1932 were approximately \$700. An annual sum of \$4000 to be met by the income from the farm would be comparable to the total figure used on the other farms where labor was hired.

The farm income for 1932 exceeded \$4100 leaving about \$100 to pay the operator for the use of his investment, assuming that the cost of family living paid for his own labor.

As the charge for family labor and much of the charge for depreciation was not met in cash this year the farm income has a comfortable margin over the necessary outgo. The expense for family living, nearly \$700 in this case, has given the operator a liberal cash allowance for his

physical labor under present conditions. Prices slightly higher than those obtained in 1932 would give a return for his investment.

A return of 2½ per cent on his book value of \$42,000 would require income over expenses of \$1050. This is equivalent to a payment of 6½ per cent for interest and amortization on a mortgage of \$16,000. If prices of butterfat, eggs, poultry, barley, corn and hay were the same as in 1932, then prices of 50 cents for wheat, 6.5 cents for finished cattle, and 4 cents for hogs would be necessary to meet this charge for the use of capital. It is evident that with existing low prices, farmers with even a moderate indebtedness will be unable to meet operating expenses, living costs, and interest, whereas the farmer who is using his own capital can not only meet his expenses, but may have some return for his investment.

The case of this farm, although it is unusual in the area, illustrates well the advantage held by the farmer who can keep his cash costs low by using family labor and his own capital, and who can obtain land at a low rental.

Earnings on this farm were sufficiently high that no immediate adjustments were necessary. A surplus of grain was produced in 1932 and with average yields, more livestock than are on the farm could be fed with farm grown feeds. Either the number of cattle or the hogs could be increased with little expense or added risk. The operator does not need to take chances to improve his financial position, and as further expansion of crops would probably require increased labor and machinery expenses, such adjustments would probably not be desirable. Operators of farms such as this one are the ones who are in a position to produce conservatively, reduce expenses, and wait for an improvement of farm markets.

Looking Forward to Next Year's Production

The preceding discussions of adjustments in farming have been taken partly from the experiences of farmers who have tried changes in production for one year and partly from suggestions not yet tried on these farms, but which appear to have certain advantages. These suggestions have been checked by advance estimates of probable income and changes in expenses likely to follow from changes in the farm business. The method of calculating in advance the returns from a proposed adjustment would be a guide to farmers who are attempting changes in their own operations.

By planning ahead in this way the farmer would have to make in advance an estimate of the financial statement which would be obtained at the close of the year's business. His planning would start from his knowledge of the land available for each crop, the equipment and power for field work, the numbers of livestock on the farm, and the available supply of labor. From a knowledge of the productivity of the farm, the operator can make a reasonable forecast of the crop yields likely to be obtained. From the number of livestock he can estimate the feed required and the production of livestock and livestock products. A comparison of the quantities of feed needed for the livestock with the quantity of feed likely to be produced would show first, the probable surplus

of crops for sale and second, the kind and quantity of the feed that will have to be purchased.

From the estimated quantities of crops and livestock for sale, the operator can estimate an approximate gross income. Prices are recognized to be highly variable factors but by using either current prices or prices that seem most likely to prevail, he can form some judgment as to the income. The Agricultural Outlook statements issued by the United States Department of Agriculture and by the South Dakota Agricultural Extension Service should be a guide in forecasting price trends.

The expenses can be judged more accurately than the income. A record of last year's business will give most of the expenses with a fair degree of accuracy. This is particularly true of those fixed expenses as taxes, interest and building insurance. The cost of fuel, machinery repairs and labor can be taken from the previous year's record unless some change is planned in the farm business. Expenses affected by a change will need some adjustment.

With due allowance for the cash cost of family living the balance between receipts and expenses will indicate the probability that the income from operating the farm will equal the outgo.

Any projected change should consider not only the labor, land, and equipment that will be needed by a new line of production but should also consider the prospects of its adding to or interfering with some other enterprise. One illustration of an ill advised change in production that might have been avoided with careful planning can be drawn from the records.

A farmer in the wheat area was farming one half section of crop land, milking a number of cows and raising about 100 head of hogs each year. The business was large enough for one man. In 1930, the operator rented another quarter of crop land. The landlord furnished seed and half of the harvesting expenses. This increase in acreage meant an increase of labor during the busy spring season and consequently, other work was neglected as no additional help was hired. In this particular case, the sows were not given the proper care during the farrowing season. The neglect not only caused quite heavy losses of small pigs at farrowing time, but the loss of pigs was followed by a severe case of necro.

The causes for the troubles might be traced back to the additional acreage although as a matter of fact, many farmers "get by" with such risks in management. On the other hand, the possibility of reducing income from existing enterprises should be balanced against the probable return from the enterprise added.