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WESTERN FARM ECONOMICS ASSOCIATION

**Proceedings
of the
Twenty-Eighth Annual Meeting**

July 18-20, 1955

BOZEMAN, MONTANA

Contributions of Farm Management Research to Farm and Home Planning

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Farm and home planning becomes a process of decision-making which involves developing and evaluating alternative courses of future action designed to reach predetermined goals. The major emphasis will be placed upon teaching people to think for themselves.

The steps in the planning procedure are:

1. Deciding upon goals for the farm family;
2. Inventorying and appraising available resources;
3. Comparing production and consumption alternatives to attain goals; and
4. Putting the plan into action.

Four classes of data required for the planning process are:

1. Expected cost-price relationships;
2. Input-output data;
3. Factor substitution;
4. Product substitution.

The immediate problem of the farm management research worker is to assemble the existing data in a usable form, to aid in filling the major gaps in our existing data, and to aid in the design of future studies so that the resulting data will be amenable to economic analysis.

The terms "farm and home planning" or "farm and home development" mean different things to different people. The farm editor of a midwestern newspaper gave one interpretation of the program in an article titled "Paternalism Running Wild."¹ His article states:

The time is coming, we suppose, when it will be rank heresy for a farmer to go out in the morning and start up the tractor without first asking his "Farm and Home Development" agent.

The Extension Service of the United States Department of Agriculture is busily trying to organize groups of farmers into little "Farm and Home Development" segments.

In charge of each segment is an agricultural agent steeped in the paternalistic philosophy that his advice is essential to the financial and social status of each member of his little ring.

With a Land Grant College diploma and a government job, the agricultural agent in this system is presumed wise enough to

¹ Max Coffee, Farm Editor, Omaha World Herald.

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act as confessor and intimate counsellor on all matters pertaining to farm family living.

To him the farmer is supposed to bare his bank account and his family troubles. If the farmer and his wife and kids do what the agent tells them they are supposed to live happily ever after.

This interpretation is in sharp conflict with the thinking that led to the initiation of the Farm and Home Development program.

The 1948 report of the joint committee on extension programs and goals strongly urged a shift to farm and home planning encompassing all of the activities of the farm. The following paragraphs illustrate the reason for emphasizing the farm unit approach:

In the past a considerable part of the research results made available to the farm family through Extension education programs have been on a piece-meal basis. It was left to the farmer's ingenuity and initiative to integrate them into a balanced program for his farm.

Later in the same report the following comments were made:

To assure maximum progress on programs of a continuing nature, Extension should concentrate on the development of a far greater degree of local thinking and planning. The Extension worker is primarily a teacher; the development of local thinking and planning is a problem of how best to arouse the interest of people to seek essential information to be put into practice through their own initiative. The search must be intensified for more effective ways of stimulating the urges of rural people to seek and find solutions to their problems, rather than ways of handing them measured doses of information to satisfy immediate demands. When this search has been successfully completed, rural people, of their own volition, will seek the "why" of things, rather than just the "what" and "how."

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A subcommittee of the Southern Farm Management Research Committee in a report on farm and home development makes the following observations:^{1/}

"It is recognized by the committee that farm and home development thus far has emphasized an educational program that either: (a) stresses demonstration of farm and home practices integration, or (b) stresses decision making as a problem solving activity---- The committee recognizes the validity of both, but believes in the long run, emphasis on problem solving activity will prove most fruitful."

The approach taken to the problem will, of course, largely determine the part that farm management research can play in the program. In this paper it is assumed that the problem-solving approach will be taken. Farm and home planning then becomes a process of decision-making which

^{1/} The Role of Farm Management Research Workers in Farm and Home Development, Southern Farm Management Research Committee, April, 1955.

involves developing and evaluating alternative courses of future action designed to reach predetermined goals. The major emphasis will be placed upon teaching people to think for themselves. In most cases this is much more difficult, but more fruitful in the long run, than teaching people to imitate or obey as visualized in the paternalistic interpretation of farm and home planning.

The steps in the complete planning procedure may be briefly summarized as follows:

1. Deciding upon goals for the farm family;
2. Inventorying and appraising available resources;
3. Comparing production and consumption alternatives to attain goals;
4. Putting the plan into action.

The place of the farm management research worker in carrying out each of these four steps will be examined.

Deciding upon goals

A specific formulation of the goals of a farm family is a very logical first step in embarking on a program designed to aid it in achieving these goals. Too often farm management research workers have assumed long-run profit maximization or short-run profit maximization as the goal of all farm families and proceeded with their analysis of alternative means of achieving this end. A careful determination and formulation of family goals in cooperation with each farm family may drastically alter our concepts of the primary motivating factor behind farm families. It could alter completely the plan of farming adopted. Specific formulation of family goals requires a careful examination of the system of values, the Farm and attitudes, and the desires of farm families. The goal of profit maximization may become secondary to such other goals as stability of income, Home Planning the opportunity to go hunting and fishing during certain seasons, and other such goals. Whatever the nature of the family goals, a program designed to achieve these goals presupposes that the goals are capable of being isolated and defined.

Inventorying and analyzing resources

The next logical step is one of inventorying the resources at the disposal of the farm family. This inventory must include more than is usually included in our inventorying of resources. In addition to the land, labor, and capital at the disposal of the farm family, the managerial ability of the member of the family most likely to make the decisions should be carefully appraised. Assuming average managerial ability in working out plans with a specific family may be disastrous in cases where the managerial ability of the family is far below average. The operator's ability to handle specific livestock or crop enterprises, or his lack of ability to do so, is fully as important in limiting the alternatives available to the family as is the amount and quality of land or the extent of his credit at the local credit agency.

Planning production and consumption to reach goals

This is the phase of the program where the farm management specialist is relied upon for assistance. Having decided upon the goals and inventoried the resources available to the farm family, the farm management specialist is looked upon to provide guidance in (1) formulating the framework within which the alternatives will be analyzed, and (2) providing the data necessary to appraise these alternatives. The farm management specialist should feel at home with this assignment. Historically, much of the work in farm management has been devoted to this specific problem.

The analytical framework within which the solutions of the problem can be determined has, in theory at least, been quite well developed. The procedure consists of developing a series of alternative courses of action open to the operator within the framework of the constraints imposed by the resources at his disposal. From these alternatives the one most likely to achieve the maximum attainment of the desired ends is selected.

This methodology has been given a vigorous, critical appraisal and use in recent bulletins and journal articles with assumed goals and assumed constraints. It should be equally as effective with specifically determined goals and carefully formulated constraints. In fact, a careful listing and formulation of the constraints may actually simplify the procedure by reducing the number of alternatives that must be appraised. A farm family that has an aversion to milking cows twice a day, 365 days a year, would reduce the number of alternatives that must be appraised for a unit located in a grade A milk shed.

To date, the farm budget has been the main analytical device used in appraising alternatives. A budget has the advantage of being flexible and easily understood. Nearly every state farm and home planning program now in operation employs some form of budget analysis. Partial budgets are employed in choosing between alternative courses of action which alter only a limited number of the costs and returns while the complete budget is employed to appraise the anticipated results of adopting the complete farm plan.

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In recent years linear programming has been employed to achieve the same end. Although it has the advantage of facilitating the appraisal of numerous alternatives once the limiting factors have been established, the mathematical knowledge required to understand and carry out the analysis will undoubtedly limit its application by extension personnel in the Farm and Home Development field.

The problem of supplying the data needed in implementing a state-wide farm and home planning program is a critical one. The data requirements for analyzing all alternatives open to farmers in any state are infinite. It would be physically impossible to supply all of the data needed to appraise all of the alternatives available to even 100 farmers. The immediate problem of the farm management research worker is to assemble the existing data in a usable form, to aid in filling the major gaps in our existing data, and to aid in the design of future studies so that the resulting data will be amenable to economic analysis.

The data requirements can be roughly classified into four categories:

1. Expected cost-price relationships;
2. Input-output data "factor-product relationships";
3. Factor substitution;
4. Product substitution.

Expected cost-price relationships

Since the purpose of planning is to aid in selecting a future course of action, an economic framework within which expectations can be formulated must be developed. Although one of the primary functions of the successful manager is the formulation of anticipated price-cost relationships, the farm management specialist will undoubtedly be called upon to aid in this critical part of the decision-making process. The access that the farm management research worker has to statistics relative to supply and demand conditions, general economic indicators, outlook information, and future government action in the field of price stabilization should permit him to make a valuable contribution in the field of price relationships. Although each family should be free to formulate plans within the economic framework that they consider most probable, the farm management research worker in many cases may be asked to aid in this phase of the planning process.

Input-output data

In allocating a limited supply of resources among possible alternative uses input-output data for all possible use of the resources are needed. This data will take the form of crop-yield response to fertilizer application, milk production at various rates of feeding, the effect of additional cultivations on yield of corn, etc. Without data of this nature which provide the basis for formulating the amount of product forthcoming at different levels of inputs, a decision as to the optimum level of inputs cannot rationally be reached.

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The use of so-called "standards" by which average fertilizer inputs by enterprises and average crop yields by enterprises is used as a basis for enterprise selection inherently assumes that the "standard" level of input is the optimum. By using only one level of input and one level of output in farm budgeting one of the critical decisions faced by all farm operators is completely assumed away. It should be the responsibility of well-trained farm management men to point out this weakness in the procedure now being employed. Although the use of "standards" may be adopted for the sake of simplicity and expedience, the shortcomings of this method should be made known.

Factor substitution

Although we are accustomed to speaking of "feed requirements" in livestock production, it is widely recognized that 100 pounds of meat or 100 pounds of milk can be produced by many different combinations and quantities of feed. In some cases dairy cows are fed a heavy roughage ration; in other cases a heavy grain ration. The degree to which roughage

can be substituted for grain or viceversa is information that is needed by a dairy farmer before he can make a rational decision concerning the composition of the feed for his dairy herd. More information is needed on the rate at which one factor of production substitutes for another in producing agricultural products.

Product substitution

With a given quantity of resources available to an individual operator a number of products or combinations of products can be produced. Within the limits set by his resources these alternative product combinations need to be determined. Many of the crop-rotation experiments have been designed to determine this relationship. For example, going from a straight corn rotation to one incorporating some forage may actually increase the amount of corn produced while increasing the forage at the same time. This type of relationship would be called complementary in that it is possible to produce more corn and more forage at the same time. As the acreage of forage in the rotation is expanded, eventually a point will be reached at which additional forage is forthcoming only at the expense of corn. This relationship then becomes competitive, and it is necessary to arrive at an optimum combination of the two products. Numerous other examples of product substitution could be given. However, the important contribution of the farm management research specialist will probably be in educating those who are employing the farm and home planning technique to the importance of the nature of the relationship between two products or enterprises in decision making.

Putting plans into action

As the farm and home planning program is now administered, the major responsibility for putting the plan into action rests with the Extension Service. It is its responsibility to solicit the cooperation of the farmers and to indicate to them that such a program can be useful, and to supply the relevant data in a form that is useful to him in formulating his plans.

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