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USE OF ENTERPRISE EFFICIENCY DATA IN PLANNING ADJUSTMENTS IN FARM ORGANIZATION AND PRODUCTION

By L. W. FLUHARTY¹

Since the term "Farm Enterprise Efficiency Studies" was coined by the author of this paper, perhaps he should explain how it came into being and the idea which the term was intended to convey. Prior to 1924, most of the work done along this line was called "Cost Production Studies." Their primary purpose was to find out the cost of farm products. However, the work, which was begun in 1924 in California, had an entirely different objective. This project was designed to help farm advisors collect information which would enable them to instruct the farmer, on whose farm the record was kept, in working out more efficient management practices. At the same time, the farm advisor was collecting information of value to him in a countywide program of farm management extension work. The cost of producing farm commodities was only incidental to the main objective of helping each individual cooperator increase his income by better management practices. Farm costs and profits were used as one of the many criteria in measuring efficient management practices. In trying to find a term which would more nearly indicate the objective sought, the term "Farm Enterprise Efficiency Studies" was born.

A farm income too low to meet the family living needs, plus interest and principal payments on indebtedness, has been the cause of most real financial distress among farmers. Inadequate farm incomes on California farms, at least during the past 20 years, can usually be traced to one or more of the following causes; (1) size of business too small, (2) uneconomical or improper use of land or other production facilities, and/or (3) stupid management practices. Furthermore, I am willing to stake my professional reputation on the prediction that the most "future farm problem" will be caused by the same set of factors. This may sound like an over-simplification of the farm problem. If time permitted, it could be proven from individual farm records in our office that any farm operator who had the proper size of farm business, who used his land or other production facilities economically, and who followed efficient farm management practices, *would have had* a satisfactory farm income during the years between World War I and World War II. You will note that I have used the phrase "real financial distress." I am not discussing the many complaints that have been coming recently from farm groups, who claim financial distress (or inequality) because some other segment of agriculture is getting relatively higher prices for their products.

It is impossible to work out a general formula for solving farm management problems on all types of farms. Each individual case must receive

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separate treatment. This is especially true in California, as well as most of the other western states, where specialized agriculture is practiced. However, the procedure for helping solve any farm organization problem falls into two general classes; (1) the organization problems involved in the operation of the separate enterprises, and (2) the uniting of these separate enterprises into a profitable farm unit on other than specialized farms. It is with these types of problems that the farm enterprise efficiency studies were designed to deal.

It should perhaps be pointed out in the beginning of this paper that any successful program of adjustments in farm organization and production must depend upon the attitude of the man in the field, who has final contact with the individual farmer. Under the organization of our agricultural educational facilities, as they have existed during the past 20 years, the farm advisor (county agent) is the person most liable to come in contact with farm organization problems. The success of farm organization plans, therefore, rests on the shoulders of the farm advisor's staff. Results depend upon their attitude toward the project, their confidence in and familiarity with the subject matter to be used, and their ability to teach farm people. It was these considerations that originally caused us to adopt the plan of procedure under which the farm enterprise efficiency studies have been carried during all these years. This plan of organization must be understood before an evaluation can be made of the place farm enterprise management studies can fill in farm organization and/or reorganization schemes.

For the past 20 years our farm organization project has been based on the farm enterprise analysis approach, instead of building a program from records kept on the farm as a whole. The kind of information collected in these studies is not radically different from that gathered by the same type of study in other states. No new statistical methods have been employed in the tabulation and analysis of data. The difference is in the channels through which the studies are made, the kind of material tabulated, and the method of applying results. Instead of depending upon a corps of farm management investigators from the college to make a study, this work is done by the county farm advisors with the advice and help of the farm management specialists.

The farm advisor is responsible for initiating the work, sometimes at the request of the farmers of his county, sometimes because he sees the need for such work. In either event, the farm advisor commits himself to a definite piece of work and a definite plan of procedure. A regular extension project is drawn and signed by the farm advisor, the Director of Extension, the county agent leader, and the leader of the farm management project. The status of the project is checked from time to time, and progress reports are submitted to the director.

When the farm advisor has secured the number of cooperators he can take care of, a meeting is called at which instructions are given on how to keep the records. In counties where records are being started for the first time,

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the farm management specialist conducts the meeting as a demonstration to the farm advisor. Cooperators who are not present are visited later by the farm advisor and given personal instructions. New cooperators, who come in after the first year, are taken care of by the farm advisor without help from the central office.

Cooperators are required to make a monthly report to the farm advisor's office of receipts, expenditures, and labor requirements for the enterprise being studied. The expense items and returns are expressed in physical quantities and money value for each item. Production and mortality information is required on livestock reports.

Monthly reports are received in the farm advisor's office not later than the 10th to 15th of the following month. A check list is used in keeping reports up to date. The reports are then audited for errors and omissions. If errors or omissions occur the farm advisor makes corrections by telephone, letter, or personal call. The material from each report is then transferred to monthly accumulation blanks. During the year the farm advisor takes the required inventories of land, improvements, and equipment used in the enterprise. Inventories are taken once a year in fruit and field crops, and at beginning and close of study in livestock enterprises.

At the close of the year the farm advisor, working under the supervision of one of the farm management specialists, makes summaries for each individual cooperator. Management and cultural practices affecting cost of production and profits are worked out for the entire study. The data are then arranged to show contrasts between management and cultural methods followed on the most profitable, the average, and the least profitable farms. Tables and charts are also prepared which measure the effect of variations in cultural and management practices on production and profits.

When the enterprise analysis has been completed, a meeting of all cooperators is held. Each one is given a copy of his own summary, together with a copy of all other data and conclusions drawn from the analysis. As the meeting proceeds, results and conclusions are discussed, so that each cooperator may make comparisons with his own record. In these meetings the farmer becomes familiar with farm management methods and terms. He is then in a position to find the "management leaks" in his own business. After such a meeting the farm advisor visits each cooperator for the purpose of further interpreting his record and of making suggestions as to improvements in management or cultural practices. A memorandum of proposed changes is often left with the cooperator.

We have paid special attention to problems arising from the management of a special enterprise for it is our belief that such management factors had to be mastered before a more complex farming unit could be made profitable. With this in mind we have carried our enterprise analysis beyond the point of determining "the physical amounts of the various cost elements 'required' in production." By processes of cross tabulation and simple correlations,

the effect of various cultural and management practices on yields, cost of production, and profits has been determined.

In order to give you an idea of the possibilities of measuring in quantitative terms related factors of production, here is a partial list of such factors from our poultry studies:

1. The relation of the size of the flock to
 - a. Number of eggs per hen.
 - b. Mortality.
 - c. Feed cost per hen.
 - d. Hours of labor per hen.
 - e. Fall egg production per hen.
 - f. Percent culled.
 - g. Percent pullets.
 - h. Gross and net cost of producing eggs.
 - i. Farm, labor, and net income per hen.
2. The relation of the number of eggs per hen to
 - a. Pounds of feed per hen.
 - b. Mortality.
 - c. Fall egg production.
 - d. Grade of eggs.
 - e. Feed costs per hen and per dozen eggs produced.
 - f. Per dozen gross and net cost of producing eggs.
 - g. Farm, labor, and net income per hen.
3. The relation of the percent mortality in the flock to
 - a. The number of eggs per hen.
 - b. Culling percent.
 - c. Fall egg production.
 - d. Feed cost per hen.
 - e. Per dozen gross and net cost of producing eggs.
 - f. Farm, labor, and net income per hen.

Time will not permit a listing of all the interrelationships between the following factors which affect costs and profits in the poultry business:

1. The size of the flock.
2. Number of eggs produced per hen.
3. Percent of mortality.
4. Percent of culling.
5. Percent required for replacements.
6. Percent actually added.
7. Percent of pullets in flock.
8. Price received for cull hens.
9. Type of house.
10. Floor space per hen.
11. Kind of floor in house (wood, concrete, dirt).
12. Use of electric lights.
13. Percent of total production of eggs during fall months.
14. Price received for market eggs.
15. Price received for hatching eggs.
16. Percent eggs sold for hatching purposes.
17. Time of year pullets are added to flock.
18. Continuous and seasonal culling.
19. Grade of market eggs.
20. Quantity of hired and family labor per hen.
21. Pounds of feed per hen.
22. Cost of feed per hundredweight.
23. Percent of grain and mash in ration.
24. Percent of income from poultry stock.
25. Type of egg market.
26. Investment per hen.
27. Years operator's experience in poultry business.
28. Disease conditions.

By measuring the effect of the most important factors in physical quantities of production or money value, it is possible to arrive at the least cost combination. The poultry industry is not alone in such variations of methods and practices. They exist in every farming enterprise and by proper methods of analysis it is possible to measure their effect upon the production and profit. It is this phase of farm management work which will vitalize the farm organization program and make possible the interest and cooperation of subject matter specialists and farm advisors. Without the interest and cooperation of these two groups, an effective farm organization program is impossible.

For the farmer who is specializing in a single enterprise, the enterprise analysis approach provides complete information to satisfy all farm organization needs. For the operator who has a combination of several enterprises, a further step is necessary. There should be a farm enterprise efficiency study available for the various crop and livestock projects in which he is interested. Let's examine the kind of information needed in the organization of a diversified farm setup to see if farm enterprise efficiency data provide the required material.

Farm enterprises which should be chosen by the operator will depend on yields, probable prices and the cost of production. The number of enterprises to be included in the farm unit and their magnitude will depend upon the operator's available investment and working capital, his available hired or family labor, and the income required annually for family living and to meet interest and principal payments on debts. Sufficient capital, either owned or borrowed, must be provided for the establishment of a satisfactory size of business. If too large a portion of the capital is borrowed, the money required to meet interest and principal payments is liable to cause failure, unless the farmer is an exceedingly shrewd manager. He must avoid paying too high a price for land on which crops of only low value can be produced. The payment of a purchase price in excess of the farmer's future earning power must sooner or later be absorbed by some operator as a loss. The probable future farm income is the only safe guide for the purchaser of a farm business to follow.

In setting up a farm unit the available supply of family or hired labor is an important consideration. The operator who expects to handle his farm operations with his own or family labor has a somewhat different problem from the operator who is dependent upon hired help. The operator of a family farm unit must select enterprises with a view of avoiding seasonal peaks of labor in so far as possible. By selecting those enterprises with an even labor distribution throughout the year, or crop season, the necessity of hiring unsatisfactory itinerant labor is avoided. He should also select those enterprises which will pay the largest return for the greatest amount of the operator's available time. It is not reasonable to expect that a farmer who is profitably employed only a small portion of his time can make as large a net farm income as that obtained by those who put in full time throughout the year. The operator, however, who is dependent on hired labor for his major source of supply has more latitude in selecting farm enterprises. If the labor supply is available, additional help can be found during the peak load.

Farm enterprise analysis records furnish most of the data required in preparing farm plans. Such data is not a substitute for proper teaching methods on the part of extension agents in presenting the material to farmers. Neither is such data a guarantee that the individual farm operator has that "divine spark of managerial ability" so necessary in making a success of any farm plan.