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BUDGETING AS A PLANNING TOOL IN A DAIRY FARM[1]

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SUMMARY : The objective of the budgeting is to make accurate decision through planning and management. Its procedure is a sort of comparison among alternatives. As a definition, budgeting is a systematic approach to organizing data to make accurate decisions on costs and returns under conditions of incomplete knowledge. The types of budgeting we will consider are the complete budget which includes a listing of all returns and expenses for the farm, partial budgets which are used to estimate the changes that will occur in the farm profit or loss from some change in the farm plan by considering only those items of income and expenses that change, and cash flow budget which is a mean by which the farm manager can asses the timing of cash inflows and outflows, and estimate the line of credit needed to implement given production plan.

The farm where I had interview is a dairy farm with 58 cows and 406 acres land in Morrow County 45 miles north from Columbus, Ohio, USA. The practice in that farm is not as the same as theory. The farmer does budgeting in some extend such as doing simple calculations, comparing the alternatives, and getting information from different sources about the problem to be solved. According to the farmer, his budgeting process and decisions are rational as far as his circumstances are considered. The decisions which are being made by farmer are not always economic. The decisions are sometimes made according to desires and wants like buying a new truck to make living standard better in the farm.

BİR PLANLAMA ARACI OLARAK BÜTÇE METODU

ÖZET : Bu çalışmada, tarımsal işletmelerde bir planlama aracı olarak kullanılan bütçe metodu konusunda teorik bilgiler derlenmiş ve bunun pratiğe uygulanması bir süt inekçiliği aile işletmesinde gözlenmeye çalıştılmıştır. Çalışma, teori ve uygulama diye iki kısımda hazırlanmıştır. Teori kısmında bütçe metodunun ne olduğu, hangi basamakları içerdiği ve hangi çeşitlerinin mevcut olduğu hususunda çeşitli kaynaklardan derleme

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yapılmıştır. İkinci kısımda ise süt inekciliği yapan bir çiftçi ile mulakat yapılarak birinci kısımdaki teoriye ne kadar uyulduğu gözlenmeye çalışılmıştır. Sonuçta çiftçinin detaylı bir bütce yapmadığı, basit ve eksik bütce yaptığı ve bağlı olduğu kooperatif birliği gerekli gördüğü için ilgili hesap ve tesbitleri minimum seviyede yaptığı gözlenmiştir. Çiftçi bunun gerekçesini, bütce hesabına ayıracağı zaman ve kaynağın alternatif maliyetinin böyle bir aile işletmesinde daha fazla olması şeklinde açıklamaktadır.

A. THEORY

I - BUDGETING

Budgeting is an important tool used by managers for planning and decision making. It is very useful for analyzing alternative inputs and outputs and their levels of use. Budgeting can be used to select most profitable plan from a number of alternatives and to test the profitability of any proposed change in a plan.

Budgeting can be defined in many ways from simple to complicated. Budgeting is an analytic tool for the farmers to evaluate certain changes in the farm or to establish a new farm or to indicate cash flows. In a complicated way, "budgeting is a systematic approach to organizing data to make accurate decisions on costs and returns under conditions of incomplete knowledge (Calkins and DiPietre, pp.78)". From the definition, the objective of the budgeting is to make accurate decisions through planning and management. "Budgeting procedures are used to estimate the differences in resource use and the average annual net farm income for one plan versus another (Boehlje and Eidman, pp.229)". That is budgeting procedure is a sort of comparison among alternatives. Several characteristics of all budgets can be listed as followings (Calkins and DiPietre, pp.80-81):

1. All budgeting is closely related to the ideal world analysis of economic principles

2. Budgets are particularly adapted to asking questions: should you have more or less livestock, should you add bigger and more efficient machinery, what rotation should you use this year, should you own the combine or custom hire.

3. Common steps in budgeting are: (a) Identifying the relevant alternatives, (b) collecting cost and return data, (c) organization to make decisions in a useable format.

4. The purposes or advantages of budgeting include: (a) Budgets are a nearly costless way of considering alternatives before committing resources, (b) budgeting usually enforces the inclusion of all costs and returns, death losses, and a margin for unexpected expenses and, (c) budgeting forces the planning function and the evaluation function, (d) Budgeting is a very important input to obtaining credit.

There are available computer software which can be used for budgeting. They can quickly organize the data and perform the necessary calculations. One of the most common used software is FINPACK, a computerized farm financial planning and analysis package. "FINPACK is a set of four computer programs designed to be used as tools by farm and ranch managers, and those who work with them, to assist in individualized business planning and financial analysis. Changing economic conditions, increased borrowing, new technology and even changing cost/price conditions make in depth study of the profitability, liquidity, and solvency potential of each farm and ranch business absolutely essential. The purpose of FINPACK is to provide the tools to make such planning and analysis as complete, easy, and meaningful to the farmer, rancher, and lender as possible (Hawkins et al. pp.1)".

II - TYPES OF BUDGETS

There are several types of budgets. They are adapted to certain size and types of planning problems. The types we will consider are: The complete farm budget, the partial budget, and the cash flow budget. The first two are concerned with the amounts and kinds of resources to use and returns to gain. But the third one is concerned with the flow of income and expenses to help the farmers determine the need for credit.

I. Complete Budget

"A complete budget includes a listing of all production and income, and all inputs and expenses for the farm business (Boehlje and Eidman, pp.229)". "Whenever major changes in the organization of the farm are anticipated, the whole farm budget should be constructed (Calkins and DiPietre, pp.123)". Also starting a farm business requires constructing a complete budget. "There are four important steps in construction of the whole farm. These are: (a) State objective, (b) inventory resources, (c) plan dominant and secondary enterprises, (d) compare all plans (Calkins and DiPietre, pp.125)".

"There are at least six situations in which a whole farm budget should be undertaken; (1) The purchase of a new farm, (2) adding or expanding livestock or cropping activities, (3) change in tenure, (4) changes in government programs, (5) major changes in demand or supply, (6) sudden changes in the farm labor supply (Calkins and DiPietre, pp.124-125)". These whole budgets might be constructed for long term whose length depends upon the activity or the type of the farm.

One of the programs in FINPACK, FINLRB a computerized long range farm budgeting procedure, is used for complete budgeting. "FINLRB is a computerized procedure for comparing the long range profitability, dept repayment capacity, and

potential for net worth growth of an existing farm operation with two alternative farm plans. The FINLRB input form is divided into four sections; (1) crop and livestock plans, (2) balance sheet changes, (3) debts to be repaid over more than one year, and (4) related operating expenses and other information. The FINLRB output describes the financial soundness of each alternative with various measures of profitability, liquidity, and solvency. The profit or lost statement shows the sources of income and expense levels for each long range plan (Hawkins et al. pp.8)".

2. Partial Budget

"Partial budgets are used to estimate the change that will occur in farm profit or loss from some change in the farm plan by considering only those items of income and expenses that change (Boehlje and Eidman, pp.237)". "The partial budget is a rough form of marginal analysis related to the factor-factor and product-product analysis of economics principles (Calkins and DiPietre pp.139)".

A partial budget contains only income and expense items which will change. The final result is an estimate of the increase or decrease in profit. A partial budgeting in general contains four basic headings which are (a) additional costs, (b) additional income, (c) reduced income, and (d) reduced costs related to the changes.

3. Cash Flow Budget

"The cash flow budget is a mean by which the farm manager can asses the timing of cash inflows and outflows and estimate the line of credit needed (if any) to implement a given production plan. Like other types of budgets, the cash flow budget is calculated in advance of production year. It is an estimate of all receipts and cash expenditures expected during the production season. It can be constructed monthly, bi-monthly, or quarterly (Calkins and DiPietre, pp.156)".

Printed forms of a cash flow budget are available from many sources, including lending agencies and agricultural extension services. FINFLO, a computerized monthly farm cash flow planning procedure, which is a program in FINPACK is used for cash flow budgeting. "FINFLO is a computerized procedure for projecting monthly farm cash flows. It allows the farm or ranch manager and the lender to take an in-dept look at the farm business over the next twelve months, with the overall objectives of determining whether cash will be available as needed, when operation loans will be needed, and when repayment will be possible. An accurate balance sheet from the beginning of the planning period and good farm records are needed to complete the crop and livestock data banks and the FINFLO input form. The FINFLO output projects monthly cash inflows and

outflows for the year , with any monthly cash deficits assumed borrowed on an operating loan and cash surpluses used to repay the operation loan (Hawkins et al. pp.34)".

III - BUDGETING IN A DAIRY FARM

"Planning a dairy enterprise should include: (a) Realistic estimates of the amount and cost of resources needed to establish the desired type of dairy enterprise, (b) a herd management plan that is conducive to a continuing high and profitable level of production, and (c) financial planning, including operating budgets to determine financial feasibility of the plan. Such planning can help to avoid many serious errors and enhance the change for success in achieving both profit and personal goals (Etgen et al. pp.95)".

"The potential of the newly established dairy enterprise to meet the financial goals depends on earning power of invested capital. This can be estimated by budgeting, that is, calculating an estimated receipt-expense statement using realistic (conservative) receipt estimates and realistic (liberal) expense estimates (Etgen et al. pp.95)".

"If realistic estimates are used in calculating budgets, they can reliably evaluate potential profitability and financial feasibility of the operation. They can also be used effectively to determine dept serving capacity, to support loan applications, to estimate net worth growth potential, to calculate projected cash flow statements, and to plan a new dairy enterprise (Etgen et al. pp.106)".

B. APPLICATION

I - BUDGETING

As a planning tool, budgeting is used very often by most of the managers. This doesn't mean that budgeting is used in all details and formally. The quality of budgeting depends on what is needed, for what kind and what size of farm the budgeting is being done. It might require only a pen, a piece of paper, and may be a small calculator. Especially in small family farms it is done by farmer or members of family. They talk, think, make some calculation .and decide what they are going to do. This is the way it goes in most of the small family farms. But if the farm is big, then budgeting is in detail, needs a lot of work and may be a computer program.

In the case of the farm where I had interview, the budgeting process was poor. The farmer doesn't have any special record and document for budgeting. They, wife and husband, collect some data such as milk yield per cow, corn and soybean yield per acre, and some statistics about the farm when required by extension agency.

They do observation, search, calculations, economic analysis, and alternative comparisons when they are doing budget through decision making in a simple and informal way. Of course they follow certain steps we learn in the theory as followings:

1. Observation and collecting data,
2. identifying alternatives,
3. comparison of alternatives,
4. doing some economic analysis, and
5. making decision.

Budgeting is done because it provides making rational and correct decision. Then farmer can maximize his profit with these decisions. But when it comes to small family farms, there is a feeling that very formal and computerized budgeting is not worth. In the case of the farmer I interviewed, he says budgeting in detail requires time whose opportunity cost is more expensive than doing budget for him since he does a lot of work other than managing the farm. They had a complete budgeting of FINPACK, a set of four computer program designed to be used as tools by farm, last year which was provided by extension agency.

II - TYPES OF BUDGETS

Commonly, three types of budgeting are being used in the farms. These are complete, partial and cash flow budgets. All these are being applied by farmers in a simple or complicated way. Farmers in the region also commonly do budgeting to get credit from lenders.

1. Complete Budget

A complete budget includes a listing of all production and income and input and expenses for the farm business. For example, establishing a farm requires complete budget. The farmer whom I interviewed bought his farm fifteen years ago without doing any formal budgeting. He said he thought about it for six months with his wife while doing calculation about its cost and profit. After that they decided to purchase the farm.

The farmer had extension people in agency to run complete budget using FINPACK for his farm which was offered by extension agency. They said they got useful information from this budget about their farm that was the answer to the question in their mind in the sense how they could have survived, although their productivity, milk yield per cow, was lower than average in that region. It was because they have kept their input cost lower than other farmers according to the results from FINPACK. That is why

they have been farming successfully. After having good experience with FINPACK, he has tendency to using it again.

2. Partial budget

Partial budgets are used to estimate the change that will occur in farm profit or loss from some changes in farm plan by considering only those items of income and expenses that change. It is generally related to the factor-factor and product-product analysis of economic principles. Partial budgets are done when the capacity of farm is extended like buying some more land or increasing the number of cows or purchasing big machine like combine or tractor.

The farmer whom I interviewed bought additional land a couple years ago. At that time joining farmer was selling fifty acres land. He needed that land. He asked people about the value of land and made alternative comparisons such as spending that money on machinery rather than buying land. It was a good opportunity since the land was $50 per acre cheaper than what he paid for his farm years ago. He decided to purchase the land without calculating the present value of the land and comparing to its cost but using his knowledge about the value of the land.

The other example for partial budget is the machine he bought last year which is called wrapper and which wraps hay with plastic cover when it is harvested. He thought of buying it long time since it was an expensive machine and he consider alternatives too. The alternatives were constructing a silage silo or a building to protect hay from rain. Finally, decision was purchasing the wrapper, so that hay can be stored properly, sold with high price and also it would be more convenient to harvest hay. Recently there was a decision on purchasing used milk tank under the alternatives which were buying a new one or used one or repairing the one the farmer has.

From the examples it can be said that budgeting is not being done properly including additional cost, additional income, reduced income, and reduced cost analysis from the changes. Whole process of budgeting is not done, but partially it is used such as comparison of alternatives to make rational decisions.

3. Cash Flow Budget

Cash flow budgeting is the estimation off all receipts and cash expenditures expected during the production season in advance of production year. It can be constructed monthly or quarterly.

The farmer I had interviewed with draws out budget at the beginning of each year in extension agency using expeeted prices. The prices are not exactly known at the

beginning of the season since they are determined by government or market. Input prices are more predictable and also they are sometimes determined in advance. The farmer has monthly and yearly payments. There is no paper work showing monthly and yearly payments. Since the payments are paid without any difficulty even sometimes by borrowing, the farmer claims he is successful with positive balances.

III - CONCLUSION

In theory section, it is said that a dairy farm should have realistic cost estimation, continuing, high and profitable level of production and financial planning. If the realistic estimates are used in calculating budgets, they can reliably evaluate potential profitability and financial feasibility of operation.

If we look at the practice, realistic estimations are done in some extend but not precisely. I found the practice of budgeting in the farm where I had interview poorer than what I expected. This might be because the farm is a small family business, and the farmer doesn't believe in that formal budgeting is worth to spend time as far as the size of his farm is concerned. There might be a few farms in which better budgeting are being done depending upon size of farm and the technology used.

In practice, everything is not considered in terms of being economic. Farmers have wants, desires, and need better condition to live. Therefore sometimes they don't make economic decisions, and also they don't care even about budget. The decisions are made according to desires and wants such as buying a new truck which may not be economic.

LITERATURE

1. Boehlje and Vernon, Management, John Wiley & Sons, Inc., New York, 1984.
2. Calkins and Dennis, Farm Business Management: Successful Decisions in a Changing Environment, Macmillan Publishing Co., Inc., New York, 1983.
3. Etgen, James and Reaves, Dairy Cattle: Feeding and Management, John Wiley & Sons Inc., New York, 1987.
4. Hawkins, Nordquist, Craven, Yates, and Klair, An Overview of FINPACK: A Computerized Farm Financial Planning and Analysis Package, Minnesota Extension Service, University of Minnesota, 1987.
5. Koontz and Heinz, Management, Ninth Edition, Mc-Graw Hill, 1988.

APPENDIX I
QUESTIONS FOR INTERVIEW

A - About The Farm

1. What is the size (number of cows) of the farm?
2. Do you produce anything other than milk?
3. Is this a family farm?
4. How many people work in this farm?
5. What is the technology using level compare to the other farms?

B - About The Farmer Interviewed

1. How old are you?
2. What is your personal objective?
3. Do you own the farm?
4. What is your educational level?
5. If you have the change to choose a new job, do you consider that?

C - About The Theory

1. Have you experienced any big changes in the farm for the last five years or are you going to experience? How have you decided or how do you decide buying a new farm or additional land, buying a large number of cows?

2. Have you purchased a big machine such as tractor, combine or are you going to purchase soon? How do you make decision on those issues?

3. How do you make sure that you have cash every period when you need? How do you make decisions for borrowing?

4. Why do you use FINPACK as a budgeting tool? Did you have any chance to use any other software? If yes, could you compare?

5. As a dairy farmer, what kind of differences you have from other farmers as far as budgeting is concerned? Is uncertainty, incomplete information about prices taxes and subsidies, more important to you than other farmers?

APPENDIX II
A BRIEF DESCRIPTION OF THE FARM

The farm where the interview was conducted is a 58 cows dairy farm. The farm is in Morrow County which is forty five miles north from Columbus, Ohio, USA. Alfalfa, corn, and soybean are also grown in this farm. Some of the corn and soybean is used as feed and rest of them is sold. He also raises bull cow to be slathered.

This is a family farm. There is no outside employees. The farmer has three kids and his wife work together. The farm has 406 acres land. He buys mineral, protein and medicine from outside.

As Equipment, the farm has a small combine, two tractors, wrapper machine, milk tank, and milker. Milk is taken from the farm once in two days by the people who collect the milk.

APPENDIX III
A BRIEF STATEMENT OF THE JOB DESCRIPTION OF THE MANAGER

The manager owns the farm. Actually couple, wife and husband, manage the farm. They divide the job into two section. Wife does milking, administrates medication, Breeding, and feeding the babies. Husband does feeding, puts the crop in to the land and harvest. They do records and financial decisions together. Since they don't have outside Employees they do everything. Their children help them. Wife is 42 and Husband is 44 years old. He has B.S. from Agricultural Economics and wife has B.S. from Home Economics.

Since the farm is small and family farm organization is very simple. They just share the job. They work as manager, milker, field worker, and sale person. They consider themselves successful since they are surviving and they love their job.