

locality should form the basis for scientific planning. Data from research should be continuously used for this purpose.

FARM BUDGETING

Farm plan is a programme of total farm activity drawn up by the farmer in a year. The expression of farm plan in monetary terms is called farm budgeting. Farm budgets are classified into enterprise budget, partial budget and complete budget or farm budget. Farm budgeting is a method of examining the profitability of alternative farm plans.

FARM ENTERPRISE BUDGET

A commodity that is being produced on the farm is called farm enterprise. Budgets can be developed for each potential enterprise. Enterprise budgets are prepared in terms of a common unit *i.e.*, acre, hectare, for a crop, one head of livestock *etc.* This facilitates easy comparison between the enterprises. Enterprise budgeting is the estimation of expected income, costs and profit for an enterprise.

ORGANIZATION OF ENTERPRISE BUDGET

It consists of three elements *viz.*, income, costs and profitability. Income is computed by estimating the expected output and expected price (Table 27.1). The expected output is the average yield under normal weather conditions. Output price should be the average price expected in future. In order to estimate the variable costs we need information on quantity of inputs used and the prices at which they are purchased. Fixed costs to be included in enterprise budget are land revenue, depreciation, interest on fixed capital and rental value of owned land.

TABLE 27.1 Enterprise Budget for Groundnut per Hectare.

Item	Rs./Ha.
A) Yield 9.54 quintal @ Rs. 1332	12,707.28
B) i) Variable costs	
Human labour	1,843.93
Bullock labour	920.05
Machine labour	516.96
Seeds	2,352.78
Manures and fertilizers	1,724.27
Plant protection chemicals	189.10
Repairs	91.59
Interest on working capital	229.16
Total variable costs	7,867.84
ii) Fixed costs	
Land revenue	15.00
Rental value of owned land	2,430.54
Depreciation	137.47
Interest on fixed capital	178.19
Total fixed costs	2,761.20
iii) Total costs (i + ii)	10,629.04
Estimated profit	12,707.28 - 10,629.04 = 2,078.24

PARTIAL BUDGETING

Partial budgeting is a statement of anticipated changes in costs, returns and profitability when a farmer contemplates few modifications or minor changes in the existing operations of the farm business, partial budgeting technique is employed. It is similar to that of marginal analysis, wherein the changes in costs and returns resulting from proposed modifications are alone considered. It consists of four important elements viz. added costs, added returns, reduced returns and reduced costs. Partial budgeting technique is generally used to evaluate the profitability of input substitution, enterprise substitution and scale of operation.

- Added Costs:** Additional costs are incurred, if the proposed modification is the introduction of a new enterprise or increase in the size of the existing enterprise.
- Added Returns:** Additional returns could be received when the proposed modification is the addition of a new enterprise, or increase in the size of the existing enterprise or adoption of technology that results in higher productivity.
- Reduced Returns:** Decrease in the returns is observed when the proposed modification involves the elimination of an existing enterprise or reduction in the size of the existing enterprise.
- Reduced Costs:** Decrease in the costs is found when the proposed modification involves the elimination of existing enterprise or reduction in the size of the enterprise or adoption of a technology that uses fewer amounts of resources.

Partial Budget

Example 1: Proposed modification to control tikka leaf spot in JL 24 groundnut variety

		Items	
Added costs		Added returns	
400 grams Carbendazim +	Rs. 628/-	Yield 187 kg @	Rs. 2,348.72
1000 grams Mancozeb		12.56	
Reduced returns	NIL	Reduced costs	NIL
Total of added costs and	Rs. 628/-	Total of added	Rs. 2,348.72
reduced returns		returns and reduced	
		costs	
Net change = Rs. 2,348.72 - 628	Rs. 1,720.72		

The expenditure on fungicides and groundnut yield in existing and alternate situations are presented below.

Existing situation	Alternate situation
To control tikka leaf spot of groundnut carbendazim 0.1% + mancozeb 0.25% @ 400 grams + 1000 grams = Rs. 1,257	To control tikka leaf spot groundnut carbendazim 0.1% + mancozeb 0.25% @ 600 grams + 1500 grams = Rs. 1,880
Yield = 583 kg @ Rs. 12.56 per kg.	Yield = 770 kg @ Rs. 12.56 per kg.

The existing practice is the application of 400 grams of carbendazim and 1000 grams of mancozeb to control tikka leaf spot in JL-24 variety of groundnut. The cost

of these fungicides is Rs. 1,257. The yield obtained is 583 kg of groundnut per hectare. If 1,500 grams of mancozeb were applied at a cost of Rs. 1,885, it would result in a yield of 770 kg. The additional yield through this fungicide is 187 kg. The incremental income would be Rs. 1,720.72.

Example 2: Substitution of sunflower for groundnut:

S. No. Particulars	Existing situation		Alternate situation
	Groundnut (Rs.)		
a) Human labour		1,474.00	
b) Bullock labour		872.00	
c) Manures		864.00	
d) Fertilizers		1,164.00	
e) Seed		2,200.00	
Total operational costs/ha		6,574.00	
Gross income/ha	9.20 Q @ 1212.82	11,158.00	9.86 Q @ 1144.01

Added costs

Manures Rs. 38.00

Reduced returns NIL

Added costs Rs. 38.00

Total of added costs and reduced returns = Rs. 38

Net change = Rs. 2161 - 38 = Rs. 2123

Added returns

Reduced costs

Human labour

Bullock labour

Fertilizers

Seed

Total reduced costs

Total of added returns +

reduced costs = 122 + 2,039 = Rs. 2161

COMPLETE BUDGETING

It is a method of estimating expected income, expenses and profits for the farm as a whole. Complete budgeting is employed when farmers want to overhaul the farm business.

STEPS IN WHOLE FARM PLANNING AND BUDGETING

A systematic procedure is generally followed in making sound farm plans for the success of the farm business. The sound farm plan should be generally feasible, acceptable, and adaptable. To make the farm plan successful, the following steps should be adopted with relevance to a given farm and its resources.

1. Statement of objective.
2. Diagnosis of the existing organization.
3. Assessment of resource endowment on the farm.
4. Identification of enterprises to be included.
5. Preparation of enterprise budgets.
6. Identification of risks, and
7. Preparation of a plan.

Assessment of Objective

The objective of the farmer may be profit maximization or cost minimization. In the case of profit maximization, the farmer aims at maximization of net returns from his enterprises and their combinations. On the other hand, while choosing resources and their combinations, he aims at cost minimization.

Analysis of the Existing Organization

Analysis and prescription are the two important components of planning. The farmer has to examine the existing organization of farm business carefully and identify weaknesses or defects or loopholes in the current plan. Once mistakes are identified, corrective steps can be taken in future. Farm plans primarily prescribe remedies for weaknesses of the existing plan. For example, continuous monocropping is considered a weak point in the existing plan. This should be replaced by an appropriate crop rotation practice i.e., growing pulses and legumes after a cereal crop to increase soil fertility and reduce the incidence of pests and diseases. Non-adherence of the recommended package of practices is also a serious lapse on the part of the farmers leading to heavy monetary loss. This should be appropriately weighed in the formulation of the plan. Poor drainage leads to heavy crop loss in certain farming systems. Hence, this problem should be carefully viewed in formulating the farm plans.

Assessment of Resource Endowment on the Farm

Land: Here there is a need to spell out the land holding area, type of land i.e., wet land or dry land, crops grown, type of soils available, topography, texture, fertility, drainage, soil and water development, soil and water conservation methods, etc. If the land is sloppy, conservation practices are very essential. If the farmer has followed any conservation measures, we have to specify the costs of such measures here. If the soil is having drainage problem then measures taken up by the farmer are indicated. If the soils are highly fertile high-income crops are grown. Thus selection of the crops particularly high yielding varieties and relevant package of practices should be based on type of the soil. Assessment regarding plant nutrients and minerals present in the soil should be taken up with the help of soil testing laboratories and recommendations should be made with regard to the use of NPK and micronutrients. If the soil is acidic or alkaline, then corrective measures should be followed consulting the soil scientists.

Labour: The extent of family labour available with the farmer viz., women, men and children along with their age, household work and farm work done by them should be indicated. Permanent labourers if any engaged by the farmer, type of work done and amount of remuneration paid should be indicated. Perquisites given to the permanent labourers are also added to the remuneration. Labour supply, in the village and demand for labour for different crops in different seasons should be assessed. The actual wage rates paid for different kinds of labourers considering the peak and slack seasons should be indicated. Peak periods of labour demand and wage rates should be included. Assessment of supply and demand for cattle labour and machine labour for each type of crop in different seasons should be done realistically. The supply position with reference to livestock should be assessed correctly.

Capital: (i) *Working Capital:* Working capital required for raising crops should be indicated. Owned funds available and the amount of funds borrowed, from different sources should be indicated.

- ent sources, interest paid, etc. need to be clearly specified. Specification of investment dates, terms and conditions, etc., is also required. (ii) Fixed Capital relates to information on farm buildings, farm equipment, farm machinery, etc.
- d) **Organization:** The farmer's knowledge in farming, his expertise, his experience in farming and confidence in adapting new potential technology should be ascertained. Based on this information relevant farm plans should be devised. If the farmer is risk-averse, farm plans, which provide stable income under risk, should be suggested.
- e) **Irrigation Source:** Availability of different sources of irrigation, area covered by different sources, period of availability of irrigation, quantity of irrigation water available, crop demands for irrigation water, accessibility of land to the irrigation sources such as canal and tank, etc., should also be indicated. In addition, the cost of irrigation needs to be mentioned.

4) Identification of Enterprises to be Included

List of enterprises not only grown by the farmer but also enterprises grown in the area and also crop rotations are identified. Estimate the input-output coefficients in terms of acre or hectare or head of livestock for all the enterprises, which we propose to include. Information on input and output prices should be collected so as to work out the costs and returns.

5) Preparation of Enterprise Budgets

Estimate the income, costs and profitability of each enterprise to be included in the plan. The preparation of enterprise budgets facilitates comparison of profitability of different enterprises.

6) Identification of Risks

We should list out all types of risks *viz.*, production risk, weather risk, technical risk, institutional risk, marketing risk, etc., faced by the farmers. Particular incidence of pests, rodents and diseases, frequency of drought occurrence over the years, cyclones, floods and their havoc caused to farm production should be kept in mind in formulating relevant alternative farm plans. Marketing risks comprising of price fluctuations and failure of markets to arrest the malpractices of middlemen should be indicated.

7) Preparation of a Plan

Here the first step is identifying the most scarcest resources and selecting the enterprise which yields maximum returns per unit of scarcest resource. This process is repeated till all the scarce resources are put to the best use which results in optimal combination of the enterprises.