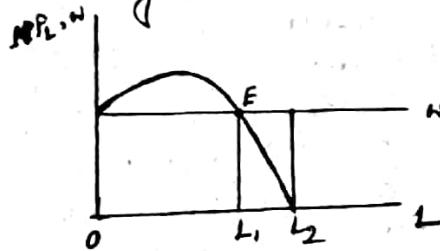


Limitations of Conventional Farm Management Analysis:-

Limitations of Conventional Farm Management Analysis can be explained as follows:-

- (i) Most of the literature on Farm Management economics is built up on the basis of the experience of the commercialised agriculture where most of the output is sold in the market and inputs are purchased from the market. But in a typically less developed country (LDC) such commercialisation is rarely found. Naturally, existing analysis on the farm management economics is very limited in LDC.
- (ii) Apart from the lack of commercialisation there are other limitations of applying farm management economics in a country like ours. There is the assumption that farmers will try to maximise their net profit; they would try to allocate their resources towards that objective. This assumption is largely valid for farms which produce for the market but not equally valid for the farms which produce mostly for subsistence.
- (iii) The cost-price relationship is important for commercialised farm for its decision making behaviour rather than for a subsistence farming. Since in a subsistence family farm a large part of the output is retained for self consumption as well as for inputs and other inputs are supplied by the members of the family farm, the cost-price relationship is irrelevant for the family farm for the simple reason that any changes in the prices of inputs and outputs will not affect the cost of production and income of the farm. Thus cost-price relationship on the basis of which the Farm Management Economics is based may not be relevant for a farm not substantially commercialised. Costs-prices may not even be calculated in many cases.
- (iv) The decision making unit may be interested in maximizing family welfare, gross output, employment etc. rather than net profit. For a typical peasant farm this situation can be shown in terms of a diagram.



For a capitalist farm equilibrium will be at point E and employment of labour will be o_1 , where $o_1 = MP_L$. But for a peasant farm level of employment will be o_2 , where the cost of maintaining labour force will be greater than in the capitalist farm. Hence profit or surplus will be reduced though output and employment will be higher. Thus here the objective is not of maximising net profit, but something else. Hence

Farm Management Economics can't be applied in the case of peasant farm.

(ii) Farms are very small in LDC as compared to that of developed country. In India the Lorenz curve for land distribution, however, does not indicate very skewness although not perfectly equal. Resources in the hand of farmers are limited and so the alternatives open to the farmers are also limited. According to Mellor, Schultz, the resources in the agricultural sector are efficiently organised. The assumption of having alternatives as made by the FME is obviously unrealistic in a country like India. Economic theory tells us that the resources are organised in such a way that their marginal returns are equal. However, since this conclusion is that resources are already optimally organised the question of reallocation of resources as is raised by the FME is not relevant. The way out is to introduce non-traditionally inputs; nothing can be done with the existing inputs. Green Revolution stems from this feeling.

(iii) The possibility of earning income from outside farming make the whole picture very complicated and makes it very difficult for the conventional FME to be applied in its framework. The smaller the size of the farm, the more the household depends on non-farm incomes. Hence, we have to consider not only the different possible products producible but also the incomes from different non-farm sources.

In summary the basic limitations of the FME in LDC are, first, although the assumption of the maximisation of net profit is by and large valid for an agricultural system exposed to the market, it is not so valid for an agricultural system in which major part of the output does not reach the market and many of the inputs are supplied by the family farm itself.

Second limitation originates from the fact that the resource position in the agricultural sector of the LDC is extremely precarious, farm size is small, excess to others factors of production is limited, options are not opened to the producing unit so far as the product choice and input allocation is concerned. In other words, flexibility is not found in most of the agricultural system in LDC.

The third limitation arises in a situation in which the most important resource in agriculture can work inside as well as outside agriculture. In such a situation FME in the conventional sense breaks down because it does not take into account of the possibility of substitution between agricultural and non-agricultural income. Hence we have to go beyond the conventional FME.

2. Basic Limitations of FME in Indian Conditions:-

(i) FME is based primarily on the profit maximizing behaviour of the farmers. But in a country like India where profit maximizing principle is not followed in agricultural production. The FME is of limited value.

(ii) If FME is to be applied in our country we should have to compute the value of both income and cash expenditure. But there is difficulty in computing the value of cost of production. There is also possibility of under estimation of cash income. Difficulty in computing the value of income is due to the fact that the food grains (or crops) are not consumed in their exact form but instead they are first transformed and then consumed and there is the difference of prices of transformed and non-transformed food crops. As a result farm records are very improper and those can hardly be used for policy recommendation.

Despite of these limitations such FME has still agriculture and technical planning. Most of the Indian agriculture is not traditional at present and it has been undergoing a rapid change since 1967 and under such circumstances the orthodox FME can be applied in Indian case also, although with some modifications. Therefore, FME is becoming relevant day by day.

3. The Core of Farm Management Economics/Analysis i.e Farm Budgeting.

Most of the Farm Management Analysis is built up around farm budget; it is the main tool of analysis. Farm planning or quantity is to be produced, what live stocks should be kept. So farm planning is a decision-making process in terms of physical quantity. Farm Budgeting involves the process of estimating the expenses, the value of output, and the net earnings. It emphasises the monetary aspects of the decision making process. We can think of farm plan without farm budget but we can take decision at the physical level without any consideration of costs and revenues. But we can't think of budgeting without a farm planning.

Budgeting in its finished form seems to be very simple affair but the process can be extremely complex particularly when applied to the agricultural sector of the LDCs because the concepts of costs and revenues can't be applied in the absence of a fully commercialised agriculture.

In FMA, budgeting is used in two ways - (a) it may be used simply as research tool, (b) it may also be

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used as extension technique. There are some important points of distinctions between these two uses. Farm budget as research tool concerns with the broad question of agriculture — the conclusions would have applications to the relevant population of micro units in a general sense. We shall have to review the results or outcomes if they are to be applicable to the individual holding.

Budgeting as an extension technique — the extension workers are interested in the means of improving resource allocation and crop combination for individual farm. The resulting recommendations are not applicable to anywhere else because the input-output data that go into the budgeting is very specific to the particular farm. Of course there are overlaps in the two uses of the farm budget. Research techniques may influence the activities of the extension workers. Individual farm budget can be modified i.e. input-output and price data can be modified for general applicability. The two uses may be complementary.

4. The Specific Uses of Budgeting:

Farm budgeting is used for the (i) estimation of the profitability of a particular pattern of organisation, (ii) determination of change in profits that is likely to follow as a result of particular change in organisation, (iii) comparison of different organisation pattern and also of different alternative changes on the basis of profitability. All these three uses centre around the profitability.

A budgetary process for a particular period is based on two figures — revenue and total expenses. The difference between the two figures is known as net earnings which may be positive or negative.

5. Types of Budgets:

Two types of budget are recommended in literature — (i) complete or full budgeting; (ii) partial budgeting. The former is more comprehensive. The two types have applications in certain situations.

For complete budgeting we are to start with the estimates of (i) list of available resources as well as the objectives of the budget; (ii) crop acreage and livestock.

numbers, (iii) physical inputs and outputs, (iv) factor and product prices, (v) fixed costs. In complete budget all aspects of farm management are considered, while in partial budget emphasis is on a single type of crop production and livestock. In this budget emphasis is given on product substitution and it need not consider the farm as a whole. Broadly, in partial budgeting, single activity of a particular or a single farm enterprise is considered.

6. Different Stages Involved in Budgeting:-

Farm budgeting is a process consisting basically of three stages: (1) observation, (2) recording at a present system in which farm is operating; (3) Analysis and decision making regarding what sort of changes are to be introduced.

* whole being.

(i) Observation: - The observation, the first step in budgeting, is to observe to find out the facts of the situation in so far as they determinable. In performing the first function, the budget user must first of all, before he does anything else, visit the farm in question. The object of the first preliminary visit is to assess the farm and the farmer. A visit to the holding with the cultivator is a must and should take place shortly after the cultivator has indicated the general nature of his problem. In the course of his visit the following aspects of the farm should be studied at first hand - (1) type of soil, (2) size and shape plots and their locations, (3) levelness of the land, (4) areas liable to flooding or draught, (5) crops and crop mixture being grown, (6) sign of soil fertility or poverty, (7) general standard of crop husbandry, (8) state of irrigation facilities, (9) conditions of livestock, (10) conditions of buildings and equipments. So the first step in budgeting is observation at the physical level.

The next step is to make a list of all the important assets and resources which the cultivator has at his disposal and record relevant information about each item. The record should include details on the following type -

(i) Land :- areas owned, leased in, leased out, leasing, or partnership arrangements, number of fragments, the numbers of plots, soil type, incidence of waterlogging and nutrient efficiencies.

(ii) Irrigation:- sources of water, conditions of availability, water charges, irrigable and non-irrigable areas.

(iii) Buildings:- type, capacity, structure, age, conditions, cost and potential life.

(iv) Equipment:- type, number, age, cost or purchase price, expected life, present value.

- (v) Power Items:- type, numbers, conditions, age, cost as purchase price, expected life, present value, opportunities for hiring out and hiring in tractors.
- (vi) Livestock:- Numbers, conditions, age, purchase price, expected life, present value, opportunities for hiring out and hiring in bullock, numbers of and type of poultry.
- (vii) Capital position:- details of cash, savings, shares and other securities and investments, outstanding loans made to the cultivators, outstanding loans made by the cultivators.
- (viii) Labour:- name, sex, age, health of family and permanent live workers, availability of family workers for work on the farm, off farm employment opportunities, wage paid to permanent workers and conditions of employment, casual labour, usual pattern of employment, conditions of supply and wage rates.

Peasant system:- This is actually a substep in the first stage or observation stage. This substep in the observation process is to define the pattern of production and inputs on the farm over the last complete agricultural year. This should cover the rotations followed, the exact cropping programme, with details of crops in Kharif and Rabi; their respective yield and utilisation or intended utilisation. On the input side should be recorded rates of application of seeds, fertilizers, manure, irrigation, bullocks, equipments and similar data.

The total value of output can be arrived at by multiplying the units of output by the price. Output shown, of course, include livestock products where applicable.

(ii) Justification of the peasant system-

From the sort of information obtained at the observation stage, a picture of the farm in physical and financial terms can be developed. The rational behind the system should then be explored to determine whether it has been arrived at more or less accidentally, or it has a firm logical scientific basis. There may or may not be good economic reasons for the choice of pastures, crop mixtures and rotations; the system may or may not be well-balanced economically; it may be favourable or unfavourable for development of pests and diseases.

(ii) Analysis and Decision making-

After the relevant data have been collected the next step is to find out what is wrong economically with the existing organisation and indicate how it might be included. Budgeting is used here as an extension tool. One approach to this problem is to calculate certain efficiency ratios.

measures for the farm; this can then be compared with standard figures for similar farms. Unfavourable comparison suggests the existence of quickness which in turn raise question about the specific nature of this weakness and possible remedies. If output is low the first step is to compute gross output per unit of area and compare this to the standard figure. If output is low, the intensity of the farming system is examined next.

7.(a) System Index:-

System intensity is measured by the system index. This index is a measure of the relative value of the potential production of the farming system on a particular farm as compared with the average value of the production of the typical farming system followed in the region on the same amount of land area. This index is calculated in four steps.

Step I:- Assign for each farm enterprise a standard value per acre of crop or per animal unit of livestock. These values are just a close approximation of the relative value of production which has been determined from all the sample farms in the region.

Step II:- Calculate the acres occupied by different crops, excluding the crops used entirely on the farm and animal units of different animals per hundred acres of farm land on the particular farm.

Step III:- Multiply the standard value of each of the farm enterprises by the acres of crop or animal units of the respective animals per hundred acres of farm land on the farm to find out the total value of potential production per hundred acres on the particular farm. This value may be the group mean or the mean of a sub-group of farms with a high level of performance.

Step IV:- Divide the total value so obtain by the average total value of the total production per hundred acres of all of all the sample farms to determine the system index. A high value suggests that the system is relatively incentive. A low value implies that there may be scope for intensification through expanding the area of high output crops, reducing fallow or increasing double cropping.

(b) Standard yield co-efficients:-

These are used to compute yield indices which indicate whether yield levels compare favourably with grouped values. If they do not, individual crop and livestock enterprises must be studied to find out the causes of poor yield.

(c) Crop yield Index:- This index represents the yields of all crops on the farm compare with the average crop yields of

the region. Before calculating this index for a particular farm, the average yield of each of the crops growing in that region must be determined. Thus by dividing the yield per hectare of crop on a particular farm by the average yield of the crop in the region, a percentage figure is obtained, which when multiplied by 100 is the index number.

(d) Livestock production Index:-

The method of calculation of this index is similar to that of the crop yield index, except that only man-work units can be used as weights because in this case the area is irrelevant.

(e) Intensity of cultivation or Intensity Index:-

Intensity of cultivation represents the amount of labour, material input and capital applied to a unit of farm or crop area. The determination the requires following things:-

- (i) Total number of labour days used per unit farm area or in a region, where animal production is not important, total number of labour days on crops per hectare of crop area. It can be seen that this measure reflects not only the amount of work done per unit area but also the amount of double or triple.
- (ii) Total working capital per unit of farm area:- This measure is preferred to the preceding one when mechanical power and machines are in common use and when the live stock enterprise is important.

(iii) Total farm expenses such as cash farm expenses, interest on capital investment and wages including the imputed wage cost of the family unpaid labour per unit of farm area. This measure takes into consideration the use of labour, machinery and other supplies. This measure is comparable to the intensity index.

(iv) Intensity Index:- An intensity index can be calculated by dividing the total farm expenses per unit of farm area of a particular farm by the average total farm expenses per unit of farm area of all the sample farms in the region and then multiplying by 100. The manner in which the total farm expenses are calculated must be uniformed on all farms.

(f) Labour Efficiency:-

Labour efficiency may be measured in the following ways:-

(i) Crop acreage for man equivalent or per work animal unit on a crop farm - the significance of this measure is affected by the valid proportion of crops with high or low labour equipments.

(ii) productive man work units per man equivalent is a good

measure of labour efficiency for all types of farms. This measure is computed by dividing total productive man-work units by the number of man equivalents on the farm.

(e) Net farm output per man equivalent:- This measure of labour efficiency is also applicable to all types of farms. It reflects not only labour efficiency but also yields and prices.

(f) Capital Efficiency:-

This may be expressed in various ways:

(i) Crop acreage per tractor:- This measures the efficiency of tractors which are commonly used on the farms. When the tractor is used, the number of draft animals on the farm and the necessity of having a spare tractor available for timely operation should also be considered.

(ii) Power, machinery and equipment expenses per productive man-work unit — This has been used by the farm management. It is calculated by workers to measure the relationship between capital input and labour.

(iii) Rate of capital turnover — This is used to measure the efficiency of capital investment. It is calculated by dividing the total farm income or gross farm output by the average capital investment at the beginning and at the end of the year.

In order to arrive at an assessment of the efficiency of a farm, cost levels are also examined both separately and in relation to expected output. If costs per acre appear to be high on an individual farm compared to the standard figure, there must be wastage of labour or some other inputs. Alternatively, higher cost per acre may be associated to the higher output. So the critical comparison is in terms of cost per acre than instead of costs per unit of output is with output expressed as an average return per unit of input. Factors such as fertilizer, labour and machinery and power can be examined on this basis. One danger here is that a high ratio of output to input does not necessarily imply a high level of economic efficiency; it may be failing to intensify sufficiently within the enterprise.

(k) Gross margin Analysis:-

A more highly focused approach in the final stage of farm budgeting is through GMA. The gross margin system is based on the division of farm costs into two fairly distinct groups. These are fixed costs which are largely independent of output levels; and variable costs which are directly related to output. Rent and depreciation are examples of fixed costs. Expenditure on fertilizer, for example, are the variable costs. There is no absolute rigid distinction between two groups, their constituents

depends on such factors as the practical problems under consideration, the status of the enterprise and its time being reviewed.

Gross margin falls midway between the value left to cover fixed costs as profit; it is what the farm is equal to fixed cost plus profit + variable or output variable costs. Since by definition fixed costs are constants, the higher the gross margin the greater will be the profit. By calculating the gross margin for each crop seasonally on a particular farm and comparing the figure with similar data for other farms in the district output can be evaluated for particular crops and guidelines established for possible improvements. In other words, the aim is to make resource allocation more nearly optimally available to permit the definition of precise optimal allocation among enterprises. The analyst can only approximate optimal allocation both in the least cost sense and also in terms of intensity of resource used. A general approach to this dilemma is to plan resource use in financial terms in the part, or area judged to be more economical than this in the current use.

The next step is to consider how net return per acre could be improved for those crops which the cultivator is growing at present. Factors to be studied in this connection are quality of seeds and rate of sowing, intensity of fertilizers and water inputs, pest control resources, standard of cultivation in relation to tools and practices used. The importance of using realistic estimates need little emphasis. Having identified realistic potential levels of performance for various crops they can be compared on a gross margin per acre basis. Included in this comparison would be the crops not being grown currently by the cultivator but which are possible substitutes for those which are currently grown. Crops not been selected in order to gross margin per acre whenever limit might apply in each case. For instance, the acreage of water requiring crops will be restricted by the availability of irrigation capacity, livestock level, herd disease, for factors may limit crop acreage in other cases. Application of the selection process will result in a plan which will maximise gross margin for the farm as a whole.

At this stage, it is useful to consider alternative plans based on different levels of availability

of factors such as permanent labour and bullocks. The farm owner reads, principally int'res of permanent labour, bullock power and equipment cost should also be examined on a comparative basis with other similar farms, as a guide to possible inefficiency in the uses of resources concern.

If a particular farmer appears to be using towards as much labour as one would normally accept except, there may be a perfectly good reason for this. He is perhaps farming very intensively. On the other hand, it could be that resources are being badly allocated or are under utilised. In some cases permanent or family labour may be a restricting factor. If so a second alternative should be chosen, allowing for the hiring of more permanent labour, assuming that this is feasible. The fixed cost would, of course, operate at a new higher level in this case.

The analysis may be justified in so far as attending to reach a maximisation solution to the farm planning problem. He has to consider the possible advantages of diversification as a stabilising influence on annual income variation, if this feature is important to the cultivator. Another factor which should be born in mind is that ~~too~~ abrupt changes in organisation or too sweeping changes can unnerve the cultivator. Initially, it is best to plan on the basis of a not too drastic alteration which is acceptable to the cultivator, rather than to advise the introduction of new enterprises and unfamiliar techniques on a large scale. If it is just necessary to introduce such enterprises and techniques, this should be done only gradually working upto a desire level as experience is gained.

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By -

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