

# Information System for Farm Accounting

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## ABSTRACT

*Objective: The paper aims to invite attention of the academicians, researchers and the policy makers towards present agricultural condition and its importance in achievement of proposed growth rate in Indian economy. The paper is devised to elaborate agricultural activities and productivity of the land and to suggest suitable information system for improvement. This will facilitate the farmers to know the profitability of each agricultural activity and to adopt an appropriate farming practices in order to increase productivity of land.*

*Design/Methodology/approach: The study is of exploratory nature. The study involved participatory observation for a period of one agricultural year (2007-08). Ten farm households were involved in the study. They were asked to observe and write down day-to-day activities performed at their household level.*

*Findings: The study found that the characteristics of the farmers and the farming pattern poses major hindrances in maintaining record of agricultural activities at the farm household level. Adoption of specialized and multiple Forms System becomes complicated and lose its applicability. Therefore, simple Information System "Model Form" is devised for recording farm activities, which enables to prepare appropriate accounts and provides factual data for identification of productivity of the land and profitability of a particular crop. This will attract more attention of academicians, researchers and the policy makers to devise 'standardized farm accounting system' for inclusion of the farmers, just as industrialists, in the process of economic development. Feasibility of the Model Form needs to be checked through its execution, which is a path for further research.*

**Key words:** agricultural activities, information system, farm accounting, farm household, Feasibility, land holding  
**Paper Type:** Research paper

## 1. Introduction

Indian economy is largely based upon agriculture sector, which has been forming major part of gross domestic product (GDP) of the nation since inception of planning. However, the share of agriculture sector in the national GDP has been declining steadily. It was 55.4 percent in the year 1951-52, which has reached to its lowest level of 18.5 percent in the year 2005-06. India ranks second, worldwide in farm output. The agriculture sector provides employment to 60 percent of the total workforce of the nation. The agriculture produce accounted for 10.95 percent of India's export during the year 2005-06. The share of service industry, which is driven by information technology (IT) industry, has been increasing steadily. It has reached to 52.4 percent in 2004-05 from 32 percent in 1970-71. The growth rate of the IT industry is increasing. Whereas, that of agriculture sector is decreasing steadily. It was more than 4 percent during sixth, seventh and eighth Five-Year-Plans (FYPs) but it was declined to 2.1 percent during 10<sup>th</sup> FYP. Despite a steady decline of its share in the GDP, still it is the largest economic sector and

plays a significant role in the overall socio-economic development of Indian economy. Therefore, the government of India has planned to inject additional funds of Rs. 25,000 crore in this sector during eleventh plan to bridge the gap of declining investment in agriculture research and development, irrigation, efficiency of institutions providing inputs and services, infrastructure in the rural areas. This sector has great potential, next to IT sector in India, which needs to be explored in detail. Moreover to this, the union government has taken unanimous decision to waive the agricultural loan of Rs. 71,000 crores in the earlier budget (Feb.2008).

Agriculture in the present day scenario is regarded as an emerging industry where large corporate entities are attracted to form agro-economic zones (AEZs). As it is proved in Japan, (Kupekar-2008) the entry of these giants in the agriculture sector has given birth to a new mantra of development. However, the development must not be at the cost of farm households. Consequently, the entry of big corporate entities in the agriculture sector is facing the problem of acquisition of land and

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broken out with new problems like Nandigram events. This however, is an independent issue, which needs special discussion. Despite of the prosperity towards which these entities are attracted to, the question arises here, what is wrong with the farmers and why they are committing suicide...? It is necessary to go to the root cause of the same, which needs concrete and detailed information of all the activities that are performed at farm household level. However, no system is available at present in order to gather this information from the farm households. No doubt, the big industrial entities entering in this sector will come out with their own information system along with special accounting package for catering the need of their farm activities. However, it is much more essential to know the status of marginal, small and medium farmers in the fast changing era of liberalization, privatization and globalization (LPG). Without an identical record (data), it is quite uneasy to elaborate the facts and figures of the farm households.

## 2. Scope of the study

The farmers in India, even after six decades of independence are unable to maintain, in any form, the record of their occupation. As a result, they are unable to know input-output cost of farm activities. They remain optimistic at every corner of life without having any concrete base. Therefore, the efforts undertaken by them become meaningless resulting into heavy losses. Ultimately, this compelled many farmers to end their lives. About thousands of farmers committed suicide during 2000-01 to Dec. 2007 out of which 279 events are from western Maharashtra. Surprisingly, out of which 126 mishaps have resulted in the year 2007. Only 155 out of 279 have qualified for financial assistance from the state government. This is not the ultimate solution on it but needs introspectiveness. The farmers need to build in themselves will power, which may not happen automatically. Planned efforts are necessary at the farm household level. Maintenance of information of farm activities and its accounting will be the best solution, which may enable to know the exact position of the state of affairs of the farm households. However, no more efforts have been taken at any levels- farmers, government, NGOs, scientists or scholars, to bring out any kind of information system that would make aware of the facts and let the farmers proceed towards specific goals.

Provision of perfect information system facilitates to take right decision. Moreover, that would have avoided most of the suicides, though not all. The accounting information system will bridge this gap. However, yet there is no standardized recording and accounting system for farm activities. Present study is the pioneering attempt in this direction. However, the Gokhale Institute of Politics and Economics (GIPE), Pune (Dandekar-1953) (Agarwal and Khudanpur-1960) had taken initiative very long back during 1952-53 to 1955-56. They had undertaken a project with an objective to design a systematic farm accounting mechanism. They had taken commendable efforts in that direction. However, the project could not bring out any specific accounting mechanism, mainly because of complexities poised in the system they had applied in the project. It is quite undesirable that neither the GIPE nor any other institution have

done further study in it over prolonged period of fifty years. This indicates reluctance of all-the government, NGOs, universities, scientists and the scholars towards the agriculture sector. Such negligence towards farm activities is not desirable in our country from where more than 70 percent of the rural population generates their livelihood. Present study is undertaken to focus on accounting information system, which may enable to prepare the required accounts and to judge the profitability and productivity of the farm activity, crop or a piece of land. In addition to this, the study aims at identification and recording transactions performed at farm household level. The study does not consider what accounting systems can be adopted but attempts have been made to devise a perfect information system for recording transactions. Preparation of detailed cost sheet and the required accounts of farm activities is the next step, which can be performed on the basis of the recorded data. The usefulness of the system can be generalised only after its execution, which is the task for further study.

## 3. Problem Statement

Most of the farm activities are performed traditionally by the farmers, without consideration of profitability or yield. Even the farmers are unable to analyse any particular activity to know its potentiality. The reason behind this is the absence of any system which may provide required information supported by factual data. Therefore present study is an attempt to come out with suitable information system that would facilitate the application of the accounting mechanism and preparation of necessary accounts pertaining to farm activities. This will provide facts and figures of farm households that may help us to know the root cause of the decline in growth rate of agriculture sector. The remedial measures can be taken easily on the basis of known facts in order to overcome the shortfalls in this sector and to boost the sector towards new growth level with involvement of farm households in this process. In the light of this the study is entitled as "Information System for Farm Accounting"

## 4. Objectives of the study

1. To know the existing information system prevailing at the farm household level.
2. To know the various activities undertaken at the farm household level.
3. To identify transactions taking place at the farm household level.
4. To suggest a simple accounting information system to record all the transactions taking place at the farm household level.

## 5. Methodology

The sample study method is used for the present study. An identical sample of ten farm households at Koparde village was selected at random. The activities performed at farm household level throughout a year 2007-2008 are taken into account. The observation of working of household members and informal discussion with them were made to collect required information for this study.

## 6. Characteristics of Farming

- 6.1 Labour Intensive:** The agriculture sector is mostly labour intensive. There is vast scope for mechanization in agriculture.
- 6.2 Less Irrigated land :** The percentage of irrigated land is as lower as 30 percent of total land prevailing in the country.
- 6.3 Large dependency on rain:** About 50 percent of the total cultivated land is dependent upon rain. Whereas 20 percent is barren land.
- 6.4 Small holding:** Fragmentation of land into small pieces on account of sub division of the property has resulted into small land holdings with individual families.
- 6.5 Single cropping pattern:** As the larger part of the sown area of agriculture is dependent upon rain, the farmers have no alternative but to adopt single cropping pattern.
- 6.6 Multiple crops:** The farmers are taking more crops at the same time in the available agricultural land which, again is segregated into different crops and reduces the area under each crop.
- 6.7 Low productivity:** The output per hector is comparatively low.
- 6.8 Traditional Farming:** Most of the farmers in the study area are performing farm activities traditionally. Much more modern techniques can be adopted in order to increase the farm productivity. Application of machines and technical support is not the latest.
- 6.9 Low level of Literacy and Knowledge:** Most of the farmers in the study area are literate having considerable knowledge of modern tools and techniques that are useful in farming.
- 6.10 Reluctance:** The farmers in the study area are unwilling to adopt modern technology in farming. They are unaware of the benefits of these technologies which, exhibits the need of making them aware of the same.
- 6.11 Absence of Formal Record:** The farmers in the study area do not keep any formal record of their farm activities which is most essential to know the facts and figures relating to the activities undertaken. The farmers maintain their information orally. There is no system as such to keep the record of the farm activities in black and white.

## 7. Transactions

The farmers perform number of farm activities throughout a year. These activities form the transactions at the farm household level. Following is inclusive but not comprehensive list of major transactions.

- 7.1 General Transactions:** Ploughing, threshing, harrowing, leveling, preparation of land for sowing, sowing, watering, intercrop cultivation, harvesting / cutting and threshing, clearing, packing, transportation and marketing.
- 7.2 Crop Based Transactions:** These are most similar to the

above mentioned activities with little variations as relates to the particular crop. These activities can be arranged according to the crop so as to ascertain its input cost. Generally following types of crops are taken in the study area.

**Cash Crops** - Sugarcane, Oil seeds like groundnut, sunflower and soybean, potato, sweet potato, chilly and turmeric are the major cash crops in the study area. The farmers take these crops on large scale.

**Non-cash Crops** - Rice, nachani, wheat, jawar are the major non-cash crops which are taken at marginal level.

**Other crops** - Horticulture- Cashew, mango and banana, flower culture, nursery, plantation and vegetable farming. Very few farmers in the sample village are taking these crops. Only one of the sample household is growing bananas, another is taking mango. Vegetable farming is taken at marginal level. None of the sample households is growing cashew, flower culture and nursery.

Accounting can be performed on the basis of these transactions. It is the main objective of this study to devise a simple accounting information system of recording these transactions. The essential accounts can be prepared from the recorded transactions by using computer technology. These accounts will provide valuable data for decision-making. The farmers can judge profitability and prosperity of each of the farm activities. This will facilitate them to undertake those activities, which give them more benefits. Thus, maintenance of record of these activities is the primary and most essential task before the farmers. As stated earlier, farmers are reluctant to adopt modern tools and techniques in their farm. Again, book-keeping and accounting is the technical task to be performed on the basis of those transactions. The person who has acquired basic accounting skills can perform this task well. However, the farmers are totally ignorant of these skills and reluctant to acquire it at the cost of additional time. The book-keeping and accounting cannot be expected to be completed from them with equal efficiency as we would do as they may not find it user friendly. Therefore, a simple and single form of recording the transactions needs to be devised so that they can use it easily without spending more time.

## 8. Accounting

Accounting is the language of any financial entity. The affairs of an entity are communicated to others as well as to those who own or manage it through accounting information which has to be suitably recorded, classified, summarized and presented. In order to convey the same meaning to all people and to make it meaningful, the accountants have agreed upon number of concepts and conventions, which they try to follow. However, all of the concepts and conventions may not be applicable in farm activities as they are applicable in business activities. As the transactions in farming are of different kinds from that of business, they need to be standardised accordingly. The accounting involves book-keeping which is an activity of recording of financial data relating to business operations in a significant manner. This is a record making phase which is based

on careful identification of transactions and efficient book-keeping system.

### 9. Farm Accounts

Generally the following farm accounts are maintained as per convenience.

**Crop Account-** A separate crop account is opened for each crop. All the receipts and payments pertaining to the crop are recorded in this statement.

**Dairy Account -** This account is prepared where milking animals are maintained.

**Cattle Account -** Transactions relating to purchase, sales and maintenance of the cattle are recorded in this account.

**Poultry Account -** Transactions relating to purchase, sales and maintenance of birds and eggs are recorded in this account.

**Land Account-** the transactions performed in the particular piece of land are to be recorded in this account to judge the productivity and profitability of the land.

### 10. Observations and Findings-

The respondents do not know how to record activities performed at farm household level, how to record the work done by the farmer himself at his farm, how to work out the cost of fodder grown in their own farm, what are its use, attitude and such other problems are the basic hindrances in keeping record of farm activities.

**10.1** Only *Four* out of *ten* sample farmers had kept record of their activities that too restricted to payment of cash only. They had not made any record of receipts from sales proceeds of farm produce. The receipts of sugarcane from sugar factories could be traced out on the basis of tonnage.

**10.2** On the same line, the receipts from the sale of other crops on wholesale basis could be traced out. However, the sales proceeds on the retail basis could not be traced out. None of the sample households could record these transactions.

**10.3** There was no record of expenditure incurred on children's education, repair and maintenance of the household property.

**10.4** None of the sample farmer could state the exact output or productivity of the land they had cultivated in the reference period. *Visa a vis* they could not judge the net income from a particular crop or piece of the land. This was mainly because of improper record accompanying the diversified activities and multiple cropping at several places on small pieces of land, low literacy level of the farmers and reluctance to adopt modern techniques in farming.

**10.5** The farmers in the study area are unable to maintain the set of books of accounts for the farm activities. However, if they are provided with simple form for maintenance of primary record of the transactions, it will facilitate them to prepare any account with the help of modern technology available for accounting. In order to bring this in reality

and make the farmers aware of usefulness of the maintenance of farm accounts, it is necessary to undertake a trial with the sample farmers.

### 11 Model Form

Considering the prevailing characters of the farmers, diversity of farm activities and the experience of GIPE, following Model Form is devised to record the transactions at the farm household level.

One need not undergo any formal training or education to record these transactions in this Form. Any person who is able to read and write can use it easily. However, the form needs to be translated in the local language. Only this form is sufficient to record all the transactions performed at the farm household level. All the receipts and payments of any nature-capital or revenue are to be recorded in this form only. Execution of this Form by the farm households is the task for further research. The Model Form consists of thirteen columns in all which are to be maintained as under.

### MODEL FORM

DATE AND SR.NO.	NAME OF FARM AND CROP AND AREA UNDER CROP (ACRES)	TRANSACTIONS (WORK DONE / EVENTS / ACTIVITIES PERFORMED IN THE FARM)	HOUSEHOLD LABOUR HOURS			HIRED LABOUR HOURS			RATE PER DAY/HOUR PER			REMARKS/ AMOUNT Rs.
			ANIMAL MACHINE	MAN	WOMAN	ANIMAL MACHINE	MAN	WOMAN	ANIMAL MACHINE	MAN	WOMAN	
1	2	3	4	5	6	7	8	9	10	11	12	13
2008 JUN 1												
1												
2												
3												
4												
2008 JUN 2												
1												
2												
3												
4												
		Total										

**Column 1** - At first, the date is to be recorded in this column, following the number of transaction in the order of its occurrence. The transaction refers to work done in agriculture.

**Column 2** - Is to be used to record the name of the farm-place and the crop therein, in which the work is done. It is also to record area under crop/s separately if multiple crops are taken in the same farm. However, the area under each crop needs not be recorded every day.

**Column 3** - Is to be used to record the actual transactions that refer to the actual work done or an event or an activity performed in the farm. This may include ploughing, threshing, harrowing, leveling, preparation of land for sowing, sowing, watering, intercrop cultivation, harvesting / cutting and threshing, cleaning, packing, transportation, marketing and so on.

**Column 4** - Is to be used to record the time (in hours) of work done with the household animals.

**Column 5** - Is to be used to record the time (in hours) of work

done with the household man and machine.

**Column 6** - Is to be used to record the time (in hours) of work done by the household women.

**Column 7** - Is to be used to record the time (in hours) of work done with the hired animals.

**Column 8** - Is to be used to record the time (in hours) of work done with the hired man and machine.

**Column 9** - Is to be used to record the time (in hours) of work done by women, other than the household women.

**Column 10** - Is to be used to record the rate (in rupees) of the animal- labors per hour or per day, on the basis of the rate prevailing in the market for hiring animal- labours.

**Column 11** - Is to be used to record the rate (in rupees) of the man and machine labour per hour or per day, on the basis of the rate prevailing in the market for hiring man and machine labours.

**Column 12** - Is to be used to record the rate (in rupees) of the women labours per hour or per day, on the basis of the rate prevailing in the market for hiring women labours.

**Column 13** - Is to be used to record the amount of the transaction (if it is possible to the record keeper, otherwise it can be traced out by multiplying the respective labour hours with the respective rate) or to mention, if any special remark regarding the transaction.

One transaction is to be recorded in one row. If there are more number of transactions in a day that much number of rows are to be used. Recording of the transactions will proceed every day in the above order.

### 13. Conclusions

Accounting in agriculture sector is largely in the nature of cost ascertainment, which facilitates to know the cost of output. Based on this the productivity and profitability of a particular farm activity, crop or the piece of land can be measured. This may help the farmers to take appropriate decision and perform the particular activities that may give them more benefit. This will increase the productivity and output enhancing the growth rate of the agriculture sector in particular and that of Indian economy in general. However, essential perfect information to take appropriate decision can be generated through accounting only. Therefore, multiple specialized forms can be suggested for farm accounting. However, it becomes complicated and the forms remain unused. Therefore, a simple accounting information system in the name of 'Model Form' with thirteen columns is devised to record the farm activities.

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