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**MONOGRAPH ON
ACCOUNTING FOR LIVESTOCK**



**Research Committee
The Institute of
Chartered Accountants of India
New Delhi**

**MONOGRAPH ON
ACCOUNTING FOR LIVESTOCK**



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FOREWORD

Livestock is vital for our national economy not only because it is still the major source of motive power for agricultural operations and rural transportation but also because it provides essential food items like milk and meat. Traditionally, livestock in India has been maintained primarily to facilitate agricultural operations. However in the recent past, rearing and maintaining the livestock has become a separate venture by itself and dairy farming on a commercial basis is assuming more and more importance. Consequently, the need for maintaining proper accounting systems to facilitate managerial decision making and external reporting in this area is now being felt more than ever. In view of the lack of literature on the subject in India, it was felt that the Institute should take up the task of providing guidance in this area. I am happy to note that this monograph on "Accounting for Livestock" is a timely endeavour of the Research Committee to fulfil this need.

I hope, the professional accountants as well as the others involved in the area will find this monograph of considerable use.

New Delhi
22nd August, 1983

Ashok Kumbhat
President

P R E F A C E

This monograph is a publication in the series on accounting for agriculture and allied areas being brought out by the Research Committee.

Livestock, as an asset, has certain peculiarities. Therefore, special considerations apply to its treatment in accounts. This monograph not only discusses the theoretical framework of livestock accounting but also deals with some practical problems which may be encountered by the professional accountants, e.g., in valuation of livestock, income measurement, etc.

I am grateful to Shri R.E. Waghmare, an agricultural scientist, for preparing the basic draft of the monograph. I must also express my gratitude to Prof. T. S. Grewal, formerly our Director of Studies, for his valuable contribution in giving this study its final shape.

New Delhi
22nd August, 1983

P. A. Nair
Chairman
Research Committee

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CHAPTER—1

INTRODUCTION

1. Livestock has played a predominant role in Indian economy, especially in the agricultural sector, where bullocks, camels, buffaloes etc. have been used as prime-movers in performing agricultural operations like ploughing and irrigation besides providing the villagers with an economical mode of transportation. However, with the advent of Green Revolution, livestock has, gradually but surely, given way to tractors, tractor-trolleys, tubewells, threshers etc. While this trend is noticeable in areas like Punjab, Haryana and Western Uttar Pradesh, the rest of the agricultural economy is still primarily dependent upon livestock mainly due to the widespread poverty of farmers. Even in urban areas, horse driven tongas and carts are not an uncommon sight, though their use has also been pushed to the background with the introduction of automobiles.

2. Although, the use of livestock in performing various agricultural operations and as a mode of transportation may be gradually decreasing, yet its role in providing nourishing food in the form of meat, milk and milk products is being increasingly emphasised as is evident from the Government's recent call for White Revolution. Also, livestock based industries like leather and leather goods, meat-packing, drugs and pharmaceuticals, wool spinning and weaving have gained importance.

3. Livestock has made an immense contribution in the development of the economies of various countries in one way or the other. For example, New Zealand and Australia have built their entire economies around livestock, while in the USA, livestock has played an important role especially in providing rich and inexpensive food. In India also, livestock has made significant contribution in the development of the economy as indicated by the figures published by the Central Statistical Organisation in the 'Basic Statistics relating to Indian Economy' in 1972.* India had 355 million heads of livestock including 179 million

* The 12th quinquennial livestock census was due in April, 1977. But only few states carried the census as scheduled while others had to postpone it for variety of reasons. Hence, data are available only for 1972, the year of previous census.

cattle, 58 million buffaloes, and 68 million goats, constituting one-sixth of the cattle, about one-half of the buffalo and one-fifth of the goat population in the world. In 1972-73 alone, the contribution to the national income from this source, in terms of 1960-61 prices was Rs. 1,667 crores which was about one-sixth of the contribution to national income from agriculture. In spite of these seemingly staggering figures, India has not been able to reap rich benefits from livestock mainly because of its poor quality. For example, average annual milk yield of a cow in India is a miserable 157 kg. as compared to 4,154 kgs. in the USA, 3,950 kgs. in the UK, and 3,902 kgs. in Denmark. One of the major reasons for the poor quality livestock in India is the abject poverty of its rural masses who can ill afford to spend much on the livestock. The consequence of this has been that people themselves have remained poor, thus setting up a vicious circle.

4. The Government has recognized in livestock a major weapon to fight poverty. With this objective and to provide milk and the other related foods to the growing population, the Government started various projects to improve the quality of livestock. The Indian Veterinary Research Institute, Izatnagar (U.P.), Central Sheep and Wool Research Institute, Malpura (Rajasthan), and National Dairy Research Institute, Karnal (Haryana) were set up. The National Dairy Development Board, Anand (Gujarat) was constituted to make available the information, skill and technical services needed to increase production of milk and dairy inputs, to speed up development of milk procurement, processing and distribution and to conduct research. The Intensive Cattle Development Project Scheme was formulated during the latter half of the Third Plan with a view to increasing the milk production potential of cows and buffaloes. Till 1980-81, there were 90 such projects. It was also envisaged to set up, by the year 1983, 6 centrally administered cattle - breeding farms for some indigenous cattle and buffalo breeds. The Central Frozen Semen Bank at Hessarghatta was established to supply frozen semen to the neighbouring states for cross-breeding purposes. Some frozen semen stations have been set up at Bangalore, Bhopal, Amritsar, Gurgaon and more are likely to be established in the near future.

5. To increase milk production, Operation Flood-Phase I was launched on July 1, 1970 and completed by June 30, 1978. About one million rural milk producers and their families have benefitted from it. Under this scheme, infrastructure for the procurement of milk from rural areas, its processing and its marketing to the four major urban markets was developed, with facilities for marketing the inputs needed for

increased milk production to milk producers. A two-tier cooperative organisation was created, in different rural centres, each having a feeder balancing dairy, a cattle feed compounding factory, the animal health care facilities, the artificial insemination facilities etc. which were linked with the modern milk transportation system. Phase I was confined to only 18 districts but another programme assisted by the World Bank covered 12 additional districts. At the beginning of this Phase, the throughput was 20,00,000 litres of milk daily; at the end the figure rose to 3,27,10,000 litres. Operation Flood-Phase II will cover 21 states and union territories with the objectives to enable about 10 million milk producers' families to build self-sustaining dairy industry by 1985, to rear a National Milch Herd of about 15 million cows and upgraded buffaloes by 1985, to erect a National Milk Grid which will link the rural milksheds to the major demand centres with urban population of about 150 million, to erect the infrastructure required to support a viable national dairy industry, e.g., national frozen semen system, vaccine production and delivery systems etc.

6. India has mainly two types of livestock—draught and milch. The draught animals are used in performing agricultural operations and for transport; these include bullocks, he-buffaloes, camels, horses, mules and donkeys, whereas, milch animals are milk producing animals like cows, she-buffaloes, she-camels, goats etc. Pigs are raised for meat production only. Sheep provide wool and mutton.

7. Presently, most of the farmers do not keep any accounts mainly because of their illiteracy and also because the exercise would not be worthwhile as the number of livestock heads kept by them is very small on the average. However, with the emergence of cooperatives and with the production of milk being recognised more and more as a commercial activity with emphasis on improving return on investment, keeping of proper accounts is bound to become a necessity. Though in the case of livestock also the accounting principles and procedures remain more or less similar to that of other commercial and industrial activities, yet, the general principles of valuation of assets may need adaptation while valuing livestock because the nature of livestock as an asset is different from other assets. The following chapters contain general guidelines which may be adopted for the valuation of livestock and the related accounting aspects.

CHAPTER—2

VALUATION OF LIVESTOCK

The Nature of Livestock :

1. It has been argued that livestock possesses some of the characteristics of fixed assets as well as some of the characteristics of current assets.* The fixed asset characteristic is apparent where, for example, a dairy keeps cows and buffaloes for the purpose of producing milk and bullocks are kept for the purpose of employment in agricultural operations. In other words, the animals are kept for use in the production of certain products or supply of services. The productive capacity of livestock is present in all animals e.g. a newly born calf has the inherent capacity of becoming a fully grown bull after a certain period, though right now, it may not be doing any productive work. Thus, some degree of fixed asset characteristic is present in all animals all the time. However, this appears in varying degrees depending upon the use of the animal.

2. The current or trading asset characteristic is apparent in livestock as the result of the productive and reproductive factors is an income aspect. For example, the wool growing upon the sheep's back and calves contained in the wombs of cows are income. This aspect, however, is not present in the case of draught male animals.

3. Another important aspect often stated regarding the nature of livestock is that if a desired level of production of the herd, with or without the male animals, is to be kept up, it is necessary to provide replacement every year as some animals in the herd may be sold or may die, fall sick or otherwise become unproductive. It may be mentioned that, to the extent the animals in each age group are replaced by their equivalent during the year whether by breeding or by purchase, it will be found at the end of the year, that as far as the herd taken as a whole is concerned, there is no deterioration in the asset as the productive capacity of the herd remains the same as it was at the beginning of the year. However, when each individual animal is considered there is an improvement or deterioration of the productive capacity. Thus, it may be said

*For a comprehensive discussion on this, see 'Livestock Accounting' by J. Haisman, New Zealand Society of Accountants.

that while an individual animal is a depreciable asset, a flock or a herd can be maintained in numbers and quality. This of course depends on the extent of replacement in each category, which may give an indication of the degree in which animals have been used as fixed assets.

4. It may be mentioned that at present no generally accepted method of valuation gives recognition to the aforementioned characteristics of livestock. Thus, for the purpose of this monograph, livestock kept mainly for selling its bodily produce or for obtaining services therefrom is regarded as fixed assets, while where the livestock is kept principally for the purpose of sale, it is treated as a current or trading asset. Also, this study addresses itself to the valuation of an individual animal rather than that of the herd though the same valuation principles may apply to the herd where all the animals are of same type and are in the same stage of their production capability.

5. From the above, it is apparent that different approaches to the valuation of livestock may be adopted depending upon the purpose for which it is kept. The two categories on this basis can be :

- (i) Animals kept for their produce or service, and
- (ii) Animals kept for sale only.

Animals kept for their Produce or Service :

6. This category includes milch animals, e.g. cows and buffaloes ; draught animals or the beasts of burden, e.g. oxen, camels and horses ; and others like sheep etc.

7. As stated earlier, livestock of this category is treated as a fixed asset. It is therefore necessary to recognise for the purpose of its valuation that the value of an animal continues to increase till it attains maturity, remains constant thereafter for a certain period, and then the value of animal begins to diminish as its age increases and its productivity goes down. The value of an animal may even become negative during the period preceding its death if it is not destroyed or disposed of. Such changes in value are often reflected in variations in the market prices of the animal from time to time.

8. For the livestock belonging to this category, the following approaches may be considered.

Capitalization of Cash Flows Method :

9. According to this method the animal is valued at future net cash inflows from the sale of its produce discounted at the appropriate

rate of interest. Thus, the value so arrived at may be considered to represent the economic value of the animal. However, this concept, though theoretically sound, may present difficulties in a practical situation.

Cost as the Basis of Valuation :

10. It is a fundamental accounting assumption that under the historical cost system, the fixed assets are recorded at their original cost. Where an animal is reared from its conception and then brought to maturity the cost may comprise the following items :

- (i) The cost of calving ;*
- (ii) The cost of the fodder and cereals etc. that the calf or the young animal consumes till maturity. This will also include the cost of the milk that the calf is allowed to consume which otherwise would have been available for sale ;
- (iii) A suitable share of the overheads comprising cost of water, supervision, maintenance of sheds and manure pits, medicines, veterinary surgeon's fees etc. less sale proceeds or value of manure. The appropriate method of apportioning the overheads appears to be allotment of appropriate weights to the various categories of animals in terms of their age, for example, weight of 5 may be allotted to a fully grown cattle, 4 to cattle of the age between 2 and 3 years, 2 to cattle of age between 1 and 2 years, 2 to calves of six months old and 1 to young calves.

11. If the number of animals kept is fairly large, the total costs may be apportioned over mature (and old) animals and the young calves on a suitable basis—say a calf of one year or less may be treated as $\frac{1}{3}$ rd of the fully grown cow, between 2-3 years may be considered equal to $\frac{2}{3}$ th of the fully grown cow for the purpose of apportioning costs.

12. Where a calf is purchased and then reared, the cost would naturally comprise the purchase price, freight inwards and the costs listed at (ii) and (iii) of para 10 above. If at the time of purchase, the animal has attained maturity, the purchase price plus freight should be considered as its cost. It may be mentioned that usually draught animals are purchased when they are fully mature.

*In the case of race-horses etc. where breeding is of great significance, certain other prebirth costs can also be included specially where they are substantial.

13. It may be seen from paragraph 10 above, that determination of the actual cost of livestock necessarily entails maintenance of detailed accounting records* which may be cumbersome for an average farmer. In view of the peculiarities of livestock the other problems with this approach of valuation may be as under :

- (i) Problems may arise where costs are to be allocated to different products or classes of livestock, e.g. where an enterprise is producing both lambs and wool. Moreover, certain classes of livestock may indirectly be used for the benefit of other classes of livestock ;
- (ii) Further difficulties may arise in an attempt to attribute a cost of natural increase. Any notional value of such increase may turn out to be arbitrary and misleading.

14. The aforementioned difficulties in the determination of actual costs for each animal may be avoided to some extent by establishing standards for certain elements of cost like fodder, medicines etc. For example, in the case of cows and buffaloes, separate standards may be established for fodder consumption in respect of (i) calves upto six months age; (ii) calves of the age between six months and one year; (iii) animals of the age between one and two years; (iv) animals of the age between two and three years; and (v) animals above three years. Such categorization is necessary because of the differing requirements of fodder in different age groups. Obviously, the categorization will have to be different for other animals like goats, horses, pigs, sheep etc.

Depreciation :

15. As stated earlier, the strength or the earning capacity of the animal increases in the initial years and remains constant for sometime thereafter. Therefore, depreciation is not normally charged during this period. The cost accumulated upto that stage is written off, once the earning capacity of the animal starts declining, over the remaining life of the animal normally by straight line method. Disposal value at the end of the life may be taken to be nil because the carcass does not fetch anything substantial. Also, the removal of carcass does not usually involve significant cost.

16. The time taken by the animals to reach maturity and the period of decline depends on their life-cycles and would differ for various animals according to their type, breed and other circumstances like the place where the animals are kept. These time periods would therefore

*Discussed in Chapter 3.

have to be determined on the basis of technical estimates in respect of each type, class and breed of animals.

Cost-Efficiency Approach :

17. The National Dairy Research Institute (NDRI) at Karnal has developed a variant of the cost approach for determining the value (termed as 'book' value by the NDRI) of an animal that combines the cost and the expected benefits of the livestock based on its expected production ability, i.e., its efficiency.

18. According to this method, the value of livestock is computed at three stages :

- (i) At the first stage, the value of the livestock increases in the initial years of its life since its production ability increases;
- (ii) At the second stage, the value remains constant for a certain period in view of the fact that the efficiency or production ability of the livestock remains the same during that period ;
- iii) Finally, the livestock is depreciated as any other fixed asset since its production ability begins to decline.

19. The NDRI uses the following formula for the computation of the value of the livestock for the aforementioned first two stages :

$$\sum_{i=1}^n C_i + P (D - \bar{D}) \times \frac{n}{AFC}$$

where

C_i = Cost of rearing the young stock in i th month

n = Age in months at which the book value is to be determined.

D = Dam's EPA (Expected Production Ability) in quintals.

\bar{D} = Average EPA of the herd in quintals.

P = The rate at which the book value of the young stock increases per quintal of increase in the Dam's EPA over the herd EPA (e.g., in 1979-80 this rate was Rs. 25/- and therefore it is subject to change).

AFC = Average age at first calving in months.

20. The NDRI has prepared different tables for different categories of livestock according to their types, breeds etc. which readily give book values based on certain given values of the variables of the above formula. For example, the following table is used for cross breeds of cattle :

**SCHEDULE OF FIXATION OF PRICES OF CROSSBREEDS
(YOUNG STOCK)**

Herd EPA = 3500

Age Group (Months)	Dam's EPA (litres)									
	Upto 1000 (750)	1001- 1500 (1250)	1501- 2000 (1750)	2001- 2500 (2250)	2501- 3000 (2750)	3001- 3500 (3250)	3501- 4000 (3750)	4001- 4500 (4250)	4501- 5000 (4750)	Above 5000 (5500)
Male										
1	163	167	171	176	180	184	188	192	196	204
3	415	428	440	453	465	478	490	503	515	534
6	946	971	996	1021	1046	1071	1096	1121	1146	1184
12	1345	1395	1445	1495	1545	1595	1645	1695	1745	1820
18	1977	2052	2127	2202	2277	2352	2427	2502	2577	2690
24	2611	2711	2811	2911	3011	3111	3211	3311	3411	3561
30	3258	3383	3508	3633	3758	3883	4008	4133	4258	4449
Less than 8 years	3258	3383	3508	3633	3758	3883	4008	4133	4258	4446
Female										
1	163	167	171	176	180	184	188	192	196	204
3	415	428	440	453	465	478	490	503	515	534
6	946	971	996	1021	1046	1071	1096	1121	1146	1184
12	1345	1395	1445	1495	1545	1595	1645	1695	1745	1820
18	1977	2052	2127	2202	2277	2352	2427	2502	2577	2690
24	2611	2711	2811	2911	3011	3111	3211	3311	3411	3561
30	3258	3383	3508	3633	3758	3883	4008	4133	4258	4446
36mths.	3258	3383	3508	3633	3785	3883	4008	4133	4258	4446

21. It may be seen that the value of male and female cattle increases upto their 30th month. Thereafter, it remains constant upto their 8th years for the male cattle and 36 months and upto third lactation in the case of female cattle.

22. After the second stage malestock of cattle is depreciated at 10 percent per annum. For the female stock, the rate of depreciation used by the NDRI, is 10 percent for the fourth and fifth lactation and the rate is doubled thereafter.

23. In addition to the aforementioned normal depreciation where the efficiency or the production ability of the livestock is impaired due to disease, deformity and injury, extra allowances are made by the NDRI depending upon the nature and degree of impairment, e.g., where a male buffalo suffers from Tuberculosis the rate of depreciation is 50 percent; Martities of a cow, where one teat is blind, the rate of depreciation is 15%, for two teats blind 40%, for three teats 70% and for all four teats 90%.

Net Market Value Method :

24. In view of the problems in valuation of livestock at cost as discussed in para 13 above the practice in many countries is to value it at its market prices or net market value. The 'net market value', in this context, means the net realisable amount which a farmer could have obtained for an animal at a particular date after deducting selling expenses. Though the current accounting practice does not generally allow adoption of net market value if it is higher than cost because profit would be recognized before it is realised yet this method may be considered suitable in the valuation of livestock because of its following advantages :

- (i) The net market value is not difficult to determine since there is normally a regular market for all sorts and types of animals. Thus, it avoids clerical labour involved in the computation of cost of rearing livestock ;
- (ii) The net market value usually takes into account the animal's characteristics such as age, weight, disease and deformity and potential productivity which influence the market's assessment of value ;
- (iii) Where the variation between the opening and closing stock is not substantial, the reported profit can safely be treated as realized since the unrealised profit on closing stock is compensated by the realization on the opening stock.

25. It may be concluded on the basis of the above that where cost of livestock cannot be determined with reasonable accuracy and where the reliable market prices are available, the 'net market value' method may be considered appropriate for the valuation of livestock.*

Animals held Principally for Sale :

26. Though livestock held mainly for the purpose of sale has the characteristics of ordinary inventories, it is not covered by the Accounting Standard-2 on "Valuation of Inventories", of the Institute of Chartered Accountants of India in view of the following peculiar features of livestock :

- (i) The livestock kept for resale may also produce something during the period it is kept, e.g., cows may give birth to calves and produce milk ; sheep may be sheered to give wool ; and pigs may gain weight.
- (ii) Livestock may undergo sudden changes in value due to diseases and other defects which may or may not be of permanent nature.

27. In view of the above peculiarities and because of problems in ascertaining cost, it is argued that livestock kept for sale may be valued at net market value as defined in para 24.† It is also suggested that net market value of certain animals e.g. race horses may further be adjusted for the pedigree and performance. Where a particular animal cannot be disposed of for a long period due to some defect and/or the market value for a similar animal is not available, the practice is to value it at a certain rate of its live body weight.

28. It may be mentioned that valuation of livestock at lower of cost and net market value would be more appropriate from the point of view of the generally accepted accounting principle of prudence. Cost for this purpose may be determined on the basis discussed in the previous section. However, where it is not possible to ascertain the cost with reasonable accuracy, the livestock of this category may be valued at net market value.

*This method with some modifications has been considered appropriate in a Research Study "The Valuation of Livestock in the Accounts of Primary Producers" of the Institute of Chartered Accountants in Australia.

†Op. cit.

29. The following types of animals are generally included in this category :

- (i) Young animals purchased and reared to maturity before being sold ;
- (ii) Natural accretion to the livestock kept for the purpose of sale of its bodily produce, e.g., male calves born to cows kept for the purpose of sale of milk ;
- (iii) Fully mature animals purchased for the purpose of resale :
- (iv) Animals having short economic life, e.g., pigs.

CHAPTER—3

ACCOUNTING RECORDS

1. In view of the fact that dairy-farming, piggeries, sheep raising for wool etc. are becoming more and more commercialised, the accounting system for livestock will essentially be similar to that of the other commercial and industrial activities. However, the individual records will differ in contents and detail. In this chapter, the accounting formats and the other relevant records are suggested for milch/draught animals. The formats† are illustrative in nature. Similar records, with appropriate modifications can be maintained for other animals.

2. *Cash Analysis Record Book* : A cash book analysing various expenses and receipts may be maintained for recording cash transactions. The columnar cash book may be more useful since a different column for every significant item of expense and receipt will readily provide important information, e.g., livestock purchased/sold ; sale of milk/milk products ; custom service by draught animals ; fodder, feed, medical expenses etc. (See Form 1). At the year end, these monthly cash books may be summarised giving monthly expenditures and receipts segregated into different items (See Form 2).

3. *Fodder Record Book* : Fodder constitutes a significant portion of the day-to-day expenditure on livestock. It is therefore desirable to keep a detailed record of its receipt and consumption. In view of this, a monthly record in values and quantities of dry and green fodder whether farm produced or purchased, along with its disposal, may be kept as suggested in Form 3. A similar Form may be kept for recording the yearly receipt and disposal of fodder.

4. *Feed Record Book* : This is another significant item of expense in the upkeep of livestock. The format of this record may contain information similar to that of Fodder Record Book (See Form 4). A similar Form may be kept for recording the yearly receipt and disposal of feeds.

5. *Labour Records* : This record may contain information regarding casual, regular and family labour employed in different activities pertaining to livestock like milking, watering, grazing, cleaning etc. The

†See Appendix.

recording of labour cost for livestock has certain peculiar characteristics as compared to commercial and industrial enterprises. For instance, since majority of the labour force may comprise family members of the farmer, the cost of their labour may be imputed on the basis of the prevailing wage rate even though accounting does not normally recognize such costs for the purpose of income determination. Another peculiar feature of the Indian farm sector is that the wages are paid in kind, i.e., in the form of the products of the farm, e.g., milk, cereals, etc. These may be valued at prevailing market prices for the purpose of determination of labour cost. Another problem could be that in many cases, particularly in small farms, no labourer is specifically employed for looking after livestock only. This may present problems in the apportionment of time spent on livestock. In such situations, it may be appropriate to work out standard labour time on livestock activities, which multiplied with average daily/hourly wage rate would give labour cost for livestock. Form No. 5 is designed to give the aforementioned information on weekly basis. Similar forms may be used to record summaries of labour cost on monthly and yearly basis.

6. *Milk Production and Disposal Records* : It may contain information regarding production of milk from cows, buffaloes, goats etc.; the disposal of milk by way of home consumption; sales and production of milk-products. This information may be recorded on daily basis, separately for cows, buffaloes etc. as shown in Form No. 6. Home consumption may be valued at market prices. A yearly summary showing milk production and its disposal for different animals for different months may also be maintained (Form No. 7). Similar records for the products of other animals, e.g., wool from sheep, may be maintained after making appropriate modifications.

7. *Dung and Farm Yard Manure Production and Disposal Records* : Dung is a by-product of livestock which is not of a significant value. It may be used as farm manure and as fuel in the form of dung-cakes. These may be consumed in the farmer's household or farm or may be sold. A simple daily record of production of dung and its disposal is suggested in Form No. 8. This record may be kept for every month separately so that monthly totals can be worked out which may be used for filling 'Annual Dung And Farm Yard Manure Production And Disposal Record' (See Form No. 9). Self-consumption may be valued at prevailing market prices.

8. *Employment Schedule of Draught Animals* : For every draught animal a record showing its employment in own farm and for

transportation purposes along with its use by outsiders, if hired out, may be maintained for every week of every month of the year as suggested in Form No. 10.

9. *Animal Cost and Yield Record* : This record may be kept for each animal showing therein particulars like the Identification Number, Date of Birth, Breed, Lactation Number, Costs upto Maturity, Depreciation, Yield, Market Value etc. as indicated in Form No. 11 which is in respect of a cow. Similar forms may be maintained for other types of animals.

10. *Livestock Register* : It is a summary of the records suggested at serial no. 9 above and contains various particulars like breed, year of purchase, purchase price, depreciation, appreciation, value at the beginning and end of the year, etc., for various categories of draught and milch animals as suggested in Form No. 11. Similar record for other animals may also be maintained after appropriate changes.

11. *Profit & Loss Account and Balance Sheet* : On the basis of the information contained in the above records and other accounting records normally kept, e.g., journal, for recording accounting transactions, a Profit and Loss Account and Balance Sheet may be prepared at the year end as suggested in Forms Nos. 13 and 14 respectively. It may be noted from Form No. 13 regarding Profit and Loss Account that first Business Profit has been worked out which is before adjusting various imputed costs and revenues. Economic Profit has been computed after accounting for these adjustments.

12. *Dual Account System*¹ : This is an alternative method for determination of annual profit and loss where livestock is valued at market prices. This method claims to recognise the following peculiar features of livestock :

- (i) Due allowance for the productive and reproductive factors which are of an income nature ;
- (ii) Income being determined on taking into account the gradually diminishing value of animals used for breeding purposes; and
- (iii) Consideration of any increase or decrease in the quality of animals, which the market value may be deemed to take into account.

1. For a comprehensive discussion on this, see 'Livestock Accounting' by J. Haisman, New Zealand Society of Accountants.

13. The Dual Account System requires preparation of two accounts viz. Livestock Account and Livestock Trading Account.¹ The Livestock Account is debited with the opening stock valued at market price ; any increase is similarly debited with a corresponding credit to the Livestock Trading Account. Decrease in livestock by death or sale is debited to the Livestock Trading Account at the market value with a corresponding credit to the Livestock Account; the closing stock is also valued at market value and is carried down to the next year. The balance in the Livestock Account represents capital profit if the herd is sought to be maintained more or less at its normal strength.

14. The Livestock Trading Account besides the entries mentioned above, is credited by sale proceeds and the balance in this account then represents gross profit or loss from livestock. The following is adapted from Haisman's work on Livestock Accounting as an illustration :

1. It may be suitably termed-say as Sheep Flock Account.

SHEEP FLOCK ACCOUNT—1981

Market Value of Sheep on Hand 1-7-80

Rams :

4 2ths @ Rs. 225	900
5 4ths @ Rs. 180	900
2 6ths @ Rs. 140	280
4 8ths @ Rs. 100	400
5 5yrs Rs. 50	<u>250</u>

2730

Ewes

210 2ths @ Rs. 33.50	7040
214 4ths @ Rs. 30/-	6420
200 6ths @ Rs. 30/-	5960
445 5yr @ Rs. 28/-	<u>12460</u>

31820

Hoggets :

210 Ewe @ Rs. 28/-	4200
100 Wthr @ Rs. 17.50	<u>1750</u>

5950

40500

1399

Transfer of Market Value at 30-6-81 of increased numbers at 30-6-81

1 2th Ram @ Rs. 200	200
3 6th Rams @ Rs. 120	360
14 6th Ewes @ Rs. 26.40	370
200 8th Ewes @ Rs. 25/-	5000
50 Wthr. Hgts @ Rs. 15.60	<u>780</u>

6710

Rs. 47210

Transfer of Market Value at 1-7-80 of decreased numbers at 30-6-81

1 4th Ram @ Rs. 180	180
2 8th Ram @ Rs. 100	200
1 5yr Ram @ Rs. 50/-	50
10 2th Ewes @ Rs. 34/-	340
4 4th Ewes @ Rs. 30/-	120
245 5yr Ewes @ Rs. 28/-	6860
50 Ewes Hgts @ Rs. 20/-	<u>1000</u>

8750

Market Value of Sheep on Hand at 30-6-81

Rams :

5 2ths @ Rs. 200	1000
4 4ths @ Rs. 160	640
5 6ths @ Rs. 120	600
2 8ths @ Rs. 80	160
4 5yr @ Rs. 40	<u>160</u>

2560

Ewes :

200 2ths @ Rs. 30/-	6000
210 4ths @ Rs. 27/-	5670
214 6ths @ Rs. 26.50	5670
200 8ths @ Rs. 25/-	5000
200 5yr @ Rs. 24/-	<u>4800</u>

27140

Hoggets :

160 Ewe @ Rs. 18/-	2880
150 Wther @ Rs. 15.50	<u>2330</u>

5210

34910

1354

Capital Account decrease in Market Value of Stock

Rs. 3550

SHEEP TRADING ACCOUNT

Purchases :

200 5yr Ewes @ Rs. 21/-	4200
5 2th Rams @ Rs. 220/-	1100
150 Wthr Hgts @ Rs. 11.50	<u>1730</u>

7030

Transfer of Market Value at 1-7-81 of decreased numbers at 30-6-81 :

1 4th Ram @ Rs. 180/-	180
2 8th Ram @ Rs. 100/-	200
1 5yr Ram @ Rs. 50/-	50
10 2th Ewes @ Rs. 34/-	340
4 4th Ewes @ Rs. 30/-	120
245 5yr Ewes @ Rs. 28/-	6860
50 Ewe Hgts @ Rs. 20/-	<u>1000</u>

8750

Gross Profit for Year

14830

Rs. 30610

Sales :

800 Lambs	16000
430 Old Ewes	5800
98 Wther	<u>2100</u>

23900

1328

Transfer of Market Value at 30-6-81

1 2th Ram @ Rs. 200	200
3 6th Rams @ Rs. 120	360
14 6th Ewes @ Rs. 26.40	370
200 8th Ewes @ Rs. 25	5000
50 Wther Hgts. @ Rs. 15.60	<u>780</u>

6710

Rs. 30 10

**CASH ANALYSIS RECORD BOOK
EXPENSES SIDE**

Form No. 1

Date	Particulars (to whom paid, qty. & rate)	Month					Year					Contd.
		Total Paid (Rs.)	Capital Items (Rs.)	Livestock Purchased (Rs.)	Labour charges (Rs.)	Dry Fodder (Rs.)	Green Fodder (Rs.)	Feed concentrates (Rs.)	Transport Charges (Rs.)	Loan Paid (Rs.)	Veterinarian fees, expenses on Medicine etc (Rs.)	Miscellaneous (Rs.)
1	2	3	4	5	6	7	8	9	10	11	12	13
Total Expenses												
Closing Balance												

**SUMMARY : CASH ANALYSIS RECORD BOOK
RECEIPT SIDE**

Form No. 2

Year :

Month	Total amt. received (Rs.)	Capital Loans (Rs.)	Livestock Sold (Rs.)	Milk (Rs.)	Milk Products (Rs.)	FYM & Dung	Customs Services (Rs.)	Miscellaneous (Rs.)
1.	2.	3.	4.	5.	6.	7.	8.	9.

Total

**SUMMARY : CASH EXPENSES AND RECEIPTS
EXPENSES SIDE**

Form No. 2 Contd.

Year :

Month	Total (Rs.)	Capital items (Rs.)	Livestock purchased (Rs.)	Labour charges (Rs.)	Dry fodder (Rs.)	Green fodder (Rs.)	Feeds concentrates (Rs.)	Transport charges (Rs.)	Loans Paid (Rs.)	Veterinarian fees, Exp. on Medicines etc. (Rs.)	Miscellaneous (Rs.)
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.

Total

Cash Balance

FODDER RECORD BOOK

Month :

Year :

Sr. No.	Name of fodder	Opening balance		Farm produced		Purchased		Total Stock		Disposal of Fodder				Sold		Total Disposal	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Fed to Livestock		Qty.	Value	Qty.	Value	Qty.	Value
										Milch	Draught						
		Qty.	Value	Qty.	Value												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Dry fodder																
1																	
2																	
3																	
4																	
5																	

Total

1	Green fodder																
2																	
3																	
4																	
5																	

Total

- Note :
- Quantity of fodder should be given in number of bundles. Its weight may be given in brackets.
 - Value figures should be in rupees.
 - Dry fodders are jowar bajra, paddy, maize, dry grass, pulses, strā etc.
 - Green fodders include jowar, maize, lucerne, pulses, grass, sugarcane tops etc.
 - Only those fodder which are fed to livestock should be listed in column 2 above.

FEED RECORD BOOK

Form No. 4

Month :

Year :

Sr. No.	Name of feeds	Receipts						Disposal								Balance	
		Opening balance		Purchase		Total Stock		Fed to milch animals		Fed to draught animals		Sold		Total disposal		Qty.	Value
		Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total																	

- Notes : (1) Names of feeds, generally fed to livestock are gingely cake, groundnut cake, sunflower cake, cotton seed cattle feeds, wheat bran, pulses husk, pulses broken, cereals, grain or flour.
- (2) Only those feeds which are commonly fed to livestock should be recorded in Column No. 2.
- (3) Quantity figures should be in kgs. and value in rupees.

LABOUR RECORD

Week No.....Month.....Year.....

Sr. No.	Name of the Labour	Hired labour					Family labour			Total wages
		Number of hrs./ days worked	Rate per hr/ per day (Rs.)	Amount paid payable in cash (Rs.)	Wages paid/ payable in kind (Rs.)	Total wages (Rs.)	No of hrs/ days worked	Rate per hr/ per day (Rs.)	Amount (Rs.)	

Form No. 6

DAILY MILK PRODUCTION AND DISPOSAL RECORD

No. of cows buffaloes/sheep/goats etc. in month.....Year.....

Sr. No.	Date	Milk Produced	Disposal of Milk					Disposal of Milk Products					
			Sale of Milk			Home consumption		Home consumption			Sold		
			To whom	Qty.	Value Rs.	Qty.	Value Rs.	Milk products Produced	Qty.	Value Rs.	To whom	Qty.	Value Rs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Total													

N.B. : Quantity figures may be in litres.

Form No. 8

DAILY DUNG AND FARM YARD MANURE PRODUCTION AND DISPOSAL RECORD

Month Year

Sr. No.	Date	Production			Sales			Self consumption (used in farm as manure or used as fuel)		
		Qty. (CL*)	Rate per CL	Value (Rs.)	Qty (CL)	Rate per CL	Value (Rs.)	Qty. (CL)	Rate Per CL	(Value) (Rs.)
1	2	3	4	5	6	7	8	9	10	11

Total

Form No. 9

ANNUAL DUNG AND FARM YARD MANURE PRODUCTION AND DISPOSAL RECORD

S. No.	Month	Production		Sales		Self-Consumption	
		Qty. (CL)	Value (Rs.)	Qty. (CL)	Value (Rs.)	Qty. (CL)	Value (Rs.)
1	2	3	4	5	6	7	8

Total

*CL Stands for 'Cart Loads'

Animal Cost and Yield Record

Identification Number..... Other Particulars of the animal.....
 Date of Birth.....
 Age on acquisition
 (months)..... Date of acquisition.....
 Breed : Bull..... Total cost to maturity.....
 Mother..... Growth costs :
 Mother's yield per lactation
 (average) First Six Months.....
 Between six months and one year.....
 Between first year and second year.....
 Between second and fifth year.....
 Total at age of 5 years.....
 Estimated annual.....
 depreciation.
 Disposal : Sale on..... Rs.....
 to.....

Lactation No.	Period From to	Maintenance Cost Rs.	Sale Proceeds Rs.	Yield in liters	Total milk yielding period (Days)	Market value at the end of each lactation	Remarks

PROFIT AND LOSS ACCOUNT

For the year ending

	Amt. (Rs.)	Amt. (Rs.)
To stock as on :		By Sales
(a) Dry fodder		By Milk
(b) Green fodder		By Milk products
(c) Feeds		By Dung & FYM
To purchase of		By Custom service
(a) Dry fodder		By Dry fodder
(b) Green fodder		By feeds
(c) Feeds		By Miscellaneous receipts
To Hired labour		By Appreciation of
(Casual & Regular)		milch animals
To Custom service		By Appreciation of
To Miscellaneous		other animals
To Depreciation of		By Stock of
(a) Equipments		Dry fodder
(b) Milch animals		Green fodder
(c) Draught animals		Feeds
(d) Other livestock		
(e) Farm Building		
	Total (b)	
Business profit carried down		Total (a)
Total a--(b)=		
To imputed charges of		By Profit brought down
(i) Family labour		(i) Home consumption of
(ii) Owned farm fodder		milk and milk products
(a) Dry		(ii) Self-consumption of
(b) Green		dung & FYM
	B=Total	A=Total
Economic profit (A-B)		

BALANCE SHEET

As on.....

Capital and Liabilities	Amount Rs.	Assets	Amount Rs.
Capital		Farm building	
Opening balance		Cost	
Add additions		less depreciation
less withdrawn		
Add business profit		Equipment Cost
		less depreciation
		
		Milch animals cost
		less depreciation
		
Loans		Other livestock	
(a)		(a) Cost	
(b)		(b) less depreciation	
(c)		(c) Add appreciation	
(d)			

Total	Total

Account payables		Stock of	
(a)		(a) Animals kept for sale	
(b)		(b) Dry fodder	
(c)		(c) Green fodder	
(d)		(d) Feeds	
		(e) Milk products	
		(f) Others	

Total	Total

		Account Receivables	
		(a)	
		(b)	
		(c)	
		(d)	
		Cash in hand	

Total	Total
