COST BENEFIT ANALYSIS OF DAIRY UNITS FINANCED BY UNION BANK OF INDIA JABALPUR (CITY BRANCH)

THESIS

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C E R T I F I C A T E - I

This is to certify that the thesis entitled "COST BENEFIT ANALYSIS OF DAIRY UNITS FINANCED BY UNION BANK OF INDIA JABALPUR (CITY BRANCH)" submitted in partial fulfilment of the requirements for the degree of "MASTER OF SCIENCE IN AGRICULTURE" of the Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, is a record of the bonafide research work carried out by Shri AJAY KUMAR JAIN under my guidance and supervision. The subject of the thesis has been approved by the Student's Advisory Committee and the Director of Instructions.

No part of the thesis has been submitted for any other degree or diploma (certificate awarded etc.) or has been published/ published part has been fully acknowledged. All the assistance and help received during the course of the investigations have been duly acknowledged by him.

(H.C. Jain)
Chairman of the Advisory Committee

THESIS APPROVED BY THE STUDENT'S ADVISORY COMMITTEE

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Jabalpur,
Dated.....1978.

(AJAY KUMAR JAIN)

DEDICATED

TO THE MEMORY OF MY

GRAND MOTHER

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CHAPTER - I

INTRODUCTION

The value of milk and milk products for physical development and well being of people is now universally recognised. With the growth of population and change in pattern of life with urbanization, there has been rapid increase in demand for milk and milk products, particularly in urban areas where these items could not be and were not produced in large quantities. At the same time the increasing pressure on land, fragmentation of land holdings and decrease in pasture made it difficult for rural milk production to keep up with demand of the growing towns and cities. As a result, there is an upsetting in the ancient system of production and consumption of milk and milk products and there developed an imbalance between production and supply of milk. Due to lack of attention to organise a system of dairying based on commercial rural milk production, bulk-collection, transportation, processing and supply of milk and milk products could not be met as required for the altered situation.

The gap between supply and demand of milk in cities continued to grow and acute shortage became patent in more and more areas. Wide spread adulteration of milk with water and

undesirable practices of urban production came into existence and became a part of general system of dairying in the country. As the per capita availability of milk is estimated to be 112 gms which is much below the nutritional requirement of 210 gms. There is urgent need to boost milk production in the country.

Agriculture production in its turn depends upon cattle wealth. In our rural economy, animal husbandry provides subsidiary means of livelihood to the agriculturists and livestock raising has become an integral part of agriculture. Under the Indian conditions it is rather impossible to think of improving agriculture to a large extent without good cattle wealth particularly in the year of crop failure, when this enterprise supports and provides an economic base for the living of farm families. This may be referred as an insurance enterprise to the farmers. The economy of a country can not improve unless animal husbandry progresses alongwith agriculture production. It is a pity that in a vast country like India with surplus cattle population, is not able to feed its people. With most important nutritive food i.e. milk, our efforts must, therefore, be covered up to see that our country be self sufficient in this respect.

Many investigations made in the country have shown that animal husbandry can contribute considerably to employment and income generation in rural areas. India has about one-half of

world's buffaloes, one-fifth of world's cattle and one-sixth of world's goats. Animal husbandry has an important role in national economic life, it contributo about 7 per cent to net national product.[1]

Addressing the 19th International Dairy Congress held in New Delhi in 1974, Shri Jagjivan Ram, former Union Minister for Agriculture and Irrigation, said that at least the scope which dairying has for improving the quality of life for both rural and urban people, its direct effect in providing productive employment for large number of people in our milk sheds and its contribution to the process of social and economic change in the village itself. He further said that socially oriented dairy development can help to set up a spiral of increasing saving and investment and productivity as well as increasing saving and investment in production.[2]

Importance of dairy enterprise for providing better nutrition for the people and creating additional employment opportunities in the rural areas is now well recognised.

However, dairying when practised on scientific and commercial lines becomes a capital intensive enterprise. It requires a considerable amount of short term working capital for the purchase of inputs, such as feed, fodder and medicines

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1. The Times of India Directory and Year Book, 1977, pp 180-181.
2. Dairying an Instrument of Social and Economic Change. Indian Farming, Vol.24, No.11, pp 3-5.

etc. Besides, medium term investment are also required for the purchase of milch animals for rearing of heifers till the age of first calving and construction of cattle sheds. Small and marginal farmers can not finance for such investment from their own resources and, therefore, it becomes necessary to arrange institutional finance for them. Large scale credit is, therefore, required for financing the dairy units. Dairy farming can however, a risky business unless inputs and services alongwith proper marketing of dairy products can be organised as a package.

Due to increased importance of achieving self sufficiency in production, the farm financing agencies are now conscious about financing dairy as a productive enterprise in their areas of operations. Now-a-days due to the high price of milk, the business is also attracting many people including educated persons for starting dairy as their business but the customers are crying of higher prices of milk and the producers talk about the meagre profits to continue in the business.

Hence, it is of paramount significance to study in depth the cost benefits of dairy units financed by a bank in the area under investigation.

The present study is proposed to find out the relative share of financing by the bank for different purposes during the last five years alongwith various economic aspects of dairy

units. Briefly the present investigation was undertaken with the following objectives.

1. To study the place of dairy enterprise in purpose-wise disbursement of loan financed by Union Bank of India, Jabalpur city branch during last five years.

2. To work out the economics of dairy enterprise financed by Union Bank of India.

3. To estimate cost of production of milk for different size of dairy units.

Limitations of the Study

In view of the importance of white revolution in our country, the study was undertaken, covering only the dairy units financed by the Union Bank of India, Jabalpur city branch. The time and energy at the disposal of the student was also a limitation to include the data for more than one year. The owners of the dairy units inspite of convincing them at their information will be kept confidential, responded very poorly in supplying requisite data/information because of fear to use the information by the local administrative authorities in fixing the milk price in the city. Hence paucity of accurate and authentic data restricted the use of results and conclusions of this enquiry for wider policy decision formulation.

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CHAPTER - II

CHAPTER - II

REVIEW OF LITERATURE

Few studies were conducted in respect to various economical aspect of dairying. The brief review, made below is an attempt to review the work done in India and abroad.

Chatterji and Goswami (1965)[1] concluded on some aspects of livestock economy with particular reference to cattle in rural India, that the non-cultivator households manage cattle better than the cultivator households in rural areas of India. Cultivator households constitute 80 per cent of rural households in India. Poor feeding and management practices in cultivator households have resulted in an uneconomic growth of cattle population in India. Consequently, development of agriculture and animal husbandry suffer for want of hard working draught animals and high yielder.

Dhondyal and Singh (1965)[2] made an attempt to examine the economics of livestock enterprise in Uttar Pradesh. It was

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1. Chatterji,A., and Goswami,S.K. (1965) On some Aspects of Livestock Economy with Particular Reference to Cattle and Buffaloes in Rural India. Ind. J. Agri. Econ. 20(1):130-134.
2. Dhondyal,S.P., and Singh,P. (1965) Economics of Livestock Enterprise in Uttar Pradesh. Ind. J. Agri. Econ. 20(1) 107-116.

observed that the expenditure on feed was productive in case of cows and a source of loss in case of buffaloes to such an extent that the gross income decreased by 183 per cent of additional expenditure on feed in case of the latter. On the contrary the expenditure on labour was productive in case of buffaloes and a source of loss in case of cows to such an extent that in case of buffaloes the gross income increased by 264 per cent and in case of cows it decreased by 31 per cent of the additional expenditure on labour.

Pant and Karanjkar (1965)[1] in their study the data was obtained from dairy units purposively from an estimated number of 200 dairy units stratified by size within the corporation limits of Jabalpur city. The size groups were 5 to 10, 11 to 16, 17 to 22, and 23 and above.

The study revealed that the production of milk ranged from 1683 to 1760 litres per lactation. The cost and the size of herd was positively correlated.

Rajpurohit and Muranjan (1965)[2] concluded that the use of cows for draught purpose are not considered in any way inferior to the bullocks in performing the process which require

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1. Pant, S.P., and Karanjkar, S.V. (1965) Economics of Dairy Enterprise in Jabalpur with Special Reference to the Scale of the Enterprise. Ind. J. Agri. Econ. 20(1): 116-121.
2. Rajpurohit, A.R., and Muranjan, S.V. (1965) Economics of Livestock Enterprise - Use of Cows for Draught Purpose. Ind. J. Agri. Econ. 20(1): 121-129.

a low draught power as ploughing with wooden plough, harrowing, sowing and interculturing. It is however doubtful whether they can be used for processes as ploughing with an iron plough, earthing and lifting water which require a heavy draught power.

Singh (1965)[1] in an analysis of feed milk relationship and cost of production of milk on farms in Delhi area. It was found that the feed cost accounts for the largest share of total costs, representing 72 per cent, therefore, we could hope to lower the cost of production of milk by suggesting measures aimed at economising on feed costs. The major conclusion which could be drawn was that if the dairy cows and buffaloes are charged with the maintenance costs of dry animals, then serious losses are involved in the dairy enterprise at the price levels used.

Sharma (1965)[2] concluded that the duration of engagement round the year and the hiring of workers do not play a significant role in determining the scale of livestock enterprise. However, the input of family workers and their association with different categories of sizes of holdings reflect quite significantly the scale of livestock enterprise.

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1. Singh,C.B. (1965) An Analysis of Feed Milk Relationship and Cost of Production of Milk on Farms in the Delhi Area. Ind. J. Agri. Econ. 20(1): 97-107.

2. Sharma,P.S. (1965) Scale of Livestock Enterprise. Ind. J. Agri. Econ. 20(1): 77-82.

In the case of households engaged in livestock only most of the districts have majority of the households operating on a small scale of livestock enterprise associated as these are with one or two workers. Single occupation households with 3 to 5 workers to be concentrated in Saurashtra region of Gujrat and Telengana region of Andhra Pradesh.

Telang and Charan (1965)[1] in their study on role of Bovine population in Maharashtra's economy with special reference to milk production arrived the general conclusion that the total value of female population in Maharashtra is of the order of Rs 143 crores which produce output worth Rs 126 crores of total female bovine population of 91.4 lakhs, breeding animals number 61.8 lakhs. If the cows yielding less than one seer and she buffaloes yielding less than two seers of milk per day are considered in efficient and are excluded, it is observed that only 21.8 lakhs i.e. 24 per cent of the female bovine population contributes materially to the economy of the State. If we include efficient young stock among efficient breeding cows and buffaloes which, when matured would contribute materially towards the economy. It is seen that of the total female bovine population 75 per cent consisting of inefficient and more or less use less stock is maintained in a year which is only a burden to the economy.

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1. Telang,M.A., and Charan,B.V. (1965) Role of Bovine Population in Maharashtra's Economy with Special Reference to Milk Production. Ind. J. Agri. Econ. 20(1): 85.

Bhargava (1968)[1] concluded that dairy occupation with small farmer as subsidiary occupation was not carried out on commercial basis but was adopted to other factors like way of living, social status to name produced milk and bullock. He found that the cost of production of milk in winter season is less than summer.

The total expenses per animal increases with large size of holding and, therefore, the cost of production of milk also increases as the size of holding increases.

Chhikara and Gangwar (1975)[2] have worked out the marginal value products of different resources that go into the production of milk for cows, Murrah buffaloes and crossbred cows in Jind district of Haryana.

The cost of milk production per litre of milk was found to be Rs 1.55 in the case of buffaloes as against Rs 0.99 in the case of crossbred cows.

Chanal and Chawla (1975) have made an attempt to examine the economics of the milk production and to estimate the short

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1. Bhargava, S.K. (1968) A Study into the Economics of Dairy when Adopted as Subsidiary Enterprise by Selected Farmers within the Radius of Five Miles of JNKVV Jabalpur (M.P.). M.Sc(Ag) Unpublished thesis, JNKVV, Jabalpur.

2. Chhikara, C.P., and Gangwar, A.C. (1975) Resource Productivity in Milk Production and Return farm Cattle, Crossbred cow and Murrah Buffaloe. Ind. J. Agri. Econ. 30 (3): 165.

3. Chanal, T.S., and Chawla, J.S. (1975) Economics of Milk Production of Different Dairy Farms in Amritsar City. Ind. J. Agri. Econ. 30(3): 85-90.

term capital and credit requirements on four different size groups of dairy farms. Situation were developed and budgeting technique was used for analysis. It was found that per animal yield, gross returns and net returns increased with the size of dairy farm up to large farm and then decreased on the big farm.

George and Shrivastava (1975)[1] covered in their study the aspects (i) private costs and returns to the farmer (ii) impact on the dairy (iii) income distribution effects (iv) impact on the bank (v) social cost benefits. In their study Institutional finance for dairy development.

They conclude that institutional financing for dairy development could be organised to suit the interests of all parties concerned. The finding of this study also endorse the view that dairying could be used as an effective means for increasing the income position of rural people if adequate finances linked with extension and marketing facilities are provided.

Galgalikar et al. (1975)[2] studied the programme of giving advances by the State Government in Akola for purpose of buffaloes alongwith other requirements.

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1. George, P.S., and Shrivastava, U.K. (1975) Institutional Finance for Dairy Development. Ind. J. Agri. Econ. 30(3): 90-96.
2. Galgalikar, V.D.; Bhole, D.D., and Gadre, N.A. (1975) Institutional Finance for Dairy Development in Akola District. Ind. J. Agri. Econ 30(3): 157.

They concluded that it is necessary that linking of credit with marketing will go a long way in encouraging the commercial banks in particular to come out in big way in making financial assistance available for the purpose.

Kahlon et al. (1975)[1] The major objective of their study was to examine the extend to which the dairy enterprise can be profitably incorporated in the production patterns of the various farm size groups at different levels of technology. The study was conducted in Ludhiana district of the Punjab, where the Punjab Dairy Development Corporation was actively engaged. They concluded that in the study area, and the price of milk was assured to the cultivators, the farmers could expand milk production on commercial lines to be able to diversify their production patterns and also raise their income.

Kumar et al. (1975)[2] concluded that milk production function revealed positive and significant response of feed to milk production. This indicated that feed was the major and the most significant factor influencing milk yield. The regression coefficients of depreciation on cows and miscellaneous items of expenditure were also found positive and significant.

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1. Kahlon, A.S.; Bhawan, K.C., and Gill, G.S. (1975) Relative Profitability of Dairy Enterprise vis-a-vis Crop Cultivation in the Punjab. Ind. J. Agri. Econ. 30(3): 120.

2. Kumar, P.; Patel, B.K., and Pant, K.C. (1975) Lactation wise Production Function and Concentration in Milk Production for Haryana cows. Ind. J. Agri. Econ. 30(3): 128-133.

Parthasarathy (1975)[1] studied the economics of milk production and trade, and covered one hundred dairy farmers supplying milk to integrated milk project, Vijayawada and Krishna districts of Andhra Pradesh.

Their input output ratios involving 434 animals, grouped in eight heard sizes were worked out. The cost components were analysed. The trade in milk was described. The procurement and sale prices were compared towards finding margins. The analysis revealed that the average input output ratio was 1.31 per animal and the average yield 2,024 litres per lactation and the total cost of maintenance was Rs 3112.00 and the total cost 85 per cent of it was on feeds. The cost of production of milk was Rs 1.48 and the net returns Rs 1.04. The most economic size was 5 animals, with site specific. Most of the milk trade was with private agencies and only a forthwith integrated milk project.

Phukan Umanand and Gohain Debasish (1975)[2] The purpose of this study was to examine the nature of dairy farming in the Brahmaputra village of Assam and to examine the part payed by two categories of dairy farmers, namely the agriculturalcum-dairying households and the primarily dairying households.

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1. Parthasarathy, I.V. (1975) Economics of Milk Production and Trade Around Vijayawada and Krishna Districts, Andhra Pradesh. Ind. J. Agri. Econ. 30(3): 149.
2. Phukan Umanand and Gohain Debasish (1975) Dairy Farming in Brahmaputra valley of Assam. Ind. J. Agri. Econ. 30(2):160.

The optimum size of household dairy farms appears to be around 10 to 15 animals per farm. This size gives a net returns of about Rs 5000 annually. Such commercialised dairy farms would be able to contribute towards greater milk supply of the urban area.

Pal et al (1975)[1] an attempt was made to study the economics of milk production under specialised dairy farming with eight Murrah buffaloes at Haryana Agricultural University, Hissar during 1972-73 to 1974-75.

The buffaloes were in second and third lactations. The result of the study pointed out that more than eight buffaloes (about 10) and their followers can be maintained on few hectares of land having cropping intensity of about 200 per cent and with assured irrigation.

They found that the cost of milk production can be reduced to as low as Rs 1.04 per litre if the milk yield per animal is better.

The net returns from specialised dairy farming are in certain years better than that from mixed and arable farming. They also concluded that dairy farming will be more advantageous in particulars near the cities where ready market for milk is available.

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1. Pal, B.N.; Baroda, A.S.; Sastry, N.S.R., and Yadav, R.S. (1975) Economics of Milk Production under Specialised Dairy Farming with Buffaloes. Ind. J. Agri. Econ. 30(3): 154.

Parkale et al (1975)[1] the objective of their study was to examine costs and return structure and there by the profitability of the newly established dairy project at the Vidyapeeth.

It was concluded that annual gross income per cow on the dairy farms amounted to Rs 2238.04 of which 74.65 per cent was derived from milk, 12.93 per cent from manure and 12.42 per cent from calf rearing and sale of surplus animals. The study revealed that the per litre net cost and net income of milk production on the dairy farm during the period of investigation was Rs 1.53 and Rs 0.30 respectively.

Radhakrishnan and Sivanandham (1975)[2] The objective of their study was to explore the possibilities of maintaining the milch animals within the availability of fodder, labour and other resources in a sample of 90 farms situated in Sarkarsamakulam block in Tamilnadu.

They concluded that it is possible for the farmers to adjust their cropping patttern to suit the mixed farming situation and earn additional income. It was also felt that if all the farmers will take up dairying as a subsidiary occupation on their farms, in such a contingency there is scope for solving the country's milk production.

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1. Parkale, S.G., Nagar, D.V., and Piso, D.R. (1975) An Investigation into the Economics of Milk Production on a Newly Established Dairy Farm. Ind. J. Agri. Econ. 30(3): 153.
2. Radhakrishnan, S.A., and Sivanandham (1975) Dairying as a Subsidiary Enterprise in Farms - A Micro Level Analysis. Ind. J. Agri. Econ. 30(3): 159.

Reddy *et al* (1975)[1] the study on the economics of milk production was taken up for gerthar cross bred cows, triple cross cows and buffaloes maintained at the southern regional station of Dairy Research Institute, Bangalore.

They concluded that gross cost of production of one kilogram of milk for the individual breeds was found to be 99.3 paise, 80.1 paise and 177.6 paise respectively and net cost 94.2 paise, 76.1 paise and 169.5 paise respective for gerthar cow, triple cross cows and buffaloes average daily milk yield being 6.7 kg, 8.7 kg, and 3.7 kg respectively. Comparatively the triple cross cow should have better performance as compared to other breeds.

Shrivastava and Singh (1975)[2] studied the economics of milk production in rural areas of Kanpur district. The findings has based on the intensive enquiry of 30 farmers, having milch cattle, selected purposively from 5 villages of Kalyanpur block of Kanpur district. The study revealed that the average input-output ratio come to 1:1.20 and 1:1.28 for cows and buffaloes respectively. The low productivity and earning from the milch cattle in the study area, was due to poor breed of animal, inadequate feeding and poor management.

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1. Reddy, Y.V.R.; Shankar,J., and Sampath,S.R. (1975) Studies on the Economics of Milk Production. Ind. J. Agri. Econ. 30(3).
2. Shrivastava,K.L., and Singh, G.N. (1975) Economics of Milk Production in Rural Areas of Kanpur District. Ind. J. Agri. Econ. 30(3): 130-151.

Saini (1975)[1] the main objective of his study was to examine the impact of dairy enterprise on farm incomes. This study was located in Malerkotla development block of Sangrur district.

He concluded that the percentage increase in the returns to fixed farm resources with incorporation of dairy enterprise, and dairy being a profitable enterprise must be encouraged so as to diversify the farm business and to have more and stable income.

Singh et al (1975)[2] studied economics of milk production in rural areas of Aligarh district in Uttar Pradesh. The results are based on an intensive enquiry of 140 cultivators selected randomly grouped under six size classes viz., 0 - 1.5, 1.5 - 3.0, 4.5 - 6.0 hectares and above. Keeping in view the important role played by the milch cattle in the farm economy of state as well as the country.

The study was conducted by survey method covering the five year period 1966-67 to 1970-71. The study revealed that a net income of Rs 105.12 per hectare was obtained from milk production on the sample farm which varied from Rs 84.00 on the larger group to 138.63 on the smallest one.

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1. Saini,A.S. (1975) Impact of Dairy Enterprise on Farm Incomes in Punjab. Ind. J. Agri. Econ. 30(3): 159.

2. Singh,B.I., Singh,G.N., and Singh,B.K. (1975) Economics of Milk Production on Farms in Aligarh District, U.P. Ind. J. Agri. Econ. 30(3): 148.

The overall input-output ratio come to 1:1.31 which varied from 1:1.35 on the size group of 4.5 - 6.0 hectares. This increasing trend in the input-output ratio on larger holding was due to the fact that the farmers of this group, maintained milch cattle of relatively good breed and fed them properly.

Singh and Krishna (1975)[1] found that the maintenance cost of milch animal formed 87 per cent to 90 per cent of the total expenditure. The net return per litre of milk produced ranged between Rs 90 to Rs 108.

Singh et al (1975)[2] arrived at the general conclusions that on the basis of more comprehensive production function analysis, confirmed the general observation that farmers cared more for the Murrah than for non descript buffaloes. It was always profitable to replace the off season fodders by the seasonal ones and the leguminous fodders were the cheapest source of nutrients. In the rainy and summer season, significant increase in the milk yield could be obtained by a reallocation of feeds inputs.

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1. Singh, R.B., and Krishna, P.B. (1975) A Comparative Study of Three Private Dairy Farms in U.P. Ind. J. Agri. Econ. 30(3) : 154.

2. Singh, P., and Jha, D. (1975) Economics Optima in Milk Production. Ind. J. Agri. Econ. 30(3) : 96-105.

Madalia and Charan (1976)[1] concluded that for milch animals the cost of maintenance was lowest for land less group and highest for medium sized farm. The cost of maintenance of milch animals was invariably higher than that of dry stock on the various sized farms. The cost of maintenance of the various types of buffaloes was also more than that of the various types of cows.

Singh and Singh (1977)[2] This study was directed to examine the impact of an optimal dairy enterprise on productivity and employment on different size of farms in Sangur district of Punjab.

They concluded in their study that introduction of dairy enterprise increased labour employment substantially as compared to the existing as well as the optimum plan developed only with crops. The increase in the labour employment also showed a positive relationship with the number of milch animals introduced in the optimum plan.

There is a great scope to increase the productivity and employment on the farms through dairy enterprise. Since dairy is a capital intensive enterprise and farmers incomes are meagre, so the financial institutions should, therefore, provide adequate and easy credit to the farmers for introduction of dairy enterprise on the farms.

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1. Madalia,V.K., and Charan,A.S. (1976) Economics of Maintenance of Cows and Buffaloes and Their Milk Production. Financing Agriculture. 8(1): 26-32.

2. Singh,A., and Singh, R.V. (1977) Impact of Dairy Enterprise on Productivity and Employment. Agri. Situa. India. 32(3): 139-142.

Singh et al (1977)[1] concluded that the integrated crop and dairy plants can play an important role in increasing income and employment on the small farms. Dairying however, is a capital intensive enterprise and the requirement of capital increases manifold with the introduction of improved technology. With the existing meagre resources of small farmers it is not possible to increase the number of milk animals and to adopt the improved crop and dairy technology. Therefore, to help the farmers in harvesting the benefit of the integrated of crop and dairy production together with the adoption of improved technology, the financial institutions should provide medium term credit at easy terms to the small farmers.

Patel et al (1978)[2] arrived the conclusion that the cattle in the plains are invariably stall fed as green fodder is scarce.

The study of various production traits demonstrate that cross breeding has brought fourth the following significant improvements.

i) Reduced age of first calving

ii) Shortened dry periods and calving intervals

iii) Higher milk yields

iv) Reduced production costs per litre of milk.

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1. Singh,R.B., Patel,R.K., and Ahlawat (1977) Impact of Integrated Crop and Milk Production on Small Farms in Punjab. Ind. J. Agri. Econ. 32(3): 136-143.

2. Patel,R.K., Kumar,P., Vegole,K., Nair,S., and Nair,G.S.(1978) Economics of Cross Bred Cattle. Ind. Dairyman 30(1):31-32.

Cost of production emphasise the economic importance of feeding patterns with the greater reliance on green roughage. Net income per cow is highest with the animal fed pre dominantly with consumption of milk in the extension areas in excess of amount recommended by the national advisory committee. The evaluation reveals that the benefit cost ratio is greater than 1.0 . Net present value is positive and the internal rate of return is higher than the prevailing bank interest rate.

Thus, the review reveals that the research work in this field lacks in Madhya Pradesh and the research study will be of much help and importance to farmers, economists, politicians and sociologists.

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C H A P T E R - III

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CHAPTER - III

METHODOLOGY

Source and Type of Data

The study was confined to the year 1977 for the purpose of economic investigation.

Selection of Dairies

The main purpose of the present study being to throw light on the commercial aspects of the dairy enterprise, it was decided to select only those dairy units which were financed by one of the commercial banks of the region. As such all dairy units financed by the Union Bank of India, Jabalpur, were considered for complete enumeration. The bank had financed in all 12 dairy units since 1971 until 1976. Two of them were excluded from this study because they had liquidated themselves prior to the start of this study. The number of buffaloes varied between a minimum of 10 to a maximum 45. It was decided therefore, to categorise them into three groups, i.e. small, medium and large corresponding to upto 15, 16 to 30, and 31 and above respectively to study the relationship between the size of the herd and their economic returns. The number of units under different groups were as under:

Groups			Number of units
I	Small	(1 - 15)	4
II	Medium	(16- 30)	3
III	Large	(31- 45)	3

Hypothesis

1. It is economically viable for the bank to finance loan in dairy enterprise.

2. The efficiency of a dairy enterprise increases with increase in the size of its herd.

Collection of Data

Survey schedules were prepared and tested for effectiveness before finalising for investigation. Secondary data pertaining to advancement of loans were obtained from various records of the bank. As regards primary data concerning dairy enterprise, they were collected through personal interviews with the dairy owners. Such interviews were made more than once to collect the needed information.

Analysis of Data

The data were tabulated and processed. Measures like averages and percentages were computed in order to bring out relationships as proposed in the study. Economic returns were calculated to measure the efficiency in production per unit

of input and output.

Limitation

It was originally proposed to obtain the break-even point to determine the schedule of repayment of loans. However, due to failure to obtain time series data, it could not be made accessible by the owners of the dairies due to unavoidable reasons like lack of written information and absence of systematic records of production of milk and various expenses, it could not be completed.

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C H A P T E R - IV

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CHAPTER - IV

RESULTS AND DISCUSSION

In this section an attempt have been made to analyse the data in the light of objectives stated earlier. The data were analysed in relation to the time element to study the disbursement of loan by bank and economics of milk production under different size of dairy units.

Analysis of Farm Financing by Bank

The Union Bank of India, Jabalpur city branch has been actively participating in financing agricultural loans to farmers of the area. The financing is advanced towards production of crops, purchase of tractors and pumpset, for digging of wells and their repair and lastly for the purchase of milch cattles. Recently, the loan is also being sanctioned for the purpose of gobar gas plants and poultry farming. Table 4.1 gives the year wise and overall picture of the loan financed by the bank during the period 1971 to 1976.

It may be observed that the number of loans advanced towards crops was maximum among all these years except 1971. Its proportion to total number of accounts increased from

Table 4.1 : Purposewise Disbursement of Loan During 1971-76 by Unio

Srl No.	Specified purpose	1971		1972		1973	
		No.of accounts	Amount (Rs)	No.of accounts	Amount (Rs)	No.of accounts	Amou (Rs)
1.	Crop loan	6	19080	15	63804	12	654
2.	Tractor	-	-	-	-	1	293
3.	Pumpset and wells	17	60400	6	24070	10	408
4.	Gobar gas plant	-	-	-	-	-	
5.	Bullocks	-	-	1	1500	-	
6.	Poultry	-	-	-	-	-	
7.	Dairy	1	21050	1	38000	3	748
	Total	24	100530	23	129374	26	2104

Table 4.1 : Purposewise Disbursement of Loan During 1971-76 by Union Bank of India, Jabalpur city branch:

Srl No.	Specified purpose	YEARS														
		1971		1972		1973		1974		1975		1976		Total		
		No.of accounts	Amount (Rs)	No.of accounts	Amount (Rs)	No.of accounts	Amount (Rs)	No.of accounts	Amount (Rs)	No.of accounts	Amount (Rs)	No.of accounts	Amount (Rs)	No.of accounts	Amount (Rs)	Percentage
1.	Crop loan	6	19080	15	65804	12	65433	27	209787	67	526960	60	440080	187	1326544	64.43
2.	Tractor	-	-	-	-	1	29350	1	47271	-	-	2	91530	4	168151	8.17
3.	Pumpset and wells	17	60400	6	24070	10	40821	6	23947	3	25055	4	21532	46	198825	9.52
4.	Gobar gas plant	-	-	-	-	-	-	-	-	-	-	1	3545	1	3545	0.17
5.	Bullocks	-	-	1	1500	-	-	-	-	-	-	1	1500	2	3000	0.15
6.	Poultry	-	-	-	-	-	-	-	-	-	-	3	105300	3	105300	5.16
7.	Dairy	1	21050	1	38000	3	74800	3	52500	2	48450	2	20250	12	255050	12.40
	Total	24	100530	23	129374	26	210404	37	333505	72	599865	73	683737	255	2057415	100.00

25 in 1971 to 87.75 in 1975 and was 64.36 in 1976. Pumpset cases were 17 (60.8 per cent) in 1971, although they were only 3 and 4 in the years 1975 and 1976 respectively leads to the conclusion that the bank paid scantly attention for financing irrigational assets of the farmers.

The important point to note is that the number of cases financed for dairy enterprise was next to crop loans and pumpset, but the amount of money financed was next only to crop loan. The total amount of money sanctioned during the last five years was Rs 1326344.00 for crop loan and it was Rs 255050.00 in the case of dairy enterprise. The percentage of total amount in the case of crop loan comes to 64.43 per cent and in the case of dairy enterprise 12.40 per cent.

The comparision of purposewise analysis of data revealed that commercial bank still financed mostly the crop loans because these loans are self-liquidating and the quick recovery can be effected by the bank after the crop season is over. The bank paid attention for financing of poultry, gobar gas plants and bullocks only since 1976 and therefore, it can be concluded that in the field of farm financing the diversification was only started recently. In the earlier years, the bank followed the caution approach in financing farm activities and the concentration was on crop loans.

The recognition of efficiency in financing loan lies in recovery of loans sanctioned. The same is being shown in table 4.2.

Table 4.2 : Position of Overdue of Loan Accounts as on December 1976

Specified purpose	No.of accounts	Amount in lakhs (Rs)	Percentage
Crop loan	48	4.12	79.30
Tractor	1	0.17	3.27
Pumpset and wells	22	0.48	9.23
Dairy	6	0.42	8.09
Poultry	-	-	-
Gobar gas plant	-	-	-
Total	77	5.19	100.00

It is evident from the table that the proportion of overdues was maximum in the case of crop loans. It comes to nearly 80 per cent of the total overdues. It was mainly on account of the crop failures in the area. However, it comes to only about 8 per cent in the case of dairy enterprise. It is evident, therefore, that financing loan is more attractive in the case of dairying as compared to crop and farm machinery loans. Nodoubt the outstanding overdue was lowest in the cases of loans sanctioned for tractors, however, the parties involved are in general big farmers.

Size of Dairy Units

It may be recalled here that the total number of dairy units were categorised on the basis of their size. The table 4.3 presents the distribution of units under different size groups and the average number of buffaloes maintained by them.

Table 4.3 : Number of Buffaloes under Different Size Groups

Sri No.	Size group	No.of units	Average number of buffaloe
1.	Small (1 - 15)*	4	11
2.	Medium (16 - 30)*	3	24
3.	Large (31 - 45)*	3	34

* Number of buffaloes.

It may be observed from the table 4.3 that out of total number, 10 dairy units studied, that were financed by the bank, 4 had less than 15 buffaloes, 3 had between 16 to 30 buffaloes and the remaining number of units had between 31 to 45 buffaloes. However, the average number of buffaloes maintained by three groups were 11, 24 and 34 respectively (small, medium and large size group).

The interesting point is to diagnose as to which of these groups were economically efficient in the production of milk for sale.

Average Milk Production

The table 4.4 presents the level of milk yield under different size groups.

Table 4.4 : Average Production of Milk under Different Size Group (Per Year Per Animal)

Size group	No. of units	Average production in litres
Small (1 - 15)	4	2633.21
Medium (16 - 30)	3	2551.13
Large (31 - 45)	3	2448.60

It is a matter of surprise to note, that the average yield per buffaloe comes larger in the case of small size group which was 2633 litres as compared to 2551 litres in the case of medium size group and 2448 litres in the case of large size group. One can argues that this variation can be a sign of inefficiency in management with an increase in the size of enterprise in terms of number of buffaloes, secondly the low level of yield could also be on account of variation in the breed quality in terms of productivity. Thirdly, it could be on account of variation in the pattern of production of milk. Some dairymen maintain buffaloes only during the period of lactation, while others maintain them during the dry period also. The difference between the two lies in the fact that the first category of dairies go on purchasing freshly calved buffaloes and cull them as soon as the level of milk production

falls and is uneconomic. This is not the case among the latter category of dairies. The first category of dairies in general are small sized, ones as compared to latter category of dairies. The phenomenon can be understood properly on reviewing the economics of milk production by these dairies.

Cost of Production of Milk and its Component

The feed and fodder expenses accounted for nearly 80 per cent of the total expenses, followed by 7.65 per cent under labour expenses and 5.58 per cent as miscellaneous expenses. Interest on working capital and depreciation together accounted for 7.44 per cent of the total cost (Table 4.3). However, the pattern of proportionate expenditure under various heads of cost is not the same. The percentage of total cost on feed and fodder increase with increase in the size of dairy unit. It amounts to saying that large size group buffaloes are better fed as compared to small size groups. The feed expenses per buffalo per year in the case of small size group comes to Rs 3981.00 while it comes to Rs 4142.00 in the case of large size group. It is surprising, therefore, that with a lower feeding cost the small size group of dairies are producing larger production per year per buffalo. It comes to 2633 litres in the case of small size group as compared to only 2448 litres in the case of large size group as can be seen from table 4.4.

Table 4.5 : Annual Average per Animal Cost of Production and its Components under Different Size of Dairy Units:

Expenditure	Small group (1-15)	% of total	Medium group (16-30)	% of total	Large group (31-45)	% of total	Average	Percentage of total
Feed expenditure	3981.76	72.69	4176.08	80.24	4142.51	85.87	4100.11	79.33
Labour expenses	517.67	9.48	468.95	9.03	200.68	4.16	395.00	7.65
Depreciation on fixed cost	135.00	2.46	138.00	2.65	150.00	3.11	141.00	2.73
Interest on working capital	210.10	3.83	250.50	4.81	270.38	5.62	243.66	4.71
Miscellaneous expenses	632.47	11.54	170.47	3.27	60.29	1.24	288.59	5.58
Total	5477.00	100.00	5204.00	100.00	4823.86	100.00	5168.36	100.00

Secondly, a higher level of expenditure on depreciation and interest further convince the fact that large size dairies are in no way inferior in technique of production.

The difference in expenditure as miscellaneous under the three groups suggest that the large size group are functioning more efficiently as compared to small size group. The proportion in the case of small group comes to as large as 11.34 per cent as compared to early 1.24 per cent in the case of small size group.

Seasonal Difference in Feed Cost and Milk Yield

One of the problems faced by milk producers is the effect of variation in seasons. This effect is also seen in terms of availability of feed and fodder in different seasons. They affect the level of cost of milk production per animal. The tables 4.6 and 4.7 shows the variability in the cost of feed and milk yield per annum per animal respectively in different seasons of the years.

It can be seen that there is not much variation in the proportion of total feed cost in the three seasons and different size groups. The percentage of cost was a little more during summer season in all the three groups. This proportion was however, larger in the case of large size group.

Table 4.6 : Seasonal Difference in Feed Cost per Animal Per Season in Different Size groups in Rupees

Size of dairy unit	Rainy	Winter	Summer	Yearly
Small (1 - 15)	1251.00 (31.44)	1243.60 (31.23)	1486.36 (37.33)	3981.76 (100.00)
Medium (16 - 30)	1322.76 (31.68)	1405.00 (33.64)	1448.32 (34.68)	4176.08 (100.00)
Large (31 - 45)	1190.79 (28.75)	1341.40 (32.38)	1610.32 (38.87)	4142.51 (100.00)

Note: Figures given in brackets are in percentages.

Table 4.7 : Variation in Milk Yields per Season and per Animal in Different Size of Dairy Units in Litre.

Size of dairy unit	Rainy	Winter	Summer	Yearly
Small (1 - 15)	884.45 (33.59)	937.80 (35.61)	810.96 (30.80)	2633.21 (100.00)
Medium (16 - 30)	840.41 (32.94)	925.15 (36.27)	785.57 (30.79)	2551.13 (100.00)
Large (31 - 45)	823.70 (33.64)	847.68 (34.62)	777.22 (31.74)	2448.60 (100.00)

Note: Figures given in brackets are in percentages.

As regards the proportion of milk produced, it comes relatively more during the winter season among all the three groups. There is not any significant difference in the level of milk produced by different size groups in different seasons.

As such there is no relationship between the size of herd and the seasonality in feeding cost and also the level of milk produced per buffaloe.

Cost of Production of Milk under Different Size of Dairy Units

The efficiency in production can further be explained on the basis of cost of milk production. The table 4.8 shows the average cost of milk production under different size groups.

Table 4.8 : Variation in Cost of Production of Milk per Litre under Different Size of Dairy Units.

Size of dairy unit	Total expenditure during the year (Rs)	Total production of milk during the year (Litre)	Cost of production of milk per litre in rupees.
Small group (1 - 15)	5477.09	2633.21	2.08
Medium group (16 - 30)	5204.41	2551.13	2.04
Large group (31 - 45)	4823.86	2448.60	1.97
Average	5168.36	2544.64	2.03

The table 4.8 reveals that the annual cost of milk per buffaloe per litre was relatively higher in the case of small size group as compared to medium and large size group. This can be attributed not to the efficiency in milk production but efficiency in the use of resources. This is because the

small size group has a larger average of milk production per buffalo per year.

This is evident from the fact that the cost of milk production per litre in the case of large size group is only Rs 1.97 as compared to Rs 2.04 in the case of medium size milk producers and as high as Rs 2.08 in the case of small size milk producers.

Average Total Cost, Gross Returns and Net Returns per Year in Different Size of Dairy Unit

The efficiency in use of resources can alternatively be established in the context of returns obtainable from milk produced. Table 4.9 shows the average annual cost per animal per year for the different size groups.

Table 4.9 : Average Total Cost, Gross Returns and Net Returns per Animal per Year in Different Size of Dairy Unit:

Size of dairy unit		Average total cost in Rs.	Average gross return in Rs.	Average net returns in Rs
Small	(1 - 15)	5477.00	6600.00	1123.00
Medium	(16 - 30)	5204.00	6534.00	1330.00
Large	(31 - 45)	4823.00	6543.20	1720.20
Average		5168.36	6560.00	1391.64

It is apparent from the above table that the average total cost per animal per year was lowest among the three groups

in the case of large size group. As a result the average returns per animal per year were maximum in their case despite a low level of milk production. It can be inferred that the efficient use of resources is one of the main criterion, in economising the production of milk.

Cost and Returns

Lastly, one may like to review the aggregate picture of cost and returns obtainable from these dairy enterprises. The table 4.10 presents the aggregate norms obtained from the study.

Table 4.10 : Consolidate View of Dairy Enterprise

Srl No.	Particulars	
1.	Average gross return per year per animal	Rs 6560.00
2.	Average total cost per year per animal	Rs 5168.36
3.	Net return	Rs 1391.64
4.	Average daily milk yield per animal(litre)	6.98
5.	Average cost per day per animal	Rs 14.16
6.	Average gross income per animal per day	Rs 17.97
7.	Average net return per animal per day	Rs 3.81
8.	Average costof production per litre of milk	Rs 2.03
9.	Average per rupees gross return	Rs 1.26
10.	Average rupees net return	Rs 0.26

(All above average value are derived from the average of all the ten dairy units.)

It is interesting to note that dairying is a profitable enterprise of the region. A dairyman attains a sum of Rs 1391.00 per buffalo per year as net profit. It is a sign of healthy investment in such a concern. The table also reveals that a buffalo maintain by these dairymen is of average murrah buffalo which yields about 7 litres a day. The cost of feeding and management of a buffalo per day comes to Rs 14.16 and a gross income of Rs 17.97 . This gives a net return of Rs 3.81 per day per animal. The net return per litre of milk comes to Rs 2.30 minus Rs 2.03 or Rs 0.47 . The net return per rupee of investment comes to Rs 0.26 as a return of 26 per cent. This return seems to be relatively very high as compared to crop investment in general in the region of study.

Financing Point of View

Let us consider the economics of these dairy units in the light of financing of buffaloes by commercial banks.

Loan required per buffalo comes as follows:

1. Cost of buffalo	Rs 2534.00
2. Cost of fixed assets	Rs 1398.00
Total	Rs 3930.00
Less down payment by member 25 per cent.	Rs 985.00
	Rs 2945.00

Total cost per animal per year was Rs 5168.00 and gross income per animal per year was Rs 6560.00 . Thus net surplus was Rs 1391.00 .

It is observed and confirmed by investigation that a dairy man maintains a buffalo for nearly four lactations of 300 days and dry period of 120 days. This duration comes to nearly four years. The table 4.11 gives the average returns obtainable after repayment of loan.

It is apparent from the table 4.11 that a loan of Rs 34450.00 can be repaid to bank in a duration of four years with a total net surplus of Rs 1750.00 per buffalo, and as such it is not risky on the part of the bank to advance this amount.

Cost Benefit Analysis

The analysis was extended further to determine the cost benefit ratio and the viability of investment in dairy enterprise. The table 4.12 presents the cost-benefit determinants with respect to different sizes of dairy units.

Table 4.12 : Cost Benefit Analysis in Different Size of Dairy Unit:

Size of dairy unit	Total cost during the year per animal in Rs.	Total return during the year per animal	Benefit/Cost
Small (1-15)	5477.00	6600.00	1.20
Medium (16-30)	5204.00	6534.00	1.25
Large (31-45)	4829.36	6543.20	1.35
Average	-	-	1.26

Cost Benefit ratio for the year = $\frac{\text{Gross return during the year}}{\text{Total cost}}$

Table 4.11 : Average Returns Obtainable after Repayment of Loan

Year	Loan received during the year (Rs)	Loan outstanding at the end of the year (Rs)	Gross surplus (Rs)	Payment of interest @ 10% (Rs)	Repayment of principal (Rs)	Total outgoing (Rs)	Net surplus (Rs)
1st	2945.00	2200.00	1391.00	360.00	745.00	1105.00	286.00
2nd	2200.00	1460.00	1391.00	264.00	740.00	1104.00	387.00
3rd	1460.00	740.00	1391.00	160.00	740.00	900.00	491.00
4th	720.00	-	1391.00	85.00	720.00	805.00	586.00
Total	-	-	-	-	-	-	1750.00

It is observed from the above analysis of cost benefit that the ratio is higher in case of larger size group followed by medium size group. The average comes to near about 1.26 which is near about 26 per cent net return per rupee.

It is again clear that dairy is an economic and profitable enterprise because the relative returns was as high as 35 per cent on large unit which ranged from 20 per cent on small size unit to 25 per cent on medium size unit.

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C H A P T E R - V

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CHAPTER - V

SUMMARY AND CONCLUSIONS

It is concluded from the study of disbursement of loan made by Union Bank of India, Jabalpur city branch that it had been participating extensively in financing agriculture and allied activities of the areas. Mainly the loans were advanced towards production of crops i.e. crop loan, for the purpose of tractors and pumpsets, digging and repairing of wells and lastly for the purchase of milch cattles. Recently the loans were also sanctioned for the purpose of gobar gas plants and poultry farming also. It is appreciable that the number of cases financed for dairy enterprise were next to crop loans and pumpsets but the amount financed was next only to crop loans. The analysis of overdues leads to the conclusion that financing was more attractive to the bankers in case of dairying as compared to other types of loans.

The average milk yield per buffalo was more in case of small size dairy unit as compared to medium and large size units. This was a sign of efficiency in managing the small

size unit. The low level of milk yield in case of large dairy enterprise was due to the variation in the breed-quality in terms of low productivity. It could also be on account of variation in the pattern of production of milk. Some dairymen maintained buffaloes only during the period lactation, while other maintained these during the dry period also. The difference between the two lies in the fact that the first category of dairies went on purchasing calved buffaloes and cull them as the level of milk production falls and was uneconomic. The phenomenon can be understood properly on reviewing the economics of milk production by these dairies.

When we consider total expenditure involved in the production of milk under different size group per animal. It can be observed that feed and fodder expenses accounted nearly 80 per cent of the total expenses, followed by 7.65 per cent under labour expenses and 5.58 per cent as miscellaneous expenses. Interest on working capital and depreciation together accounted 7.44 per cent of the total cost. However, it had already been observed that the feed cost accounted largest share of total cost. Therefore, we could hope to lower the cost of production of milk by suggesting measures aimed at economising on feed cost. When we consider different size groups it may be concludod that higher level of expenditure on depreciation and interest confirmed the fact that large size dairies were in no way inferior in technique of production.

The difference in expenditure as miscellaneous under three groups suggested that the large size group were functioning more efficiently as compared to small size group. The effect was also seen in terms of availability of feed and fodder in different seasons.

It can be seen that there is not much variations in the proportion of total feed cost in the three seasons and different size groups. The percentage of cost was a little more during summer season in all the three groups. This is so because in summer season, farmer fed larger quantity of concentrated and roughage. The proportion was however, larger in the case of larger size group.

As regards the proportion of milk production, it was relatively more during the winter season among all the three groups. There was also not any significant difference in the level of milk produced by different size groups in different seasons.

As such there was no relationship between the size of herd and the seasonality in feeding costand also the level of milk produced per buffalo.

However, it can be concluded that in summer season, the cost of feeding was higher and yield was highest in winter season which was followed by rainy and summer season respectively.

The efficiency in production can be explained on the basis of cost of milk production. It was observed that the cost of milk per buffalo per litre was relatively higher in the case of small size group as compared to medium and large size groups. This can be attributed not to the efficiency in milk production but efficiency in use of resources.

It is apparent that the average total cost per animal per year was lowest among three groups in the case of large size group. As a result, the average returns per animal per year was maximum.

Lastly, one may like to present the aggregate picture of costs and returns obtainable from these dairy enterprises. It is interesting to note that dairying is a profitable enterprise in this region. A dairy man earned a sum of Rs 1391.00 per buffalo per year as net profit, it was a sign of productive investment in such a concern. It was also observed that buffaloes maintained by the dairy man were of average Murrah buffaloes which yielded about 7 litres a day. The cost of feeding per buffalo, per day came to Rs 14.16 and as a gross income Rs 17.97 . This gave a net return of Rs 3.81 per day per animal. The net returns per litre of milk thus came to Rs 2.30 minus Rs 2.03 or Rs 0.47 .

It is therefore, concluded from the analysis of cost benefit, that the ratio is relatively higher in the case of

large size group i.e. 35 per cent as compared to 20 per cent in small size and 25 per cent in medium size group. The overall average come to 26 per cent which is relatively higher as compared to crop investment in the region of study.

Suggestions

By considering all the aspects which were analysed in this study, it may be suggested that the buffaloes which were kept in herd should be high yielding quality of good breeds followed by efficient management and care.

As is observed the cost of production of milk also comes lower in the large size group it is suggested that formation of large size dairies be encouraged.

It is also suggested that commercial banks should advance loans for establishment of dairies in this area on a large scale because of their favourable economics from the point of view of institutional lenders for achieving commendable success in white revolution.

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R E F E R E N C E S

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A P P E N D I C E S

APPENDIX - I

Yearwise Relative Change in Purposewise Financing in Respect of Total Amounts Financed 1971-76 (Percentage)

Year	Purpose						
	Crop loan	Tractor	Pumpset and well	Gobar gas plant	Bullock	Poultry	Dairy
1971	1.438	-	30.843	-	-	-	8.240
1972	4.960	-	12.290	-	50.000	-	14.900
1973	4.932	17.454	20.845	-	-	-	29.780
1974	15.814	28.112	12.238	-	-	-	20.500
1975	39.679	-	12.792	-	-	-	19.080
1976	39.177	54.434	10.992	100.00	50.000	100.00	7.500
Total	100.000	100.000	100.000	100.00	100.000	100.00	100.000

APPENDIX - II

GUIDELINES ON FINANCING OF DAIRY ENTERPRISE BY COMMERCIAL BANK

Introduction

At present there is a shortage of quality milk in cities urban areas as well as in towns. To meet this shortage, the development of dairy on scientific lines is essential.

Objectives

The objective is to provide credit facilities for establishing new units or expansion of existing units.

i) to increase the production of milk or milk products, or both;

ii) to provide for straining, filteration, chilling, cooling etc., in case of larger schemes;

iii) to supply the milk to customers in cans and bottles.

Purpose

A. Term loans can be considered for

i) purchase of milch animals such as cows, buffaloes and breeding bull.

ii) purchase of dairy equipments such as milk cans, buckets, cream seperator, fat testing equipment, butter churner, milk weighing balances, feed mixing equipment etc.

iii) construction of dairy buildings such as cattle shed, milk shed, concentrate room, dutch barn, silo, pits for silage including light and water arrangements for the dairy building, and

iv) purchase of vehicles for transport of milk for marketing.

v) purchase of draft animal, if required for dairy purposes.

vi) pasturisation or other processing plants.

vii) cold storage for preservation of milk.

viii) provision of tube wells, pumpsets, or other irrigation equipment for growing fodder.

ix) refrigerated vans for transporting milk or its products.

x) retail stalls for sale of milk.

B. Working Capital

Loan can be considered for the expenditure for running a dairy for items such as:

i) Purchase of cattle feed - concentrates.

ii) Purchase of green fodder.

iii) Labour charges for hired labour and permanent skilled labour, viz., milkman, herdman.

iv) Purchase of veterinary medicines.

v) Payment of salvage charges in dry period.

vi) Payment of transport charges for salvage during dry period.

The bank does not entertain proposals for providing finance for the following purposes:

1. Purchase of land for construction of milk sheds and for setting up various units envisaged in the projects.

2. Administrative and residential buildings.

Eligibility

Any individual, group of individuals, partners of a firm, company and/or cooperative society are eligible for financial assistance provided they have sufficient and experience in dairy farming know-how and initial resources like space for cattle sheds, water resources, veterinary facilities etc. Such borrowers must be engaged in actual dairy operation.

Loan application

The loan application should be obtained on our prescribed form for dairy development.

Technical feasibility

(a) Location and size of the farm: We should see that location of the dairy farm is suitable. There are five main criteria which determine the location for the proposed successful dairy scheme. They are:

i) The proximity of pasture land or virgin forest land capable of being converted as pasture and/or assured commercial supply of adequate green fodder through out the year. Normally for raising green fodder throughout the year, 0.25 acre is a must per milch animal.

ii) The proximity of urba, semi-urban, or compact rural areas where milk products could find a ready market. In other words, there should be compact consumer population centres having adequate demand for milk throughout the year.

iii) Availability of right type of milch breeds suitable to the climatic conditions of the locality viz., Delhi or Murrah buffalo for cities, Surti is also suitable.

iv) Availability of veterinary facilities within a reasonable distance of say, 2-3 miles from the dairy farm.

v) The area required for housing buffalo is 8' x 5' = 40 sq.ft. per animal and 6' x 5' = 30 sq.ft. for cows.

Suitability of location and size should be ascertained by making enquiry from the neighbouring places where cattle raising by individuals or dairy farming has generally been successful. Further, the scheme of dairy development should preferably be implemented where the off take of milk is large and where intensive cattle development is sponsored by the Central or State Government.

(b) Size of stock

The size of the proposed cattle stock should be looked into. The phasing of the acquisition of the stock of milch cattle will depend on (i) purchase of foundation herd of milch cattle (ii) addition to stock of milch cattle by way of natural growth from the subsisting stock and (iii) periodical replacement of dry cattle with fresh stock. If the stock of milch cattle to be purchased is very large, it will have to be spread over two or three seasons depending upon the capacity of the party to test, select, and transport the cattle. The mortality of cattle about one per cent in the case of adult milch cattle and 15 per cent amongst calves and proportion of female calves to total births (about 50 per cent) will have to be taken into consideration while estimating the availability of yielding milch cattle each year. Furtherit is necessary to ensure that the scheme provides for replacement of cattle as soon as the lactation period is over so that supply of milk at the desired level is maintained. This can be ensured by suitably staggering the acquisition of milch animals initially in such a manner that over a period of time there is automatic replacement of every animal going dry. The details of the arrangement proposed in this connection should therefore be spelled out. In order to maintain the required number of animals in the lactation, it is necessary to have suitable arrangements for the maintenance of cattle during the dry period and for breeding either in the farm itself or in a nearby cattle breeding centre. The scheme should indicate the details of arrangement in this regard.

(c) Breed

We should satisfy that the breed of cattle to be purchased is suitable for the area. This can be ascertained by making enquiry with the local officials of the Animal Husbandry Department.

(d) We should ensure that the place from where the milch animals are to be purchased in quite reputed for supplying good milk yielding animals. However, we should satisfy that animals are not purchased from an epidemic area.

(e) We should ensure that the plant and machinery and other equipment proposed to be purchased are normal for the proposed unit. Arrangements for acquiring plant and machinery, their erection, whether the plant will run to full rated capacity should be looked into. In case such machineries are to be imported, source of foreign supply, import license etc. should also be examined.

(f) We should satisfy that milk production assumed is normal and not very ambitious.

(g) We should ensure that the feeding standard assumed is normal.

(h) Technical assistance:- We should see that adequate technical assistance and veterinary facilities are available. It should be ascertained whether there is any veterinary hospital close to the dairy farm for assistance for disease control, artificial insemination etc.

(i) Feed stuffs:- We should see that green fodder and concentrates are available regularly and in adequate quantity.

(j) Marketing arrangements:-

i) We should see that borrower has adequate arrangements for distribution of milk and milk products to the ultimate consumer. For long distance transportation, specific transporting arrangements including provision of refrigerated carrier vans are available.

ii) The quantum of demand for milk having regard to the population catered to and the existing source of supply should be looked into. In the case of bigger schemes comprehensive survey to assess the demand should be undertaken.

(k) Management:- It is necessary to ensure that the party submitting the scheme has sufficient experience in the line as well as technical know-how and the managerial ability for running the various processing plants and marketing of milk and milk products. In case any industrial license is required for setting up any processing plant or manufacturing unit, the position in this regard should be verified.

(l) Personnel:- Details of technical personnel required for the implementation of the scheme properly qualified in dairy technology, quality control, dairy engineering etc. should be ascertained. If the staff is not already employed, their availability according to the requirements of the scheme should be examined. Similarly the requirements of administrative and marketing staff under the scheme should also be checked specifically. If veterinary aid is not available locally, the scheme should provide for this also.

Economic feasibility

(a) A detailed break up of capital cost should be obtained and it should be ensured that the costing of the various items of development for which loan is required has been done realistically.

(b) The availability of milk and its pricing should be estimated as accurately as possible to arrive at the gross income from the dairy products, keeping in view the lactation period of milch cattle. Roughly not more than 50 per cent to 60 per cent of the milch cattle are likely to be in milk at any point of time, the rest being dry. Keeping in view the proportion of milking cattle to the total stock and also the additions to the stock of milch cattle during each phase of the scheme after providing for mortality and replacement of stock, the total quantity of milk available from the farm will have

to be determined according to the productivity of the breed of cattle to be acquired. Thereafter, the phased installation of processing plant envisaged in the scheme will have to be examined keeping in view the utilisation of rated capacity to be installed to a reasonable extent. The estimate of gross income under the scheme will thus include receipts by way of sale of fresh or processed milk in each phase of development till the scheme in in full implementation at which level the income should normally get established. In estimating the gross income, note will have to be taken of receipts by saleof calves, young stock, adult stock, dead animals and the manure.

The items of expenditure should be checked to ascertain that they are realistic and normal and have not been underestimated. Further no major item of expenditure should have been omitted.

(c) The expenditure on the dairy farm would include the cost of maintenance of cattle stock which involves feed cost which should be estimated according to the composition of the herd. If the fodder is to be produced in the party's farm itself by utilisation of part of the land for the purpose, then the cultivation cost of the fodder will also have to be accounted for. The other items of expenditure will be veterinary aid, repairs and maintenance, power and water charges, wages and salaries of the staff employed, replacement of stores, running cost of vehicle and other incidental expenses. In case of processing plants the detailed break up of running expenses of these plants including insurance charges, depreciation etc. will have to be indicated. If apart from the milk available from the farm, any additional milk is to be purchased from other sources, the same should be separately shown. On the above basis the net income accuring to the party from the implementation of the scheme will be determined. The net surplus will help to evaluate repaying capacity of the applicant.

Financial aspects

It is not our policy to finance for one or two cattle to an individual borrower, but for a dairy farm, we entertain the proposal, if it is technically and economically viable unit. Normally for any size of dairy, we finance milch cattle of high yielding breeds which are suitable in the locality. The conditions for such finance are:

(a) i) The animal should be already calved and strictly of the first or second lactations only.

ii) The financial assistance should not be extended for animal likely to be calved shortly.

iii) The borrower should produce the certificate from veterinary officer stating date of innoculation of animals for Winder pests and H.S. and age of animal after purchase of animals. Innoculation should be got completed within a week's time from the date of purchase of animals.

iv) The borrower should be prepared to arrange for banding the animals which should be done at the top of the tail to identify the animal.

v) The animal should be insured for cattle insurance against mortality, theft, etc. if available.

(b) We should finance for cattle feed @ Rs 9/- per month per cattle for 2 months from the date of purchase, if required. Afterwards, cost of cattle feed should be met by the borrower from his own resources.

(c) The cultivator should execute irrevocable power of attorney to recover the amount of loan instalments from the said proceeds of milk to society or milk marketing agency, wherever possible.

(d) The society or private agencies should agree to recover the loan instalments by registering power of attorney by deducting each time of payments at least 50 per cent of the sale proceeds of milk supplied by the farmers to the societies or private agencies.

(e) The usual practice of determining the price is on the basis of milk yield of the animals purchased. Normally finance is provided @ Rs 2500/- per animal upto Rs 3000/- maximum. The branch should however, by making general enquiry allow only such price as based on milk yield and not the inflated price.

(f) The advance to an individual should not normally exceed Rs 10,000/- (in case of home raising of milch cattle).

(g) Loan limits for other items eligible for finance should be considered on the basis of estimates furnished by qualified engineer/technical expert or on the basis of the proforma invoices as the case may be.

(h) Payment should be made direct tothe suppliers of dairy machinery equipment, cattle feed plant or any other item.

(i) In other cases, for example construction of sheds etc. payment should be phased in instalments. First instalment may be realised on completion of documents. Second and subsequent instalments should be realised only after satisfying the progress of work carried out. Borrower should submit details of expenditure for expenses incurred against the previous instalment is realised.

(j) The working capital requirements should be worked on realistic basis.

Terms and Conditions of Advance

(a) Security

i) Hypothecation of machinery and equipment to be purchased and/or already purchased.

ii) Hypothecation of dairy animals which should preferably be insured against risk of mortality with banks clause.

iii) Mortgage (simple or equitable as permissible under prevailing laws and as considered necessary) of land and building of the dairy farms.

iv) Two suitable guarantors of means acceptable to the bank.

v) Hypothecation of book debts, wherever possible.

vi) Hypothecation of crops.

vii) A letter of negative lien.

(b) Rate of Interest

Three to four per cent over reserve bank of India rate.

(c) Margin

A margin of 30 per cent should normally be retained on medium term loans on the value of immovable properties offered as security for such loans.

(d) Disbursement of the loan

i) Before payment is effected invoices etc. in original in respect of the materials, equipments, implements, cattle, etc. to be purchased should be obtained and scrutinised.

ii) Payment should be made as far as possible to the suppliers of the above items after obtaining suitable letters of authority from the borrowers.

iii) In other cases, wherever feasible, disbursement should be made in a phased manner in keeping with the progress of the implementation of the scheme/projects financed. First instalment may be released on completion of the documents. Second and subsequent instalments should be released only after satisfying the progress of work carried out. Borrowers should submit details of expenditure for expenses incurred against the previous instalments before subsequent instalment is released.

(e) Insurance

All sheds/structures, plant and machinery and equipments existing or to be acquired in the farm land should be fully insured against fire with an approved insurance company in the joint names of the bank and the borrower at the letter's cost and relative policy retained at the bank.

(f) Repayment schedule

i) The repayment schedule of loans for development of dairy farms depends upon the economics and the relative scheme financed under the scheme and net surplus generated from the dairy farm. Normally, repayment should be adjusted within a period of 4-5 years as the best yielding period of animal is assumed to be 6-7 years.

ii) Repayment of working capital loans towards cattle feed medicines etc. should be within one year.

iii) The loan should be repaid in quarterly/half yearly instalments. A suitable start of period may be permitted for the purposes of repayment of loans depending upon the economics of the relative scheme financed under the scheme and the net surplus to be accrued from the implementation of the scheme.

Documentation

i) Demand promising note signed by the borrower.

ii) Letter of waiver.

iii) Letter of continuity.

iv) Letter of hypothecation of crops prescribed for agricultural advances.

v) Letter of guarantee

vi) A certificate of search from a competent lawyer indicating therein that the borrower has clear and marketable title to the land and it is free from all encumbrances. The search should be made by the lawyer for the past 12 years till date.

vii) Mortgage deed duly registered for the simple mortgage of the land or equitable mortgage wherever permissible and considered preferable.

viii) Letter of authority to make payments direct to the supplier/contractor, wherever possible.

ix) A copy of bill and original stamped money receipt for having received the payment alongwith a letter from the borrower indicating receipt of the item covered by the bill in good and satisfactory condition wherever applicable.

x) Irrevocable power of attorney in favour of the bank which should be got registerd with the body to whom the milk is supplied.

xi) Letter of hypothecation of book debts.

xii) A letter of undertaking not to create any further charge/ encumberances on the securities hypothecated/mortgaged to the bank during the currency of the loan without our prior permission in writing.

xiii) A certificate preferably from the legal advisor of the borrower to the effect that all the above documents have been explained to the borrower in his mother tongue and that he has executed the documents of his own free will. Such certificate should be taken where the borrower is illiterate or cannot read and understand English languggo. A photograph with the left hand thum impression of the borrower duly attested preferably the Magistrate/ J.P./Government Gazetted Officer should invariably be obtained in case of illiterate borrowers.

xiv) A letter of consent permitting the bank to pass information regarding loan account to other banks, cooperative institution, etc.

Post advance inspection and supervision

It is necessary to exercise close supervision on the implementation of a dairy development project financed by the bank. Unless proper precautions are taken there can be heavy losses and consequent default to the bank. The borrower's farm land should be inspected at monthly/quarterly intervals for maintaining proper supervision over the utilisation of the advance during the visits to the farm. The inspecting officials should discuss with the borrowers their problems and he should gather as much information as possible which will help them to make assessment of the present state of dairy farm and its future prospects. Further points to be looked into periodically after a sanction of the scheme are in regard to purchase of fresh milch cattle, purchase of feed stuffs of requisite quality and quantity, adequate attention to disease control and proper arrangements for marketing the products. The supervision will have to be exercised by the financing bank both by obtaining reports at frequent intervals from the party undertaking the development and on the spot inspection by the bank's staff.

DAIRY FINANCING : CHECK LIST OF POINTS

A. General

1. Are the environmental and climatic conditions congenial for dairy farming?

2. Is there marketing centre nearby?

3. Is there adequate water supply?

4. Has the party made arrangement for replacement of cattle regularly?

5. Is the location at high level and free from dampness and water logging?

6. Is the borrower experienced in dairy farming? Has he enough managerial ability to run the dairy unit effectively?

7. What are the objectives?

i) Production of milk
ii) Production of milk products
iii) Both

8. Is the project linked to a comprehensive state or other project providing all essential aids to dairy development such as:

Feed supply
Setting up of processing plants
Arrangements for distribution and others

9. Does the scheme contemplate raising a new dairy farm by purchase of basic stock of milch animals or only an increase in the existing stock?

10. What are the purposes for which loans are required?

B. Technical feasibility

1. Whether there exist adequate grazing land, green fodder and veterinary aid nearby?

2. What are the kinds and breeds of milch cattle proposed to be bought? Is the breed of buffalo or cow suitable to the locality?

3. Whether the cost of breed and equipments indicated in the proposal are realistic?

4. Whether the applicant has adequate area for construction of cattle shed, store room, milk room etc.?

5. What is the mode of transport of milch animals?

6. What is the mortality rate in the herd?

7. What arrangement has been made for regular veterinary aid?

8. Is there assured demand for milk in the locality?

9. Is there adequate transport facilities of milk throughout the year?

10. Is the existing cattle shed hygenic in conditions?

11. Whether the party is maintaining any dairy accounts?

12. What arrangement is available for branding animals? Is it more effective and convenient?

13. Is there provision for isolation box for quarantining sick cattle?

14. What is the lactation stage of purchased animals?

15. How is the borrower going to test select and transport milch animal?

C. ECONOMIC FEASIBILITY

1. What is the monthly gross income and expenditure from the dairy? Both existing and proposed one.

2. What is the present rate of milk production per animal?

3. Does the applicant propose to bring additional milk from other sources for transport?

4. Is this rate of milk production satisfactory?

5. What will be the output of other products?

6. Whether the size of herd is properly related to acreage under fodder?

7. What is the net surplus available per month?

8. Has the party asked for loan for construction of dairy buildings? If yes, whether he has produced?

9. What other equipments like refrigerator and van you propose to acquire? How could they be put to optimum use?

10. Whether the cost of breed and equipments indicated in the proposal are realistic?

11. Is there assured demand for milk in the locality?

12. What is the break-up of capital cost?

i) Cost of land (if proposed to be acquired)
ii) Livestock
iii) Dead stock - plants and equipments in detail, vehicles.
iv) Buildings (Plans, estimates, capacities, unit costs, quotations, letters of intent, performance guarantee)

13. What is the break-up of working capital?

i) Labour
ii) Management supervision charges
iii) Rent
iv) Feed: Milch animal calves (from where feeds will be purchased? Will the proposed feeds be suitable for the animal? How does the cost of feed compare with the other?
v) Insurance
vi) Medicines and treatment
vii) Depreciation on livestock
viii) Miscellaneous

14. Is the price of purchased fodder, feed rational?

15. Whether the cost of breed and equipments indicated in the proposal are realistic?

16. Is there assured demand for milk in the locality?

17. Is there ready market for cow-dung manure?

D. ASPECTS - LEGAL

1. Have all the relevant documents been examined properly to confirm title deeds, land free from encumberances, no dues from cooperative society etc.

2. Whether the party has insured the stock of cattle machinery and buildings against all risk?

3. Has the party taken any loan from any other source for the existing dairy unit?

4. Is the security offered sufficient to cover the loan?

5. Who are co-obligants and what the their credit worthiness?

6. Whether necessary permission for setting up buildings has been obtained from the muncipal authority/State government?

7. Has the borrower authorised the bank to make direct payment to the contractor/supplier?

E. Repaying Capacity

1. What are the other sources of income?
2. Has the borrower furnished the cash and credit flow charts?
3. What is the size of holding and net income from the farm for next 3-5 years?

   By sale of milk
   By sale of otherproducts
   By sale of male calves
   By sale of manure
   By appreciable value of female calves

4. Is he having any liability? If so to what extent? Whether he has borrowed for productive purpose?
5. What will be the period of repayment number of instalments and period of instalments for (a) capital loan and (b) for working capital loan?

F. Key Points forSuccessful Dairy Farm

1. Student for life long in dairy farming
2. Utmost availability of fodder and feed resources
3. Control both problems and costs
4. Cost of production at profitable level
5. Efficient water management
6. Successful programme andproduction planning
7. Sure about breed and milk yield at the time of purchase
8. Overall patent and business tact
9. Fairly high lactation average
10. Daily work himself
11. Ability to identify problems
12. Interest towards cattle kindness
13. Ready market for milk
14. Yearly increase in income.

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APPENDIX - III

SCHEDULE OF INVESTIGATION

Name of dairy owner.....

Size of dairy unit.....Location of dairy unit.....

Details of the herd

Particulars	On..... Number	Appx.Price	On..... Number	Appx.Price
Cows: Two year old				
Three year old				
Four year old				
Five year old				
Six year old				
Buffaloes:				
Two year old				
Three year old				
Four year old				
Five year old				
Six year old				
Seven year old				
Eight year old				
Calves:				
Cows - 6 months				
1 year				
upto 2 year				
Buffaloes:				
6 months				
1 year				
upto 2 year				
Others				

Details of Purchased/Sold of animals during the period

Particulars	Age	Purchased No.	Purchased Month of purchase	Purchased Purchase value	Sold No.	Sold Month of sale	Sold value
Cows	Two year old						
	Three year						
	four year						
	five year						
	six year						
Buffaloes	Two year old						
	Three year						
	Four year						
	Five year						
	Six year						
	Seven year						
	Eight year						
Calves	One year old						
	Two year						
	Three year						
	Four year						
	Five year						
Bullocks	Two year old						
	Three year old						
	Four year old						
	Five year old						
Others							

Loss due to death of the animal

Period. . . . . To. . . . . .

Type of animal	Month during which death occured	Appx. price	Cost incurred in disposal	Any type of gain so,then appx.price	Remarks

Statment of Fixed Cost Items

Particulars	No.	Year of construction or purchased	Cost	Cost of repairs during the year	Remarks
Kachhashed					
Pakkashed					
Land					
Residential home					
Water pump					
Feeding through					
Chaff-cutter					
Buckets					
Milk measures					
Milk cans					
Cycle					
Rikasha					
Tanga					
Motor cycle					
Scooter					
Others					

Miscellaneous Expenditures

1. App. Kanji house charges paid in past year.

2. Barbar charges

3. App. medical expenses during last year

4. Cloth covers charges during last year

5. Others

Statement of Feeding Expenses(Seasonwise)

Details of animals	No.	Name of feed Dry	Green	Total Qty.	Cost	Remarks
Milch Animal: Summer						
Rainy						
Winter						
Dry Animal : Summer						
Rainy						
Winter						
Young stock : Summer						
Rainy						
Winter						

Details on Purchase of Feeds and Fodder

Particulars		Quantity	Month of purchase	Value
Dry Feeds	: Summer			
	Rainy			
	Winter			
Green Fodder	: Summer			
	Rainy			
	Winter			
Concentrates	: Summer			
	Rainy			
	Winter			

Expenses on Concentrates Feeds (Season-wise)

Particulars	For Milch Animals(No...)						For Dry Animals(No..)						Young stock:(No..)					
	Total Qty.			Cost			Total Qty.			Cost			Total Qty.			Cost		
	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W
1. Cakes																		
a.																		
b.																		
c.																		
2. Channa chuni																		
3. Masor chuni																		
4. Arhar dana																		
5. Chocknar																		
6. Salt																		
7. Wheat Bhusa																		
8. Others																		
- - - - -																		
Halia																		
Gud																		
Oil																		

S = Summer. R = Rainy W = Winter.

Details Over Labour Expenses

Permanent Labour

Type of labour	Rate	Type of leave given	No. of leave availed	Total working day
Male				
Female				
Children				
Family labour				

Casual Labour

Type of labour	Monthly employed	Days of employed	Rate	Type of work for which employed
Male				
Female				
Children				
Family labour				

Details of Investment as Interest

Type of capital	Amount	Source	Year of investment	Interest
1. Owned				
2. Borrowed				

Amount paid during the year principal:

Amount outstanding on. . . . . .

Income Details of Unit

Particulars	Milk Qty.	Rate	Ghee Qty.	Rate	Butter Qty.	Rate	Dahi Qty.	Rate	Khoy Qty.	Rate	Other Qty.	Rate
January												
February												
March												
April												
May												
June												
July												
August												
September												
October												
November												
December												
Total:												

Other than milk product:

1. Value of manures
2. Others

V I T A

The author was born on 1st June 1955 in a Jain family of Panagar, district Jabalpur (M.P.) and did his Higher Secondary from Government Higher Secondary School, Panagar (Jabalpur); B.Sc.(Agri) degree from the College of Agriculture, Jabalpur, in the year 1976 and thereafter joined the M.Sc.(Agri) in the same College.

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