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## An economic analysis of milk production in Gonda district of Uttar Pradesh

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### Abstract

Agriculture the main occupation in the India. Agriculture development is boost up manifold by the river flowing in the district. There is great contribution in milk production by the district. The production of Milk in year 2010 was estimated as 121.4 million tonnes while it increase 61.25 per cent and become 187.7 million tonnes in 2018-19. At the district level the gross income from milk production per farm is Rs.9536.13 and per milch cattle Rs.17659.50 The production expense per farm is Rs.3258.08 on marginal Rs.15651.33 on small and Rs.17916.55 on medium and large farms. The overall production expense is Rs. 6113.36 per farm. There is positive association between farm size and per milch cattle feed and fodder expense, probably to ratio of higher quality cattle.

**Keywords:** milk production, income, expenses, small, marginal, large, farm, milch

### Introduction

Production of milk is the second important economic activity after crop production in Gonda district. Gonda is the headquarter of the District and also the administrative center for Devipatan division. Rivers play very significant role in development of agriculture in the district. Ghaghra river is the main river flowing in the district. The district is located between 26° 47' and 27° 20' north latitude and 81° 30' and 82° 46' east longitude. Gonda is bordered on the north by Shrawasti district, the north east by Balrampur and Sidharthnagar district, the east by Basti district, the south by Faizabad, the south west by Barabanki, and the northwest by Bahraich. Livestock rearing is performed with the twin purposes of milk production and raising of cattle for sale. The production of Milk in year 2010 was estimated as 121.4 million tonnes while it increase 61.25 per cent and become 187.7 million tonnes in 2018-19 (Basic Animal Husbandry Statistics, DAHD&F, GoI). In year 2010-11 the share of output from agriculture was 65.4 per cent while livestock shares 26.4 per cent. According to the Livestock Census 2012, the number of dairy animals has grown by about 30%, from 17 million in 2007 to 22 million in 2012.

### Methodology

Secondary data from published report of Department of Agriculture, Department of Statistics, Government of India and Government of Uttar Pradesh was used of the purpose. Here attempted is made to analyse the income from milk production in Gonda district.

### Result and Discussion

#### Income from Milk Production

In this study, income from sale of cattle has been included under the head sale of assets; as such the present discussion is restricted to the estimates of gross income from milk production, allocated expenditure on milk production and the net income from milk production. It has to be borne in mind as emerged from the survey that small farmers reared quality livestock for milk production, e.g. Buffalo and Cross breed cows. It is widely acknowledged that crossbreed cattle produce higher quantities of milk.

**Table 1:** Income from milk Production (Rs. / Farm)

Operational Holding Group	Gross Income from Milk Production	Production Expenses	Net Income
Marginal	5522.17 (16290.40)	3258.08 (9611.34)	2264.09(6679.06)
Small	23360.21 (18281.90)	15651.33 (12248.87)	7708.86 (6033.03)
Medium and large	25594.55 (19906.87)	17916.55 (13934.81)	7678.00 (5972.06)
Overall	9536.13 (17659.50)	6113.36 (11321.04)	3422.77 (6335.46)

(Figures in parentheses are values/ milch animal)

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The Gross income from milk production depends on density of milch cattle in different operational holding group and type of milch cattle. There are three types of milk animal, Desi cows, cross breed cows and buffalo. It is settled fact that cross breed cows are high yielding whereas buffalo milk fetches higher price. The lactation period of Desi cows is also short. Total 39 Desi cows are distributed as 19 on marginal, 12 on small and 8 on medium and large farms. Total 36 buffalo are distributed as 20 on marginal 9 on small and 7 on medium and large. There are 6 cross breed cows. 1 is on marginal, 2 on small and 3 on medium and large farms. The per farm gross income from milk production on marginal farms is Rs.5522.17 on small farm Rs.23360.21 and on medium and large farms Rs.25594.55 per farm. At farm level, apparently there seems to be wide difference between the per farm income from milk production on different size of holding, but it has to be examined on the basis of the distribution of milch cattle in the areas, the types of milch cattle reared and the ratio between Desi cows and cross breed cows and buffalo besides the modes and methods of feeding cattle and price of different livestock. The estimates of the gross income from milk production per milch cattle in different holding groups though is a better parameter for comparison but is also affected by the quality and composition of the milch cattle as described above. Perusal of the table reveals that per milch cattle gross income on marginal farms is Rs.16290.17 on small farm Rs. 18281.90 and on medium and large farm Rs.19906.87. There is evidence of difference on account of quality of milk. At the district level the gross income from milk production per farm is Rs.9536.13 and per milch cattle Rs.17659.50 The production expense per farm is Rs.3258.08

on marginal Rs.15651.33 on small and Rs.17916.55 on medium and large farms. The overall production expense is Rs. 6113.36 per farm. The per farm production expense, as recognized is based on type of milch cattle, quality of feeding and share of hired labour in rearing the animal. Though the ratio of high milk producing cattle in different holding groups affects per milch cattle production expenses, which is considered as a better parameter for comparison. The per milch cattle production expenses in Gonda district is estimated to be Rs.11321.4, it is estimated as Rs. 9611.34 on marginal Rs. 12248.87 on small and Rs.13934.81 on medium and large farms.

The net income from milk production is one of the important constituents of disposable income. The per farm net income from milk production has been estimated to be Rs. 3422.77. It is dependent on the gross income from milk production and milk production expenses. The net income from milk production is Rs.2264.09 on marginal, Rs.7708.86 on small and Rs. 7678.00 on medium and large farms. The per milch cattle net income is Rs.6679.06 on marginal, Rs. 6033.03 on small and Rs.5922.06 medium and large farms. The per milch cattle net income is negatively associated with the size of farm. This may be due to larger proportionate share of milch cattle and role of hired labour. The explanation for this negative association can be found in the ratio of different elements of expenses in rearing of milch cattle on farms of different size groups.

Attempt in this study was made to trifurcate milk production expenses under expenses on feed and fodder, expenses on payment to hired labour and other expenses.

**Table 2:** Milk Production Expenses (Rs./Farm)

Operational Holding Group	Feed and Fodder	Hired Labour	Other Costs
Marginal	2543.88 (7506.46)	430.07 (1268.70)	284.15 (836.18)
Small	10189.01 (7974.01)	4131.95 (3233.70)	1330.37 (1041.16)
Medium and large	10310.76 (8019.48)	6145.25 (4779.64)	1464.54 (1135.69)
Overall	4186.74 (7753.23)	1415.45 (2600.21)	511.17 (917.60)

(Figure in the parentheses are expenses/milch cattle)

The respective estimates towards feeds and fodder is Rs.2543.88 per farm on marginal, Rs.10189.01 on small and Rs.10189.00 on medium and large farms. These per farm expense estimates are not comparable on account of density of milch cattle in different operational size groups. The overall expense per farm is Rs.4186.74 It has to be understood that there are 81 milch cattle reared by 150 households of the study. Irrespective of the type and breed of livestock the per milch cattle expenditure on feed and fodder has been estimated to be Rs. 7753.23 per milch cattle. The per milch cattle expenses towards feed and fodder has been estimated as Rs. 7506.46 per milch livestock on marginal, Rs. 7974.01 on small and Rs. 8019.48 on medium and large farms. There is positive association between farm size and per milch cattle feed and fodder expense, probably to ratio of higher quality cattle. The expenses towards hired labour is Rs. 430.07 per farm on marginal, Rs. 4131.95 on small and Rs.6145.25 on medium and large and over all estimate Rs. 1415.45 per farm. The overall per milch animal hired labour cost is Rs.2600.21, while the per milch animal hired labour expenses on marginal farms is Rs. 1268.70 on small holdings Rs.4131.95 and on medium and large farm Rs.4779.64. This divergence is on

account of distribution of land in different caste groups. Most of the marginal farmers are scheduled castes and extremely backward castes. The tendency of hiring labour is low in marginal households.

The ratio of higher castes rises in medium and large holding groups. This explains the cause of rise in per milch animal hired labour caste and its positive association with the size of holding. This is caused by relationships between the share of family labour in total labour in the total human labour deployed in milch cattle rearing, size of farm, besides, the composition of milch cattle on farms of different category. other costs comprise of costs in cattle upkeep besides feed and fodder and hired labour. It is Rs.511.17 per farm in Gonda district. It is Rs.284.13 pr farm on marginal, Rs. 1330.37 on small and Rs. 1464.54 on medium and large farms. Like other costs the differences are on account of density, type and quality of milch animal in different holding groups. The per milch animal other expenses are Rs. 917.60, Where as it is Rs. 836.18 on marginal, Rs. 1041.16 on small and Rs.1135.69 on medium and large farms. The other costs per milch animal is positively associated with size of farms.

**Table 3:** Share of different inputs in milk Production

Operational Holding Group	Feed and Fodder	Hired Labour	Other Costs
Marginal	78.10	13.20	8.70
Small	65.10	26.40	8.50
Medium and large	57.55	34.30	8.15
Overall	68.49	22.97	8.11

The relative share of considered inputs in the study is substantially different in the three farm size groups. The feed and fodder share in Gonda district is 68.49 per cent of the milk production expenses. It is 78.10 per cent in marginal, 65.10 per cent on small and 57.55 per cent on medium and large farms. The share percentage is inversely associated with the size of farm. It may be mentioned that while the feed and fodder expenses in real term is positively associated their per cent share is inversely associated. Contrary to feed and fodder cost the share of hired labour expenses is 22.97 per cent at overall level with 13.20 per cent on marginal 26.40 per cent on small and 34.30 per cent on medium and large. Share of hired labour expenses is positively associated with the size of farm. The overall share of other costs is 8.11 per cent with 8.70 per cent in marginal. 8.50 per cent on small and 8.15 per cent on medium and large farms. Though the relationship between share of other costs with farm share seems to be inverse but the values are nearly similar on the farm groups.

#### Income from Farm Wages and Other Farm Sources

Besides, the incomes from crop and milk production, incomes earned from farm work and other farm resources like orchard, bamboo bushes, bee keeping, fishing, hire of farm resources, e.g., bullocks, farm machineries etc. are other important sources of farm income. Addition of net income from all these sources constitutes farm income. Net income from agricultural wages and other farm sources are presented in Table 4.

**Table 4:** Income from Farm Wages and other Farm Sources (Rs./Farm)

Operational Holding Group	Farm Wages	Other Sources
Marginal	9600.80	330.50
Small	5958.30	820.80
Medium and large	810.00	4625.00
Overall	8343.23	431.67

It is evident from the table that the per farm income from farm wages in Gonda district is Rs.8343.23 and income from other sources described above is Rs.431.67. The table reveals that on marginal farm the income from farm wages is Rs.9600.80 per farm and from other sources Rs.330.50. On small farms the income from farm wages is Rs. 5958.30 per farm and from other sources Rs. 820.80 per farm. On medium and large farms the income from farm wages is Rs.810.00 per farm and from other sources Rs. 4625.00 per farm. It is evident from above that the income from farm wages is inversely associated with size of farm while income from other sources is positively associated with farm size.

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