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Impact of Dairy Farming on Socioeconomic Condition of Small Farmers: A Case Study

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Abstract: *Vidarbha regional has a mixed type of cropping pattern and maximum non irrigated land hence author intended to analyze and roll of dairy farming on socioeconomic condition of small farmers in viderbha region. In the post-independence era, the dairying is recognized as a source of additional income to the landless labourers and small and marginal farmers, It can be observed from the land and milch animal holding pattern in India however the average milk yield of the buffaloes belonging to landless household is fairly higher than others. Though India having largest cattle and buffalo population is about 67% in the world. It produces 13 % of the total world milk production. This is primary due to malnutrition and underfeeding of the milch animal. The per capita daily consumption of milk in India is quite low 245 gm. when compared to the recommended nutritional requirement of 284 gm. Indian farmers should be given the much needed attention for the healthy growth of cattle and buffalo to increase the milk production in proportion to their strength (Largest cattle & buffalo population in world).13% of the total production of the milk is contributed by India. The large vegetarian sector of the India feed upon the dairy products of India. Author had some finding through survey on impact of dairy farming on socioeconomic condition of small farmers who lived in Washim District of Maharashtra.*

Keywords*: farmers, Dairying, economic condition, consumption pattern,production*

1. Introduction

Milk has been recognised as a staple food for human for thousands of years this chapter contains information related to the production and consumption pattern of milk. The world production of milk of all species was estimated to be 640.2 million metric tons (MT) in 2005, which registered a growth 2.4 % over the production during 2004. The growth is primarily attributed to the growth in developing countries in Asia & south America. The 25 countries constituting European Union produced 147.4 million MT in 2005. India is the largest producer of milk with 95.4 million MT followed by US output of 80.6 MT. Non fat dairy milk and whole milk powder constitutes almost 50 % of international Dairy trade. The worldwide production of Buffalo milk is estimated at 83 million tonnes constituting around 13 % of the total world milk production. It has increased on an average by more than 3 % annually during the last ten years. Almost 90 per cent of the total volume is produced in India and Pakistan. A total production of 4.2 million tonnes of whole milkand skim milk powder is expected.

In the post-independence era, the dairying is recognized as a source of additional income to the landless labourers and small and marginal farmers, but dairying is introduced in India on a large scale by the British Government to meet the requirement of their army men. It can be observed from the land and milch animal holding pattern in India however the average milk yield of the buffaloes belonging to landless household is fairly higher than others.Though India having largest cattle and buffalo population is about 67% in the world. It produces 13 % of the total world milk production. This is primary due to malnutrition and underfeeding of the milch animal. The per capita daily consumption of milk in India is quite low 245 gm. when compared to the recommended nutritional requirement of 284 gm.Indian farmers should be given the much needed attention for the healthy growth of cattle and buffalo to increase the milk production in proportion to their strength (Largest cattle & buffalo population in world).13% of the total production of the milk is contributed by India. The large vegetarian sector of the India feed upon the dairy products of India.

This part of the industry has helped the India economy in better possible ways. Some of the glaring problems of the economy are dealt with much ease. The unemployment and the rates of poverty have diminished as this sector has provided ample scope to these fields. The industry has seen rapid growth in recent years. The best possible technologies are undertaken and the resources are used in fullest extent so that the sector reaches the booming phase. India houses the largest livestock in the world. 50% percent of the buffalo and 20 % the cattle are present in India in respect to world. Moreover the milk and the milk products of India are highly acclaimed in different parts of the world. It ranks first in producing dairy products in India. Some of the past reports of the past year found that when the production of milk was 72 million then the demand reached 80million. So the country under the regulatory bodies have gone far to increase the production of milk and other milk products to higher extent. The present production of milk as marked in the year 2009- 2010 is 112mt which follows a growth rate of 4%. But the recent research

confirmed that by 2012-21 the growth rate must increase to 5.5% where the quantity produces should be 180mt. this is only due to higher the consumption rate. More over the country is stressing on the milk product industries to increase there production rate, all the public and the private sector s of milk production are taken into grant.The per capita availability of milk is 253grams/day. The government is trying hard to increase these rates too.

2. Review of Literature

T.Rathakrishnan (2009) states that the primary goal of extension is to assist farming families in adapting their production and marketing strategies to rapidly changing social, political and economic condition, so that they can in the long term shape their lives according to their personnel preferences and those of the community. Shakuntala Shridhar (2009) explain that women in India no. nearly 500 million constituting 49% of total population of which 70 % live in villages. Farm women carry out 75-80 % farm work with 50-66% of them contributing to agricultural labour. Raising nurseries, manual weeding, harvesting, threshing, grading and storage of agriculture produce are exclusively womens activities. In case of livestock more than 90% of the work is done by women. Dhananjaya B. (2009) states that Rural Indian women are extensively involved in agricultural activities and play a major role in agrarian scenario. Men perform major share of work quantitatively on agriculture side, whereas on the animal husbandry side most of the management operation are being carried out by women in addition to their household activity. Dairy development now consider as a important tool for rural development or poverty alleviation. R.K.Punia (2009) explains rural women plays dominant role in dairy husbandry activities, capacity building of rural women in this enterprise is the need of the hour to sustain 4% growth rate in the Dairy sector as the future demand of dairy products is bound to increase. Hence training is needed to rural women regarding dairy entrepreneurship. R.R. Chaudhari (2007) reveals that the entrepreneurs are key person of any country for promoting economic growth and technological change. The apparent of their activities i.e. development of entrepreneurship is directly related to socio economic development of society, India is the largest producer of milk in the world therefore the role of farmer is very important in dairy industry and socio economic development of the society. Boone (1985) defines Extension Programming as:A comprehensive, systematic, and proactive process encompassing the total planned, collaborative efforts of the adult education organization, the adult educator in the roles of change agent and programmer, representatives of the learners, and the learners themselves in a purposive manner and designed to facilitate desirable changes in the behavior oflearners and the environment in which they live (p. 41). De los Santos and Norland (1990) used Bennett's theoretical framework to study extension programming in the Dominican Republic. They found that the farmers gained mostly knowledge and skills toward the program and that older farmers tended to hold negative attitudes toward information provided by extensionists. Rossi and Freeman (1985) Explains that after extension programs are initiated, there is a need to monitor the programs. there are several reasons monitoring of programs is required. First, monitoring provides judgment information. Second, monitoring is required for accountability purposes. Third, it is adjunct to impact assessment. Fourth, monitoring evaluations often are instrumental in decisions to continue, expand, or terminate ongoing programs. The authors mention that the monitoring of programs is directed at two key questions: (1) whether or not the program is reaching the appropriate target population, and (2) whether or not the delivery of service is consistent with program design specifications. Sapp & Jensen (1997) states that Sociological and economic variables play complementary roles in the innovation decision process; the sociological variables had more impact in the adoption stage, while the economical factors were more predictive in the implementation-confirmation stages. Sandhu & Allen (1974), Pfeffer & Gilbert (1989) It was found that farmers preferred neighbors as sources of agricultural information. The rate of early adoption was influenced by the farmers' level of education for attaining knowledge and land holding. Organizational assistance and communication showed a higher correlation with adoption of farming innovation. Umali et al. (1992) pointed that The livestock sector plays a crucial role in the economies of many developing countries as an important source of protein-rich products. It is a vital generator of employment. However, the ability of the sector to attain its full productive potential is influenced by the availability and quality of livestock support services. According to Umali et al (1992), livestock services can be grouped into two major functional categories: health and production services. Health services consist of curative and preventive services and the provision of veterinary pharmaceuticals; while production services include research and extension services relating to improved livestock husbandry and the provision of input supplies such as seeds, feeds, and artificial insemination. Production services try to improve livestock productivity by such means as genetic upgrading of livestock through artificial insemination, the improved formulation of feeds, the use of improved forages and changes in management practices. In addition, Ahuja and Redmond (2004) included a third service as marketing service including marketing information and output marketing. Birner et al., (2006) analyze pluralistic dairy services, it is useful to distinguish three sectors that may be involved in financing and providing dairy related services: (1) the public sector (public administration, state agencies), (2) the private sector (farm households, agribusiness enterprises, other profit-oriented firms), and (3) the third sector (non-governmental and non-profit organizations, farmers' organizations, civil society organizations).

3. Research Area

Washim is a district in Maharashtra, India. The headquarters is at Washim. The area of the district is 5,150 km².The district had a population of 1,020,216 of which 17.49% were urban as of 2001. According 2011 census Washim district contributes total population about 1196714 it means 1.06% of total Population of Maharashtra (11,23,72,972).out of which total population of Washim male population is 621228 and female population is 575486. Washim district having literacy 81.70 as compared to Maharashtra literacy rate is 82.91% as per literacy concern washim stand 17 rank from Maharashtra within this male literacy is 90.54 and female literacy is 72.26. Washim is located in the eastern region of Vidharbha. Akola lies to its north, Amravati lies to its north-east, Hingoli lies to its south, Buldhana lies to its west, Yavatmal lies to its east. River Penganga is the main river of the district. It flows through the Tehsil of Risod. Later it flows through the boundary of Washim and Hingoli districts. River Kas is

the main tributary of Penganga. River Kas meets Penganga about 1 km from the village of Shelgaon Rajgure. River Arunavati and its tributaries originates in the Tehsil of Washim and them flows through the tehsils of Mangrul Pir and Manora into the district of Yavatmal. River Katepurna originates in the hilly areas of the district and flows northwards through the tehsil of Malegaon and enters the Akola district.

4. Innovativeness Response from Respondents

Sr. No.	Innovativeness	Most relevant	Relevant	Not relevant
1	Artificial insemination	345	128	35
2	Feeding colostrums to newly born calves.	287	97	116
3	Feeding balanced concentrate mixture based on milk production.	218	186	96
4	Timely and regular vaccination against common contagious disease.	167	234	99
5	Insurance of animal	156	242	102

Table 1

The response of respondents were secured on three point continuum namely "Most relevant", "Relevant" and "Not Relevant" frequencies and score as 2,1 and 0, respectively.
In all 500 respondents cold respond. These responses were used to work out the Relevancy weightage (RW) of each component by using following formula.

$$\text{Relevancy Weightage (RW)} = \frac{\text{Most Relevant X 2 + Relevant X 1 + Not Relevant X}}{\text{Maximum possible score (500 X2 = 1000)}}$$

Considering relevancy Weightage, the components were screened for their relevancy, accordingly components having relevancy weightage of more than 0.75 were considered. Using this process five component having more than 0.75 relevancy weightage was selected.
Computation of scale value by normalized rank method based on relevancy weight age the selected five components had been questioned to 650 respondents for ranking, out of 500 respondents had responded. The rank given by the 500 respondents based on relative importance of the components in measuring the knowledge / behaviour/ Innovativeness of Dairy farmers were used to work out the scale value with the help of Guilford's (1954) normalised rank method.

Sr. No.	Component	Relevancy weight
1	Artificial insemination	0.818
2	Feeding colostrum to newly born calves.	0.671
3	Feeding balanced concentrate mixture based on milk production.	0.622
4	Timely and regular vaccination against common contagious disease.	0.568
5	Insurance of animal	0.554

Table 2: Component wise relevancy weightage (RW) of components of knowledge of innovation and behaviour of dairy farmer

From the above result is as under:-

- Mean : - 0.64660
- SD (Standard Deviation) :- 0.10646
- SEM (standard error of measurement) :- 0.04761
- Reliability Coefficient : - 0.800

5. Conclusion & Recommendations

- From study area about 60% of respondents qualification found higher than SSC, it means the 60% farmers are educated hence they needs the proper guidance regarding dairy extension activities/ economics of dairy farming from the field experts, scientists and successful resource person from the Dairy farming / Dairy business. It will make positive impact on farmers and adapt the dairy farming through adaption process.

- About 50 % of family member's age group between 19-40 years, this group people are young generation it means they are energetic and confidence level is very high so that we can focus on this group to do dairy farming / Dairy business for their social and economic upliftment.
- Almost all farmers having electricity in their households but less than 15 % of farmers having toilet, bore well, wells and hand pumps etc. I observed that most of farmers family income is less compared to his expenses on hospitals, clothes, kiranas and other agri input expenses.
- Found 67% of kaccha house due to less income of small & medium farmers having average family size about 5-6 people in a family.
- Found almost all respondents business is farming within that 20% of farmers having joined business like Kirana shops, General stores, Cloth stores, etc within this 80 % preference of farmers to kirana shops. It means most of farmers having knowledge of business but they don't know how to do business so that farmers required proper information / guidance to do dairy farming/ dairy business and provide him regular market of milk to establishing milk chilling centre on central place of the area. Dairy farming gives additional income to households for their livelihood.
- As per study about 45 % of farmers having land holding in between 02-05 acres and about 35 % of farmers having land holding less than 2 acres and only 20% of farmers having land holding is greater than 5 acres. It means average land holding from the study area is 2-5 acre with a farmers and family size of farmer is 5-6 people in their family so that farmers must do the complementary business it's nothing but the dairy farming hence we can say that dairy farming acts as a complementary business to small and medium landholders.
- Only 30% of farmers having dry land in the study area remaining 70 % of farmers having mixed type of land plus irrigated land hence it is a great opportunity to do dairy farming with the help of farmers they have mixed type of land holdings.
- Average income received from source of agriculture is about 43% of farmers having income between Rs. 20000/- to Rs. 40000/- and only 8 % of farmers having income source from agriculture is greater than Rs.40000/- per year if the farmers prefer to start dairy farming it will definitely increase their total income.
- As per the study about 44 % of farmers having zero income from Dairy farming remaining farmers families income in between Rs.500/- to Rs. 2000/- per month from dairy farming. Farmers from the study area have the great opportunity to start the dairy farming so that they will increase their total income as against to global expenses.
- From study area found that 80 % of farmers having bullock (paired) for their regular agricultural activity within this 21% farmers having cows, 30% farmers having buffaloes and less than 5% of farmers having goat for milching purpose and found no one farmer have sheep for mulching purpose. About 20 % of farmers are totally depend on mechanized farming. If farmers are used the high yield animal for milking purpose so they can increase their income.
- From the study area observed that mostly women are involved in Dairy farming and almost all farmers engaged in agricultural activities.
- As per the study about 40% of farmers are not involved in dairy farming it means that their milk production is nil, less than 5 % of farmers having milk production is greater than 3 LPD and about 55% of farmers milk production in between 1-3 LPD from the above observed that already 60 % farmers engaged in Dairy farming and their milk production for their own use. So that farmer has to become an entrepreneur or business man with respect to dairy farming e.g. farmers has to adapt new skills ,techniques and knowledge about dairy farming, farmers has to purchase high yield animal this will increase the milk production and simultaneously increase their income through dairy farming.
- From the observation I have to suggest that farmers might have change his attitude, knowledge and skills towards dairy farming and uplift their socioeconomic status.
- From the study area about 60% of farmers are engage in dairy farming for their own use. Out of which 60 % of respondents sold loose milk directly to the customers from his own doorstep's mostly women are involved in this activity and about 40% of milk sold to hotels / restaurants etc. the most interesting things there is no one farmers from the study area to sell the milk to dairy industry / milk chilling centre etc.so I suggest that any Government / private/ cooperative milk unions has to set up milk chilling centre at central place of the study area and make availability of regular market for liquid milk to farmers so that they may buy high yield animal and increase their milk production and their income.
- As per study concern 80 % of farmers not aware about his daily expenses on dairy farming only they are carry out traditional practices and only 20% of farmers known about his average expenses so that I want to suggest that farmers has to become an entrepreneur or business man it will definitely increase the socio economic status of farmers.
- When I ask to farmers regarding major obstacles in Dairy farming about 80% of farmers told there is no regular market for milk and about 65% of farmers told that restaurants/ private firms/ hotels etc. are providing less purchasing price than average govt. purchasing price also 55% of farmers told that there is no regular availability of veterinary services so that I can suggest that to do available regular market of milk for farmers to setting up the milk chilling centre at the study place and providing proper procurement price for farmers milk so that farmers might be increase his income through Dairy farming hence we can say that dairy farming is a complementary business for small, marginal and medium landholders.
- From study area about 91% of farmers have not received any kind of government subsidies/ schemes for purpose of increasing milk production and only 9% of farmers has received the the government subsidies for purchasing of cows and buffaloes. So I would like to suggest that Government has focussed on these region to increase the milk production through providing subsidies for dairy farming to farmers and create interest among the farmers for dairy farming it will gives the socioeconomic upliftment and decrease the rate of farmer sucide from this area.

- As per study concern 98% of farmers told that they have not getting any kind of training regarding dairy farming / dairy allied activities, only 2 % of large farmers had got training for dairy farming from District Agriculture Office. So kindly suggest that extension officer from the district have focussed on small and marginal farmers to trained them for dairy farming and increase their socioeconomic status.
- Conducted survey from the study area on relevant basis for the subject of innovativeness under 5 components and found some interesting results is as above farmers are more relevant regarding artificial insemination than other 4 components because they are newer for these four components and found reliability coefficient is 0.800 .

6. References

1. Ahuja V. and K.E. McConnell, 2000. Estimating the Willingness to pay for Veterinary Services in India: A Methodology Paper. Indian Institute of Management (IIMA) Working Paper No 2000-01-01, Ahmedabad, India
2. Ahuja V., D. D. Umali and C D Haan, 2003. Market structure and the demand for veterinary service in India. Agricultural Economics, 29:27-42.
3. Ahuja, V. and E. Redmond, 2004. Livestock Services and the poor. Tropical Animal health and Production, 36 (2004): 247-268.
4. Ajayi, A.O., 2006. An Assessment of Farmers' Willingness to Pay for Extension Services Using the Contingent Valuation Method (CVM): The Case of Oyo State, Nigeria. Journal of Agricultural Education and Extension Vol.12 No 2: 97-108
5. Benin, S., Nkonya, E., Okecho, G., Pender, J., Nahdy, S., Mugarura, S., Kato, E. and Kayobyo, G., 2007. Assessing the Impact of the National Agricultural Advisory Services (NAADS) in the Uganda Rural Livelihoods, IFPRI Discussion Paper 00724, Development Strategy and Governance Division and Environment and Production Technology Division, International Food Policy Research Institute, Washington DC.
6. Bennett, J.W. and Carter, M. 1993. "Prospects for Contingent Valuation: Lesson from the Southeast Forest". Australian Journal of Agricultural Economics, 37(2):79-93.
7. Berhanu Gebremedin, D., Hoekstra, and Azage Tegegne, 2006a. Commercialization of Ethiopian Agriculture: extension service from input supplier to knowledge broker and facilitator, Working Paper no. 1, Nairobi, Kenya: International Livestock Research Institute.
8. T.Rathakrishnan (2009) "Advances and Challenges in Agriculture Extension & Rural Development"
9. Shakuntala Shridhar (2009) "Women in agriculture and rural development"
10. R.K. Punia (2009) "Dairy Husbandry training for rural women " Women in agriculture and rural development, pp 173-182
11. Dhananjaya B.(2009) "Role of women in Dairy Industry" Women in agriculture and rural development, pp 147-148.
12. C Madan Mohan (1989) "Dairying in India" Dairy Mangement in india, pp.30-33
13. Carney, D., 1998. Changing Public and Private Roles in Agricultural Service Provision. ODI. London.
14. Checkland, P., 1999. Systems thinking, systems practice. Soft systems methodology: a 30- year retrospective. John Wiley & Sons, LTD, Chichester, UK
15. Kristrom B., 1990. A Nonparametric Approach to Estimation of Welfare Measures in Discrete Response Valuation Studies. Land Economics, 66 (2):135-139.
16. Leonard O.R., M., Upton ansd A., Mcleod, 2000. Restructuring of Animal Health Services in Kenya: Constraints, Prospects and Options. Development Policy Review Vol. 18 (2003): 123-138
17. Nicholson, C. F., 1997. The Impact of Milk Groups in the Shewa and Arsi Regions of Ethiopia: Project Description, Survey Methodology, and Collection Procedures. Mimeograph, Livestock Policy Analysis Project, International Livestock Research Institute, Addis Ababa.
18. Pardey, P. G., and N. M. Beintema, 2001. Slow Magic: Agricultural R&D a Century after Mendel. Technical Report 36, Agricultural Science and Technology Indicators. Washington, DC: IFPRI.
19. Rivera, W.M., M.K Qamar, & L.Van Crowder, 2001.Agricultural and rural extension worldwide: Options for institutional reform in the developing countries. Rome, Italy: FAO.
20. Rivera, W.M., and M.K., Qamar, 2003. Agricultural Extension, Rural Development and the Food Security Challenge. Rome, Italy: FAO