

A STUDY ON THE ECONOMIC CONTRIBUTION OF DAIRY FARMING IN INDIA

M. Ganesan

Ph.D. Research Scholar, Madurai Kamaraj University, Madurai, Tamil Nadu, India

Abstract

Dairy farming is a class of agriculture for long haul production of milk, which is handled (either on the farm or at a dairy plant, both of which might be known as a dairy) for possible clearance of a dairy product. Milk is the biggest crop in India as far as incentive at '6.5 lakh crore, it's more than the all out estimation of paddy and wheat set up together. The approach of dairying has been an aid for dairy farmers and of specific significance to those fragments of the society that have been customarily frail, the small landholders, landless workers and women. It has given an all year source of income for individuals who beforehand could just rely upon payments from small regular crops or from intermittent work. It is evaluated that up to 60-65 percent of the income of this group (minor and small-scale farmers) presently originates from dairying. Studies have demonstrated that dairying in rural regions outperformed crop production as far as profit in peripheral, small and medium-sized property. For small-scale farmers with watered land, dairying and crop production together, were more profitable than crop farming alone. Over the period, dairying has additionally obtained the forms of a completely fledged industry in the nation and has decidedly improved the life of those occupied with this business, straightforwardly or in a roundabout way, bringing critical socioeconomic changes. The Indian setting for Dairy Indian agriculture is an economic beneficial interaction of crop and cows populace. A large number of rural smallholder milk producers overwhelm India's dairy industry, contributing 62 percent of all out milk produced in the nation. The milch creatures are benefited from crop deposits and milch creature waste is utilized as compost for crops. Domesticated animals assume a fundamental job in the economy; creature farming is the most significant economic movement in rural regions. The dairy sector today furnishes 80 million farm families with the triple advantages of nutritive food, valuable income and productive employment for family work, for the most part for women. Hence, the present study has been focused on the economic contribution of Dairy Farming in India and study based on the secondary sources of data.

Keywords: *Socioeconomic Development, Indian Agriculture, GDP, Largest Captive Market, Dairy Products and Economic Sustainability.*

Introduction

The Indian dairy sector is the biggest supporter of the agriculture Gross Domestic Product (GDP). As far as yield, milk is presently the single biggest agrarian product in India. Right now, around 46 percent of the milk is expended as fluid milk, 47 percent as

conventional dairy products and 7per penny as Western dairy products. The worth included variants like ghee, spread, yogurt, paneer, cheese, alongside a cornucopia of enhanced milks, frozen yogurts, UHT prepared milk and destroyed and fluid cheese is making the sector an appealing for growth. The dairy industry in India is presently evaluated to be around 130 million tons and is relied upon to develop at 4-5% per annum. The anticipated estimation of the industry is about Rs 500,000 crore, which incorporates Rs 160,000 crore from fluid milk, Rs 45,000 crore from ghee, Rs 50,000 crore from khoa/chhana/paneer, Rs 10,000 crore from milk powder, Rs 300 crore from table spread, Rs 8,000 crore from cheese/palatable casein and the parity from different products. The other noteworthy component is that inside the 30 percent generally speaking portion of composed dairies, the significant 20 percent of that will be represented by the private sector. The cooperatives and government dairies will deal with 10 percent which will be lower than that of the sorted out private sector. The milk devoured by the rural populace and the producer families stays in the chaotic sector and this peculiarity will keep on appearing in India when contrasted with the other dairy propelled nations, as indicated by Vijayabhasker Reddy, expert, Fresh Ideas, Hyderabad. There are in excess of 550 plants in the nation with around 175 in the north, around 50 in east around 120 in south and west, representing more than 200.

The main dairies in nation are Gujarat Cooperative with Amul brand, Karnataka Milk Federation (KMF) with Nandini brand, Mahanand Dairy (Mahanand), Tamil Nadu Co-usable Milk Producers' Federation Limited with Aavin brand, Heritage, Nilgiri Dairy Farm Pvt Ltd, Hatsun with Arokya brand, Cavinkare Dairy, GRB Dairy, CreamLine Dairy, Parag Milk Foods, Tirumala Milk Products, Gokul and Sridevi Milk Products. Mulkanoor Women's Mutually Aided Milk Producers Cooperative Union is the principal women' co-usable in the nation and universally. It is situated in Bheemdevarapally mandal in Karimnagar region. The Indian dairy sector is currently in a period of solidification and dairy-proprietors are searching for acquisitions for which it is additionally exploring for private value and funding imbueement, expressed delegates from KMF, Nilgiri Dairy Farm and GRB Dairy. At the as of late finished up yearly session of the International Dairy Federation's World Dairy Summit in the picturesque city of Daejeon in South Korea, India was the toast of the world. From a to a great extent hostage market in spite of being the world's biggest milk produced the nation is developing as a noteworthy exporter now, with production ready to surpass household utilization soon. In this way, it is obligatory to study about the Indian Dairy Farming and its economic contribution of India.

Research Objectives

The present study aimed with following objectives:

1. To know about dairy farming in India.
2. To study the economic contribution of dairy farming in India.

3. To understand about Compound Annual Growth Rate (CAGR) and Dairy Farming in India
4. To narrate the vision 2022 of Dairy farming in India

Operational Definitions

Dairy products or milk products are a sort of food produced from or containing the milk of warm blooded animals. They are fundamentally produced from well evolved creatures, for example, dairy cattle, water wild oxen, goats, sheep, camels and people. Dairy products incorporate food things, for example, yogurt, cheese and spread. An office that produces dairy products is known as a dairy or dairy manufacturing plant.

Dairy farming is a class of agriculture for long haul production of milk, which is prepared (either on the farm or at a dairy plant, both of which might be known as a dairy) for possible closeout of a dairy product.

Reviews of Related Literature

S.M.Feroze and A.K.Chauhan NDRI, Karnal(2010) "Effect of Microcredit: An Empirical Study of Dairy Self Help Groups in Mewat District (Haryana)". This paper displays the effect of microcredit on come back from dairy in Mewat. An example of 60 individuals from 30 Self Help Groups and 30 non-individuals from three squares of Mewat was drawn for the present study. So as to disconnect the effect of credit help for dairy, normal least squares system was utilized. The normal bison milk production per family every day and productivity was seen as higher in the event of part families than non-part families. The yearly gross come back from dairy was higher in part family units in contrast with non-part families. The coefficient of credit sham ended up being sure and exceptionally critical suggesting positive effect of microcredit on come back from dairy.

Shibu C. Thankanchan, S.V.Singh and R.C.Upadhyay NDRI, Karnal(2010), "Warmth Dissipation, Oxygen Consumption and Antioxidant Enzymes Status During Heat Exposures in Buffaloes". So as to screen the adjustments in warmth dispersal through perspiring and gasping, oxygen utilization, heat production, heat stockpiling, physiological reactions (RR, RT and ST) and cell reinforcement compounds status, five yearlings of Murrah bison were chosen from crowd and kept up under ordinary encouraging and the board pursued at the farm. The creatures were presented to four presentation temperatures viz. 32, 35, 40°C with a consistent relative moistness of half and trick control at 8.00am in a climatic chamber for three hours ceaselessly. The after-effects of the study showed that the warmth stress adversely affected physiological status of wild ox calves. Along these lines, wild ox calves require a security from warmth worry at higher temperature (40°C) presentation for keeping up body temperature.

Ata-Ul-Munim Tak, Ritu Chakravarty, B.S.Meena and Kavita Rani NDRI, Karnal(2010), "Wellbeing Status and Reproductive and Productive Performance Traits of Dairy Bovines in

Haryana". The study was led in four towns of locale Karnal in particular Budhakheda, Kulwehri, Subhri and Ranwar, chose purposively. From each chose town, 30 respondents having in any event one crossbred dairy animals and one wild ox were chosen haphazardly to establish an aggregate of 120 respondents for the study. Information was gathered with the assistance of a pretested organized meeting plan. Information were then classified and put to reasonable factual tests and ends were drawn. Around 70 percent of respondents having small measured milch group constantly immunized their creatures against Haemorrhagic Septicaemia (HS) though 75 percent constantly inoculated against Foot and Mouth Disease (FMD). 73.91 percent of respondents having medium estimated milch group constantly inoculated their creatures against HS, 89.13 percent constantly immunized against FMD. 72.22 percent out of the respondents having enormous measured milch group constantly inoculated their creatures against HS, 61.11 percent constantly immunized against FMD. Study of the issue of continue reproducing uncovered that 6.16 percent of the crossbred bovines having a place with respondents having small estimated milch group were rehash raisers and 1.93 percent of the bison were rehash raisers. Out of the crossbred dairy animals and wild oxen having a place with respondents having medium estimated milch group, 7.52 percent and 4.93 percent were rehash reproducers, individually. While, 13.80 percent of the crossbred dairy animals and 10.31 percent wild oxen having a place with respondents having huge measured milch group were rehash raisers. Normal age at adolescence was higher in small crossbred crowd size and the normal pinnacle yield expanded with increment in crossbred group size. Normal age at adolescence, normal age from the outset calving, normal administration period diminished and the normal pinnacle yield expanded with increment in bison crowd size.

Raka Saxena, Smita Sirohi and Massoumeh N. Zadeh NDRI, Karnal(2010), "Repercussions of Global Economic Crisis : Impact on Indian Dairy Sector". This paper looks at the impact of ongoing economic retreat on dairy sector. The progressions in dairy production, utilization, exchange and costs of milk, feed and worth included dairy products have been analyzed for world in general and in the Indian setting during 2000-06 (typical circumstance) and after 2006 (under economic emergency). The Indian dairy sector has seen some uneasiness drifts regarding stoppage in fare execution, at the same time, the value patterns have not indicated unpredictability like the universal markets as the sector generally takes into account the local market where request is additionally decidedly impacted by variables other than income growth. If there should be an occurrence of complete interest for worth included modern dairy products, that have more noteworthy association with common economic conditions, the impact of economic turndown is perceptible as far as declining import request. The decrease in fares, conceivable fall in household utilization of prepared dairy products and declining pattern in production of significant dairy products may have antagonistically influenced the economic execution of composed dairy handling sector in the nation. In nutshell, under the current dairy

production framework, as the cooperative energy between universal value patterns and local production is to some degree feeble, the powerlessness of dairy sector to current economic emergency has not been significant. Be that as it may, the darker side of this infers increases to the Indian dairy sector, particularly the dairy farmers would be minor once the world economy pursues the recuperation way.

Need for the Study

There are huge growth prospects. Despite the fact that India is one of the world's driving milk producers, yet the northern pieces of the nation are confronting intense lack of milk supply. Conditions of north-east, West Bengal, Delhi and Kerala are reliant on milk powders. Truth be told, Delhi government is quick to obtain milk from Karnataka Milk Federation (KMF) by means of a rail tanker and the stock is anticipating freedom from the Indian Railways. There are likewise open doors for improvement of low-fat and sugarless milk products, paneer and cheese variations. Subsequently, it is been imperative to study the economic contribution of dairy farming in India and the study made.

Dairy Farming in India

India has been the main producer and buyer of dairy products worldwide since 1998 with a continued growth in the accessibility of milk and milk products. Dairy exercises structure a basic piece of the rural Indian economy, filling in as a significant source of employment and income. India likewise has the biggest ox-like populace on the planet. Notwithstanding, the milk production per creature is essentially low when contrasted with the other major dairy producers. Also, about the majority of the dairy produce in India is expended locally, with most of it being sold as liquid milk. By virtue of this, the Indian dairy industry holds colossal potential for worth expansion and generally speaking improvement. As per the most recent report by IMARC Group, titled "Dairy Industry in India 2019 Edition: Market Size, Growth, Prices, Segments, Cooperatives, Private Dairies, Procurement and Distribution", the dairy market in India arrived at an estimation of INR 9,168 Billion of every 2018.

Alongside offering profitable business openings, the dairy industry in India fills in as an instrument of socio-economic advancement. Keeping this in view, the Government of India has presented different plans and activities went for the advancement of the dairy sector in the nation. For example, the "National Dairy Program (Phase-I)" means to improve cows productivity and increment the production of milk extending and reinforcing and growing the rural milk acquisition foundation and give more prominent market access to the farmers. Then again, the private cooperation in the Indian dairy sector has additionally expanded in the course of recent years. Both national and global players are entering the dairy industry, pulled in by the size and capability of the Indian market. The center is being given to esteem included products, for example, cheese, yogurt, probiotic drinks, and so

forth. They are additionally presenting inventive products remembering the particular prerequisites of the Indian shoppers. These players are additionally improving their milk acquisition arrange which is further encouraging the advancement of the dairy industry in India. Looking forward, the market is required to arrive at an estimation of INR 21,971 Billion by 2024, displaying a CAGR of around 16% during 2019-2024.

Economic Contribution of Indian Dairy Farming

The Indian dairy industry has developed reliably as far back as the White insurgency of the 1970s, making India, the world's biggest producer of milk with 17% worldwide offer. With a yearly production of 146 million tons of milk India creates roughly USD 70 Billion of income. The Indian dairy market is required to twofold inside the following decade, basically determined by more than 15-20% growth in worth included dairy portion. To use this high growth potential and to satisfy the rising need, a maintainable and solid dairy farming base will be basic. For accomplishing this, it ends up basic to address key difficulties looked by the industry, for example, low creature yields, incapable rearing, ill-advised feed and grain the board, lacking veterinary consideration, poor farm the executives and low monetary incorporation among others. With dairy farming in India commanded by smallholder farmers, with a normal group size of fewer than 2, it turns into all the all the more testing to address these issues, in the particular setting of making small holder dairy farming all inclusive focused. Notwithstanding the magnificent backend work being finished by private sector and agreeable, proper farm level approaches should be created by the Government to guarantee maintainable dairy advancement through existing socio-economic elements and resource points of interest.

Compound Annual Growth Rate (CAGR) and Dairy Farming in India

India's dairy industry is relied upon to keep up 15 percent exacerbated yearly growth (CAGR) more than 2016-20, and achieve estimation of Rs 9.4 trillion on rising industrialism, a report said.

"India's dairy industry is worth Rs 5.4 trillion by worth, having developed at 15 percent CAGR during 2010-16. Proceeding, the dairy industry is relied upon to keep up 15 percent CAGR more than 2016-20, and achieve estimation of Rs 9.4 trillion on rising industrialism". India has advanced from being insufficient in milk production at 20 million MT in 1970 to turning into the world's biggest milk producer at 160 million MT, representing 18.5 percent of worldwide milk production. Further, India is relied upon to rise as the biggest dairy producer by 2020, the report said. The Union government actualized the Central Scheme National Dairy Plan - Phase 1 during 2012-17 to improve productivity of dairy cooperatives through a few information exercises. Speculations by private players in the residential dairy sector are additionally expected to further increase milk productivity, it clarified. Proceeding, India's milk production is required to beat worldwide production

and develop at a comparative 4.2 percent CAGR to 185 million MT for every annum, and outperform EU to raise the biggest dairy producer by 2020. Strikingly, the nation's per capita milk utilization has additionally been expanding at 3 percent CAGR when contrasted with 1 percent CAGR universally. The report takes note of that there is colossal extension for India's per capita milk utilization to spurt driven by growth in worth included products (VADP), which is at 34 percent of industry versus 86 percent for the worldwide develop markets like EU, the report said. India has a capability of 15-30 percent in addition to growth in VADP like cheese, whey, UHT milk over next couple of years, it included. Driven by rising expendable income, and developing purchaser inclination for marked and esteem included milk and milk products, ventures by composed players additionally in the sector has been on the ascent. The report called attention to that other top milk creating topographies like EU, USA, China, Pakistan are required to develop their production volumes at 2 percent growth more than 2020, which is lower than India's growth gauges.

Value-Added Product wise Segment Insights

Aside from milk, the income of the Indian dairy and milk preparing industry is created from a few worth included products, for example, spread, curd, paneer, ghee, whey, enhanced milk, ultra-high temperature (UHT) milk, cheese, and yogurt. During the period FY 2016 to FY 2020, the market size of spread is required to develop by 14.5%, curd by 14.4%, paneer by 14.1%, and ghee by 14.1%, among others.

Export-Import

From India, the fare of dairy products has expanded to nations like Bhutan, Afghanistan, Canada, Egypt, and the United Arab Emirates. India has likewise imported a lot of dairy products from nations like France, New Zealand, Ireland, France, Ukraine, and Italy as indicated by businesswire.com.

Key Growth Drivers of the Market

India's livestock sector is viewed as one of the biggest on the planet with a cow-like populace of 299.9 Mn, which includes cows, wild ox, mithun, and yak. The growth of the Indian dairy and milk preparing market is guaranteed by the consistent stock of milk which is the essential crude material for this industry.

Key Deterrents to the Growth of the Market

In spite of having a critical domesticated livestock base of milch creatures, India needs terms of accessibility of cold stockpiles which results in wastage of dairy yield. Hence, the absence of adequate storerooms and wasteful dispersion are hampering the growth of the Indian dairy and milk preparing industry. Repeating dry spells and floods influence the production of feed in India. Adequate amounts of feed and grain are required for appropriate creature raising and milk production. Absence of legitimate feed and grub

for milch creatures, because of high utilization of rural crop deposits by producers of fiberboard, paper, and fluid energizes, influence its accessibility for dairy production and milk handling.

Dairy Farming in India - Vision 2022

A supported growth of milk production in India, developing at a CAGR of 5 percent between 2010-16, and the main situation of milk among all the rural wares have put dairy in the bleeding edge of the administration's responsibility to twofold farmers' income by 2022. So as to carry dairying in a state of harmony with its fantastic vision of multiplying farmers' income, the administration figured a thorough arrangement for dairy improvement – Vision 2022: National Action Plan on Dairy Development (NAPDD) in 2017. Vision 2022 visualizes expanding milk production to 300 million tons by 2023-24. To understand the ideal milk production focuses on, the arrangement activities to expand the in-milk cow-like populace from 88 million to 116.38 million and normal milk yield per cow-like from 4.35 kg/day to 7kg/day between 2015 - 2023. The central issue is whether these august aims of the vision are attainable in a time allotment of 5-6 years.

The principal part of multiplying milk production is to expand the in-milk creature populace from 88 to 116.8 million by 2023-24. Between 2003-15 in-milk cow-like populace developed at CAGR of 2 percent; the present arrangement is for yearly growth pace of 3.7 percent practically twofold between 2015-23; and that too without changing the absolute cow-like populace, in view of the constrained accessibility of feed and grub resources. Basically, the arrangement is to upgrade the crowd proficiency proportion (Herd Efficiency Ratio is characterized as the proportion of in-milk cow-like populace to add up to cow-like populace) from 27 percent to 40 percent by 2023. At present, just Punjab has crowd proficiency as high as 39 percent. On the off chance that India is intending to imitate Punjab's crowd synthesis by 2023, it should specifically get rid of 50 million male and unproductive female bovines which have no contribution in milk production and supplant them with proportional number of female bovines by 2023. Thinking about the present world of politics, discarding unproductive creatures has turned into a major test for the farmers. With many State governments upholding prohibitive principles on steers butcher and private vigilantism on the ascent causing impedance with the set up arrangement of transfer of unproductive bovines, the possibilities of keeping up high productive group seems unrealistic in such a limited capacity to focus.

The second segment of multiplying milk production by 2023 is to expand the milk yield per cow-like. Vision 2022 puts uncommon spotlight on expanding the milk yield of low-yielding, non-descript nearby steers from 2.15 kg/day to 5 kg/day by 2023-24. It intends to update 50 percent of non-descript cows utilizing seven indigenous dairy breeds and another 50 percent utilizing 33 indigenous double reason breeds. Of all the indigenous breeds which will be utilized for upgradation, just four are considered as unrivaled dairy breeds Gir,

Thaparkar, Sahiwal and Red Sindhi whose normal milk yield goes between 5-7 kg/day. The greater part of the non-descript cows populace will be overhauled utilizing indigenous breeds whose normal milk yield is 3-4 kg/day. Shockingly, the arrangement doesn't significantly consider up gradation by utilizing intriguing breeds, for example, Holstein Friesian. As indicated by Basic Animal Husbandry Statistics 2016, the normal milk yield every day of crossbreed-colorful is in excess of 7 kg/day; which is the required objective of Vision 2022. States, for example, Punjab and Kerala have displayed honorable accomplishments in milk production by reviewing up their nearby dairy cattle with fascinating breeds. It is difficult to comprehend, in spite of being demonstrated heroes in milk production, why intriguing breeds are being sidelined in the arrangement.

We comprehend the need of sparing and advancing indigenous breeds, however not at the expense of denying a dairy farmer of understanding the maximum capacity of its creature by raising low-yielding indigenous steers. With this breed upgrade methodology, it is improbable that the normal milk yield of bovines could accomplish a more than 50 percent growth by 2023.

Re-Visioning the Dairy Plan

In its present structure, Vision 2022 has a few ailments and seems ridiculous in its responsibility of multiplying the milk production by 2023-24. It doesn't mirror the ground substances of milk production in India and disregards the wide between state holes present. The whole eastern India, spoke to in red, have both crowd productivity and normal milk yield underneath the national normal of 27 percent and 1,600 kg for every year individually. States, for example, Chhattisgarh, Assam, Odisha and Jharkhand are at present in a position where the remainder of India was four-five decades back as far as crowd productivity and normal milk yield. Rather than expediting the remainders of India a similar balance as Punjab in a limited ability to focus, 2022 ought to pursue a progressively impartial and down to earth way to deal with quicken dairying in the nation. It should initially organize its vitality and resources in moving cow-like capacities more towards dairying in the eastern geology. Just by taking up the crowd effectiveness proportion and milk respect the national normal in the eastern States (Bihar, Jharkhand, Chhattisgarh, Odisha, Assam and West Bengal) alone could bring extra 35-40 million tons of milk to the national milk pool, which will be worth Rs. 1,20,000-1,40,000 crore. If not multiplying the farmers' income, this extra climb in milk production will have extensive socio-economic and job impacts in these States, which logically ought to be the vision for India's dairy advancement.

Conclusion

The dairy sector in India holds a unique space in the nation however there are a couple of bottlenecks yet to survive. Masses of disorderly players moving towards the sorted

out sector is set to expand the extent of rivalry in the dairy space alongside the chance to give employment to masses. The goliath dairy sector is balanced for quickened growth. The worth included dairy food fragment is consistently getting the customer's bushel. New innovations, moving and pressing methods are making the route in the dairy sector quicker. In addition, government activities and approaches for outside friends in the dairy fragment are empowering. These sectors give a plenty of venture open doors for outside friends. With the mix of an intense interest for dairy products, government's positive outlook and outstanding execution of the industry in production and utilization, signs to monstrous growth of the Indian dairy sector later on.

References

1. Ata-Ul-Munim Tak, Ritu Chakravarty, B.S.Meena and Kavita Rani NDRI, Karnal(2010), "Health Status and Reproductive and Productive Performance Traits of Dairy Bovines in Haryana".
2. businesswire.com
3. Gol- Government of India, 2018
4. <https://www.thehindubusinessline.com/opinion/vision-2022-indias-far-flung-dairy-dreams/article24137390.ece>
5. Jay, J. M. (1992). *Modern Food Microbiology*; 4th edition. New York: Chapman & Hall. pp. 237-9.
6. PIB - Press Information Bureau, 2018
7. Potter, N. N. & J. H. Hotchkiss. (1995). *Food Science*; 5th Edition. New York: Chapman & Hall. pp. 279-315.
8. Raka Saxena, Smita Sirohi and Massoumeh N. Zadeh NDRI, Karnal (2010), "Aftermath of Global Economic Crisis : Impact on Indian Dairy Sector".
9. S.M.Feroze and A.K.Chauhan NDRI, Karnal(2010) "Impact of Microcredit: An Empirical Study of Dairy Self Help Groups in Mewat District (Haryana)"
10. Shibu C. Thankanchan, S.V.Singh and R.C.Upadhyay NDRI, Karnal (2010), "Heat Dissipation, Oxygen Consumption and Antioxidant Enzymes Status during Heat Exposures in Buffaloes".
11. Swasigood, H. E. (1985). "Characteristics of Edible Fluids of Animal Origin: Milk." In *Food Chemistry*; 2nd edition. Revised and Expanded. O. R. Fennema, Ed. New York: Marcel Dekker, Inc. pp. 791-827.
12. Wolfson, D. J. (1996). "Beyond the law: Agribusiness and the systemic abuse of animals raised for food or food production". *Animal Law*. 2: 123.