

# ROLE OF DAIRY SECTOR IN PUNJAB: AN EMPIRICAL ANALYSIS

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## ABSTRACT

Punjab is known as grain bowl of India. Traditionally Punjab is agrarian state. Now these days, Agriculture has reached at saturation point so that need of diversification is required. Dairy has come to the centre stage as a potential alternative. Dairy has assumed the status of full fledged vocation rather than complimentary vocation. Contribution of Agriculture and Livestock sector is 27% to GDP of the state. There are ample scope to lift up this share further provided investment in dairy sector is given due importance. Annually Punjab produces 10.1 Million MT of milk at present which is about 8% of total milk production of the Nation. In the Country, Per capita availability of milk is highest in state as 971 gms per day. Daily milk production is about 274 Lac liters and organized sector daily milk handling capacity 82.4 lac liters in Punjab. This shows that potential of dairy sector in the state which holds out a promise of employment and wealth generation. For this extensive training, education, extension and incentives, dairy schemes are required.

**Key words:** Dairy, Diversification, Extensive training, Dairy schemes

## 1. INTRODUCTION

Dairy Development Department Punjab is promise to spread dairy training services throughout the state in the year, expand, commercialize and mechanize dairy farming operations by providing incentives, exert quality control on compounded cattle feed, concentrates and mineral mixture and regulate the manufacturers and dealers in the most organized, systematic, fair and transparent manner. The department continually monitors, review and improve the quality and delivery system of the service for the satisfaction of the beneficiaries. Stakeholders of Dairy Farmers Dairy Development Department Punjab are Prospective Dairy Farmers, Commercial Banks, Compounded cattle feed, concentrates and mineral mixture Manufacturers, Compounded cattle feed, concentrates and mineral mixture Dealers, Insurance Companies, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, Punjab Agricultural University, Ludhiana, Milk Industry. The source of finance is mainly state non plan and non plan schemes, centrally sponsored schemes and Rashtria Krishi Vikas Yojna (RKVS).

## 2. REVIEW OF LITERATURE

Milk production in India has risen by a historic 6.25% in 2014-15, reaching 146 million tonne. There was an urgent need to increase the growth rate in milk production, to meet the growing domestic demand for milk and milk products. High incremental growth rate was limited to only three states. The largest milk producing state Uttar Pradesh demonstrates a constant but below the national level of growth. Growth in population of adult female bovines seems to be pointed off with a very low increase in productivity per animal. The author analyse the growth in terms of

supply, demand and price of milk. There is no immediate market for the incremental quantity within or outside country, so that the incremental quantity is being processed and stored in form of skim milk powder and butter. This is main reason of financial burden on the milk purchasers forcing for reduced their demand and price for fresh milk. The regular increase in consumer price is also not expected to be transmitted to the producer. (Rajeshwaran S, Gopal Naik (2014))

This study reveals Growing demand for dairy products, the development of milk production in rural area was played a important role in reducing poverty in Indonesia. For the development of smallholder dairy production requires sufficient support from the government and proper development of organizations, and private concerns. The author conducted a study to assess the needs and situations of poor dairy farmers in Ciater sub-district in West Java. Before the implementation of a dairy development project, Region was comparing the current situation with the situation that prevailed 4 years ago. The Data were collected from 61 farms in June 2014. The average number of cows on the farms surveyed was three to four, and each relied on cultivating an average of 0.4 ha of forage. Results showed that thanks to the project activities, milk productivity per cow and net income from milk production increased by 25% between 2010 and 2014. These results underline the importance of providing training and technical support for the development of the livelihoods of dairy smallholders.(Sembada et al,(2016))

The study reveals that a large number of farmers are not able to meet their requirements from crops and dairy farming. Further dairy farming has appeared as a major associated enterprise for complementing the income of marginal and small farmers in Punjab. Income from off-farm sources has been recognized another important factor contributing considerably to the disposable income of these farm households. The study has suggested supplementary potential of off-farm sources towards meeting the domestic expenditure. Also, the technical efficiency of crops and dairy farming should be get better to give more income to farmers. (Singh ,Mandeep and Joshi, A.S.(2008))

The author assesses the total factor productivity (TFP) growth and efficiency levels in the Indian dairy processing industry using the Tornqvist index and data envelopment analysis (DEA) models over the period 1980-2008.They use a different empirical approach and extend the data sets. DEA frontier is used to examine the nature of scale inefficiency, non-increasing returns. The results suggested that total factor productivity in the Indian dairy processing industry has grown significantly. The study observed that an average technical efficiency level was 72% and 38% inefficiency level. It noted the devaluation in terms of real effective exchange rate, profitability, and export and import penetration. In this study, it was noticed that a high volume of milk does not reach to milk processing plants in India. It suggested to efficient utilization of existing processing capacity in dairy plants, a organized investment is needed in logistics of raw milk collection and infrastructure development. The European model may be used as a benchmark in strengthening milk farmers for increasing farm size and building own processing capacity Ohlan ,Ramphul (2013)

The Basic objective of the study was to understand the “current scenario of dairy industry in India and different matters of the stakeholders of the dairy industry”. This research articles were related with dairy industry. 24 research articles randomly selected from different states of India are selected. The major problems were related with lack of fodder, shortage of veterinary and diagnostic services not have much information and technological consciousness. Some of the issues were related with area like in Assam and milk products were not the components of daily use of people in

the state which is not the scenario in other states of the country. The residual 10 studies were either related to cooperative plants and private dairy plants, cooperative federations or general dairy scenario of the relevant state. Procurement cost was found to be the major element of total costs. These studies were evaluated the economic feasibility of concerned dairy units. (S. Kunte, Bhagyashree et al. June 2015)

This study discloses the work rank of the adult population has no significant difference between MS farmers and NMS farmers could be observed. Women committed considerable time for dairying, irrespective of whether they are working or not. Women's role in cattle keeping is great. These aspects of work bring and show by disposal studies. The initiatives undertaken such as Malabar Rural Development Foundation for improving the quality of dairy farmers are welcome as they go beyond the landless as their participation in dairying is low. This needs to be kept in mind while planning welfare interventions. Narayana (2001)

The main objective of this paper is to study the issues in improving "The operational efficiency of the dairy supply chain in Tamil Nadu, India". Dairy Farming is a major occupation of the people of Tamil Nadu, India and it contributes a significant amount to the growth of our country. This study reveals the objectives and its three-tier structure of Tamil Nadu dairy development department. SWOT analysis shows strengths, weaknesses, opportunities and threats of department. Tamil Nadu Cooperative Milk Producers Federation is compared with Gujarat Cooperative Milk Producers Federation (AMUL). The main factor which is influencing the dairy farming was studied. For this study literature survey, field study and researchers experience were used. Questionnaire method and these interactions recorded by a video camera were used to collect data. The major issues like as creation of special dairy zone, implementing dynamic milk procurement method, strengthening cooperative societies, creation of feed bank and increasing fodder productivity, integrated animal health plan and information technology. Subburaj, et al (May 2015)

### 3. OBJECTIVES

The objectives of the present study are given below:

- To analysis the milk trends in Punjab and India.
- To study the budget and expenditure of Development Department Punjab
- To study the role of government schemes on milk production of Dairy Development Department Punjab

### 4. RESEARCH METHODOLOGY

- **Scope of study:** The study relates to Dairy Development Department in Punjab. It covers the period from 2010-2011 to 2014-2015.
- **Source of data:** The data has been collected from secondary sources. The data has been collected from annual reports of Dairy Development department in Punjab.
- **Statistical tool:** The statistical tool like average and trend analysis has been applied for the study. In this study, the trend analysis 2005-06 takes as base year.

### 5. RESULTS AND DISCUSSION

**Table 1** Trends of Total Milk production in Punjab and India

Milk production				
Years	Milk production in Punjab('000)	Trends in % of Punjab	Milk production in India(MT)	Trends in % of India
2005-2006	8908	100	97.1	100
2006-2007	9167	102.9074989	102.6	105.6642636
2007-2008	9273	104.0974405	107.9	111.1225541
2008-2009	9385	105.3547373	112.2	115.5509784
2009-2010	9389	105.3996408	116.4	119.8764161
2010-2011	9423	105.7813202	121.8	125.4376931
2011-2012	9551	107.2182308	127.9	131.7198764
2012-2013	9724	109.1603053	132.43	136.3851699
2013-2014	10013	112.4045802	137.7	141.8125644
Average	9425.888889		117.3366667	
S.D	318.3690643		13.77037037	
CAGR	-1.186681836		-4.402799006	

Source Director Animal husbandry Punjab

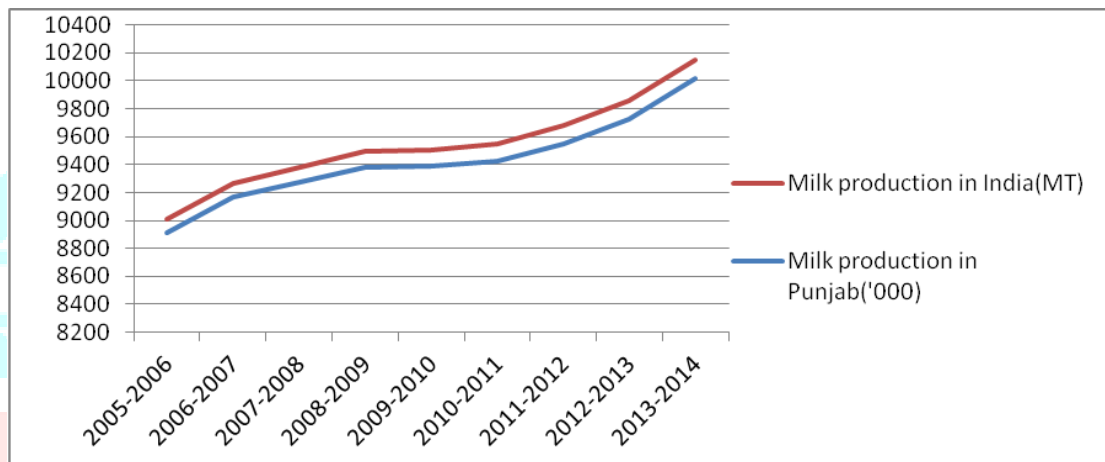


Figure 1: Trends of Total Milk production in Punjab and India

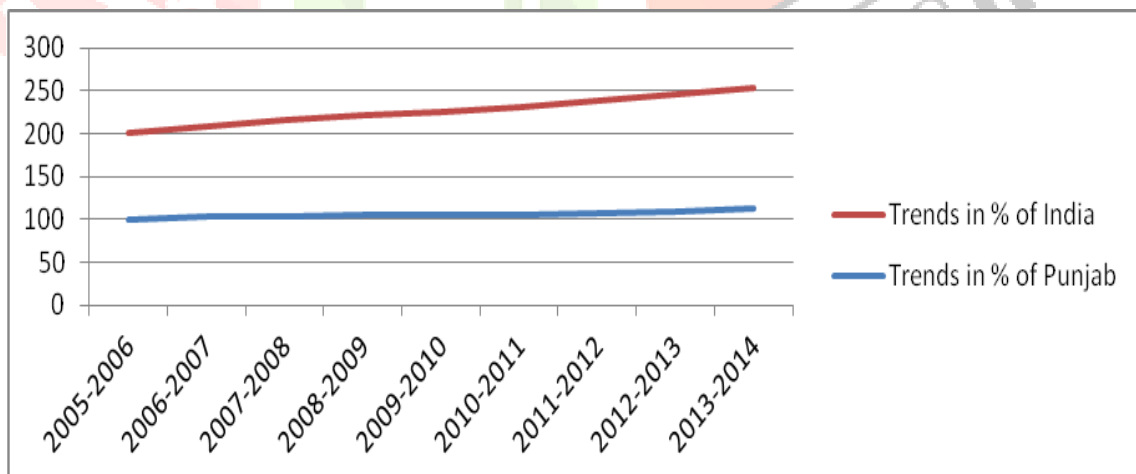


Figure1.1: Trends of % of milk production in Punjab and India

The table 1 shows the Trends of Total Milk production in India and Punjab during the study period. Total Milk production trend goes upward direction in India and Punjab. During analysing the annual growth rate in milk production it is not only declining but shows slow growth. It reveals that the total production increased from 8908('000) tonne in 2005-06 to 10013 (000) tonne in 2013-14 and registering a compound annual growth rate of -1.186681836 per cent and mean value was 9425.89 over the study period in Punjab. The higher value of production of milk was 10013 in 2013-14. Table shows that the total production increased from 97.1 MT in 2005-06 to 137.7 MT in 2013-14 and registering a negative compound annual growth rate of -4.40 per cent and mean value was 117.33 over the study period in India. The higher value of production of milk was 137.7 in 2013-14.

**Table 2** Per Capita availability of milk in Punjab per annual in kg

Years	Per Capita availability of milk	Trends in %
2005-2006	339.31	100
2006-2007	342.85	101.0432937
2007-2008	337.94	99.59623943
2008-2009	335.8	98.96554773
2009-2010	333.97	98.42621791
2010-2011	339.81	100.1473579
2011-2012	345.51	101.8272376
2012-2013	344.25	101.4558958
2013-2014	347.67	102.4638236
Average	340.79	
S.D	4.589577867	
CAGR	-0.276650454	

Source Director Animal husbandry Punjab

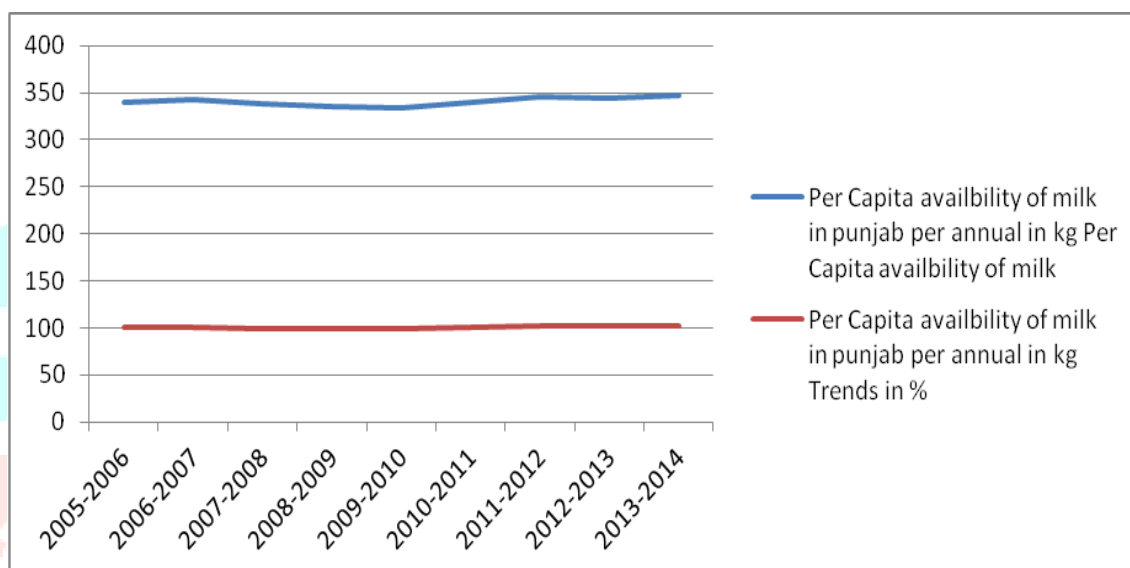


Figure 2: Per Capita availability of milk in Punjab per annual in kg

Table 2 depict negative compound annual growth rate of 0.27%, per capita availability in Punjab .347.67kg per day in 2013-2014. In 2005-06 was 339.31 and continually decrease from 2007 -08 to 2009-10. Then increase in 2010-11 and 2011-12 from 339.81kg to 345.51kg and afterward increase till now. The mean value was 340.79 over the study period in Punjab.

**Table 3** Total Punjab Dairy Budget and Expenditure From 2010-11 to 2014-15

Year	Budget	Expenditure
2010-2011	785.9	760.25
2011-2012	936	900
2012-2013	948	900
2013-2014	1018.3	916.85
2014-2015	1040.55	985.22

Source: Calculated from Annual Administrative Report of Dairy Development Department of Punjab from 2010-2011 to 2014-15

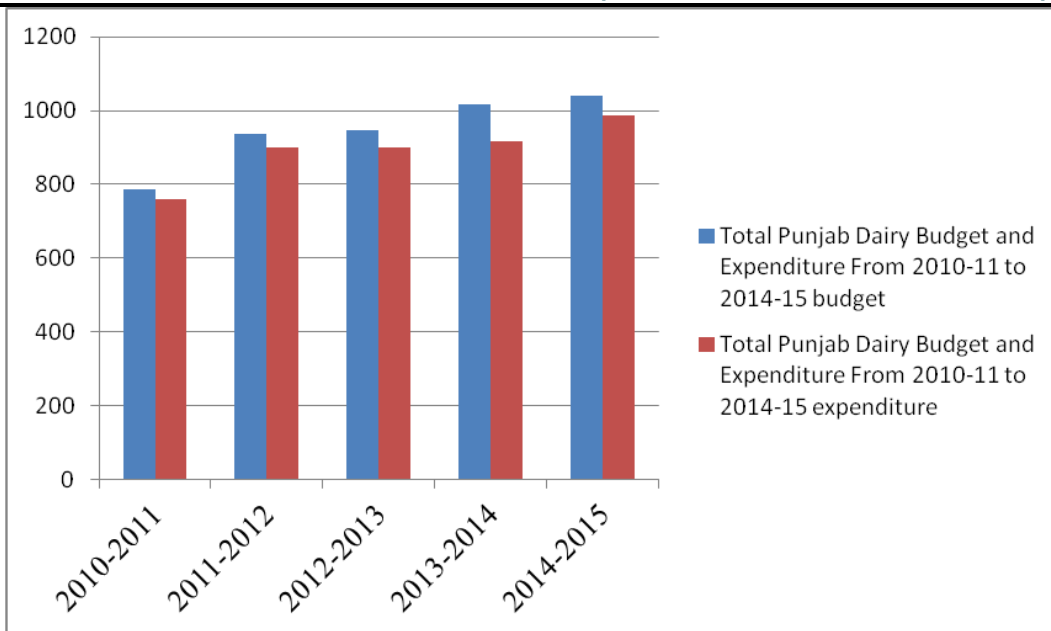


Figure 3. Total Punjab Dairy Budget and Expenditure From 2010-11 to 2014-15

The observation of the table 3 shows total Punjab Dairy Budget and Expenditure From 2010-11 to 2014-15. During the year 2010-11 a budgetary provision was made of Rs. 785.9 lakh but actual expenditure was 760.25 lakh. Recently Punjab dairy development department has increased from 785.9 lakh in 2010-11 to 1040.55 lakh in 2014-15. but actual expenditure 985.22 lakh in 2014-15.

Table 4 Proposed outlay for Rashtriya Krishi Vikas Yojna for 2014-2015

S.No.	Category	Amount proposed project
A	Production growth	1569.3
B	Infrastructure and assets	300
C	Special schemes	948
	<b>Grand total</b>	<b>2817.3</b>

Source: Calculated from Annual Administrative Report of Dairy Development Department of Punjab from 2014-15

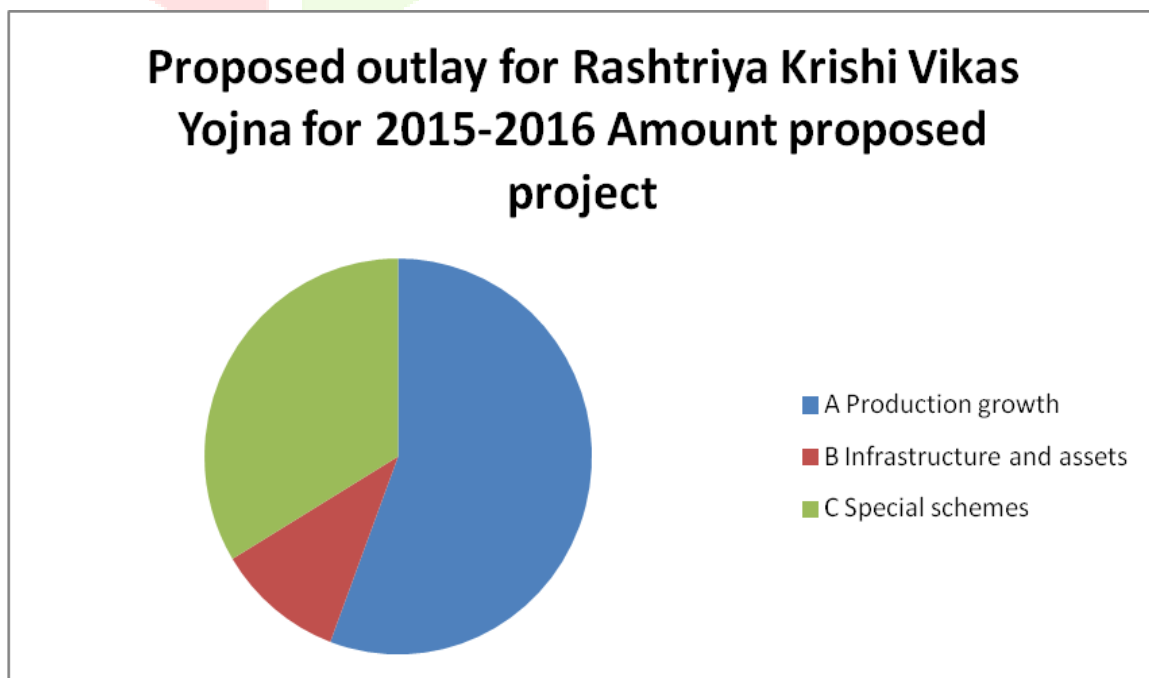


Figure 4: Proposed outlay for Rashtriya Krishi Vikas Yojna for 2015-2016

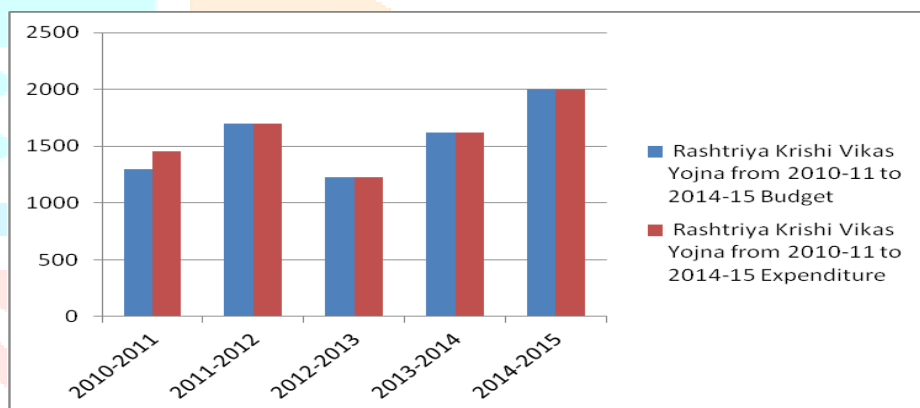


Rashtriya Krishi Vikas Yojna came into existence during the year 2007-08. Dairying has been recognized as one of main associated activity of agriculture. Rashtriya Krishi Vikas Yojna divides into three category production growth, infrastructure and assets and special schemes. Total proposed amount under this yojna was **2817.3 lakh**. The proposed amount for production growth was 1569.3 lakh , for infrastructure and assets 300lakh and other special schemes 948 lakh. Under RKVY titled “National Mission on protein Supplement” a part project of special programme on Dairy Development .the amount issued under this scheme providing 25% subsidy on to Dairy farmers.

**Table 5** Rashtriya Krishi Vikas Yojna from 2010-11 to 2014-15

Year	Budget	Expenditure
2010-2011	1298	1455
2011-2012	1695.55	1695.55
2012-2013	1225	1225
2013-2014	1620	1620
2014-2015	2000	2000

Source: Calculated from Annual Administrative Report of Dairy Development Department of Punjab from 2010-2011 to 2014-15



**Figure 5.** Rashtriya Krishi Vikas Yojna from 2010-11 to 2014-15

Table 5 shows the data related with Rashtriya Krishi Vikas Yojna for the period 2010-11 to 2014-15. Under this scheme, budget was 1298 lakh and actual expenditure was 1455 lakh. The budget and expenditure was increased from 1298 lakh to 2000 lakh to promote the dairy occupation in Punjab. The amount have been utilised for providing incentive for modern cattle shed, insurance /chip mechanization and establishing of government analytical laboratory.

**Table 6** Training under Self Employment Schemes for 15 days

Years	Person
2010-2011	4826
2011-2012	5180
2012-2013	970
2013-2014	1208
2014-2015	4631

Source: Calculated from Annual Administrative Report of Dairy Development Department of Punjab from 2010-2011 to 2014-15



Figure 6: Training under Self Employment Schemes for 15 days

Table 6 reveal the data related with Training under Self Employment Schemes for 15 days for promoting self employment in Punjab. Under this scheme, the department providing training to 4826 persons during the 2010-2011 which was decreased in year 2012-2013 were 970 person. In the year 2014-15, the department was provided training to 4631 persons.

Table 7 Dairy Development Training Schemes for 45 days

Year	Training
2010-2011	1095
2011-2012	969
2012-2013	5181
2013-2014	5745
2014-2015	641

Source: Calculated from Annual Administrative Report of Dairy Development Department of Punjab from 2010-2011 to 2014-15.

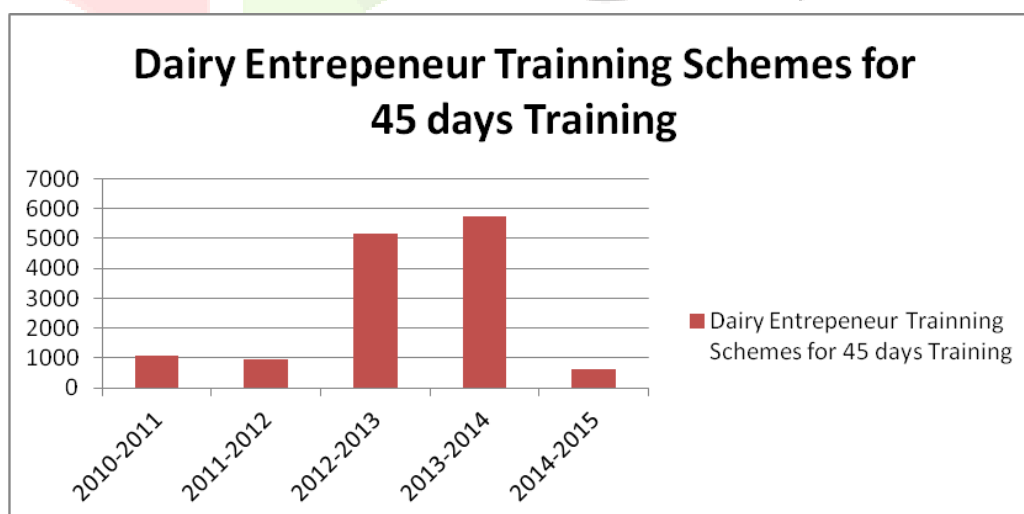


Figure 7: Dairy Development Training Schemes for 45 days

Table 7 provide the information regarding 45 days Training Schemes in Punjab .The main objective of the training was to make self dependent to milk producer in dairy farming occupation. This training provides knowledge regarding



dairy. Under this scheme, the department providing training to 1095 persons during the 2010-2011 which was decreased in year 2011-2012 were 969 persons. In the year 2014-15, the department was provided training to 641 persons.

## 6. Recommendation

- Dairy sector in Punjab has huge potential but it is possible through whole hearted support by government and Dairy sector faced problems related with delay in release of funds by government
- Dairy department should required adequate manpower.
- Government should provide of basic dairy facilities and credits facility to poor farmers.

## 7. CONCLUSION

Total Milk production trend goes upward direction in India and Punjab. During analyzing the annual growth rate in milk production it is not declining but shows slow growth. The negative compound annual growth rate was 0.27% of per capita availability in Punjab. Rashtriya Krishi Vikas Yojna , Training under Self Employment Schemes for 15 days, 45 days Training Schemes for promoting self employment in Punjab. Rashtriya Krishi Vikas Yojna divides the schemes into three category production growth, infrastructure and assets and special schemes. Total proposed amount under this yojna was **2817.3 lakh**. The proposed amount for production growth was 1569.3 lakh , for infrastructure and assets 300lakh and other special schemes 948 lakh in 2015-16. Under RKVY titled “National Mission on protein Supplement” a part project of special programme .The amount provide under this scheme use to give 25% subsidy on to Dairy farmers. We try to analysis various schemes which promote the dairy sector as independent occupation.

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