

EXECUTIVE SUMMARY

Efficient and effective service delivery systems are to be provided to all the concerned stakeholders as long as all the stakeholders will have a stake in the service providing machinery or organisation. It could be an organisation, a state, a cooperative entity or an institution. The impact of an efficient and an effective “service delivery system” then needs to be assessed / measured or even to be qualitatively or quantitatively estimated.

Keeping this in perspective M/S Remote Sensing Instruments, Bengaluru, was retained and awarded by the Karnataka Evaluation Authority (KEA) to undertake an evaluation of “**Milk Incentive Scheme**”(MIS) of the Department of Animal Husbandry and Veterinary Services, in Karnataka implemented during 2008-2013.

Government of Karnataka in its order dated 08-09-2008 launched a “Milk Incentive Scheme” providing Rs. 2/- per litre of milk as an incentive amount to the farmers, who are selling milk to the Milk Producers Cooperative Societies (MPCSs), located in rural areas. The scheme is under implementation since 09-09-2008 and during the year 2013-14, the Government revised prevailing rate of Rs.2/- to Rs.4/- to be effective from 14-05-2013. The revision was mainly to encourage dairy farming activity under the cooperative sector. The Department has spent around Rs.1279.45/- crores by the end of 2012-13. Thus, around 19.41 lakh farmers are benefited throughout the State.

Objectives/Purpose of the Scheme

1. To make the dairy activity profitable in rural areas especially to small/marginal farmers, agricultural labourers/landless, women and other weaker section of the society.
2. To motivate the rural youth to take up dairy activity and improve their economic status and avoid migration of youth to the urban areas in search of livelihood.
3. To improve the economic and social status of the milk producing dairy farmers in rural areas.
4. To increase the milk production to help in providing food security, and
5. To support and encourage dairying activities in Cooperative Sector in the rural parts

As per the approved action plan, study has been done, committing to the points mentioned in the Terms of Reference (ToR).

Sampling Design and Methodology

- There are **14 District Milk Unions (DMUs)** (“Chamarajanagar DMU” is newly established one from 1st April 2015) brought under the evaluation study.
- All the **29 districts** are covered for the study except “Yadgir district” due to absence of functional MPCs.
- **Thirteen Study Clusters** were identified covering 300 milk pouring farmers in each DMU in the vicinity of the MPCs (Total 3900 milk pourers) and **One Control Cluster** of 325 milk producing farmers of groups, supplying milk to private vendors.
- Three senior level officers in the Head Quarters, 21 District Deputy Directors of the Department of AH&VS, and 48 field level veterinarians, 14 Managing Directors of DMUs and 44 Secretaries of the local MPCs were considered as stakeholders for the study.
- Eleven trained retired senior veterinarians worked as consultant Nodal Officers for all the 13 DMUs. They were given required guidelines, inputs related to the evaluation study and operational methodology. Approved formats (1 to 5) and in addition, customized formats, required guidelines, scrutiny sheets were also given to them.
- Thirty eight evaluators were selected and trained in rural areas by the Nodal Officers to proceed with the collection of study related data and information.
- As per the Time Frame of events and strategy, 83 officers, 44 MPCs Secretaries, and 4225 dairy Milk Pourers (3900 under study cluster and 325 in control cluster) were interviewed by administering printed questionnaires in Kannada language.
- Entire data and information collection activity was monitored by the team members. Reality check was also done by the committed team by making visit to the study cluster village.
- Accordingly, required primary and secondary field data and information were efficiently collected from all the stakeholders. Furthermore, data was processed, analysed and inference registered based on the findings.

Incentive Amount Release and Delivery System

- During the study period, incentive amount has been released to all the 13 DMUs (2008-2013) and newly established Chamarajanagara DMU since April 2015 through the Department of AH & VS, according to the availability of grants released by the Government.

- The DMUs have claimed actual incentive grant amount every month from the Department of AH & VS, submitting bills in the first week of the subsequent month.
- The bills have been processed at the Department of AH & VS and the cheques for the claimed amount were sent to the Managing Directors (MDs) of the respective DMUs to disburse the amount to all the MPCS, in their jurisdiction for further payment to Farmers / Cattle owners.
- The acquittance register for the disbursement is maintained by the Secretary of the concerned MPCS.

Findings and Discussion based on the TOR Questions

1. Performance of the Department of AH & VS as an implementing agency of the MIS in nutshell

Department of AH&VS has incurred an expenditure of 83% to 98% of Grant amount released by the Government under the MIS. Due to this within a span of 7 years, observed growth in the quantity of milk procured by the rural dairy farmers is from 11% to 39% by 2016. This increase is due to gradual shift of rural milk pourers, from the private milk procurers to the protective field of cooperative societies. This growth seen is exclusively due to the positive impact of the MIS implementation. This is a great support to the growth of cooperative institutions, in the state. Therefore, the **Overall Performance** of the Department of AH & VS is impressive and could be rated as **Very Good**. Role played by the DMUs is also **Highly Satisfactory**. This is a bench mark for achieving Excellence in future.

2. Average time taken for the incentive amount to reach the milk supplying person after the amount is released by the State.

- Average time taken is 80 days in 2009-10 and in 2011-12 it is 104 days. This duration is considered as delay and is **too long**.
- Majority of stakeholders have reported that more than 3-6 months delay occurred in many instances.
- The delay caused could be mainly due to claims processing at different levels and availability of grants.

3. Whether the amount released to farmers is reaching them in full or there any unwarranted / illegal deductions made in any stage of disbursement?

- The results indicated that the legitimate claims have been completely settled in full. Illegal and unauthorised cuts are not made.
- All the 13 MDs of DMUs have reported that entire incentive money pertaining to the period 2008-09 to 2012-13 has reached respective farmers in full.
- It is also reported that at present incentive money is being transferred by ECS to the farmers' account, since April 2015, without much problem.

4. Impact of the MIS on milk production and number of quality of milch animals and on reduction of migration of rural youth to urban areas.

I. Milk Production:

- The growth of milk production in study cluster is indirectly measured from the data of quantity of total milk supplied to the MPCs. Observed growth is 8.16% to 70%, which is highly significant in the study cluster as compared to the control sample.
- State level sample survey results indicate Cumulative Growth in Total production is 32.7% during 2012-13 and during 2014-15 it is 42.24%
- The MIS scheme has an overall positive highly significant impact on the milk production in the state.

II. Impact of MIS on Number of Milch Animals

- Data analysis of study cluster revealed, positive growth varying from 2.18% to 9.52% by increase in the total number of milch Cross Bred Cows and Buffaloes and is highly significant as compared to the control cluster sample. Observed increase of quality milch animals could be mainly due to the impact of the MIS implementation in the state.

III. MIS Impact results on other related parameters

- Data obtained from the DMUs has revealed highly positive increase in the average percentage growth in number of functional MPCs' (26.62%), Women milk pourers(30.8%), Scheduled Caste milk pourers(28.44%), Scheduled Tribe milk pourers (37.19%), Total Milk pourers (24.31%) and Total quantity of Milk Purchased (120.48%) from Women(117.18%), and SCs' (137.32%) and STs'(131.16%) in litres during the study period 2008-13, under all the 13 DMUs in the state.

- Observed positive growth in all the 9 indicators is possibly due to the shift of milk pourers / dairy farmers, from the private milk purchasers to the MPCS and also due to increased production and productivity at household level. The observed outcome may be attributed to the influence and motivation by the incentive money being given under the MIS by the government.

IV. Migration of Youth in Rural Areas of Study and Control clusters.

- Village level Migration of youth to the cities is taking place in general for various reasons. However, data reveals that very few youth have taken up dairy farming in the study cluster villages.
- Since dairy farming provides regular income, a small number of youth, who are usually school dropouts or unemployed, have settled for dairy farming depending on their family financial situation and opportunities.
- Data analysis has also confirmed the same above.
- Data analysis has revealed that the MIS does not have any impact on reducing migration of youth. The same is confirmed during the village visit for reality check.

5. Response of stakeholders on incentive amount of Rs. 2/- (in the past) or Rs. 4/- (at present) per litre of milk on the rate, revision and reasons for revision

- Majority of respondents have reported that the existing incentive rate is less.
- Higher rate is required due to increased feed cost and increased total management cost of dairy animals. Thereby the cost of production of litre of milk has also increased substantially.
- Data revealed that the demand for rise in the incentive amount rate, by farmers is genuine and reasonable.
- A model Score Card method is suggested for adoption, to address equity among needy farmers, if the incentive rate is revised by the Government to Rs.6/- per litre of milk as a support for the districts which are relatively less in dairy development activities, under cooperative sector.
- Proposed method could be used to arrive at a variable incentive rate for DMUs/Districts, based on the Cost of Production of litre of Milk, its Purchase rate, Number of Milk Pourers in the Districts/DMUs, and the Productive Population of Milch animals in the districts.

6. Impact of MIS on the Socio-Economic condition of Farmers and Landless

- Data analysis indicates that the individual farmers' income level in the study cluster areas has increased by annual growth varying from 7 to 20% during 2008-13. Observed Cumulative Growth is 94%.
- Regarding the Investment pattern of income, 29 to 36% farmers have used on household articles like TV, Fridge and other utility items. Majority (62.4%) of dairy farmers made savings in banks.
- 13.4% of farmers have purchased land also.
- 9% of farmers have used their income for cattle shed repairs.
- Out of additional income, 67% of farmers have also used for their children's education.
- Majority (88 to 95%) of farmer's social status increased by being Village Panchayath Members, MPCs Directors and by increased participation in local dramas and festivals etc.
- Therefore, results indicate that the MIS resulted in positive impact on the socio-economic conditions of the farmers under milk cooperative sector as compared to the control farmers.

7. Impact of MIS on improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed

- The MIS has significantly positive impact on improving awareness of the quality of dairy farm management at the farmer's level in the study cluster as compared to the control cluster farmers.
- This is also a consequent positive effect of capacity building activities conducted, like exposure visits to the successful farmers, short term trainings by the DMUs and also due to the counselling of farmers by the local veterinarians during treating of animals.
- During reality check also has confirmed the findings during the village visit.

8. Impact of MIS on rural youth to take up dairy activities solely due to Incentive money.

- The MIS might have influenced a few youth to continue with the dairy farming due to increased income from the sale of milk.

- The scheme appears to have no influence on youth to take up dairy farming, exclusively due to incentive money.
- Data analysis has indicated not much difference between the study as well as control clusters.

9. Impact of the MIS on the profitability of dairy farming in rural areas

- Data analysis indicates that the individual farmers' income level in the study cluster areas has increased by annual growth varying from 7 to 20%, during 2008-13.
- It is obvious that the farmers' income has increased due to the incentive amount being paid by the government. Farmers do think that the additional income he gets is itself as profit.
- However, positive growth percentage observed in the income is significant, due to the MIS implementation as compared to the farmers in control cluster who are deprived of the MIS in their area. This is an important outcome of positive impact of the MIS implementation.

10. Data and information about over charging at any level and monitoring the MIS to prevent any illegal claims

- In the study cluster, majority (98%) of farmers have reported that they have not got more money due to overcharging. However a few instances of illegal claims have been reported.
- The Extension Officers of the milk union, Local Officers and audit party have done periodical verification of accounts and payments made, as a routine activity. Dedicated teams constituted by the AH & VS Department are also verifying the accounts at the field level once in a while.
- At the state level MIS progress is being reviewed through the Video Conference, periodically by the Principal Secretary, Department of AH&F. However, it is suggested that constituted review committees at district and taluka levels have to conduct meetings regularly.

Opinions offered by all the stakeholders in general on the MIS Scheme / Programme

- Farmers are happy about the scheme.
- Incentive amount being paid is less and needs to be revised to the higher scale, due to increased feed and overall dairy management cost.

- Incentive amount needs to be paid along with the milk bill of farmers to overcome the delay in making payments.
- Scheme has positive impact on milk production, increase in number of quality animals and management of dairy animals.
- Rural farmers are attracted by the scheme and coming back to the folds of cooperative sector to supply milk as milk pourers.
- MIS scheme needs to be continued till they get remunerative purchase rate by the respective district milk unions.
- Scheme has positive effect on the socio economic condition of the milk pourers.

Lessons learned

On Incentive Amount or Service Delivery System

“Any scheme providing incentive amount or any service or benefit, in the larger interest of the society, before implementation, the method of delivery system for adoption has to be discussed thoroughly to know the “PROS AND CONS” by the concerned implementing agencies. Based on the outcome, an efficient, suitable delivery system could be selected and guidelines could be issued for adoption aiming at speedy implementation for achieving the objectives efficiently”.

Conclusions

Policy decision of the Government of Karnataka, in sanctioning “The Milk Intensive Scheme” has a highly positive significant impact in general, resulting in an overall development of the dairy activity under the cooperative sector, assuring livelihood for the women, small, marginal and the landless farmers in the state. Now, the Government have a strong justification to continue the scheme with suggested improvements in the incentive amount delivery system with an upward revision in the incentive rate of R.6/- per litre of milk or more in the larger interest of dairy farming community, under cooperative sector. Revision of incentive amount rate, would definitely maintain the pace of sustainable growth in milk production, also in drought situation, aiming at food security.

Recommendations

- 1. Milk Incentive Scheme** under implementation is to be continued with an upward revision rate. It could be of Rs.6/- or Rs. 8/- per litre of milk poured by the dairy farmer to the local village level MPCs, since the majority of stakeholders expressed their need due to increased feed cost and overall dairy farming management cost. The scheme will have to remain till the rural farmers get “Remunerative / Profitable purchase rate” by the respective DMUs, in order to achieve maximum growth in dairy activity in the cooperative sector and to improve the status of dairy farmers.
- 2. “Monitoring, Evaluation, Learning and Documentation (MELD)”** wing could be established at the Commissionerate of AH & VS to take care of “Concurrent Monitoring, Evaluation, for Learning and Documentation” of the schemes under implementation, by suggesting timely mid course corrections and suitable remedies for problems as and when encountered.
- 3. Responsibility of calculating cost of production and purchase rate of milk procured by the milk unions from the rural dairy farmers. Two options are recommended.**

Option – I: National Dairy Development Board (NDDB), could be identified by the government, to take-up the responsibility of calculating the cost of production and also fixing price of milk purchased by the milk unions at the village level, in Karnataka State.

Option-II: ‘Milk’ as such, is an essential commodity, which could also be considered as an item under the purview of “**The Karnataka Agriculture Price Commission**” to protect the interest of the farmers, for assuring the remunerative price for the milk in the State.

The above regulatory authority shall also consider the financial condition of the district milk unions, as one of the parameters, while calculating the purchase rate of milk.

4. Incentive Amount Delivery System under the MIS.

Option I: The present system needs to be further strengthened to make it more efficient in delivering the **incentive amount** to the rural milk pourers along with the farmers’ **milk bill** being paid fortnightly by the MPCs.

Option II: If MIS is continued in the same mode of delivery system, the situation deserves to opt for an efficient dedicated Software System with a net work of connecting all the functional MPCSSs, District Milk Unions from the Department of AH & VS., to monitor the scheme implementation. The software should have scope for maintaining detailed data of milk pourers linked to their Aadhaar number, for accounting and payments verification with digital certification at different levels to assure transparency, accountability and speedy disposal.

This net could be further widened to cover all allied institutions of the department, connecting all livestock farmers with the details of their land and livestock resources to provide door delivery services, input supply and sample survey, livestock insurance and incentives including providing disease forecasting information on mobile SMS in long run, **as a long term plan.**

5. Logistic and Development Support: Two percent of the incentive grant amount, be allocated for creating need based, additional infrastructure and man power, both for the AH & VS Department and the DMUs, including at MPCS level. Part of which could be used for logistic support for conducting “**Training of Trainers**” programmes for local farm women leaders and further, for conducting “**Village Based Trainings**” (VBTs), for dairy farmers to impart knowledge for rearing of dairy animals under adverse / drought situations. This model of capacity building activity results in “**Farmer to Farmer**” extension for knowledge dissemination and sustainable positive growth for the dairy development activity at the village level.

SECTION 1: INTRODUCTION

1.1 Dairy Development - Global Scenario

The world dairy industry has undergone significant structural changes over the last two decades as the milk production has expanded by an annual average compound growth rate of almost two percent. More than half of the world's total milk production has been in the developing countries. Rapid economic growth in many developing countries and oil-exporting countries has stimulated demand for and production of dairy products. In addition, population growth, increased urbanisation and adoption of western eating habits have also boosted demand. Furthermore, dairying is important for food and nutritional security in many developing countries including India because it is a chief source of income and nutritional source for the majority of the rural people. (FAO-2011) (Global Competitiveness in Dairy Sector-Dr. Ramphul-2012)

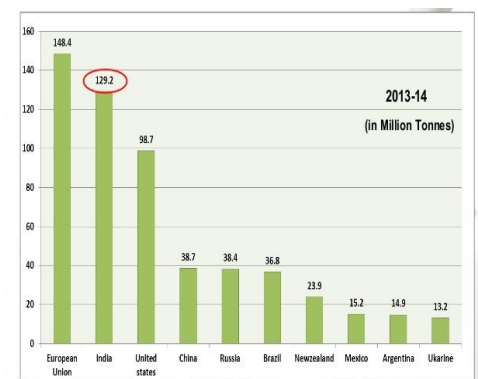
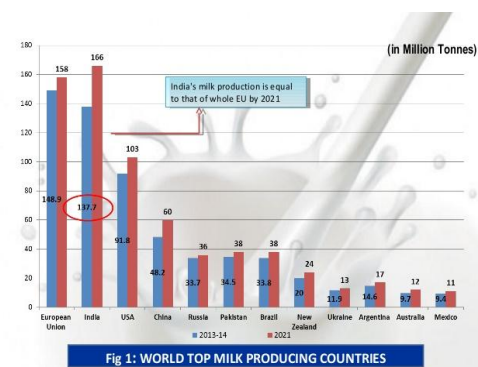
Table 2: Cost of Production of Milk

Cost of production(US \$/ 100 Kg)	Country
> 20 ≤ 30	Argentina, Pakistan, Vietnam, Indonesia , Chile (Small farms), China (small farms).
> 30 ≤ 40	Estonia, Czech Republic, Brazil, Bangladesh, Thailand, Poland, India and New Zealand.
> 40 ≤ 50	Spain, Denmark, Ireland, UK, USA, Germany(large Farms) and Neither land(Large farms) and Israel.
> 50 ≤ 60	Austria, France, Sweden, China, Neither land Small farms) .
> 60 ≤ 120	Switzerland, Norway, Finland, Canada and Germany(small Farms)

Source: IFCN Dairy Report 2011

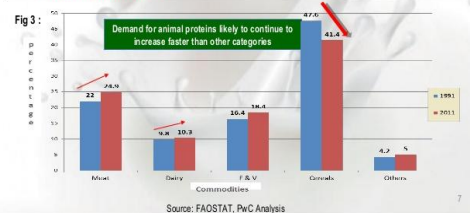


Modern Dairy Farm



Global Consumption increasing faster than Population growth...

- Global consumption of protein increased from 3.7 to 5.4 lakh tonnes per day - CAGR of 2% .
- Global population increased from 5.4 to 7.0 billion - CAGR of 1% .
- Increasing proportions of this growth is from animal protein
 - Meat - 2.9 %
 - Dairy - 0.5 % increase
 - Vegetables, soy and fruit - 2% increase
 - Cereals - decreased 6.2%



1.2 Dairy Development - Indian Scenario

Livestock/Dairy production and Agriculture are intrinsically linked, each being mutually dependent, and both are crucial for overall food security. It forms an important livelihood activity for most of the farmers, supporting agriculture in the form of critical inputs, contributing to the health and nutrition of the household, supplementing income, offering employment opportunities, and finally being a dependable “bank on hooves” in times of need. It acts as a supplementary and complementary enterprise. According to NSSO 66th Round Survey (July 2009 – June 2010), total number of workers in farming of animals is 20.5 million as per usual status (principal status plus subsidiaries status irrespective of their principal activity status). Farmers of marginal, small and semi-medium operational holdings (area less than 4 ha) own about 87.7% of the livestock. Therefore, development of livestock sector is more inclusive.

Currently, livestock is one of the fastest growing agricultural subsectors in developing countries. Its share to total GDP is around 3.9 percent and is largest segment of the agricultural sector. This growth is driven by rapidly increasing demand for livestock products, driven by population growth, urbanization and increasing income. The Net Domestic Product from agriculture and allied activities is Rs. 11, 79,341 Crores out of which livestock sector contributes Rs. 4, 59,051 Crores of value of output. (Department of AHD & F, GoI, Basic Animal Husbandry Statistics 2013)

Indian sub continent maintains nearly 17% of World’s human population and a share of about 10.7% of total livestock resource, while its land share is only 2.3% of the land area in the World. India’s livestock population is 512.05 million. The number of animals in various categories of livestock species as per 19th Livestock Census is cattle – 190.90 millions and buffalo – 108.70 millions. Livestock sector which recorded a growth in value of output about 4.8 percent per annum in 11th Five Year Plan has excellent potential for higher growth in 12th Five Year Plan. The increased demand for protein foods in the country is the main driver for such growth, which is also more inclusive, since small holders and landless farmers account for major share in ownership of livestock.

The Dairy sector in India has grown substantially over the years. As a result of prudent policy intervention, India ranks first among the world’s milk producing nations, achieving an annual output of 132.43 million tonnes of milk during the year 2012-13 as compared to 127.9 million tonnes in 2011-12 recording a growth of 3.5%. This represents a sustained growth in the availability of milk and milk products for growing population, the per

capita availability of milk has reached a level of 296.5 grams per day during the year 2012-13, which is more than the world average of 294 grams per day.

Most of the milk in the Country is produced by small, marginal farmers and landless. About 15.1 million farmers have been brought under the ambit of 1, 55,634 village level dairy cooperative societies upto March 2013. The cooperative milk unions have procured an average of 32.8 million kg of milk per day during the year 2012-13 as compared to 28.7 million kg in the previous year recording a growth of 14.3%. The sale of liquid milk by cooperative sector has reached 23.7 million litres per day during the year 2012-13 registering a growth of 3.7% over the previous year.

Characteristics of India's dairy farming and its relevance to inclusive growth

- Small and marginal farmers own **33 % of land** and about **60 percent of female cattle and buffaloes**.
- Some **75 % of rural households** own, on average, two to four animals.
- Dairying is a part of the farming system, not a separate enterprise.
- Feed is mostly residual from **crops**, whereas cow dung is important for manure.
- Dairying provides a source of **regular income**, whereas income from agriculture is seasonal.
- About a **one third of rural incomes** are dependent upon dairying.
- Livestock is a **security asset** to be sold in times of crisis.

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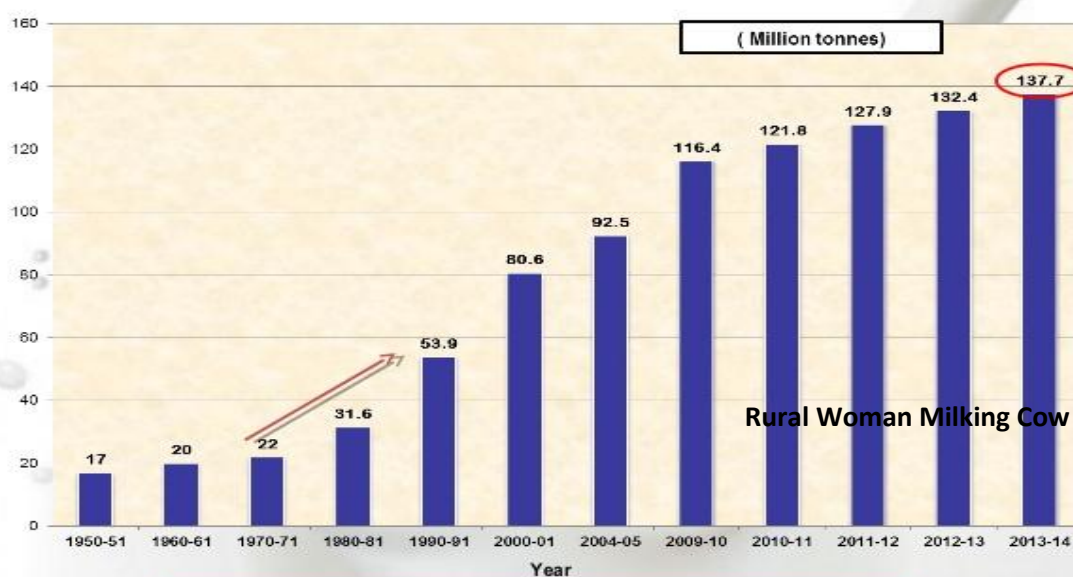


Fig 5: Trend in Milk production in India

Source : Author's Representation based on FAO and NDDB .

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1.3 Dairy Development - Karnataka States' Scenario

Dairy farming has been playing an important role in improving the economic conditions of the farmers in the Karnataka State. About 65% of small farmers, marginal farmers, and agricultural labourers are engaged in Animal Husbandry activities. About 74% of the families are dependent on dairying alone in the state.



Karnataka is the 9th largest state in cattle and buffalo population in the country, accounting for 4.3 percent of the total population as per the latest Livestock Census, 2012. About half of the total bovine population is indigenous cattle and the rest is almost equally shared by crossbred cattle and buffalo population. The share of crossbreds to bovine population has increased from 4 percent in 1992 to 22 percent in 2012, while that of buffalo has marginally increased from 24 percent to 27 percent. Both indigenous cattle and buffalo population registered an annual decline of 4.5 percent and 4.3 percent respectively between 2007 and 2012 census periods, while that of crossbred cattle increased by 5.8 percent. Farmers in the districts of Bengaluru, Kolara, Chikkaballapura, Dakshina Kannada, Chamarajanagar, Mandya, Ramanagara, etc., have more than 40 percent crossbred animals in their herds, which have helped them generate substantial income through dairying.

(Dairying in Karnataka– A Statistical Profile 2015 | Dairy Knowledge Portal)

SECTION 2: BASIS FOR GOVERNMENT INTERVENTION

The Department of Animal Husbandry and Veterinary Services is planning and implementing livestock production programmes in Karnataka State to accelerate productivity in Livestock and Poultry, so as to provide gainful employment and supporting income to rural population. State has 2.9 crores of livestock population as per the 19th Livestock census- (2012). To provide health care to the animals and for improvement and development of breeds of animals, various programmes are implemented by the Department of Animal Husbandry and Veterinary Services (AH&VS), through its institutional network.

The production of milk in the State was 5.99 million MT during the year 2013-14 and 6.12 million MT for the year 2014-15. During 2015-16, the production of milk was 5.37 million MT till December 2015.

The Karnataka Milk Producers Federation is a state level Co-operative organization implementing dairy development activities under 'Operation Flood'. This organization has the responsibility of providing remunerative price and market to the rural milk producers of the

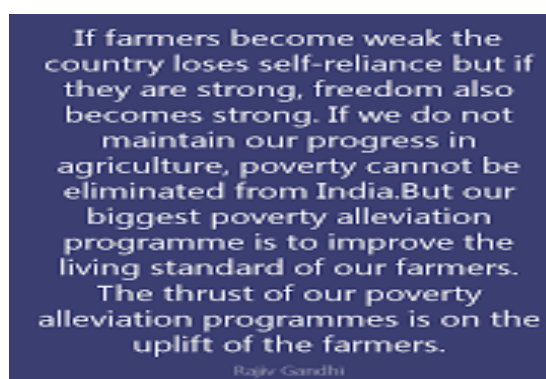
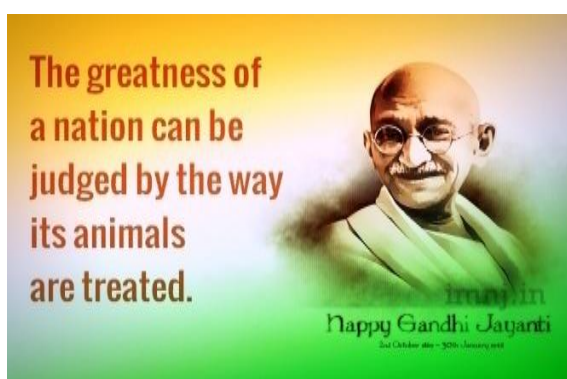
state and of supplying quality milk and milk products to the consumers through its 14 District Milk Producers Unions (DMUs).

- Entire State covered by Cooperative Dairy Development.
- Elected boards are in position in all the District Milk Unions and Federation.
- More than 97% of the Dairy Cooperative Societies (DCS) are earning profit.

There are 14692 Registered Milk Producers Cooperative Societies, out of which 13157 societies are functioning in 22000 Villages with 23.08 lakhs Enrolled Members under 14 District Milk Unions. (KMF website and Economic Survey of Karnataka 2014-15, Department of Planning, Programme Monitoring and Statistics, GoK, Bengaluru)

2.1 Milk Incentive Scheme Implementation by the Department of Animal Husbandry in association with the District Milk Unions of the State of Karnataka

Government of Karnataka in its Government order dated 08-09-2008 launched a “Milk Incentive Scheme” providing Rs. 2/- per litre of milk as incentive to the farmers, which is procured by Milk Producers Cooperative Societies (MPCS), registered by the District Milk Union (DMU). The scheme is being implemented since 09-09-2008 and during the year 2013-14 the scheme has been continued by revising the incentive amount rate from Rs.2/- to Rs.4/- per litre with effect from 14-05-2013, mainly to encourage dairy farming activity under cooperative sector. Thus, around 19.41 lakhs farmers are benefited throughout the State. **Probably, this is a foresighted action and an appropriate measure to overcome the probable, predicted situation of crisis for milk as against the expected increase in the demand for milk during 2016. Review of literature has revealed this aspect, which has been reported in the International Journal of Innovative Research in Science, Engineering and Technology, published in the year 2014.** It is mentioned in the Budget Speech (2015-16) that due to the enhancement of incentive for milk to Rs. 4/- per litre, there is an increase of milk procurement by 16% from 186.16 Crores litres in 2013-14 to 222 Crores litres in 2014-15.



SECTION 3: PROGRESS REVIEW

3.1 Awarding of task of Evaluation Study

M/S Remote Sensing Instruments (RSI), Bengaluru, the Consulting Organization (CO), has been retained by the Karnataka Evaluation Authority (KEA) to undertake an “**Evaluation of the Milk Incentive Scheme**” of the Department of AH & VS, in Karnataka implemented during 2008-2013.

3.2 An Incentive Amount Release and Delivery System

The incentive amount is being released to all the 13 DMUs (2008-2013) and newly established ‘Chamarajanagara’ DMU since April 2015 through the Department of AH & VS, Govt. of Karnataka, according to the availability of grants released by the Government. The DMUs are submitting their respective claims of incentive grant amount every month to the Commissioner, AH & VS, in the first week of the subsequent month. The bills are processed at AH&VS Department and the cheques for the claimed amount are sent to the Managing Directors (MDs) of the respective DMUs to disburse the amount to all the MPCs, in their jurisdiction for further payment to Farmers / cattle owners. The acquittance register for the disbursement is being maintained by the Secretary of the concerned MPCs. Till the end of 2013, a total amount of Rs. 1275.46 Crore as expenditure has been booked by the AH & VS, under the scheme.

SECTION 4: PROBLEM STATEMENT

4.1 Objective of the Study

Broadly the **objective of the study** is to evaluate the scheme and answer the questions posed in the Terms of Reference (ToR) as a fact finding mission.

The questions for Evaluation Study are;

1. Whether the incentive amount is actually motivating or becoming a subsidy? Whether the scheme is meeting the desired objectives? If not, which are the areas of concern and what corrective action is needed?
2. Whether the incentive amount needs to be altered? If so, what should it be? Is the delivery of the incentive amount efficient and aberration free? If not, what is the suggested recourse to ameliorate it?
3. Whether transfer of incentive money to the bank accounts of milk supplying farmers by Electronic Clearing System (ECS) is in the interest of the scheme’s objectives and the milk suppliers?

And any other relevant points observed and revealed in the course of evaluation study.

SECTION 5: SCOPE, OBJECTIVES AND EVALUATION QUESTIONS

5.1 The scope of the scheme

The entire State of Karnataka is under the scope of the scheme.

5.2 Objectives of the Scheme

Broadly the Objectives/Purpose of the scheme were;

1. To make the dairy activity profitable in rural areas especially to small/marginal farmers, agricultural labourers/landless, women and other weaker section of the society.
2. To motivate the rural youth to take up dairy activity and improve their economic status and avoid migration of youth to the urban areas in search of livelihood.
3. To improve the economic and social status of the milk producing dairy farmers and cattle owners in rural areas.
4. To increase the milk production and this will help in providing food security, and
5. To support and encourage dairying activities in Co-operative sector in the rural parts.

5.3 Evaluation Questions

1. What is the average time taken for the incentive to reach the milk supplying person after the amount is released by the State? Is this too long, short or O.K?
2. Whether the amount released to farmers is reaching them in full, or there any unwarranted/ illegal deduction made in any stage of disbursement?
3. What is the impact of the incentive to farmers, with reference to increase in the production of milk by increasing the number or quality of milch animals and in reduction in migration of rural youth to urban areas etc?
4. Whether the incentive of Rs.2 (in the past) or 4(at present) per litre is sufficient? Does it need to be changed? If so, why, considering all and by how much?
5. Is there any impact on the socio-economic condition of farmers and agricultural labourers by the introduction of this scheme?
6. Whether there is improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder solely because of this incentive provided?
7. Have rural youth been attracted to take up dairy activities solely due to this scheme being in vogue?
8. Has the scheme made any difference in the profitability of dairy industry in rural areas?
9. Whether the incentive money is being over charged at any level? Are any checks and balances to prevent these?

SECTION 6: EVALUATION DESIGN

Considering all the questions posed, a systematic study was planned and obtained approval for the Inception Report to take up an evaluation study on behalf of the Karnataka Evaluation Authority (KEA), Government of Karnataka. As per the approved action plan, study was under taken, committing to the points mentioned in the ToR, as envisaged. As a result, all the questions posed in the ToR are answered and in addition, study has also identified **Areas of Improvement** and provided **Recommendations** for the improvement of “The Milk Incentive Scheme” under implementation in Karnataka State.

6.1 Log Frame: Logical Frame Work-Evaluation Design, Logical Model followed for Study

Main Components	Stakeholders considered are – Department of AH & VS, Thirteen District Milk Unions, District and local Veterinary Institutions, Local Milk Producers Cooperative Societies linked to the study Cluster farmers and Control Scattered Cluster farmers.
Study Implementation Objectives	To study the overall impact of “The Milk Incentive Scheme” on Milk production in rural areas, Institutional attitude related to the incentive delivery system, Socio-economic changes among dairy farmers, Profitability of Milk Production and Social acceptance of the scheme in general. Also to suggest and recommend the corrective measures for an efficient incentive delivery system of the scheme in the state.
Outputs- (Quantitative Study)	All indicators viz., increase in milk production, milch animals, role of MPCSSs, participation of SCs, STs, Small, Marginal and landless farmers and their Socio-economic changes, migration of youth are considered for change in growth at the study clusters of the state. Further, comparing with control cluster group for significance of positive or negative growth is also considered.
Planned Short-term Outcomes- (Qualitative Study)	Increased income levels, scale of production, Increase in number of milch animals reared, increased dairy activity in the village level.
Planned Long-term Outcomes- (Qualitative Study)	Positive socio-economic changes, reduced migration of rural youth by adoption of dairy farming, profitable price for the milk poured by rural farmers to the local MPCSS and to see positive sustainable growth in milk production activity in the cooperative sector. Ultimately assuring food and nutritional security in the state.

SECTION 7: EVALUATION METHODOLOGY

7.1 Sampling Procedure

There are 13 DMUs (2008-2013) and one more Chamarajanagar DMU was established by 2015 in the State. The DMUs procure milk from more than 19.41 lakh farmers. Each Milk Union has been evaluated on all parameters suggested under afore mentioned evaluation questions. The study clusters – as a random sample selected for study is proportionate to the size of MPCs member strength, at least 300 persons in each and every DMU, such that small farmers (SF), marginal farmers (MF), landless (LL), women, and SC & ST population adequately represented.

For the purpose of identifying Sample Cluster, 300 milk producing member farmers and their respective MPCs are taken as a **Study Sample cluster**. For the purpose of random selection, all the 13 Milk Unions are grouped into three blocks, i.e., Block-I consisting 4 DMUs (Kalaburagi and Bidar DMU, Vijayapura and Bagalakote DMU, Dharawada, Haveri, Gadag and Uttara Kannada DMU, and Belagavi DMU), Block-II, having 4 DMUs (Hassan, Kodagu and Chikkamagaluru DMU, Dakshina Kannada and Udupi DMU, Shivamogga, Davanagere and Chitradurga DMU, Ballary, Raichur and Koppal DMU), Block-III consisting of 5 DMUs (Bengaluru (Urban) and (Rural) and Ramanagara DMU, Tumakuru DMU, Mysuru and Chamarajangara DMU, Kolar and Chikkaballapura DMU and Mandya DMU). While selecting thirteen study clusters, one nearer to the district head quarters, one to the taluka head quarters, one to the hobali head quarters and one at the village level are considered for evaluating the impact of the scheme in the Block-I DMUs. The same pattern is followed for the Block-II of 4 Milk Unions and in the Block-III of 5 Milk Unions. This pattern has ensured random sampling for selection of clusters, encompassing all the 29 districts of the State. (Yadagiri District is not considered due to lack of functional MPCs). This method has also addressed uniform distribution of study samples in the state. Furthermore, for evaluating impact of the scheme in any district/Union area/areas, a **Control Sample**, (where the scheme is not operational) of around 325 dairy farmers, at least 25 dairy farmers from the area of each of all 13 DMUs are considered. For example, group of farmers supplying milk to hotels but not to Milk Unions is also considered as a **“Non Scheme Operational Control Sample cluster**.

7.2 Study Tools: Calculator, Personal Computer, Laptop, Work Sheets and Software have been used as tools/Instruments for Pilot and Main Evaluation study. Guidelines Sheet,

Check list, Data Scrutiny formats were also prepared for the Nodal Officers and have been used during the survey - data collection.

7.3 Steps followed in the Evaluation Study

- 1. Study and Verification of Government Order:** The scheme related Government Orders were studied and the Terms of Reference perused, focussing on the objectives of the study and the questions to be answered in the fact finding evaluation task.
- 2. Development of Indicators:** Suitable Indicators were identified, based on the objectives and the questions provided in the Terms of Reference and the same were discussed with the Coordinator of the AH&VS Department and the KEA.
- 3. Development of Survey Formats /Questionnaires:** Appropriate formats as questionnaires in Kannada were developed and consulted the Coordinator of the Department of AH & VS., and the KEA. Following are the formats and are appended as **Annexure 2-6**.

Format No. 1. For the officers of the Department of AH & VS

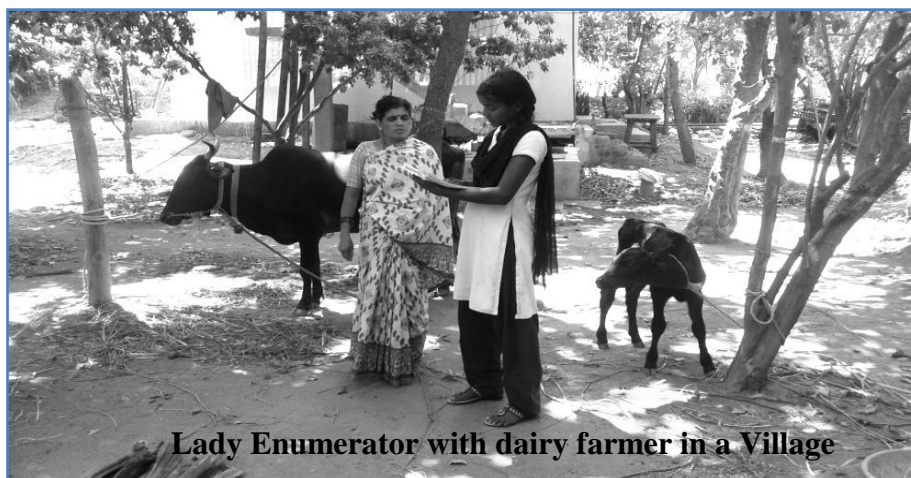
Format No. 2. For the Managing Directors of the District Milk Unions

Format No. 3. For the Secretaries of the MPCS

Format No. 4. For the farmers of the Study Cluster -Milk Pourers to the local MPCS

Format No. 5. For the Control Cluster Milk Producing Farmers

7.4 Evaluation Process: Evaluation study has been carried out by administering customised questionnaires. Information was also collected from key stakeholders by asking qualitative and quantitative questions.



Lady Enumerator with dairy farmer in a Village



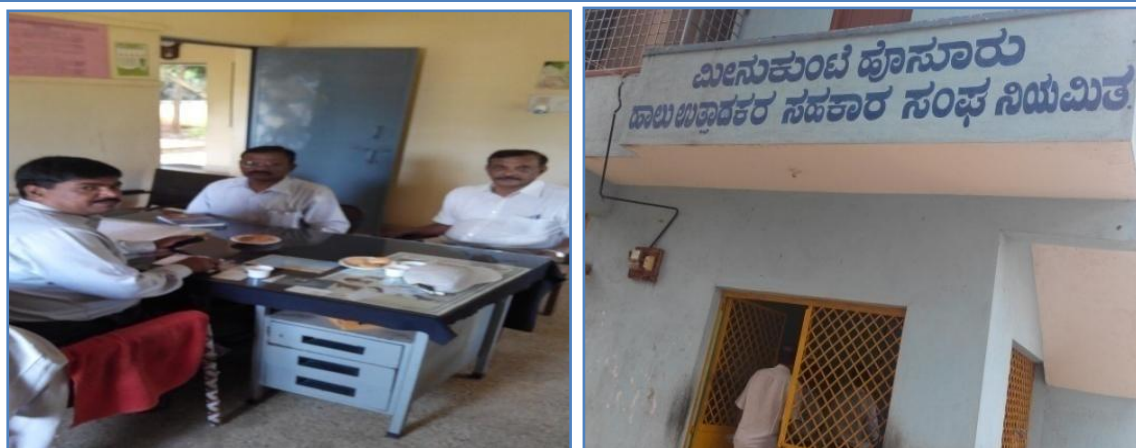
7.5 Stakeholders and Number of Respondents

The details of sampled stakeholders and their number considered as respondents for the study is given below. They were administered questionnaires by the Nodal Officers and Evaluators to obtain the data, opinions and suggestions for the evaluation study.

Stakeholders	Respondents in Nos.
AH&VS Dept. Officers in Head Office	3
Managing Directors of the District Milk Unions	14
District Deputy Directors-AH	21
Local Veterinarians	48
MPCS Secretaries	44
MPCS active Members	3900
Milk Producers of Non operational area	325
Total	4355

7.6 A Pilot Study:

A Pilot study was undertaken by a team comprising Principal Investigator (PI), Chief Nodal Officer (CNO), Nodal Officer (NO) from RSI/EMF and the local Chief Veterinary Officer by visiting Meenukunte Hosur Milk Producers Cooperative Society Ltd., Bengaluru North Taluka, Bengaluru Urban District. The objective of the pilot study was to test the questionnaires / study tools on field and assess its “**Applicability, Appropriateness and Comprehensiveness**” for collection of required data. Based on the realities and local situations prevailing, questionnaires were fine tuned.



Visit to Meenukunte Hosur Milk Producers Cooperative Society Ltd., Bengaluru North Taluka, Bengaluru Urban District, by the Study Team.



SECTION 8: DATA COLLECTION AND ANALYSYS

8.1 Evaluation Team Members:

The man power deployed for the Evaluation Study is;

Table 1: Evaluation Team Members

Sl.Nos	Evaluation Team Members	Number
1	Principal Investigator	1
2	Social Scientist	1
3	Research Assistant/Statistician	1
4	Chief Nodal Officer	1
5	Nodal Officers	11
6	Field Enumerators	38
7	Data Entry Operators	1
	Total	54

8.2 Task for Nodal Officers to spearhead the survey at field level: Eleven Senior Retired Officers of the Department of AH & VS., having field experience, were recognised as consultant Nodal Officers for the study. Their main task was to select the clusters for study and control purpose and train the selected enumerators in the cluster area and monitor the entire process of data collection at the grass root level, with the help of the Extension Officers of the DMUs and the local Veterinarians. They were also apprised to use the Format-1 and 2 to collect information and data from the District Deputy Directors, local Veterinarians' of the AH & VS Department and the MDs of the DMUs.

8.3 Capacity Building Activity: One day Crash Course of "Training of Trainers" (TOT) programme was conducted for all the eleven Nodal Officers to appraise the details of Milk Incentive Scheme objectives and other important points to fine tune their task. They were also trained on the use of formats in the field and to select the required number of enumerators in the cluster area based on the field situation for collecting the data from the farmers of the Study Sample and Control Clusters. During the training, they were supplied sufficient number of all the formats in Kannada and the stationery to be used by them and the enumerators at the field level. They were also provided the guidelines and the additional formats for scrutiny of the data sheets and final checklist for verification of appropriate entries and to despatch all the formats to the consultant Chief Nodal Officer (CNO) for data processing. To support the data collection system they were also supplied with stationery kit for an effective data collection activity at the field level.

8.4 Concurrent Monitoring of Study Survey: The activity progress of Nodal Officers was periodically monitored and any clarification required was attended by the PI and the CNO.

8.5 Field level Survey: Field Survey questionnaires were administered in the study area by 11 Nodal Officers and 38 trained Enumerators.

8.6 Reality Check at the Field Study: The PI and the CNO along with the Nodal Officers have undertaken reality check by visiting a study cluster-Byatha Village of Bengaluru (Rural) district. The team had open house discussion with the MPCS President, Secretary and a few member farmers along with the enumerator, to have first hand information on the reality of process of data collection and also to get the opinion of the farmers, MPCS members on the "Milk Incentive Scheme" implementation.

8.7 Output Formats development, Data collation and cleaning, it's Study for Processing:

Data sheets obtained from the field were again scrutinised for the development of an effective data processing plan. A customised Software main frame was perused and appropriate parameters for the output formats were incorporated for the data compilation and processing.

8.8 Processed Data Analysis: Dedicated team, comprising the Social Scientist, Statistician, CNO and PI, studied the processed data and analysed output results for all the indicators-parameters, with reference to the questions asked in the Terms of Reference.

8.9 Discussion with the MDs of the DMUs and the Secretaries of the MPCs: In order to have additional information and confirmation of some aspects of the findings, discussions were held with the concerned, as and when required.

8.10 Results Analysis, Findings and Inference: Results analysed and the Information provided in the formats were further studied and findings were interpreted as Inference, which is relevant to the indicators and the asked questions. In general, suitable statistical methods were adopted for analysis of results to infer as to know, whether the scheme has made statistically significant difference in both the qualitative and quantitative impact or not, in relation to the indicators considered.

8.11 Preparation of Evaluation Study “Draft Report”: Draft Report was prepared along with feasible recommendations for discussion with the concerned officers of the Karnataka Evaluation Authority (KEA) and the Department of AH & VS for fine tuning the same.

SECTION 9: FINDINGS AND DISCUSSION

9.1 Performance of the Department of AH & VS. as an implementing agency of the MIS in nutshell:

Performance in relation to the grant utilisation and increase in milk procurement by the milk unions is studied for the period 2008 to 2013 (First Five Years) and then for the period 2013 – 2016 (second three years). For the first five years, farmers were paid an incentive of Rs.2/- per litre of milk poured to the MPCs. During 2013-2016 (Second three years) farmers got the revised rate of Rs.4/- litre of milk, effective from 14th May 2015.

Table 2: Details of the year wise grant release, expenditure incurred, along with year wise milk production estimates, actual milk procurement and annual growth percentage of milk procured by the MPCS, in the State

Sl. No.	Year	Grant amount. (Rs. Lakhs)	Expenditure incurred (Rs. Lakhs)	%	Milk production in the State. (000 tonnes)	Milk procured by Milk Unions (lakh litres)	% Milk procured by Milk Unions (%)
1	2008-09	11000.00	9832.61	89.40	4487	4916.30	11.0
2	2009-10	25000.00	22250.00	89.00	4769	11125.25	23.3
3	2010-11	30165.00	29445.03	97.61	5058	14722.51	29.11
4	2011-12	34700.00	33477.60	96.47	5390	16738.80	31.10
5	2012-13	34185.00	32940.58	96.36	5659	16470.29	29.10
6	2013-14	81700.00	67957.87	83.18	5937	18616.51	31.36
7	2014-15	82500.00	71871.74*	87.12	6065	21324.30	35.16
8	2015-16	99602.00	96518.80	96.90	6199	24129.70	39.00***

(* Up to December-2014 expenditure) (***) An estimate) Source: Department of AH & VS.,

Findings:

- Expenditure incurred by the Department of AH & VS is **83.18% to 97.61%** against the grant amount released by the government.
- Milk procurement made by the Milk Unions in rural areas has significantly increased. During 2008-09, it was **11%** of the total milk produced (Estimated) in the state, when the Milk Incentive Scheme was introduced. Impact of the scheme on the procurement has resulted in increase to 29% during 2012-13 and to 39% in 2015-16.

❖ **Inference:** Grant utilization and disbursement to the milk pourers in collaboration with the DMUs is **Highly Satisfactory**.

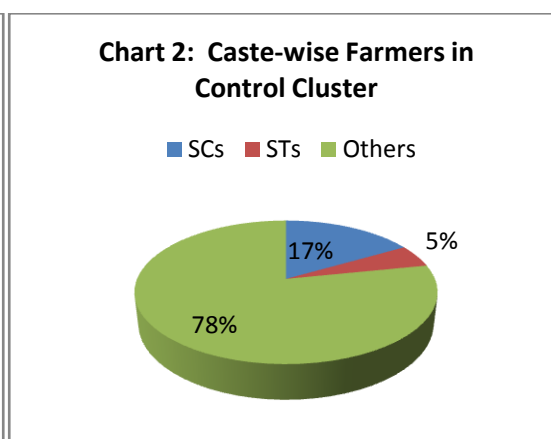
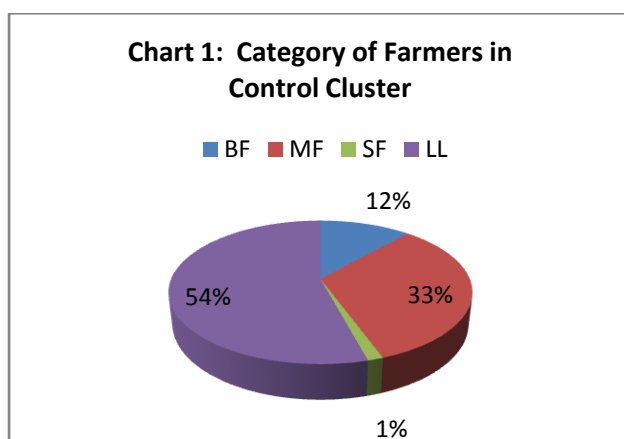
Observed growth in the quantity of milk procured by the rural dairy farmers is from 11% to 39% during 2015-16, within a span of seven years, and is due to gradual shift of rural milk pourers, from the private milk procurers to the protective field of cooperative societies. The shift observed is a positive change in changing the mindset of dairy farmers to opt the cooperative setup exclusively due to the significant impact of milk incentive scheme

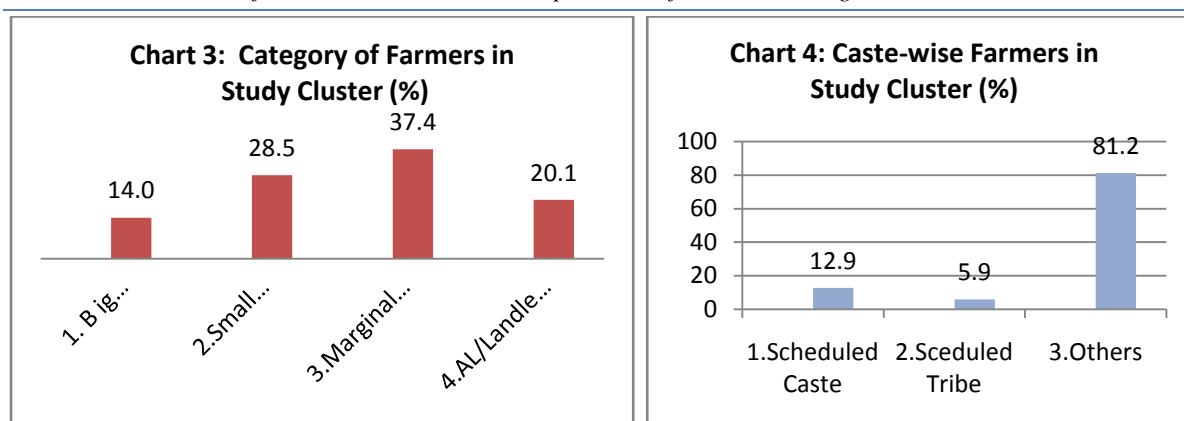
implementation. This is a great support to the growth of cooperative institutions. Therefore, the **overall Performance** of the Department of AH & VS is impressive and can be rated as **Very Good**. Role played by the DMUs is also **Highly Satisfactory**. This is a bench mark for achieving Excellence in future.

9.2 Data Analysis, Results, Findings and Inference drawn involving all the indicators connected to the evaluation study questions, for the period 2008-2013.

Table 3: Gender, Farmers Category and Caste details of 325 Dairy Farmers of Control and 3900 Dairy Farmers of Study Clusters in all 13 DMUs of 29 Districts.

Sl.Nos	Parameters/Questions	Control Cluster	Study Cluster
1	Gender	Percentage (%)	Percentage (%)
	Male	74.40	62.3
	Women	25.60	37.7
2	Farmers Category		
	Big Farmers (BF)	11.60	14.0
	Small Farmers(SF)	32.80	37.4
	Marginal Farmers(MF)	1.40	28.5
	Landless (LL)	54.20	20.1
3	Cast		
	Scheduled Cast	16.70	12.9
	Scheduled Tribe	5.10	5.9
	Others	78.20	81.2





- Detailed Results of the Study Cluster data (Format-4) are given in the Annexure 7.
- Detailed Results of the Control Cluster data (Format-5) are given in the Annexure 8.

9.2.1. What is the average time taken for the incentive amount to reach the milk supplying person after the amount is released by the State? Is this too long, short or OK?

- Average time taken for incentive to reach milk pouring farmer, from preparing the claim bill, submitting to the milk Union, verification of bill at milk Union and further submitting to the AH & VS Department, bill processing at the Department, release of incentive amount to Union, further releasing to the respective MPCS and then to the farmers by the MPCS is **80 days**; Max. **89 days** and Min. **51 days** during 2009-10. During 2011-12- Average time taken is **104 days**; Max.**142 days** and Min. **73 days**.
 - Average time taken for incentive to reach milk Unions, after submitting the claim bills and transferring to the MPCS during 2009-10 is **71 days** and during 2010-2011 it is **64 days**.
 - In the study clusters, **99.5%** of the farmers have reported that the delay in reaching the incentive money by them is **“too long”** after they pour milk to the MPCS.
- ❖ **Inference:** The delay observed for the specified period of study, in reaching the incentive money to the milk supplying farmers is **too long**, when the normal time to be taken is assumed as **30 to 45 days** in general. It is also reported that the delay has occurred to an extent of more than 4-6 months during the scheme implementation period in many instances. The delay caused could be mainly due to claims processing at different levels and availability of grants.

9.2.2. Whether the amount released to farmers is reaching them in full or there any unwarranted / illegal deductions made in any stage of disbursement?

- Majority (95%) of MPCS secretaries have reported that the incentive amount has reached farmers in full without any unwarranted or illegal deductions at the stage of disbursement. Other 5% have not responded.
 - In the study clusters, majority (97%) of dairy farmers have reported that the incentive amount has reached them in full without any unwarranted or illegal deductions during disbursement.
 - 60% in study cluster and 43% in control cluster farmers have reported that adequate infrastructures do not present in the local veterinary Institutions to implement the MIS.
- ❖ **Inference:** The results indicated that the legitimate claims have been completely settled in full. Illegal and unauthorised cuts are not made during the disbursement of incentive amount at any stage. All the 13 MDs of DMU have reported that entire incentive money pertaining to the period 2008-09 to 2012-13 has reached respective farmers in full. It is also reported that at present incentive money is being transferred by ECS to the farmers' account, since April 2015, without much problem.

9.2.3. What is the impact of the incentive amount to farmers, with reference to increase in the production of milk by increasing the number of quality of milch animals and in reduction in migration of rural youth to urban areas etc?

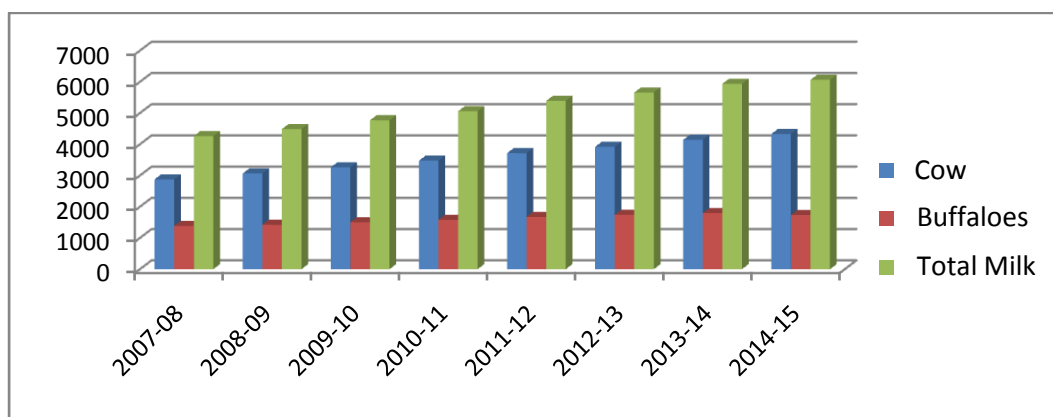
I. Milk Production:

Table 4: Total Milk Production Estimates of the State (In .000 tonnes)

Year	Cow	Buffalo	Total Milk	% Growth
2007-08	2877	1387	4264	
2008-09	3066	1421	4487	5.2
2009-10	3263	1506	4769	6.3
2010-11	3475	1583	5058	6.1
2011-12	3715	1675	5390	6.6
2012-13	3919	1740	5659	5.0
2013-14	4142	1795	5937	4.9
2014-15	4331	1734	6065	2.2
Cumulative Growth % 2012-13	36.20	25.45	32.70	
Cumulative Growth % 2014-15	50.54	25.02	42.24	

Source: Report on Integrated Sample Survey for Estimation of Production of Milk, Egg, Wool and Meat for the Year 2014-15. Published by the Department of AH & VS., Bengaluru

Chart 5: State level year wise Total Milk Production by Cows and Buffaloes
(In.000 tones)



- State level Sample Survey result reveals, that the 36.2% of Cumulative Growth in Cow's Milk, 25.45% in Buffaloes Milk and 32.7% growth in the Total Milk production by the end of 2013. Similarly by the end of 2015 the Cu. Growth of 50.54% is observed in Cow's Milk, 25.02% in Buffaloes Milk and 42.24% in Total Milk production. Year 2007-08 is taken as base year. Annual growth observed is between 5.0-6.6% up to 2012-2013. But the same is reduced to 4.9 and 2.2 % by the end of year 2014 and 2015 respectively. This reduction could be due to the consequential effect of extensive Foot and Mouth disease outbreak occurred in the state during the year 2013-14.

(PDFMD, 2014, Annual Report, 2013-14. Project Directorate on Foot and Mouth Disease, Mukteshwar)

- Data provided by the MPCSS' Secretaries indicate that the Average Growth in Total Milk poured by the rural dairy farmers to the society is 120.48% during the study period 2008-13. (Table-7)

❖ **Inference:** The growth of milk production in study cluster is indirectly measured in the data of quantity of total milk supplied to the MPCS. Observed growth is 8.16% to 70%, which is highly significant in the study cluster as compared to the control sample. The MIS scheme has an overall positive highly significant impact on the milk production in the state. Similarly the shift of farmers from the clutches of private procurers to cooperative sector is highly significant and it is a bounce back phenomena.



II. Details of Number of Milch Animals and their cumulative growth in the state.

Table 5: Number of In Milk and Milch animals Cows-2007-15 in the State.(Rs. lakhs)

In Milk Cows			Milch Cows		
	Cross Bred	Indigenous	Cross Bred	Indigenous	Total
2007-08	7.63	14.99	9.96	26.51	59.09
2008-09	8.65	14.76	11.3	25.9	60.61
2009-10	9.39	14.96	12.01	26.19	62.55
2010-11	10.02	15.53	12.71	26.89	65.15
2011-12	10.68	16.25	13.55	27.61	68.09
2012-13	11.43	16.58	14.42	27.91	70.34
2013-14	12.12	16.78	15.24	28.11	72.25
2014-15	13.06	16.61	16.19	27.81	73.67
Cumulative Growth % 2012-13	49.80	10.61	44.78	5.28	19.04
Cumulative Growth % 2014-15	71.17	10.81	62.55	4.90	24.67

- ❖ Cumulative growth observed in the state, both in Milk and Milch Cattle is **19.04%** (2012-13) and **24.67%** (2014-2015), and the base year considered is 2007-08. However, in Cross bred cattle Cumulative Growth is **49.8%** (2012-13) and **71.17%** (2014-15) in Milk and 44.78% (2012-13) and **62.55%** (2014-15) in milch animals.



Table 6: Details of number of Quality Buffaloes and Cumulative Growth in the State (In lakhs)

Year	Buffaloes In Milk	Buffaloes Milch	Total Buffaloes
2007-08	15.22	23.27	38.49
2008-09	15.73	23.75	39.48
2009-10	16.17	24.43	40.60
2010-11	16.77	24.73	41.50
2011-12	17.5	25.62	43.12
2012-13	18.03	26.45	44.48
2013-14	18.24	26.75	44.99
2014-15	17.61	26.39	44.00
Cumulative Growth % 2007-13	18.46	13.67	15.56
Cumulative Growth % 2007-15	15.70	13.41	14.32

- ❖ Cumulative growth observed in the state, in Milk and Milch Buffaloes is **15.56%** (2013) and **14.32** (2015) and in the total Buffaloes, it is **15.56%** (2013) and **14.32%** (2015); base year considered is 2007-08.
- ❖ In the study cluster number of milch animals reared by the farmers, data analysis reveals that the annual growth observed is from 2% to 9.5% during the study period of 2007-13. The cumulative growth was 33.36% in Cross Bred Cows, 12.38% in Milch Buffaloes and overall cumulative growth was 28.03% in the total increase in number of milch animals by the end of 2013.
- ❖ **Inference:** Observed growth in percentage for the study period 2008-13 in the total number of milch Cows and Buffaloes is positive and statistically highly significant. Study cluster data when compared with the data of control cluster indicates highly significant positive change on the increase of quality milch animals both in Cross Bred (CB) cows, Indigenous (IND) cows and Buffaloes (BF) in the state. This could be mainly due to the impact of the MIS implementation.



III. Impact of results on other parameters

The details are presented in Table 7.

Table 7: Average Growth % for different Parameters/Indicators of 13 District Cooperative Milk Unions for the period 2008-13

Sl. Nos.	Parameters /Indicators	Average Growth %	Min	Max
1	MPCSs, Nos.	26.62	3.3% in DK DMU	66.4% in Ballary DMU
2	Women members, Nos.	30.80	15.3% in Kalaburagi DMU	59.2% in Hassan DMU
3	Scheduled Cast, Nos.	28.44	4.8% in DK DMU	61.1% in BNG DMU
4	Scheduled Tribe, Nos.	37.19	7.7% in Belagavi DMU	78.9% in Vijayapura DMU
5	Total Milk Producers in Nos.	24.31	2.4% in Shivamogga DMU	86% in Vijayapura DMU
6	Total Milk purchased in litres.	120.48	34.7% in DK DMU	261% in Mysuru DMU
7	Milk Purchased from Women in litres	117.18	24.1% in Bengaluru DMU	250% in Mysuru DMU
8	Milk Purchased from SCs in litres	137.32	44.8% in Tumakuru DMU	282.3% in Mysuru DMU
9	Milk Purchased from STs in litres	131.16	30.9% in Tumakuru DMU	294.6% in Mysuru DMU

Source: Data provided by the MDs of the DMUs of the State.

Indicator 1: MPCS Numbers

CHART 6: Milk Producers Cooperative Societies (MPCS) under the District Milk Unions during 2007-2013 in Block-I of Karnataka State

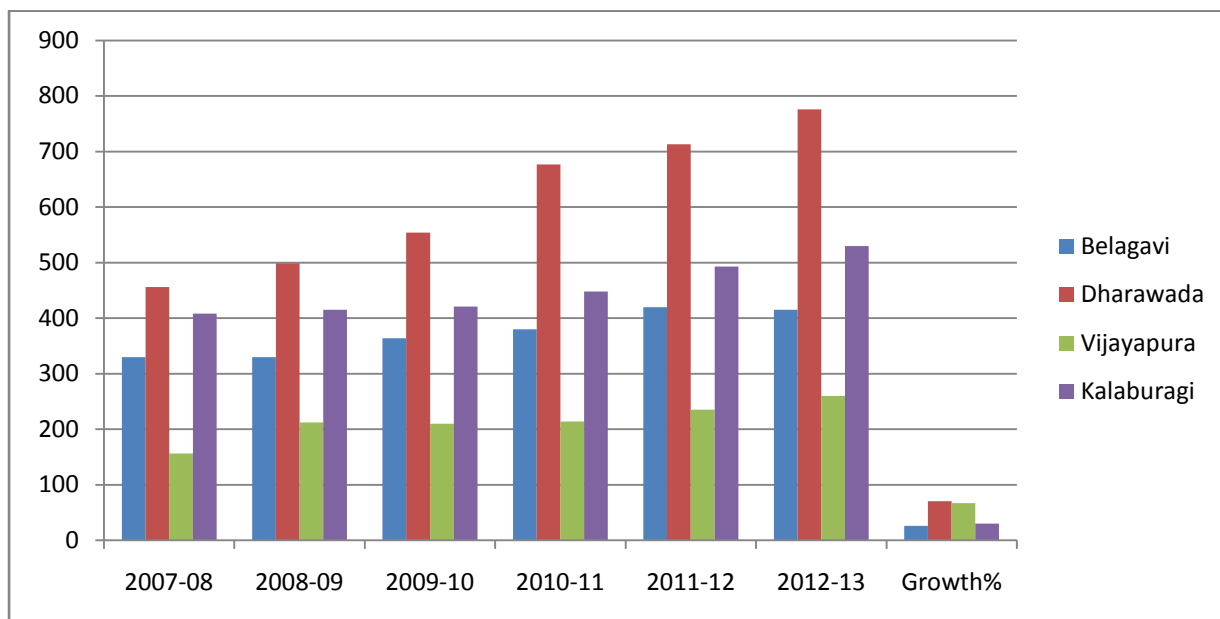


CHART 7: Milk Producers Cooperative Societies (MPCS) under the District Milk Unions during 2007-2013 in Block-II of Karnataka State

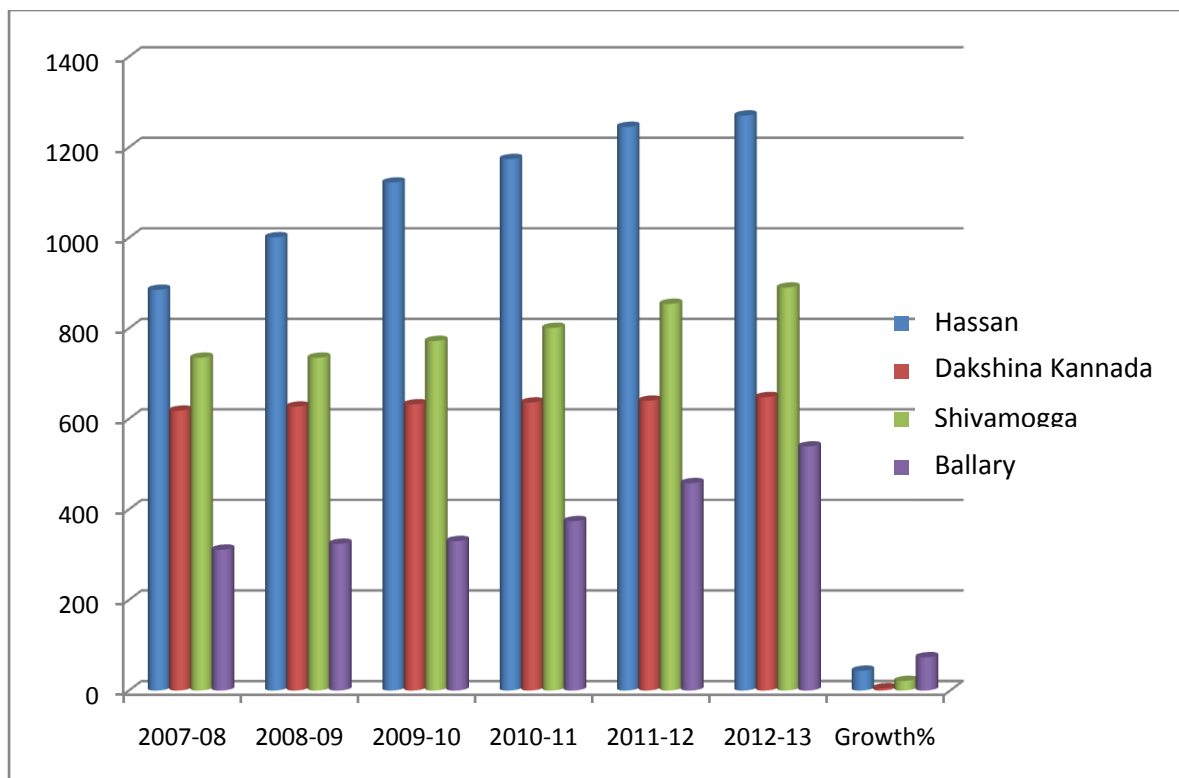
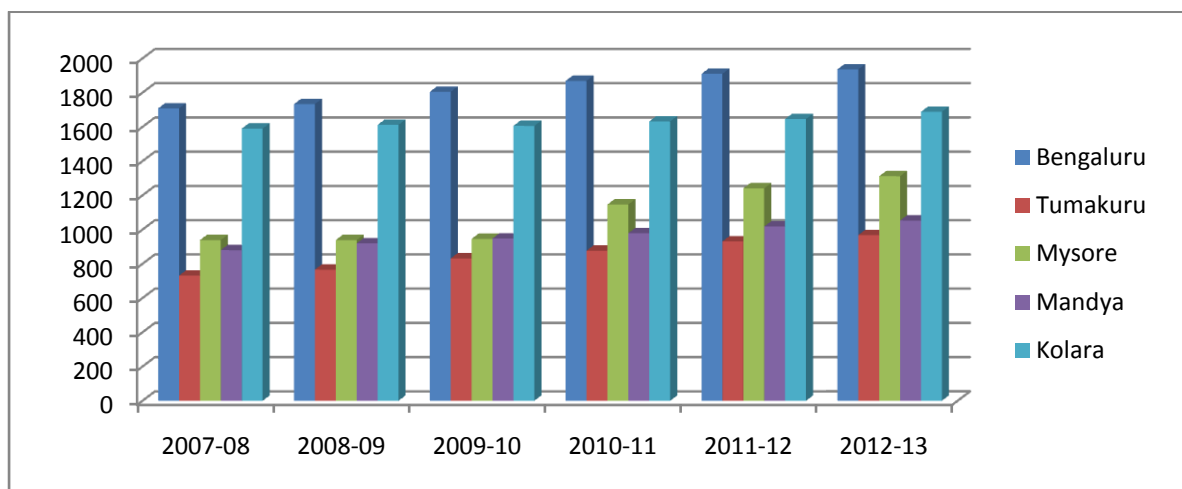


CHART 8: Milk Producers Cooperative Societies (MPCS) under the District Milk Unions during 2007-2013 in Block-III of Karnataka State



- ❖ **Findings:** Minimum growth observed in DMU is 3.3%. This is probably due to, majority of area in the districts are already having functional MPCSs. Maximum growth observed in Ballary DMU is 66.4%. It appears that more number of MPCSs' are established as well as a few might have been revived to be functional societies. However, Average Growth of 26.62% observed in the State under DMUs is significantly positive.

Indicator 2: Women Members in Numbers

- ❖ **Findings:** Minimum growth observed is **15.3% in Kalaburagi DMU**. This probably is due to, majority of area in the districts are already having more number of women members. Maximum growth observed is **59.2% in Hassan DMU**. Here, it appears that more number of women milk pourers have shifted from private sector to cooperative sector. However, Average Growth of **30.8%** observed in the State under DMUs is significantly positive. This change would lead to empowerment of women.

Indicator 3: Scheduled Caste (Nos.)

- ❖ **Findings:** Minimum growth observed is in **4.8% in DK DMU**. This probably is due to the DMU already having more number of SC members. Maximum growth observed is **61.1% in Bengaluru DMU**. Here, it appears that more number of SC pourers have shifted from private sector to cooperative sector. The positive change also could be due to more number of SC farmers' taking up dairy farming. However, Average Growth of **28.44%** observed in the state, under DMUs is significantly positive.

Indicator 4: Scheduled Tribe (Nos.)

- ❖ **Findings:** Minimum growth observed is **7.7% in Belagavi DMU**. This probably is due to the DMU already having more number of ST members. Maximum growth observed is **78.9% in Vijayapura DMU**. Here more number of ST milk pourers have shifted from private sector to cooperative sector. The positive change also could be due to more number of ST farmers' taking up dairy farming. However, Average Growth of **37.19%** observed in the state under DMUs is significantly positive.

Indicator 5: Total Milk Producers (Nos.)

- ❖ **Findings:** Minimum growth observed is **2.4% in Shivamogga DMU**. This probably because the DMU was already having more number of milk pouring members. Maximum growth observed is **86% in Vijayapura DMU**. Here more number of milk pourers have shifted from private sector to cooperative sector. However, Average Growth of **24.31%** observed in the state under DMUs is significantly positive.

Indicator 6: Total Milk Purchased in litres.

- ❖ **Findings:** Minimum growth observed is **34.7% in DK DMU**. This probably because the DMU was already having more number of milk pouring members. Maximum growth observed is **261% in Mysuru DMU**. Here more number of milk pourers have shifted from private sector to cooperative sector. However, Average Growth of **120.48%** observed in the state under DMUs is significantly positive.

Indicator 7: Milk Purchased from Women in litres:

- ❖ **Findings:** Minimum growth observed is **24.1% in Bengaluru DMU**. This is probably because the DMU was already having more number of women milk pouring members. Maximum growth observed is **250% in Mysuru DMU**. Here more number of women milk pourers have shifted from private sector to cooperative sector. However, Average Growth of **117.18 %** observed in the state under DMUs is significantly positive.

Indicator 8: Milk Purchased from SCs in litres

- ❖ **Findings:** Minimum growth observed is **44.8% in Tumakuru DMU**. This is probably because the DMU was already having more number of SC milk pouring members. Maximum growth observed is **282.3% in Mysuru DMU**. Here more number of SC milk pourers have shifted from private sector to cooperative sector. However, Average Growth of **137.32 %** observed in the state under DMUs is significantly positive.

Indicator 9: Milk Purchased from STs in litres

- **Findings:** Minimum growth observed is **30.9% in Tumakuru DMU**. This is probably because the DMU was already having more number of ST milk pouring members. Maximum growth observed is **294.6% in Mysuru DMU**. Here more number of ST milk pourers have shifted from private sector to cooperative sector. However, Average Growth of **131.16%** observed in the State under DMUs is significantly positive.

❖ **Inference:** Data analysis indicating positive growth in all the nine indicators is possibly due to the shift of milk pourers / dairy farmers, from the private milk purchasers to the MPCS and due to increased production and productivity at household level. The observed outcome may be attributed to the influence and motivation by the incentive money being given under the Milk Incentive Scheme by the government.

IV. Migration of Youth in rural areas of study and control clusters.

- Data obtained from the individual farmers from the study cluster, reveals that, some youths ranging from one to eight have continued for the dairy farming, instead of migrating to cities. This aspect is also evident that around 1.8% to 28% of farmers have concurred with the above information.
- ❖ **Inference:** Village level Migration of youth to cities is taking place in general for various reasons. However, very few youths have taken up dairy farming without opting for migration as per the data report. Since dairy farming provides regular income, a small number of youth, who are usually school dropouts or unemployed, opted for dairy farming depending on their family financial situations and opportunities. Discussion with the farmers during reality check has also revealed that the Milk incentive scheme is not having direct effect on reducing migration of youth at village level. Data analysis has also confirmed the same.

9.2.4. Whether the incentive amount of Rs.2/- (in the past) or Rs.4/- (at present) per litre is sufficient? Does it need to be changed? If so, why and by how much should it be?

- Data analysis revealed that 81% of Deputy Directors (AH), 90% of local field Veterinarians, 32% of Secretaries of the MPCS have reported that the present rate of Rs.4/- per litre being given as incentive is **less**. They have also informed that

the incentive amount needs to be revised to Rs.6/- (29 %, 42% and 20% respectively) and Rs.8/-(29%, 21% and 34% respectively) per litre of milk. 79% of MDs are happy about the scheme.29% have suggested for revision from Rs.4/- to Rs.5 or 6/- per litre of milk due to increased cost offered and management in general. Other MDs have not reported.

- In the study cluster areas 79.2% of farmers have reported that they are not happy with the existing rate of Rs.4/- incentive amount as the amount rate is **less**. Around 89.5% of farmers want revision of the existing incentive amount rate. Around 25.8% farmers want Rs.6/- per litre of milk and around 29.3% of farmers want Rs.8/- as incentive money. They want upward revision due to increased feed and fodder cost and in the overall management cost in general.
- ❖ **Inference:** Majority of respondents have reported that higher incentive amount is required due to increased management cost of dairy animals in general. The fact is the feed cost has gone up. (At present it is Rs.18/- per kg for feed sold in MPCS).Other input costs have also increased. Thus the cost of production of one litre of milk has also increased substantially. Therefore farmers demand for rise in the incentive amount rate is genuine and reasonable.

9.2.5. Is there any impact on the socio-economic condition of farmers and landless by the introduction of this scheme?

- Data analysis indicate that the individual farmers' income level in the study cluster areas has increased by annual growth varying from 7% to 20%, by the end of 2013. Cumulative Growth **observed is 94% for the same period**.
- Investment pattern: 29 to 36% farmers have used their income on household articles like TV, Fridge and other utility items. Majority (62.4%) of dairy farmers made savings in banks. 13.4% of farmers have purchased land also. 9% of farmers have used their income for cattle shed repairs. Out of additional income, 67% of farmers have used for their children's education. Majority (88 to 95%) of farmer's social status increased by being Village Panchayath members, MPCS Directors and also by increased participation in local dramas and festivals etc.

- ❖ **Inference:** As a whole the MIS scheme has significant positive impact on the socio-economic condition of the farmers under milk cooperative sector as compared to the control farmers.

9.2.6. Whether there is improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder solely because of this incentive provided?

- Data analysis revealed that at the individual farmer's level, majority (88%) have reported increase in the awareness on improved/scientific management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder because of MIS implementation. Majority of Secretaries of MPCs have reported positive changes in dairy management.
- ❖ **Inference:** The MIS has positive impact on improving awareness of the quality of dairy farm management at the farmer's level. This is also a consequent positive effect of capacity building activities conducted, like exposure visits to the successful farmers, short term trainings by the milk unions and also the advice given by the local veterinarians during treating the animals. Thereby farmers are well motivated in the co-operative environment locally. To justify the positive impact of the scheme, results have indicated that majority (95%) of MPCs Secretaries have reported that the sale of cattle feed; mineral mixture has increased substantially at the local MPCs. It is also reported that the animal disease outbreaks have come down. Artificial Insemination in milch animals has increased at the village level. During the reality check by the team, one back yard dairy farm was inspected. It was evident that the cleanliness, condition of the animals and farmers care in dairy farm management and expected quality standards followed was apparent. During interaction also it was confirmed.

9.2.7. Have rural youth been attracted to take up dairy activities solely due to this scheme being in vogue?

- In the study area as per the data available only **94 youth have taken up dairy farming**. Similarly 56% of farmers have reported that a few youths have opted dairy farming in the village level. In control population 41% farmers have also reported the same.

- ❖ **Inference:** The milk incentive scheme might have influenced a few youths to continue with the dairy farming due to increased income from the sale of milk. The scheme appears to have no influence on youth to involve in the dairy farming. However the data analysis has indicated not much difference between the study as well as control cluster areas and no impact exclusively due to the MIS implementation on the youth adopting dairy farming.

9.2.8. Has the scheme made any difference in the profitability of dairy farming in rural areas?

- ✓ **Some facts about the rural dairy farming:**
 - Majority of dairy farming in rural India is on a “Back Yard or Front Yard Farming System”. It is not on an Industrial Type of Dairy Farming System.
 - Generally big farmers are having more number of milch animals and will have their own profitable marketing channel.
 - Cow’s milk has about half the fat content as of Buffalo’s milk. (Cow’s Milk-3.5 - 5% Fat; Buffalo’s Milk - 6.1 -10% Fat)
 - The income or amount of money a farmer earns from the cooperative depends on the fat content of the milk and the amount of milk poured to the local MPCS.
 - Every farmer generates minimum of Rs. 500/- annually from each animal he owns by selling animal waste as manure.
 - Buffalo milk is much more expensive to produce than cow’s milk.
 - Farmers do consider that the premium for animal insurance is too expensive.
 - Fodder and feed cost is around 80-90% of the total cost, which decides the profitability.
 - Generally farmers rearing one or two animals, feed their animals with fodder collected after their hard labour in the agricultural lands. They don’t account for the cost for feeding fodder.
 - “Farmers labour” towards the dairy cattle management is also not considered for the cost of labour. It is a free labour in their view. Their real income out of the fodder and the labour cost generated is considered as profits by them.
- Data analysis revealed that the individual farmers’ income level in the study cluster areas has increased by annual growth varying from 7% to 20%, by the end of 2013.

- ❖ **Inference:** It is obvious that the farmers' income has increased due to the incentive amount being paid by the government. Farmers do think that the additional income he gets is itself as a profit. However, observed positive growth in the income, they got from the milk is significant as compared to the farmers of control cluster. This is an important outcome resulted due the impact of the MIS implementation.

9.2.9. Whether the incentive money is being over charged at any level? Are any checks and balances to prevent these?

- Data analysis finding confirms that over charging at any level is not observed by the 67% of district officers (AH) and 65% of local veterinary officers. In the study cluster, majority (98%) of farmers have reported that they have not got more money due to overcharging.
 - Similarly in the study cluster 85.5% farmers have informed that periodical checking of accounts is being done by the concerned authorities.
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- ❖ **Inference:** The Extension Officers of the milk union, Local Officers and audit party have done periodical checks. It may be a monthly, quarterly or annual checks and verification of accounts about payments made; this routine activity is in vogue. Dedicated teams constituted by the AH & VS Department are also verifying accounts at the field level once in a while. At the state level periodical review of progress of the MIS is being done by the Principal Secretary AH&F by conducting the Video Conference. Review committees constituted at the District and Taluka level review the progress regularly.

9.3 Answers to the ToR Questions and Discussion

9.3.1 Whether the incentive amount is actually motivating or becoming just a subsidy?

The State Government order dated 8th Sept. 2008 sanctioning the incentive scheme clearly says that the amount of Rs.2/- per litre of milk supplied by the farmers to the MPCSC is **an incentive to encourage dairy activity to run on profitable basis in rural areas under cooperative network**. Furthermore, Karnataka Government has sanctioned, revised rate of incentive of Rs.4/- effective from 14th of May 2013, due to significant increase in the fodder and feed cost, as a timely action to motivate farmers to continue the dairy cattle rearing with better margins in rural areas. The data analysis and findings have endorsed achieving the set

objectives with a positive impact on the increased milk production in the state. It has also motivated rural farmers to rear more number of milch animals. It is obvious that the scheme has given the boost to dairy development in the state. Farmers are also happy about the milk incentive scheme, but majority of them have expressed that the incentive rate of Rs.4/- being given is less. However, the findings have confirmed that the incentive money has motivated farmers to continue their dairy farming and also have come back to the fold of cooperative system by pouring milk to the MPCS.

As understood, the dictionary definition of an **incentive** is ‘something that motivates you to do something’. In economics one can say that an incentive is a benefit, a reward, or cost that motivates an economic action. A **subsidy** is a benefit given by the government to the groups or individuals usually in the form of cash payment or tax reduction. The subsidy is usually given to remove some type of burden and is often considered to be in the interest of the public. A production subsidy encourages suppliers to increase the output of a particular product by partially offsetting the production costs or losses.

Hence, it is opined that the incentive sanctioned is definitely an **INCENTIVE** amount **to the farmers**. But it may be considered as **SUBSIDY** amount by the milk pourers, as the incentive money being paid is an additional amount to their income and reduces the burden of increased feed cost to some extent. So, it has a dual effect on the dairy farmer.

9.3.2 Whether the scheme is meeting the desired objectives?

Yes. The scheme has largely met the desired objectives. To justify the same, analysis of data in the study clusters has clearly indicated, that the impact is positive in providing additional income to the milk pouring farmers. In addition to that, the dairy activity has increased with an improvement in the quality of dairy management, resulting in substantial increase in the milk production and procurement by the MPCS in the villages.

9.3.3 Areas of concern and what corrective action is needed?

It is a possibility that the prevailing purchase rate of milk offered to the farmers for the milk poured to the MPCS may not be remunerative. It is really a concern area, since, the objective of assuring remunerative price is still a challenge to the DMUs in the state. However, in order to suggest corrective measures, the dedicated team has studied the data obtained by all the MDs of the DMUs on “the cost of production and the procurement rate” for the period 2007-08 to 2015-16.

Data study has revealed some facts and the details are the following.

- “The Cost of Production and the Purchase Rate” of milk considered by the milk unions has varied from union to union.
- It is a fact that, while calculating the purchase rate of milk at the union level, the rate doesn’t depend, only on the cost of production of milk’ but also the financial condition and its status of the Milk Union, which is an important factor.
- At present, Karnataka state is not having an empowered agency at the government level, to advise the “seasonally variable cost of production and purchase rate of milk, to be followed by the DMUs.
- Discussion held with the concerned officers, has given some more information, and the details are;
 - The DMUs may be having an attitude of functioning like corporate bodies, for its survival in the highly competitive field of milk marketing, which is “profitable to the unions”.
 - Milk Unions may be generating more profits for their sustainable growth, for creating, required infrastructure using their own resources, for providing dairy farming related quality services to the farmers without depending on the Government grants.
 - Government grants being received by the DMUs as a “support” for infrastructure development may not be sufficient, to ensure remunerative purchase rate for the milk purchased by the rural dairy farmers.

In order to sort out the lacunas prevailing in the setup, based on the above mentioned facts, the following three options are discussed;

Option – 1: National Dairy Development Board (NDDB) could be identified by the government, to take-up the responsibility of recommending the procedure and methodology for calculating cost of production and also for fixing purchase rate considering seasonally variable costs to the DMUs of the state.

Option-2: “Karnataka Agriculture Price Commission” could be requested to look into the methodology for calculation of cost of production and purchase rate of milk procured by the DMUs.

Option-3: On a participatory method, thirty district level empowered committees could be constituted to follow a standard method of **calculating the cost of**

production involving farmers representative – representing landless, MF/SF and Big dairy farmers and respective MDs of the DMUs, the District Deputy Director of AH&VS and a district level officer of the Co-operative Department. (In this option, there is scope for biased action).

9.3.4 Action taken on the proceedings of the 25th Technical Committee meeting held on 26th December 2015, under the Chairmanship of the Secretary, Planning, Programme Monitoring and Statistics, GoK.

The Committee suggested that “since the cost of milk production vary from place to place and purchase rate of milk from union to union, cost of milk production data and purchase rate data could be used to suggest either milk union/district specific variable incentive amount”. In response to the suggestion made, latest required data was obtained from the DMUs, for the study. The details are provided in Table 8.

Table 8: Cost of Production and Purchase Rate of One litre of Milk in Rural areas during 2015-16.

SI No.	2015-16	Cost of Production (Rs)	Purchase Rate (Rs)	Difference
1	Dakshina Kannada	23.00	27.37	4.37
2	Kalaburagi	23.21	24.70	1.49
3	Ballary	17.10	24.45	7.35
4	Mandya	17.14	23.81	6.67
5	Shivamogga	21.00	22.71	1.71
6	Kolara	17.54	22.65	5.11
7	Dharawada	10.22	22.25	12.03
8	Bengaluru	18.28	22.16	3.88
9	Vijayapura	9.11	21.50	12.39
10	Mysuru	19.13	21.00	1.87
11	Belagavi	12.36	20.60	8.24
12	Tumakuru	20.00	19.71	-0.29
13	Hassan	26.18	21.00	-5.18
14	Chamarajanagara	17.63	21.00	2.37

Further, in order to verify the method of calculation being followed for Dairy Economics, 14 estimates are received from the MDs and Field level Veterinarians and they were studied in detail. The study indicates that none of them have followed a uniform pattern or method for calculation, considering all the parameters of cost of production and reasonable profit to the producer. Even the data considered for their calculation appears to be adhoc and un-scientific.

Hence it is presumed that the DMUs might have not followed a common method of calculating the Cost of Production and the Purchase Rate of milk with reasonable profit to farmers. In addition to that they have arrived at the purchase rate, mainly based on the financial condition/situation of the respective unions. Therefore, it is opined that, **it is not possible to suggest “specific variable incentive amount” with the existing incentive rate as the data available is inadequate and un-scientific.** However, a study on “Exploring the cost of milk production & potential economies of scale in a dairy cooperative’ in Anand, Gujarat State, an article published in 2012, by Wharton Research Scholars, Wharton School, Pennsylvania, as extract abridged copy is given in **Appendix 9**, as a reference document.

It is ascertained that the **National Dairy Research Institute (NDRI), Karnal, Haryana State**, has been entrusted by the Department of Animal Husbandry, Dairying and Fisheries (DAH,D&F), Government of India (GoI) to take-up a study on **“Costs and Returns in Milk Production: Developing a Standardized Methodology and Estimates for Various Production Systems 2015”**. Similarly, the Department of AH & VS also could request the DAH, D&F, GoI, to consider the Karnataka State for taking up similar study on calculation of Standardised method of Cost of Production and the Purchase rate of milk produced in rural Karnataka State. Once the method is recommended, the same can be used for fixing purchase rate for winter, rainy and summer seasons by considering different variables seasonally, to advise the respective DMUs in the state. Another option is, similar study could also be entrusted to, any Institution in the state having expertise, by providing required financial assistance by the Department of AH & VS, through the KEA, Department of Planning, Programme Monitoring and Statistics of Government of Karnataka.

However, the study team after a detailed discussion, decided to propose a **Model Score Card Method, if the present incentive rate of Rs.4/- is revised to Rs.6/- as a presumption**, to suggest a variable incentive rate to address the equity, based on need for development of the districts, which could be adopted safely with justification, by considering four parameters. Detailed work sheet is given as **Appendix 10**.

9.3.5 Whether the incentive amount needs to be altered? If so, what should it be?

Field data analysis reveals that majority (79.2%) of stakeholders have expressed that the present incentive amount being given is less. Further, majority (89.5%) of farmers have expressed that the present rate is to be revised or changed. 25% of farmers want revision to Rs.6/- and around 30% want revision for Rs.8/- for the milk purchased. Others want a rate more than Rs.8/-.

Furthermore, while discussing with the MPCS Chairman and the member farmers during the reality check it was found to be a **fact that increase in the cost of feed and the cost of dairy farming management in general, is causing hardship and diluting the farmers' efforts**. All those farmers, who were present, strongly expressed their opinion that “instead of giving incentive amount, it could be merged with the existing milk purchase rate and it should be not less than Rs.28/- per litre of milk, which may be on par with the cost of production of milk. It was also informed that anything given more than Rs.28/- it may be a profitable dairy farming for them, in their view.

Continued discussion, evinced that the MIS has motivated the farmers to continue the dairy farming activity with an improved quality of management, resulting in increased milk production and their socio economic status, to some extent. However, it was mentioned that the scheme has minimum effect on avoiding migration of youth to urban areas in search of livelihood. They also said that dairy farming is a vibrant activity in the village, as well as a ray of hope for their survival under harsh conditions, since they get regular uninterrupted income throughout the year. The study findings also endorse the opinion expressed by the farmers' that the dairy farming activity is a visible silver line for the development of strong and sustainable rural economy in long run. Therefore, government could consider revision of present rate of Rs.4/- to Rs.6/- with a variable rate based on the factual parameters, considering CoP, PR, Productive Animals Population and number of functional MPCS or milk pourers in DMUs/ Districts.

9.3.6 Is the delivery of the incentive amount is efficient and aberration free? If not what is the suggested recourse to ameliorate it? And whether transfer of incentive money to the bank accounts' of milk supplying farmers by ECS is the interest of the scheme's objectives and milk suppliers?

The study findings indicate that during the period 2008 to 2013, the incentive money was reaching farmers with a gap of 2 to 3 months after the milk is poured to the MPCS. Money was also being paid on aquittance at the society level. Only a few complaints of abnormal claims were reported. However, at present incentive amount delivery system is

made by adjusting or transferring money to the farmers account by ECS by the DMUs is in the interest of the scheme's objective and the milk suppliers.

As regard to the incentive amount claims verification for the correctness and to check the unauthorised claims in the bills, the DMUs' are following a simple method. The total incentive amount claimed is being verified with the actual total quantity of milk they received at the union level. If, the amount claimed is tallying with the total milk purchased, then the respective bill is accepted and submitted to the Department of AH&VS for release of grant amount. This procedure effectively eliminates any fraudulent claims. In addition the government should ensure timely and adequate grants for the scheme.

The present delivery system is not very efficient enough to address the delay caused in delivery of amount to the farmers. It is also a cumbersome system with a scope for benami claims as an abrasion. In addition to this, it has caused additional work load to the existing staff at all levels. Therefore, in order to recourse and ameliorate the aberrations, user friendly customised software needs to be developed and applied as a dedicated net work. In addition to this the Department of AH&VS must have an exclusive wing for Monitoring and Surveillance of the schemes. However, the senior officers of the department are taking care of investigations, looking for checks and balances periodically at the DMUs' level. In a few instances, district level and taluka level constituted committees have also reviewed the progress of the MIS. In the state level, MIS progress has been reviewed in the video conference by the Principal Secretary AH & F Government of Karnataka. However, it is suggested that the committees formed at various levels to take up review and monitoring of the scheme regularly.

In this connection, for effective implementation of the scheme, it is suggested to establish an exclusive **Monitoring, Evaluation, Learning and Documentation (MELD) wing or Cell**, under the direct supervision of Vigilance wing of the Commissionarate of Department of AH & VS. The wing with a team of trained officers, would actively participate in concurrent monitoring of this scheme. This setup would help the beneficiaries.

SECTION 10: REFLECTIONS AND CONCLUSIONS

10.1 Opinions and Suggestions provided by the 23 Senior Officers and 48 field Veterinarians of the Department of AH & VS based on their experience on the process of Implementation of Milk Incentive Scheme.

1. Milk Incentive amount to be paid along with the payments made for the regular milk bills to the farmers.
2. It is good that Milk incentive amount is being given to the farmers. But it should be paid with minimum time without delay in full without any cuts.
3. Incentive amount rate should be revised based on the cost of production and purchase rate of milk.
4. Higher incentive rate is required for buffaloes due to its higher management cost.
5. Making incentive money payments through the ECS which is in vogue to be continued.
6. Improvement needs to be made for the existing infrastructure at the Veterinary Institutions and provide additional man power at the MPCS level also.
7. Government Officials and Social Audit Committees should visit the MPCS to check the utilisation of incentive amount.
8. Training is required for Secretaries of MPCS to manage the MIS efficiently.

10.2 Opinions and Suggestions provided by the Managing Directors of all the Milk Unions on the “Milk Incentive Scheme Implementation process” to improve the efficiency, based on their experience.

Incentive amount: Time taken to reach the hands of farmers:

- At present incentive money is reaching farmers late. Therefore, it is better if the incentive money is paid weekly along with the regular milk payments. This system ensures transparency and confidence among farmers.
- Prevailing system of transferring incentive money directly to the farmers account by ECS is quite efficient, transparent and could be continued.

Revision of rate of Incentive amount – reasons:

- Incentive amount is to be revised to Rs.6/-per litre of milk. This revision is required due to increased cost of production, rise in animal cost and increased cost of animal feed and treatment cost.

- Belagavi Milk Union is very close to Maharashtra boarder. Therefore too much competition is seen in milk collection and marketing. Hence Rs.6/- incentive per litre of milk is required to motivate farmers and to compensate the increased maintenance cost of dairy animals in general. Further Buffaloes maintenance cost is higher than the cost of rearing cows.

Regarding the Cost of Production and Purchase Rate of milk in rural areas by the MPCs:

- There is a need to constitute an expert committee at the government level to provide a model method for calculating cost of milk production and purchase rate of milk in rural areas. Based on that all the unions shall follow a common method and arrive at the purchase rate for milk.
- In the interest of the farmers, the Unions provide subsidised feed and green fodder seeds along with technical support to reduce the production cost.

Regarding Incentive payment system, financial management and surveillance, checks and balances in the scheme implementation process:

- User friendly suitable customised software is to be provided to monitor all the activities of the incentive scheme. The software could be used at different levels for effective monitoring, accountability and transparency.

Existing infrastructure and man power status:

- Lumpsum amount equivalent to two percent of the incentive amount is to be released as grant to the unions separately to meet the costs of required additional infrastructure and the man power. At present union is incurring additional cost for auditing the accounts at different levels. Additional cost met for the staff per month is around Rs. 50000/- to 60000/-. This has to be paid by the Government to the union.
- If the government provides additional grants for increasing the milk processing capacity and value addition activity, including the cost for infrastructure and man power, unions would be able to run on profits. Thereby farmers could also be given additional amount to the existing purchase rate by the union. Thereby Milk incentive scheme could be withdrawn. Therefore it is suggested that government could implement long term capital investment programmes to reduce revenue expenditure and to make it feasible to pay higher purchase rate by the MPCs to the farmers.

Any Other:

- Instead of Unions transferring the Incentive amount to the milk producers' account directly, as informed in the government order, it is better, if the Government treasury transfers the same directly to the farmers account.

10.3 Consolidated Opinions and Suggestions provided by the Secretaries of the MPCs on the impact of the Milk Incentive Scheme:

1. There is increase in the Artificial Inseminations for animals and sale of Cattle feed, Mineral mixtures at MPCs level. It is also observed that disease outbreaks in animals have come down due to effective preventive measures and the hygienic practices followed in the dairy farming management.
2. Chilling plant established.
3. Milk Pourers increased.
4. Milk production in village increased.
5. Number of milch animals has increased.
6. Automatic milk Analysers are established at MPCs for testing.
7. In general dairy activity is vibrant in the village.
8. To some extent living standards among dairy farmers has gone up.
9. Dairy farmer's children are studying in convents and their attendance is also good.
10. Repairs and improvements for an old building of a dairy farmer are observed.

Suggestions by the Secretaries of the MPCs:

1. Revising the Incentive rate of Rs.4/- to Rs.6/- or Rs.8/- is required to meet increased management cost of dairy farming in general.
2. In order to avoid delay in getting incentive money, it should be paid along with the regular milk bills by the society.
3. Societies staff incentive to be enhanced due to increased work load in existing system. Therefore Rs.500/- per month is to be paid as honorarium.

10.4 Lessons Learned

On Incentive Amount or Service Delivery System

Any scheme providing incentive amount or any service or benefit, in the larger interest of the society, before implementation, the method of delivery system for adoption has to be discussed thoroughly to know the "PROS AND CONS" by the concerned implementing agencies. Based on the outcome, an efficient, suitable delivery system could be selected and guidelines issued, for adoption aiming at speedy implementation for achieving the objectives efficiently.

10.5 Conclusions

Policy decision of the Government of Karnataka, in sanctioning “The Milk Intensive Scheme” has a highly positive significant impact in general, resulting in an overall development of the dairy activity under the cooperative sector, assuring livelihood for the women, small, marginal and the landless farmers in the state. Now, the Government have a strong justification to continue the scheme with suggested improvements in the incentive delivery system with an upward revision in the incentive rate of R.6/- per litre of milk or more in the larger interest of dairy farming community, under cooperative sector. Revision of incentive rate, would definitely maintain the pace of sustainable growth in milk production, also in drought situation, aiming at food security.

SECTION 11: RECOMMENDATIONS

11.1. Milk Incentive Scheme under implementation is to be continued with an upward revision rate. It could be of Rs.6/- or more per litre of milk poured by the dairy farmer to the local village level MPCS, since the majority of stakeholders expressed their need due to increased feed cost and overall dairy farming management cost. The scheme will have to remain till the rural farmers get “Remunerative / Profitable purchase rate” by the respective DMUs, in order to achieve maximum growth in dairy activity in the cooperative sector and to improve the status of dairy farmers.

11.2. “Monitoring, Evaluation, Learning and Documentation (MELD)” wing could be established at the Commissionerate of AH & VS to take care of “Concurrent Monitoring, Evaluation, for Learning and Documentation” of the schemes under implementation, by suggesting timely mid course corrections and suitable remedies for problems as and when encountered.

11.3. Responsibility of calculating cost of production and purchase rate of milk procured by the milk unions from the rural dairy farmers. Two options are recommended.

Option – I: National Dairy Development Board (NDDDB), could be identified by the government, to take-up the responsibility of calculating the cost of production and also fixing price of milk purchased by the milk unions at the village level, in Karnataka State.

Option-II: ‘Milk’ as such, is an essential commodity, which could also be considered as an item under the purview of “**The Karnataka Agriculture Price Commission**” to protect the interest of the farmers, for assuring the remunerative price for the milk in the State.

The above regulatory authority shall also consider the financial condition of the district milk unions, as one of the parameters, while calculating the purchase rate of milk.

11.4. Incentive Amount Delivery System under the MIS.

Option I: The present system needs to be further strengthened to make it more efficient in delivering the **incentive amount** to the rural milk pourers along with the farmers’ **milk bill** being paid fortnightly by the MPCSSs.

Option II: If MIS is continued in the same mode of delivery system, the situation deserves to opt for an efficient dedicated Software System with a net work of connecting all the functional MPCSSs, District Milk Unions from the Department of AH & VS., to monitor the scheme implementation. The software should have scope for maintaining detailed data of milk pourers linked to their Aadhaar number, for accounting and payments verification with digital certification at different levels to assure transparency, accountability and speedy disposal.

This net could be further widened to cover all allied institutions of the department, connecting all livestock farmers with the details of their land and livestock resources to provide door delivery services, input supply and sample survey, livestock insurance and incentives including providing disease forecasting information on mobile SMS in long run, as **a long term plan.**

11.5. Logistic and Development Support: Two percent of the incentive grant amount, be allocated for creating need based, additional infrastructure and man power, both for the AH & VS department and the DMUs, including at MPCSS level. Part of which could be used for logistic support for conducting “**Training of Trainers**” programmes for local farm women leaders and further, for conducting “**Village Based Trainings**” (VBTs), for dairy farmers to impart knowledge for rearing of dairy animals under adverse / drought situations. This model of capacity building activity results in “**Farmer to Farmer**” extension for knowledge dissemination and sustainable positive growth for the dairy development activity at the village level.

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APPENDICES

Appendix 1

Terms of Reference for Evaluation of Milk Incentive Scheme of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka during 2008-2013.

1. The background and implementation of the scheme:

The Government of Karnataka has launched the scheme of providing incentive of Rs. 2/- per litre (later this was increased to Rs 4 per litre) of milk to farmers/cattle owners supplying milk to milk Co-operative societies, from 09-09-2008 vide G.O. No. Pa.Sa.Mi 53 Ka.Ha.Ma 2008 dated: 08.09.2008. Thus, around 19.41lakhs farmers are benefited throughout the State. The incentives are released to 13 District Milk Unions through the Commissioner, Animal Husbandry and Veterinary Services, Karnataka, according to the availability of grants released by the Government. The 13 District Milk Unions are to give their respective claims every month to the Commissioner, Animal Husbandry and Veterinary Services, Karnataka, in the first week of the subsequent month. The Milk Unions, after receiving the cheques for the claim amount, disburse the amount to each and every Milk Producing Cooperative Societies (MPCS) in their jurisdiction for further payment to farmers/cattle owners directly to their bank accounts. The acquaintance register for the disbursement is to be maintained by the Secretary of the concerned MPCS.

2. Objectives of the Schemes:

1. To make the dairy activity profitable in rural areas especially to small/marginal farmers, agricultural labourers, women and other weaker section of the society.
2. To motivate the rural youth to take up dairy activity and improve their economic status and avoid migration of youth to urban areas in search of livelihood.
3. To improve the economic and social status of farmers/cattle owners in rural areas.
4. To increase the milk production, which will help in providing food security?
5. To support and encourage dairying activities in Co-operative sector in the rural areas.

3. Monitoring of the scheme

As per the guidelines (**Annexure-1**) the scheme is to be monitored, reviewed and evaluated at 3 levels. The State level committee is headed by the Principal Secretary, Animal Husbandry and Fisheries, at the district level by the Deputy Director, Animal Husbandry and

Veterinary Services and at taluk level by the Assistant Director of the concerned taluk veterinary hospital. The MPCs are responsible to keep all the records pertaining to milk collection and submit it to the officials of Animal Husbandry and Veterinary Services and Karnataka Milk Federation, whenever required for inspection.

4. The scope of the scheme

The entire State of Karnataka is under the scope of the scheme. The details of fund allocations of the scheme since inception is enclosed (**Annexure-2**).

5. Evaluation Questions:

1. What is the average time taken for the incentive to reach the milk supplying person after the amount is released by the State? Is this too long, short or O.K?
2. Whether the amount released to farmers is reaching them in full, or there any un-warranted/ illegal deduction made in any stage of disbursement?
3. What is the impact of the incentive to farmers, with reference to increase in the production of milk by increasing the number or quality of milch animals and in reduction in migration of rural youth to urban areas etc?
4. Whether the incentive of Rs.2 (in the past) or 4(at present) per litre is sufficient? Does it need to be changed? If so, why, and by how much?
5. Is there any impact on the socio-economic condition of farmers and agricultural labourers by the introduction of this scheme?
6. Whether there is improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder solely because of this incentive provided?
7. Have rural youth been attracted to take up dairy activities solely due to this scheme being in vogue?
8. Has the scheme made any difference in the profitability of dairy industry in rural areas?
9. Whether the incentive money is being over charged at any level? Are any checks and balances to prevent these?

6. Evaluation Methodology:

Request for Proposals for Selection of Consultant Evaluation Organization for the evaluation of Milk Incentive Scheme. There are 13 Milk Unions in the State procuring milk from 11 lakh farmers. Each Milk Union has to be evaluated on all parameters suggested

under aforementioned evaluation questions. The cluster random sample selected for study should be proportionate to the size of MPCS member strength, at least 300 persons in each Union be selected, such that small farmers, marginal farmers, agricultural labourers, women, SC & ST population is adequately represented.

For evaluating the impact of the scheme in any district/ Union area viz a viz areas where the scheme is not operational (for example: group of farmers supplying milk to hotels but not to Milk Unions), a non scheme operation sample will be taken as control.

At least ANOVA should be use to infer as to whether the scheme has made a statistically significant difference or not in the case of question numbers 3,5,6,7, and 8 of evaluation questions.

7. Deliverables time schedule

The department of Animal Husbandry and Veterinary Services will provide the list of district wise NGOs/District co-operative milk unions who are provided grants under scheme. After this-

1. Work plan/ Inception report to Karnataka evaluation authority for approval within 30 days.
2. Field data collection – Within three months from date of work plan approval.
3. Draft report submission – Within one month from completion of field data collection.
4. Final report submission – Within one month from completion of draft report submission.
5. Total duration of the study is less than 6 months.

8. Qualities Expected from the Evaluation Report

It is expected that the final evaluation report will provide statistically correct and significant inferences (where ever applicable) with regards to at least following points:-

- a. Whether the incentive amount is actually motivating or becoming a subsidy?
- b. Whether the scheme is meeting the desired objectives?
- c. If not, which are the areas of concern and what corrective action is needed?
- d. Whether the incentive amount needs to be altered? If so, what should it be?
- e. Is the delivery of the incentive amount efficient and aberration free? If not, what is the suggested recourse to ameliorate it?
- f. Whether transfer of incentive money to the bank accounts of milk supplying farmers by ECS is the interest of the scheme's objectives and milk suppliers.

And other relevant point that may be of relevance, revealed in the course of evaluation.

9. Cost and Schedule of Budget releases

Output based budget release may be as follows:-

- a.30% of the contract cost will be released on signing of the MOU.
- b.30% will be released after the work plan is approved by KEA.
- c.20% will be released after the draft evaluation report is approved by KEA & Animal Husbandry department.
- d.Last 20% will be released, but only after the final report is submitted to Department of Animal Husbandry and at least five copies to KEA, along with a soft copy.

Income tax will be deducted from each payment as per rates in force. In addition, the evaluator is expected to pay the service tax at their end.

10. Contact person to get further details about the study

Dr K. Nagaraj Shetty, Additional Director (Livestock Health), Animal Husbandry and Veterinary Services Department (Ph No. 9449519626), Dr Nagendra, Joint Director (Development) Animal Husbandry and Veterinary Services Department (Phone no. 9448816680) and Dr S.Udupa, Assistant Director, Office of the Commissioner, Animal Husbandry and Veterinary Services Department (Ph No.9448836288) will be the contact persons for giving information and details for this study.

Approved in the 8th Technical Committee Meeting of KEA held on 21-04-2014

Sd/-

Chief Evaluation Officer

Karnataka Evaluation Authority

Appendix 2

Evaluation of Milk Incentives Scheme of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka, for the Period 2008 – 2013.

KARNATAKA EVALUATION AUTHORITY (KEA)

FORMAT-1/QUESTIONNAIRE – Q1a, b, c, d and e

For the State Coordinator- (Q1a) / District Deputy Directors- (Q1b) / Taluka Chief Veterinary Officer-(Q1c)/ Veterinary Officer of Hobli-(Q1d) / Village level-(Q-1e) of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka.

Section A – General Information

A1	Name of the Department				
A2	Name of the State Coordinator	A3	Contact No.		
A4	Name of Deputy Director	A5	Name of the District	Contact No.	
A6	Name of the Chief Veterinary Officer	A7	Name of the Taluka	Contact No.	
A8	Name of the Veterinary officer	A9	Name of the Hobli/Village	Contact No.	

B- Interview Questions.

B1	What is your honest opinion about the milk incentive scheme on the following?	(Mark √)						
	About Rs.4/-litre being paid.	Less		More				
		If less, how much should it be?						
		Rs	5/-	6/-	7/-	8/-	9/	10/-
		Why the incentive amount is to be raised? Reasons: a. b.						
B2	What is the cost of production of one litre of milk in the rural area as per your records?							
B3	What is the base cost considered for one litre of milk produced at the village level, while proposing, an incentive of Rs2/- or Rs 4/- per litre as							

	per you records?				
B4	Please provide details of the latest calculated economics of dairy farming in rural area as per your records?				
B5	Provide the detailed information on the system of releasing of Milk incentive grant amount to the farmers from the Department?	Detailed procedure step by step as expressed:			
B6	Generally how many days required in the office to process the incentive claim bills submitted, to release the Grant amount.	(Mark \sqrt)			
		1 – 2 months		5 - 6 months	
		2 -3 months		7 - 8 months	
		4 -5 months		9 - 10 months	
B7	During your field visits, have you observed the apparent positive dairy developments in the state exclusively due to an impact of the milk incentive scheme?	(Mark \sqrt)			
		Yes		No	
		If Yes, Write down the details expressed			
		a.			
		b.			
B8	Are there any special programmes or activities implemented as supportive activities to the milk incentive scheme, by the department?	(Mark \sqrt)			
		Yes		No	
		If No, what is the reason for absence?			
		a.			
		b.			
		c.			
		If Yes , (Mark \sqrt)			
		a. Exposure visits to a successful farmer			
		b. Additional training			
		c. Any other			
B9	Is there any monitoring and surveillance wing dedicated exclusively for the incentive scheme?	(Mark \sqrt)			
		Yes		No	
B10	Is there any software developed and used for monitoring the scheme?	Yes		No	
B11	Are there any chances of overcharging the incentive money at any level?	(Mark \sqrt)			
		Yes		No	

		If Yes, what are the reasons?-Possibilities	
		a. Due to entry or typing error	
		b. Deliberate wrong entries	
		c. Fraudulent practices	
		d. Any other-as expressed	
B12	Are there any checks and balances to prevent over charging, from the state level?	(Mark √)	
		Yes	No
		If Yes, write the details in short.	
		a. Field level supervision by the officers	
		b. Periodical audit by the union	
		c. On complaints- investigation	
		d. Any other	
		If No, what is the reason, write the details in short.	
B13	What are your suggestions to improve the scheme to be more efficiently implemented to achieve desired objectives?	Jot down the suggestions given by the Officer in nut shell?	
		a.	
		b.	
		c.	
B14	Is the Milk processing activity changed, due to the impact of the incentive scheme in your jurisdiction?	Observation: (Mark √)	
		Yes	No
		If Yes, give reasons?	
		a.	
		b.	
B15	Whether the State level/ District level/Taluka level Review committee are conducting monthly/Half yearly /Annual meetings regularly?	(Mark √)	
		Yes	No
		If Yes, what are the important decisions taken to improve the system of implementation during the meetings held? Provide copies of the minutes of the meetings?	
		a.	
		b.	
B16	Interviews' Name	Signature	
B17	Date of Interview		

Appendix 3

Evaluation of Milk Incentives Scheme of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka, from 2008 – 2013.

KARNATAKA EVALUATION AUTHORITY (KEA)

FORMAT-2/QUESTIONNAIRE – Q 2,

For the Managing Director of the _____ District Milk Union.

Section A – General Information

A1	Name of the Milk Union		A2	Postal address.	
A3	Name of the Managing Director		A4	Contact No.	

Section B –Secondary data

B1	Number of MPC Societies existed under the Milk Union and Total Number of Registered members of Milk Producers.						
	Year	Number of MPCS	Total Women		Total SC	Total ST	
	2007-2008						
	2008-2009						
	2010-2011						
	2011-2012						
	2012-2013						
	Total						
B2	Total Quantity of Milk procured from the member farmers and Non members by the Union(in litres)						
	Year	Registered Members			Total In litres	Gross Total In litres	Total Non Member In litres
		Women	SC	ST			
	2007-2008						
	2008-2009						
	2009-2010						
	2010-2011						
	2011-2012						
	2012-2013						
	Total						

B3	Year and Month wise details of Incentive money-Demand with date, Receipt with date and Disbursement date to the MPCs.					
Year 2009-2010						
	Proposal/Demand		Receipt of Incentive		Disbursement / Transfer by ECS	
Month	Amount(Rs)	Date	Amount(Rs)	Date	Amount(Rs)	Date
July						
Dec						
Year 2011-2012						
	Demand		Receipt of Incentive		Disbursement / Transfer by ECS	
Month	Amount(Rs)	Date	Amount(Rs)	Date	Amount(Rs)	Date
July						
Dec						
Observations:				Year	2009-2010	2011-2012
1. How many days taken to receive the grant money from the date of submission of proposal to the AH&VS department?				Min;		
				Max:		
2. How many days taken to release the grant money from the Union to the MPCs?				Min;		
				Max		
3. If the delay is abnormal, what are the reasons?				Reason:		
				a.		
				b.		
4. If there are variations in releases or disbursement or transfer of grant amount is observed, write down the reason for the same as expressed by the MD?				Reason:		
				a.		
				b.		

Section C – Interview Questions

C1	Are you happy with the milk incentive of Rs.4/lit, being given to the farmers?	Observation: (Mark \sqrt)							
		Yes		No					
		If no, how much it should be?							
		In Rs.	5/-	6/-	7/-	8/-	9/-	10/-	---
		Why? Reasons as expressed by the MD;							
		a.							
b.									

		c.	
		d.	
C2	What is the cost of production of one litre of milk in the rural area as per your records?	2007-2008	Rs.
		2008-2009	Rs.
		2009-2010	Rs.
		2010-2011	Rs.
		2011-2012	Rs.
		2012-2013	Rs.
		2013-2014	Rs.
		2014-2015	Rs.
C3	What is the base cost considered for one litre of milk produced at the village level, while proposing, an incentive of Rs2/- or Rs 4/- per litre as per you records?		
C4	Please provide details of the latest calculated economics of dairy farming in rural area as per your records?		
C5	Is the incentive due every month, is being disbursed / Transferred in full to farmers account by ECS?	(Mark \sqrt)	
		Yes	No
		If No, Why? Mention the details expressed by the MD	
		a.	b.
C6	Are there any chances of overcharging / Undercharging the incentive money at any level?	(Mark \sqrt)	
		Yes	No
		If Yes, what are the reasons?	
		a.	b.
C7	Are there any checks and balances to prevent overcharging /	(Mark \sqrt)	
		Yes	No

	undercharging, from the Union level?	If actions taken (Mark √)	
	What action is taken by the union to avoid over charging/ under charging, fraudulent practices and delay in disbursement?	a. Periodical audit	
		b. Verification of Bill amount at the MPC Society level	
		c. Supervision by the officers at the MPCS level	
	d. Any other as expressed		
C8	What are your suggestions to revise the scheme to be more efficiently implemented to achieve desired objectives?	Jot down the suggestions given by the MD in nut shell on the following?	
		a. Revision of incentive money based on the cost of production and the purchase price of one litre of milk in rural areas.	
		b. Incentive money delivery, Financial management and scheme monitoring system.	
		c. Infrastructure and man power for scheme implementation.	
	d. Any other		
C9	Interviews' Name	Signature	
C10	Date of Interview		

Appendix 4

Evaluation of ‘Milk Incentives Scheme’ of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka, from 2008-2013.

KARNATAKA EVALUATION AUTHORITY (KEA)

FORMAT-3/QUESTIONNAIRE – Q 3

For the Secretary of the MPCs.

Section A – General Information

A1	Name of the Milk Union		A2	Name of the MPCs with full postal address.	
A3	Name of the Secretary		A4	Contact No.	
A5	Registered No.		A6	Name of the Village	

Section B –Secondary data

B1	What is the Total Number of Active Registered members in the MPCs-Provide Year wise details? Also provide SC & ST total members in numbers? a. During the period of Non implementation of the scheme? b. During implementation of the scheme?	Year	Registered Men			Registered Women			Total
			General	SC	ST	General	SC	ST	
	a. During the period of Non implementation of the scheme?	2007-2008							
	b. During implementation of the scheme?	2008-2009							
		2009-2010							
		2010-2011							
		2011-2012							
		2012-2013							
		Total							
Observations:									
1. Average number of Increase in the number membership as compared to 2007-08		Min:							
		Max:							
2. Is there any positive influence or impact of the scheme on the SC/ST		Observation: (Mark √)							
		Yes				No			

population and others?								
B2	What is the Annual Total Quantity of Milk procured from the member farmers In litres?	Year	Registered Members			Women		
			Others	SC	ST	Others	SC	ST
	a. During the period of Non implementation of the scheme?	2007-2008						
	b. Milk procured by the farmers during implementation of the Milk Incentive Scheme?	2008-2009						
		2009-2010						
		2010-2011						
		2011-2012						
		2012-2013						
		Total						
Observations:								
	1. Average quantity of milk procured as compared to 2007-08	Min:						
		Max:						
	2. Is there any positive number of Increases in the influence or impact of the scheme on the SC/ST population and others?	Observation: (Mark \sqrt)						
		Yes		No				
		If Yes/No, quantify the impact?						
B3	Milk procurement price details in Rupees;					In Rupees.		
	a. During the period of Non implementation of scheme?	2007-2008						
	b. During implementation of the Scheme?	2008-2009						
		2009-2010						
		2010-2011						
		2011-2012						
	2012-2013							
B4	Year and Month wise details of Incentive money-Demand with date, Receipt with date and Disbursement and date.							
Year 2009 - 2010								

Month	Demand		Receipt of Incentive		Disbursement	
	Amount (Rs)	Date	Amount (Rs)	Date	Amount (Rs)	Date
July						
Dec						
B5	Year and Month wise details of Incentive money-Demand with date, Receipt with date and Disbursement and date.					
Year 2011-2012						
Mont	Demand		Receipt of Incentive		Disbursement	
	Amount (Rs)	Date	Amount (Rs)	Date	Amount (Rs)	Date
July						
Dec						

Observations;	Year	2009-2010	2011-2012
a. Number of days taken to get the Milk Incentive grant amount released by the Union to the MPCs?	Min:		
	Max:		
b. Number of days taken to get the Milk Incentive grant disbursed by the MPCs to the farmers?	Min:		
	Max:		
c. If abnormal delay is observed what is the reason?	Reasons:		
	a.		
	b.		
d. If variations are in releases or disbursement or transfer of grant amount is observed, write down the reason for the same as expressed by the MPCs Secretary.	Reasons:		
	a.		
	b.		
	c.		

Section C – Interview Questions							
C1	What is the Total Annual Profit of the MPCS? Before and during implementation of the scheme.	Year			In Rupees.		
		2007-2008					
		2008-2009					
		2009-2010					
		2010-2011					
		2011-2012					
		2012-2013					
C2	Are you happy with the milk incentive of Rs.4/lit being given to the farmers? Should it be raised further?	Observation: (Mark √)					
		Yes		No			
		If no, how much it should be? And why?					
		Rupees	1	2	3	4	---
		Reasons as expressed by the Secretary;					
		a. Increased feeding cost					
		b. Increased labour cost					
		c. Increased total management cost					
		d. For additional profits					
		e. Any other-as expressed					
C3	Is there any improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder solely because of the Milk incentive scheme?	Observation: (Mark √)					
		Yes		No			
		If yes how the improvements are achieved?					
		a. By exposure- study tour/ Visit to the Successful farmer					
		b. By additional training-need based capsule courses					
		c. By motivation due raised income level					
		d. Any other reason as expressed					
		If No; what is the reasons as expressed by the farmer					
		a. Additional income is					

		meagre.						
		b. Additional income is absorbed in the higher input costs.						
		c. Additional income is spent for liquor.						
		d. Any other---						
C4	Is the incentive due every month, is being disbursed to the farmers?	Observation: (Mark √)						
		Yes		No				
		If No, Why? Mention the details expressed by the Secretary.						
		a. Un authorised expenditure deducted	Ye		s			
			No					
b. If yes, what are the items deducted?								
1.								
2.								
C5	Are the disbursements or payments of milk incentive amount made being checked periodically? By anyone?	If yes, how often checked? (Mark √)						
		Once in a month	Once in quarter	Once in Half year	Once in a year			
C6	Is there any reduction in the youth migration in the village by the adoption of dairy cattle rearing due to the influence of milk incentive scheme?	Observation: (Mark √)						
		Yes		No				
		If yes, write down the details with number of youth opted dairy cattle rearing as expressed by the Secretary?						
		Number Of Youth	1	2	3	4	5	-
		If No, Reasons for migration, as expressed by the Secretary.						
		a. Low income has no impact						
		b. Attracted by the cities/Towns						
C7	Changes in the Services / Sales of	Observation: (Mark √)						

	inputs, and disease outbreak due to the impact of the Incentive scheme?	Increased	No increased
	a. Artificial Inseminations		
	b. Feed		
	c. Mineral Mixtures		
	d. Urea Molasses Blocks		
	e. Disease out break		
	f. Any other		
B8	Is the Milk processing activity changed, due to the impact of the incentive scheme in the society area?	Observation: (Mark √)	
		Yes	Yes
		If yes, provide reasons	
		a.	b.
C9	Write the unusual, unexpected changes expressed by the Secretary, resulted either at the family level or village level due the impact of implementation of Milk incentive scheme.	Externalities:	
		Positive	Negative
		a.	a.
		b.	b.
C10	What are your suggestions to improve the impact of the scheme to be more efficiently implemented to achieve desired objectives?	Jot down the suggestions given by the Secretary in nut shell?	
C11	Signature of the Secretary. (Mandatory)		
C12	Interviewers' Name	Signature	
C13	Date of Interview		

Appendix 5

Evaluation of ‘Milk Incentives Scheme’ of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka, from 2008-2013.

KARNATAKA EVALUATION AUTHORITY (KEA)

FORMAT-4/QUESTIONNAIRE- Q 4

For Milk Pourers – Members of the MPCs. (Study Cluster)

Section A – General Information

1	Name of the Milk Union		2	Name of the MPCs		
3	Name of the Milk producer		4	(Mark √)		
5	Sex	Male		Big Farmer	Small Farmer	
		Female		Marginal Farmer	Agricultural labourers/Landless farmers	
6	Membership No.			Scheduled Cast	Scheduled Tribe.	
7			7	Name of the Village		

Section B –Interview Questions

1	What is the average time taken for the incentive to reach milk supplying person after the amount is released by the state? Is this duration too long, Short or OK?				
	Generally how much duration taken to get incentive money by you after you supply milk to the MPCs?	Observation: (Mark √)			
		Less than one month		Two month to three months	
		One month to two months		Three month to four months	
		a. It is too long			
		b. Is it short			
c. Is It OK					
2	Whether the amount released to farmers is reaching them in full or there any unwarranted / illegal deduction made in any stage of disbursement?				
	a. Is the incentive due every month, is being credited in full to your account?	Observation: (Mark √)			
		Yes		No	
If No, Why? Mention the details expressed					

		by the farmer.					
		a. Cuts imposed for dues					
		b. Deduction for Service charges					
		c. Deductions for other unknown reasons					
		d. Any other					
	b. Are there any illegal deductions made in the incentive amount credited to your account?	Observation: (Mark √)					
		Yes		No,			
		If yes, for what? Mention the details expressed by the farmer.					
		a. As commission charges					
		b. As additional expenditure incurred					
		c. Not known					
3	Whether the incentive of Rs.2 (in the past) or 4(at present) per litre is sufficient? Does it need to be changed? If so, why, and by how much?						
	a. Are you happy with the milk incentive of Rs.4/lit being given under the incentive scheme and is It sufficient?	Observation: (Mark √)					
		Yes Sufficient		Not sufficient			
	b. Does it need to be changed?	Yes		No			
	c. If revised? How much should it be?	Observation: (Mark √)					
		In Rupees	5	6	7	8	9
	d. If so, why it should be changed?	Observation: (Mark √)					
		If Yes, What is the reason? As expressed by the farmer.					
		a. All input costs are high.					
		a. Labour is cost is high.					
		b. Fodder needs to be purchased.					
		c. For additional profits					
		Any other reason as expressed, jot down					
	e. How long the milk incentive Schemes to be continued?	a. For ever					
		b. Merge with milk purchase Price					
		c. Any other suggestion given jot down					

4	What is the impact of the incentive to farmers, with reference to increase in the production of milk by increasing the number or quality of milch animals and in reduction in migration of rural youth to urban areas etc?					
4a	Total Quantity of milk supplied annually to the Milk Producers Cooperative Society (MPCS) by the milk producing farmer	Year	Quantity in litres	% Increase		
	a. Before the scheme implementation	2007-2008.				
	b. During the milk incentive scheme implementation?	2008-2009				
		2009-2010				
		2010-2011				
		2011-2012				
		2012-2013				
		Total				
	Observations:					
Increase in milk supply –in litres	Min					
	Max					
4b		Year	In Numbers			
			Cows	Buffaloes	Total	%
	a) Number of milch animals reared by the farmer before implementation of the milk incentive scheme?	2007-2008				
	b) Number of milch animals reared by the farmer during implementation of the milk incentive scheme?	2008-2009				
		2009-2010				
		2010-2011				
		2011-2012				
		2012-2013				
		Total				
Observations:		Number	%	Year		
Increase in the number of milch animals	Min					
	Max					
5	Is there any impact on the socio-economic condition of farmers and Agricultural labourers by the introduction of this scheme?					
	Total Annual Income got by sale of milk to the MPCS by the farmer	Year	In Rupees	% Change		
	a. Before implementation of the Scheme	2007-2008				

b. During implementation of the scheme?	2008-2009			
	2009-2010			
	2010-2011			
	2011-2012			
	2012-2013			
Observations				
a. Increased	Min			
	Max			
c. Income Utilisation Pattern:	(Mark √)			
Additional income earned, is it spent for different items or Savings done in different forms as mentioned?	Expenditure Towards		Form of Savings if Done In Rupees (range)	
	Marriage-		In Post Office	
	Tours			
	TV			
	Fridge			
	House repairs		In Bank	
	Cattle shed Improvements			
	Ornaments			
	Dress material		Inn Mutual Fund	
	Higher Education			
	Land purchase		In shares	
	High quality food			
Any other				
d. In your opinion is the additional income helped the farmer to get better Socio-Economic Status in the society?	Observation: (Mark √)			
	Yes		No	
If yes, mark in what the changes observed				
i. Rise of Income level-Financial status	a. Savings increased			
	b. Land purchased			
ii. Political status	a. Local Village Panchayath member			
	b. MPCS –EC Director			
iii. Participation in social activities People	c. Participation in sports			
	d. Participation in village festivals			
iv. Any other				
If No, give the reasons				

		Income from milk is less	
		Increased cost of inputs	
	e. Is the Increased income is used for children's education?	Observation: (Mark \sqrt)	
		Yes	No
		If yes, How? (Mark \sqrt) as expressed	
		a. Children joined convent/ Private Schools	
		b. Regularity in attendance	
		c. Fees paid for pursuing higher education	
		d. Stay in city hostels	
		e. Any Other	
		If No, Reasons	
		a. No additional income	
		b. Daily expenditure increased	
		c. Any Other as expressed	
6	Has the scheme made any difference in the profitability of dairy industry in rural areas?	Observation: (Mark \sqrt)	
	How much Net profit per litre you got in dairy cattle rearing / Farming?		
	a. Before implementation of the Milk Incentive Scheme	Year	In Rupees
		2007-2008	0 - 1 2 - 3 4 - 5 6 +
	b. During implementation of Scheme	2008-2009	4 - 5 6 - 7 8 - 9 10+
		2009-2010	4 - 5 6 - 7 8 - 9 10+
		2010-2011	4 - 5 6 - 7 8 - 9 10+
		2011-2012	4 - 5 6 - 7 8 - 9 10+
		2012-2013	4 - 5 6 - 7 8 - 9 10+
7.	Whether there is improvement in the awareness of management practices in feeding, Vaccination, de-worming, calf rearing and optimum usage of feed and fodder solely because of This incentive provided?	Observation: (Mark \sqrt)	
	Is there any improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder solely because of the Milk incentive scheme?	Yes	No
		If yes, how the improvements are achieved?	
		b. By exposure- study tour/ Visit to the Successful farmer	
		c. By additional training-need based capsule courses	
		d. By motivation due to raised income level	
		e. Any other reason as expressed	
		f. Reduction in animal diseases out	

		breaks														
		If No; reasons as expressed by the farmer														
		a. Additional income is meagre.														
		b. Additional income is absorbed in the higher input costs.														
		c. Additional income is spent for entertainment														
		d. No support by any department														
		e. Any other---														
8	Have rural youth been attracted to take up dairy activities solely due to this scheme being in Vogue?															
	a. Have you come across Youth Migration to cities for some obvious reasons in your village				Observation: (Mark \sqrt)											
					Yes				No							
	b. Is there any reduction in the youth migration in the village due to adoption of dairy cattle rearing due to the influence of Milk incentive scheme?				Yes				No							
If yes, write down the details of number of youth opted dairy cattle rearing as expressed by the farmer. (In Numbers)																
Youth in Numbers		1		2		3		4		6		7		8		
	b. Is the scheme motivated the youth to take-up dairy farming				Observation: (Mark \sqrt)											
					Yes				No							
					If yes, how youth are motivated? Give reasons?											
					a. Due to trainings											
					b. Exposure visits to successful farmers											
					c. Due to increased income as a result of Milk Incentive Scheme implementation											
					d. Any other as expressed											
					If No, Why? Give reasons?											
					a. No additional support											
					b. Incentive is absorbed due to Increased management cost											
c. No additional profits																
d. Any other reason as expressed																
9	Whether the incentive money is being over charged at any level? Are any checks and balances to prevent these															
	a. While making payments of				Observation: (Mark \sqrt)											

	incentive money, did you get more money by chance?	Yes		No	Yes
	b. Are the payments made to you checked periodically by any Officer or personals?	Yes		No	
		If yes, Mention the details expressed by the farmer.			
		a. By local veterinarian			
		b. Local audit personal			
		c. Any other			
10	Is the Milk processing activity changed, due to the impact of the incentive scheme in the Village?	Observation: (Mark √)			
		Yes		No	
		If Yes, give reasons.			
		a.			
		b.			
11	Write the unexpected changes resulted as either at the family level or village level due the impact of implementation of Milk Incentive scheme.	Observation: (Mark √)			
		Yes		No	
		a.			
		b.			
12	Do you feel that the local veterinary institutions have the required infrastructure to implement the milk incentive scheme?				
13	You can give suggestions to improve the quality of implementation of the milk incentive scheme?				
14	Signature of the farmer. (Mandatory)				
15	Interviewers' Name	Signature			
16	Date of Interview				

Appendix 6

Evaluation of ‘Milk Incentives Scheme’ of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka, from 2008-2013.

KARNATAKA EVALUATION AUTHORITY (KEA)

FORMAT-5/QUESTIONNAIRE- Q 5

For Milk Pourers of Non operational Area. (Control Cluster)

Section A – General Information

A1	Name of the Milk producer				(Mark √)			
A2	Address and Village Name			A5	Big Farmer		Small Farmer	
A3	Contact No if any				Marginal Farmer		Land less farmer	
A4	(Mark √)				Scheduled Cast		Scheduled Tribe.	
	Sex	Male						
		Female						

Section B –Interview Questions

B1	Where are you supplying the milk produced at the household level?	(Mark √)			
		a. Supplied to the households of the nearest village			
		b. To the households and hotels of our village			
		c. Private dairy personals			
		d. Any other			
B2	Why are you not supplying milk to the nearest MPCs? Provide reasons?	a. It is a non operational area and too far from the MPCs			
		b. I get better price for the milk			
		c. Any other reason			
B3	Generally in how many days you get the payments for milk supplied?	(Mark √)			
		a. Same day			
		b. 7 days			
		c. 15 days			
		d. 30 days			
		e. More than 30 days			
B4	Have you any time faced problems	(Mark √)	Yes		

	in getting payments from the milk receiving end?		No		
B5	If your village is brought under the MPCS operational area, will you supply the milk?	(Mark √)	Yes		
			No		
		If no, what is the reason? (Mark √)			
		a. I get extra Rs. 2/- to 4/-per litre of milk Supplied as compared to MPCS			
		b. Payments are instant			
		c. Any other reason as expressed			
B6	Total Quantity of milk supplied by the milk producing farmer	Year	Quantity in litres	% Increase	
		2007-2008.			
		2008-2009			
		2009-2010			
		2010-2011			
		2011-2012			
		2012-2013			
		Total			
	Observations:				
	a. Increase in milk supply –in litres				
Min					
Max					
b. Any other					
B7	Number of milch animals reared by the farmer	Year	Milking Animals Reared		
			Cows	Buffaloes	Total
		2007-2008			
		2008-2009			
		2009-2010			
		2010-2011			
		2011-2012			
		2012-2013			
Total					
	Observations:		Number	%	Year
	a. Increase in the number of milch animals	Minimum			
		Maximum			
	b. Any other				

B8	Total Annual Income earned by the farmer by selling milk	Year	In Rupees	% Change	
		2007-2008			
		2008-2009			
		2009-2010			
		2010-2011			
		2011-2012			
B9	Income Utilisation Pattern	(Mark √)			
		Expenditure Towards		Form of Savings if Done In Rupees (range)	
		Marriage- Tours		In Post Office	
		TV			
		Fridge			
		House repairs		In Bank	
		Cattle shed Improvements			
		Ornaments			
		Dress material		Inn Mutual Fund	
		Higher Education			
		Land purchase		In shares	
		High quality food			
		Any other			
a	For Better Education	Observation: (Mark √)			
	Is the income helped the farmer to get better education to his children?	Yes		No	
		If yes, How? (Mark √) as expressed			
		a. Children joined convent			
		b. Regularity in attendance			
		c. Fees paid for higher education			
		d. Computer purchase			
e. Any Other					
		If No, Reasons			
		d. No additional income			
		e. Liquor consumption increase			
		f. Extra entertainment			
		g. Additional income spent for luxury			
		h. Any Other as expressed			
b	Better Nutrition	Observation: (Mark √)			
	Is the income helped the farmer to get better nutrition (Food)?	Yes		No	
		If yes, write down the details mentioned. How? As expressed by the farmer			
		a. Increased costly food consumption			
		b. Increased Milk consumption			

		c. Increased Vegetables consumption				
		d. Increased Pulses consumption				
		e. Any other, as expressed				
		If No reasons				
		a. No additional income				
		b. Additional income spent for luxury				
		c. Any other, as expressed				
c	Change in Socio-Economic Status	Observation (Mark \sqrt)				
	In your opinion, Is the income helped the dairy farmer to get better Socio-Economic Status in the society?	Yes	No			
		If yes, How and in what form (Mark \sqrt)				
	i. Rise of Income level-Financial status	a. Savings increased				
		b. Land purchased				
	ii. Participation in social activities	a. Sports				
		b. Drama				
		c. Local social activities committee member				
	iii. Any other					
		If No- reasons shall be record in the box. (Mark \sqrt)				
		a. Income from milk is meagre.				
		b. Income is absorbed in the higher input costs.				
		c. Any other				
B10	How much Net profit per litre you got in dairy cattle rearing / Farming?	Observation: (Mark \sqrt)				
		Year	In Rupees			
		2007-2008.	0 - 1	2 - 3	4 - 5	6 +
		2008-2009	4 - 5	6 - 7	8 - 9	10+
		2009-2010	4 - 5	6 - 7	8 - 9	10+
		2010-2011	4 - 5	6 - 7	8 - 9	10+
		2011-2012	4 - 5	6 - 7	8 - 9	10+
	2012-2013	4 - 5	6 - 7	8 - 9	10+	
B11	Whether there is improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder solely extension activities of the Department?	Observation: (Mark \sqrt)				
		Yes	No			
		If yes, how the improvements are achieved?				
		a. By exposure- study tour/ Visit to the				
	b. Successful farmer					
	c. By additional training-need					

		based	
		d. capsule courses	
		e. By motivation income level from milk	
		f. Any other reason as expressed	
		g. If No; reasons as expressed by the farmer	
		h. Income is meagre.	
		i. Profit is absorbed in the higher input costs.	
		j. Income is spent for liquor.	
		k. No support by any department	
		l. Any other---	
B12	Have rural youth been attracted to take up dairy activities due to better Income and profits?		
a	Youth Migration for obvious reasons	Observation: (Mark \sqrt)	
	a. Do you find Youth Migration Urban area in your Village?	Yes	No
	b. Is there any reduction in the youth migration in the village by the adoption of dairy cattle rearing?	Yes	No
		If yes, write down the details of number of youth opted dairy cattle rearing as expressed by the farmer. (In Numbers)	
		1	2
		3	4
		5	More
		If No, Reasons for migration, as expressed by the farmer.	
		a. Income got is meagre	
		b. Youth are attracted by towns and Cities.	
		c. For higher education	
		d. Do not know	
		e. Any other reason as expressed	
	c. Is your Children's' Education level Changed due to non migration?	Observation: (Mark \sqrt)	
		Yes	No
b	Are the dairy cattle rearing activity motivated the youth to take-up dairy farming in the village level?	Yes	No
		If yes, how youth are motivated? Give reasons?	
		a. Due to trainings	
		b. Exposure visits to successful farmers	
		c. Due to better income/profits	
		d. Any other as expressed	

		If No, Why? Give reasons?			
		a. No additional support			
		b. Profit is being absorbed due to Increased management cost			
		c. No profits			
		d. Any other reason as expressed			
B13	Is the Milk processing activity changed, due to the impact of the incentive scheme in the Village?	Observation: (Mark √)			
		Yes		No	
		If Yes, give reasons.			
		a.			
		b.			
B14	Write the unexpected changes resulted as either at the family level or village level due to the impact dairy activity?	Externalities:			
		a.			
		b.			
		c.			
B15	Do you feel that the infrastructure in the Village level Government Veterinary Institutions need to be improved to oversee the scheme?	Yes		No	
		Reasons as expressed			
		1.			
		2.			
		3.			
B16	Do you have any suggestion to improve the procedure of Implementation of MIS to get milk incentive as support price, although you are not a member and not supplying milk to the MPCs?	Observation: (Mark √)			
		Yes		No	
		If yes, reasons			
		a. Due to increase in dairy management cost			
		b. To support the loss incurred			
		c. Any other reason as expressed			
		Suggestions:			
		1.			
		2.			
B17	Signature of the farmer. (Mandatory)				
B18	Interviewers' Name	Signature			
B19	Date of Interview				

Appendix 7

Consolidated Results of processed data of 3900 dairy farmers, under Study Clusters- output from the Format- 4.

		Study Cluster	
1	Gender	(%)	
	Male	62.3	
	Women	37.7	
2	Farmers Category		
	Big Farmers	14.0	
	Small farmers	37.4	
	Marginal Farmers	28.5	
	Landless	20.1	
3	Cast		
	Scheduled Cast	12.9	
	Scheduled Tribe	5.9	
4	Generally how much duration taken to get incentive money by you after you supply milk to the MPCs		
	1 Less than one month	25.2	
	2 One month to two months	22.3	
	3 Two month to three months	29.1	
	4 Three month to four months	23.5	
5	Generally how much duration taken to get incentive money by you after you supply milk to the MPCs		
	1 It is too long	99.5	
	2 Is it short	-	
	3 Is It OK	.5	
6	Is the incentive due every month, is being credited in full to your account		
	1 Yes	97.0	
	2 No	3.0	
	If No, Why Mention the details expressed by the farmer		
	1 Cuts imposed for dues	56.3	
	2 Deduction for Service charges	37.5	
	3 Deductions for other un known reasons	6.3	
7	Are there any illegal deductions made in the incentive amount credited to your account		
	1 Yes	1.4	
	2 No	98.6	
	If yes, for what mention the details expressed by the farmer		
	1 As commission charges	41.8	
	2 As additional expenditure incurred	49.1	
	3 Not known	9.1	
8	Are you happy with the milk incentive of Rs.4/lit being given under the incentive scheme and is It sufficient?		
	1 Yes	20.8	
	2 No	79.2	
9	Does it need to be changed?		

	1 Yes	89.5		
	2 No	10.5		
10	If revised how much should it be?	(%)		
	Rs.5/-	6.0		
	Rs.6/-	25.8		
	Rs.7/-	11.6		
	Rs.8/-	29.3		
	Rs.9/-	4.5		
	Rs.10/-	22.8		
11	What is the reason, as expressed by the farmer			
	1 All input costs are high	82.2%		
	2 Labour is cost is high	36.8%		
	3 Fodder needs to be purchased	55.2%		
	4 For additional profits	27.2%		
12	How long the milk incentive Schemes to be continued			
	1 For ever	90.6%		
	2 Merge with milk purchase Price	26.3%		
	3 Any other suggestion given jot down	.2%		
13	Total Quantity of milk supplied annually to the Milk Producers Cooperative Society (MPCS) by the milk producing farmer? Average in litres			
	Before scheme implementation Yr. 2007-2008	2269.68	Percent growth (%)	
	During scheme implementation Yr. 2008-2009	3866.23	70.34	
	2009-2010	3513.47	-9.12	
	2010-2011	3474.42	-1.11	
	2011-2012	3317.73	-4.51	
	2012-2013	3588.51	8.16	
	Growth in percentage observed by yr. 2012-13, as against the yr.2007-08			58.11
14	Number of milch cows and Buffaloes reared by the farmers, mention?			
		Cows	Buffaloes	Total
	Before scheme implementation Yr. 2007-2008	2515	856	3371
	During scheme implementation Yr. 2008-2009	2686	776	3462
	2009-2010	2937	790	3727
	2010-2011	3066	791	3857
	2011-2012	3139	802	3941
	2012-2013	3354	962	4316
	Growth in percentage observed by 2012-13, as against the yr.2007-08			28.03
15	Total Annual Income got by sale of milk to the MPCS by the farmer in Rupees			
	Before scheme implementation Yr. 2007-2008	25838	(%)	
	During scheme implementation Yr. 2008-2009	29580	14.48	

	2009-2010	31505	6.51	
	2010-2011	36636	16.29	
	2011-2012	41891	14.34	
	2012-2013	50119	19.64	
	Growth in percentage observed rise in income from milk by 2012-13, as against the base year 2007-08		94.0%	
16	Additional income earned is spent for different items, mention?			
	1 Marriage	19.8%		
	2 Tours	10.5%		
	3 TV	33.0%		
	4 Fridge	32.5%		
	5 House repairs	36.3%		
	6 Cattle shed Improvements	9.0%		
	7 Ornaments	28.8%		
	8 Dress material	36.1%		
	9 Higher Education	4.1%		
	10 Land purchase	37.0%		
	11 High quality food	.1%		
	12 Any other	0.0%		
17	Form of Savings if Done, No. of farmers in percentage?			
	1 In Post Office	18.5		
	2 In Bank	62.4		
	3 in mutual fund	10.9		
	4 in shares	8.2		
18	In your opinion is the additional income helped the farmer to get better Socio-Economic Status in the society?			
	1 Yes	75.6%		
	2 No	24.4%		
	a. Rise of Income level-Financial status increased, how??			
	1 Savings increased People	92.7%		
	2 Land purchased	13.4%		
	b. Political status increased how?			
	1 Local Village Panchayat member	16.1%		
	2 MPCs –EC Director	88.4%		
	c. Participation in social activities, how?			
	1 Participation in sports	12.0%		
	2 Participation in village festivals	95.1%		
19	Is the Increased income is used for children's education?			
	1 Yes	61.7		
	2 No	38.3		
	If yes, details how?		(%)	
	1 Children joined convent/ Private Schools	53.1%		
	2 Regularity in attendance	37.1%		
	3 Fees paid for pursuing higher education	54.8%		
	4 Stay in city hostels	18.5%		
	If No, details, why?			

	1 No additional income				67.9%		
	2 Daily expenditure increased				70.4%		
	3 Any Other as expressed				8.4%		
20	Net profit obtained in dairy farming per litre of milk sold?						
	Net Profit Before implementation of the Milk Incentive Scheme yr 2007-2008						
				1. Rs 0-1	54.7%		
				2.Rs 2-3	36.4%		
				3 .Rs 4-5	6.9%		
				4.Rs 6+	2.0%		
	Profit (Rs) Year	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	
	1. Rs. 4-5	84.4%	76.2%	65.0%	58.3%	52.6%	
	2. Rs. 6-7	14.2%	19.4%	29.4%	27.3%	26.6%	
	3 .Rs. 8-9	1.3%	4.2%	3.9%	11.1%	10.5%	
	4. Rs10+	.1%	.1%	1.7%	3.3%	10.4%	
21	Is there any improvement in the awareness of management practices in feeding, vaccination, de-worming, calf rearing feed and fodder solely because of the and optimum usage of Milk incentive scheme						
				1 Yes		88.0%	
				2 No		12.0%	
	If yes how the improvements are achieved?						
	1 By exposure- study tour/ Visit to the Successful farmer						55.0%
	2 By additional training-need based capsule courses						46.7%
	3 By motivation due to raised income level						41.0%
	4 Reduction in animal diseases out breaks						58.2%
	5 Any other reason as expressed						4.4%
	If No, reasons as expressed by the farmer						
	1 Additional income is meagre						53.9%
	2 Additional income is absorbed in the higher input costs						61.0%
	3 Additional income is spent for entertainment						5.6%
	4 No support by any department						17.7%
	5 Any other						.9%
22	Have you come across Youth Migration to cities for some obvious reasons in your village?						
				1 Yes		38.4%	
				2 No		61.6%	
23	Is there any reduction in the youth migration in the village due to adoption of dairy cattle rearing due to the influence of Milk incentive scheme?						
				1 Yes		56.0%	
				2 No		44.0%	
	If yes-write down the details of number of youth opted dairy cattle rearing as expressed by the farmer? In percentage (%)						
	Youth migration-1 youth						27.4
	Youth migration-2 youths						24.0
	Youth migration-3 youths						19.5

	Youth migration-4 youths	9.8
	Youth migration-5 youths	12.0
	Youth migration-6 youths	2.6
	Youth migration-7 youths	1.8
	Youth migration-8 youths	2.8
	If yes_ how youth are motivated_ Give reasons	
	1 Due to trainings	55.3%
	2 Exposure visits to successful farmers	48.7%
	3 Due to increased income as a result of Milk Incentive Scheme implementation	61.2%
	4 Any other as expressed	8.7%
	If No, Why, Give reasons?	
	1 No additional support	60.3%
	2 Incentive is absorbed due to Increased management cost	55.6%
	3 No additional profits	2.6%
	4 Any other reason as expressed	.1%
24	While making payments of incentive money, did you get more money by chance?	
	1 Yes	2.0%
	2 No	98.0%
25	Are the payments made to you checked periodically by any Officer or personals	
	1 Yes	85.5%
	2 No	14.5%
	If yes, Mention the details expressed by the farmer?	
	1 By local veterinarian	48.7%
	2 Local audit personal	75.5%
	3 Any other	7.7%
25	Is the Milk processing activity changed, due to the impact of the incentive scheme in the Village?	
	1 Yes	62.1%
	2 No	37.9%
	If Yes, give reasons?	
	1. Animal fodder is grown- produced	
	2. Better equipments	
	3. Bulk Milk Chilling Centre and pure drinking water centre opened in village	
	4. Changes in milk quality	
	5. Sub division should be opened locally to purchase milk	
	A Write the unexpected changes resulted as either at the family level or village level due the impact of implementation of Milk Incentive scheme?	
	1 Yes	46.1%
	2 No	53.9%
	If Yes, give reasons?	
	Due Youths are showing more interest on dairy farming	
	Cleaning is on priority in sheds	
	During drought season dairy farming will helpful	
	More changes in cattle farming	
	More stable market	
	Women involved in dairy farming	

	Do you feel that the local veterinary institutions have the required infrastructure to implement the milk incentive scheme?	
	1 Yes	40.1%
	2 No	59.9%
	If Yes, give details?	
	All the facilities are to be given for veterinary doctors	
	Need veterinary doctors	
	Veterinary Doctors are appointed immediately	
	Veterinary hospital should be opened	
	You can give suggestions to improve the quality of implementation of the milk incentive scheme	
	Add incentives with the price of the milk	
	Free insurance for animals	
	Free insurance for fodder for 3 years	
	Give better price to milk	
	Give good food to animals	
	Give incentives for loss incurred	
	Give incentives quickly	
	Give money to purchase Milk	
	Give more importance to production of milk	
	Give subsidy to purchase veterinary food	
	Give subsidy to purchase veterinary food in 30 days	
	Help to purchase veterinary feed	
	Incentives are given monthly and properly	
	Incentives are given to society members also	
	Incentives should be given properly	
	Incentives should be given in less time	
	Incentives should be given in time	
	Incentives should be given more	
	Incentives should be given quickly	
	Incentives should be given for feed mixture	
	Lack of veterinary doctors is a problem	
	Maintain veterinary feed quality	
	More incentives should be given	
	Need experienced veterinary doctors	
	Need veterinary Hospital	
	Provide fodder	
	Provide good veterinary feed	
	Reduce the price of the cattle food	
	Separate more incentives should be given for buffalo milk	
	SMS message should be given when the incentive is deposited to account	
	Free Vaccination for all cattle	

Appendix 8

**Consolidated Results of processed data of 325 Dairy Farmers of Control Cluster-
Output of Format-5**

Sl.No	Parameters/Questions	Control Cluster	
1	Gender	Percentage (%)	
	Male	74.40	
	Women	25.60	
2	Farmers Category		
	Big farmers (BF)	11.60	
	Small Farmers(SF)	32.80	
	Marginal Farmers(MF)	1.40	
	Landless (LL)	54.20	
3	Cast		
	Scheduled Cast	16.70	
	Scheduled Tribe	5.10	
	Others	78.20	
	Questions		
4	Where are you supplying the milk produced at the household level?		
	a. Supplied to the households of the nearest village	24.2	
	b. To the households and hotels of our village	8.9	
	c. Private dairy personals	64.5	
	d. Any other	2.4	
5	Why are you not supplying milk to the nearest MPCS? Provide reasons?		
	a. It is a non operational area	40.6	
	b. Too far from the MPCS	22.2	
	c. I get better price for the milk	37.2	
6	Generally in how many days you get the payments for milk supplied?		
	a. Same day	11.3	
	b. 7 days	43.0	
	c. 15 days	23.9	
	d. 30 days	16.7	
	e. More than 30 days	5.1	
7	Have you any time faced problems in getting payments	Yes	14.0

	from the milk receiving end? In Percentage (%)	No	86.0	
8	If your village is brought under the MPCS operational area, will you supply the milk? In Percentage (%)	Yes	39.2	
		No	60.8	
9	If no, what is the reason?			
	a. I get extra Rs. 2/- to 4/-per litre of milk Supplied as compared to MPCS	65.2%		
	a. Any other reason as expressed	34.8%		
10	Total Quantity of milk supplied by the milk producing farmer during the Year			
	Year	Quantity in litres	% Increase/Decrease	
	2007-2008.	5556.79	-	
	2008-2009	3479.22	-37.4	
	2009-2010	3128.22	-10.1	
	2010-2011	3337.77	6.7	
	2011-2012	3644.55	9.2	
	2012-2013	4240.08	16.3	
11	Number of milch animals reared by the farmer			
	Year	Average No. of Milking Animals Reared		
		Cows	Buffaloes	Total Farmers (%)
	2007-2008	< 2	>2	<5 91
	2008-2009	>2	2	>3 90
	2009-2010	<2	<2	<3 69
	2010-2011	<3	<2	<5 49
	2011-2012	>2	<2	<4 36
	2012-2013	>2	>2	>4 83
12	Total Annual Income earned by the farmer by selling milk			
		In Rupees	%	Findings

			Change	
	2007-2008	31386.96	-	
	2008-2009	35916.66	14.43	
	2009-2010	35605.67	-0.87	
	2010-2011	41146.16	15.56	
	2011-2012	45401.55	10.34	
	2012-2013	42707.39	-5.93	
13	Income Utilisation Pattern			
	Expenditure		Savings Pattern %	
	Marriage-	19.5%	In Post Office	7.7
	Tours	3.8%		
	Household articles-TV- Fridge	42.0%		
	House repairs	30.7%		
	Cattle shed Improvements	36.5%	In Bank	76.9
	Ornaments	7.8%		
	Dress material	37.5%		
	Higher Education	41.0%	In Mutual Fund	15.4
	Land purchase	9.6%		
	High quality food	18.4%	In shares	-
	Any other	6.8%		
14	Is the income helped the farmer to get better education to his children?		Yes	69.6%
			No	30.4%
15	If yes, write down the details mentioned. How? As expressed by the farmer in percentage (%)			
	1 Children joined convent	59.8%		
	2 Regularity in attendance	17.6%		
	3 Fees paid for higher education	52.0%		
	4 In private hostel stay	14.2%		
	5 Any Other	2.9%		
16	If the income helped the farmer to get better nutrition		Yes	56.0%
			No	44.0%
	a. Increased costly food consumption	53.0%		
	b. Increased Milk consumption	40.2%		
	c. Increased Vegetables consumption	29.3%		
	d. Increased Pulses consumption	18.3%		

	e. Any other, as expressed	22.0%	
	If No reasons		
	a. No additional income	59.0%	
	b. Additional income spent for luxury	35.5%	
	c. Any other, as expressed	4.8	
17	In your opinion, Is the income helped the dairy farmer to get better Socio-Economic Status in the society?		
		Yes	65.2%
		No	34.8%
	If yes, How and in what form - out of 65.2% percentage (%)		In
	a. Rise of Income level-Financial status	a. Savings increased	91.4
		b. Land purchased	8.6
	b. Participation in social activities	c. Sports	6.1
		d. Drama	81.6
		e. Local social activities committee member	12.2
	Any other	-	
	If No- reasons shall be record in the box. – out of 34.8% percentage (%)		In
	a. Income from milk is meagre.	68.7	
	b. Income is absorbed in the higher input costs.	27.7	
	c. Any other	3.6	
18	Is there any net profit in dairy farming? In (%)		
		Yes	98.6
		No	1.4
	How much Net profit per litre you got in dairy cattle rearing / Farming? In percentage (%)		
	2007-2008.	0 - 1	98.6
		2 - 3	18.8
		4 - 5	8.5
		6 +	16.4
	2008-2009	4 - 5	57.1
		6 - 7	13.7
		8 - 9	11.7
		10+	19.5
	2009-2010	4 - 5	52.9
		6 - 7	18.1
		8 - 9	9.7
		10+	19.4
	2010-2011	4 - 5	50.0
		6 - 7	20.9
		8 - 9	10.3
		10+	18.8
	2011-2012	4 - 5	54.0
		6 - 7	17.7
		8 - 9	5.8
		10+	22.6
	2012-2013	4 - 5	52.3
		6 - 7	18.3
		8 - 9	7.9
		10+	21.6
19	Is there any improvement in the awareness of management		Yes
			77.5

	practices in feeding, vaccination, de-worming, calf rearing and optimum usage of feed and fodder? In percentage (%)	No	22.5											
	If yes, how the improvements are achieved? In percentage (%)													
	a. By exposure- study tour/ Visit to the b. Successful farmer		51.3%											
	c. By additional training-need based d. capsule courses		20.1%											
	e. By motivation income level from milk		20.5%											
	f. Any other reason as expressed		45.3%											
	If No; reasons as expressed by the farmer. In percentage (%)													
	g. Income is meagre.		93.2											
	h. Profit is absorbed in the higher input costs.		6.8											
20	Do you find Youth Migration Urban area in your Village? In percentage (%)	Yes No	29.7 70.3											
	Is there any reduction in the youth migration in the village by the adoption of dairy cattle rearing? In percentage (%)	Yes No	41.0 59.0											
	If yes, write down the details of number of youth opted dairy cattle rearing as expressed by the farmer. (In Numbers)													
	1	44%	2	31%	3	8%	4	2%	5	2%	6	1%	7	1%
	If No, Reasons for migration, as expressed by the farmer.													
	Income got is meagre													
	Youth are attracted by towns, Cities.													
	For higher education													
	Do not know													
	Any other													
21	Is your Children's' Education level Changed due to non migration? In percentage (%)	Yes No	34.8 65.2											
22	Are the dairy cattle rearing activity motivated the youth to take-up dairy farming in the village level? In percentage (%)	Yes No	24.6 75.4											
	If yes, how youth are motivated? Give reasons? In percentage (%)													
	a. Due to trainings		26.7%											

	b. Exposure visits to successful farmers	70.7%	
	c. Due to better income/profits	12.1%	
	d. Any other reason	7.8%	
	If No, Why? Give reasons?		
	1 Income is meagre	85.1	
	2 Profit is absorbed in the higher input costs	14.9	
23	Is the Milk processing activity changed, due to the impact of the incentive scheme in the Village? In percentage (%)	Yes	32.4
		No	67.6
	If Yes give reasons a. More people are opting dairy farming due to more profit. b. Income is un interrupted throughout the year.		
24	Write the unexpected changes resulted as either at the family level Or village level due to the impact dairy activity? In percentage (%)	Yes	34.5
		No	65.5
	a. Disease out breaks reduced b.		
25	Do you feel that the infrastructure in the Village level Government Veterinary Institutions is adequate to oversee the scheme?	Yes	56.3
		No	43.7
26	Do you have any suggestion to improve the procedure of Implementation of MIS to get milk incentive as support price, although you are not the member and not supplying milk to the MPCs?		
	Private company cattle feed should be given		
	MPCS feed cost should be reduced.		
	Incentive amount should be given to non MPCs members also.		
	Open MPCs here also.		
	More training required for poor farmers.		
	Bank loan is required for poor people.		

Wharton Research Scholars Journal - Wharton School

Extract Copy

Exploring the cost of milk production & potential economies of scale in a dairy cooperative

Parth Shah May 22nd, 2012

Abstract

Agricultural cooperatives have been a unique way of addressing the concerns of the producers and consumers regarding pricing, storage, marketing, and other such activities of bringing the commodity to the market. One of such sectors is the dairy, where there are cooperatives in both the developed and developing countries. *Amul Dairy*, a milk cooperative in India is, synonymous with quality of its milk and milk products as well as fair prices to both the consumer and producer. In this study, we will examine the effectiveness of *Amul* by comparing the procurement prices offered by the dairy cooperative to the cost of producing milk. In addition, we will measure whether there are economies of scale in milk production.

Table 1: Revenue Part of the Survey conducted in villages around Anand, Gujarat

	Buffaloes	Cows
Number of Villagers	222.00	129
Number of Animals	2.10	5.32
Daily Total Amount of Milk in Summer	8.82	40.08
Daily Total Amount of Milk in Winter	10.02	46.19
Daily Total Amount of Milk poured in the dairy in Summer	6.92	38.27
Daily Total Amount of Milk poured in the dairy in Winter	7.85	44.00
Amount of Fat	7.4%	3.9%
Number of Months Buffalo continuously gives milk for	7.75	8.29
Number of Months between lactation periods	4.23	3.13
Number of Lactation periods during a buffalo's lifetime	9.55	9.89
How many buffaloes did you purchase?	1.03	4.21
Average Purchase Price of Buffalo	25,386.02	26,660.01
Do you keep the buffalo till it becomes old?	95%	90%
Do you sell the buffalo before it becomes old?	5%	10%
Selling Price of the buffalo?	22,378.79	24,722.00
Total Amount of Milk Produced in a year	2,192.61	12,170.34
Total Amount of Milk Sold to Dairy in a year	1,638.44	11,580.28
		229,035.7
Total Amount of Annual Revenue from selling milk to dairy	52,933.05	7
Annual Deprecation cost of animal	5,864.72	18,579.85
Annual Salvage Costs of Animal	80,769.58	24,033.07

Average Amount of Annual Milk per animal	1,079.87	2,099.42
		229,035.7
Total Raw Annual Revenue	61,202.72	7
Total Annual Bonus (20% of Raw Annual Revenue)	11,605.25	45,807.15
Total Trolley Revenue (1 Animal = Rs. 500/yr)	1,051.80	2,658.91
		277,501.8
Total Cumulative Annual Revenue	73,807.50	4

*The unit of observation is a village household that owns cows or buffaloes. If the household owns both types of animals, income & expenses are divided based on the amount of revenue contributed by each animal.

**All the amounts are in litres and Indian Rupees.

Table 2: Expenses Part of the Survey conducted in villages around Anand, Gujarat

	Buffaloes	Cows
Expenses		
<u>Fixed Costs (Shelter, Electricity, and Water)</u>	1,299.76	7,398.59
Feeding Costs		
Total daily amount of Amuldaan fed to animals (kg)	5.67	22.22
Total daily amount of Dry Grass fed to animals (pura)	12.73	24.90
Total daily amount of Green Grass fed to animals (mandh)	1.94	4.37
Total daily amount of Makai Khor fed to animals (kg)	3.33	4.04
Total daily amount of Kapas Khor fed to animals (kg)	2.20	3.06
Total daily amount of Makai Phatri fed to animals (kg)	0.05	1.13
Total daily amount of Tuver Chuni fed to animals (kg)	0.01	2.09
Total daily additional feeding costs	-	141.88
<u>Total Annual Feed Costs</u>	95,038.94	221,626.05
Medical/Insurance Expenses		
<i>Do your animals have insurance?</i>	5%	9%
Average coverage per animal	25,583.33	3,527.13
Average annual premium per animal (in respect to coverage)	1,351.92	157.95
Number of Doctor visits in a year	2.30	1.79
<u>Total Annual Medical & Insurance Expenses</u>	428.23	5,981.03
Labour Costs		
Total number of unpaid daily hours	2.33	9.81
Annual cost of daily unpaid labour	13,638.00	14,716.67
Annual Salary paid to hired individuals	678.01	7,112.38

Total Annual Labour Costs	14,316.01	21,829.05
Total Annual Costs (excl. labour)	102,022.70	245,756.27
Total Annual Costs (incl. labour)	116,338.70	289,141.49
Total Amount of Milk Produced in a year	2,192.61	12,170.34
Milk Cost (Rs./L) excluding labour	52.20	28.82
Milk Cost (Rs./L) including labour	62.00	33.42

Table 3: Adjustments

	Buffaloes	Cows
Household Expenses		
<i>What are your monthly household expenses?</i>	4,427.17	6,655.70
<i>Does selling milk help with your household expenses?</i>	88%	93%
<i>Do you think your children will continue to sell milk in the future?</i>	73%	67%
Annual Net Income (excluding labour costs)	(28,215.19)	31,745.57
Monthly Net Income (excluding labour costs)	(2,351.27)	2,645.46
Annual Net Income (including labour costs)	(42,531.20)	(11,639.65)
Annual Net Income (including labour costs)	(3,544.27)	(969.97)
Adjusted Milk Cost (Rs./L) excluding labour	44.24	26.77
Adjusted Milk Cost (Rs./L) including labour	51.77	30.66
Adjusted Annual Net Income (excluding labour costs)	(21,872.04)	53,959.63
Adjusted Monthly Net Income (excluding labour costs)	(1,822.67)	4,496.64
Adjusted Annual Net Income (including labour costs)	(36,188.04)	10,574.40
Adjusted Annual Net Income (including labour costs)	(3,015.67)	881.20

Table 4 :- Market prices of items at which cost of feed was calculated

Cost Line Items	INR
Amount Doctor charges per visit	50.00
Cost of Amuldaan (per kg)	9.50
Cost of Dry Grass (market price/pura)*	8.00
Cost of Green Grass (market price/mandh)**	30.00
Cost of Makai Khor (market price/kg)	20.00
Cost of Kapas Khor (market price/kg)	18.00
Cost of Makai Phatri (market price/kg)	10.00
Cost of Tuver Chuni (market price/kg)	13.00
Hourly Cost of Labour (NREGA) (INR 120 for 8 hr day for 100 days)	4.11
*1 pura = 0.8kg; **1 mandh = 25kg	

Appendix 10

Model Score Card Method

Guidelines for Calculation of Variable Incentive Rate based on four parameters for all the districts of Karnataka State, under the Milk Incentive Scheme

Background of the Scheme's Sanction:

Preamble of the Government Order issued for Sanction of Milk Incentive Scheme, indicates clearly that due to increased cost of feed and fodder, the cost of production of milk significantly increased and now the cost is greater than before. Thereby the resultant situation is dairy farming in rural areas is not remunerative. In order to make the farmers to continue their rural dairy farming activity profitably under the cooperative sector, an amount of Rs.4/- per litre of milk is sanctioned for the milk poured by the farmers to the local Milk Producers Cooperative Societies (MPCSs).

- 25th Technical Committee Meeting of KEA held on 26th December 2015, has resolved to suggest the variable incentive rate for the Districts or the Milk Unions based on the Cost of Milk production and the purchase rate of milk being offered by the milk unions. Therefore, after studying the data obtained from the DMUs on Cost of Production of Milk and Purchase Rate of one litre of milk, following four parameters are considered as relevant to derive a Score Card Method.
- **Parameters:**
 1. Cost of Production of One litre of Milk calculated by the DMUs-2015-16;
 2. Purchase Rate of One litre of Milk being offered by the by the DMUs-2015-16;
 3. Milk Pourers existed during February 20016 under DMUs;
 4. Population of Productive Animals existed in the districts (Based on the Sample Survey Results of year - 2014-15 of the Department of Animal Husbandry and Veterinary Services.)

I. A & B: Cost of Production and Purchase rate of one litre of milk of all the District Milk Union of Karnataka State: 2015-16

Sl.No.	2015-16	A. Cost of Production of one litre of Milk in Rs.	B. Purchase rate of one litre of Milk in Rs.
1	D Kannda DMU	23.00	27.37
2	Kalaburagi DMU	23.21	24.70
3	Ballary DMU	17.10	24.45
4	Mandya DMU	17.14	23.81
5	Shivamogga DMU	21.00	22.71
6	Kolar DMU	17.54	22.65
7	Dharawada DMU	10.22	22.25
8	Bengaluru DMU	18.28	22.16

9	Vijayapura DMU	9.11	21.50
10	Hassan DMU	26.18	21.00
11	Mysuru DMU	19.13	21.00
12	Chamarajanagara DMU	17.63	21.00
13	Belagavi-DMU-Cow	12.36	20.60
	Belagavi-DMU- Buffaloes	20.3	29.00
14	Tumakuru DMU	20.00	19.71

Source: Respective DMUs.

C. Total Milk Pourers Existed- Status during February 2016 in the DMUs

Sl. No.	District Milk Unions	Milk Pourers Nos.
1.	Bengaluru	114563
2.	Mandya	94846
3.	Kolar	86389
4.	Mysuru	82174
5.	Hassan	74977
6.	Tumakuru	69666
7.	Dharawada	43008
8.	Chamarajanagara	40002
9.	Belagavi	38278
10.	Dakshina Kannada	31144
11.	Shivamogga	26599
12.	Ballary	25333
13.	Vijayapura	24245
14.	Kalaburagi	10776
	Total	762000

Source: Department of AH & VS., Bengaluru.

D. Productive Population Rating Index:

(in, 00 Nos.)

Districts having less than the 1000 no. of Estimated Productive Animals 2014-15									
Indigenous Cows		Crossbred Cows		Buffaloes		Common in all the Three			
BNG Urban	202	Yadgir	44	Udupi	49	1. Kodagu	IND	CB	BF
BNG Rural	382	Vijayapura	55	D Kannada	64	2. Gadag	IND	CB	BF
Kolar	394	Kalaburagi	140	Bengaluru Urban	186	Common in Two			
Kodagu	477	Bidar	150	Kodagu	191	1. Yadagiri		CB	BF
C.B.Pura	603	Raichur	199	CMR Nagara	313	2. Bengaluru (U)	IND		BF

Gadag	604	Gadag	216	Ramanagara	515	3.Bengaluru (R)	IND	BF
Mandya	617	Ballary	251	Bengaluru. Rural	518	4. Kolar	IND	BF
Dharawada	701	Koppal	289	Yadgir	581	5. CB Pura	IND	BF
CMR Nagara	908	Kodagu	296	Kolar	615	6. Dharawada	IND	BF
		Chithradurga	380	CB Pura	633	7. CMR Nagara	IND	BF
		Bagalkote	400	Mysuru	652	8. Uttara Kannada	CB	BF
		Dharawada	432	Gadag	839	9.Udupi	CB	BF
		Uttara kannada	445	Dharawada	950			
		Chikmagaluru	637	U Kannada	999	Only in One		
		Haveri	638			1. Mandya		
		Udupi	951			2. Vijayapura		
		Shivamogga	969			3. Kalaburagi		
						4. Bidar		
						5. Ballary		
						6. Koppal		
						7. Chitradurga		
						8. Bagalakote		
						9. Chikkamagaluru		
						10. Haveri		
						12. Shivamogga		
						13. Raichur		
						13.Dakshina Kannada		
						14.Mysuru		
						15. Ramanagara		

Source: Source: Department of AH & VS., Bengaluru-Sample Survey results 2014-15

Note: Belagavi, Hassan and Davanagere Districts are having more than 1000 Nos. of productive animals in all the three categories.

II. Marks for the parameters: Total- 100 Marks

Index:

Sl.No.	Parameters	Situation	Marks
A	Cost of Production of one litre Milk	Rs.15/- to Rs.20/-	10 Minimum
		Rs.21/- to Rs.25/-	20
		Rs.26/- to Rs.30/-	30 Maximum
B	Purchase Rate by the MU/litre of milk	Rs.15/- to Rs.20/-	30 Maximum
		Rs.21/- to Rs.25/-	20

		Rs.26/- to Rs.30/-	10 Minimum
C	Number of Milk Pourers	10000-15000	20 Maximum
		15001-25000	19
		25001-30000	18
		30001-35000	17
		35001-40000	16
		40001-45000	15
		45001-50000	14
		55001-60000	13
		61000-65000	12
		65001-70000	11
		70001-75000	10
		75001-80000	09
		80001-85000	08
		85001-90000	07
		90001-95000	06
		95001-100000	05
		100001-105000	04
		105001-120000	03 Minimum
D	Productive Animal Population	Colour Index	
	Lowest No. of Indigenous, Crossbred and Buffaloes Population	Ind. CB BF.	20 Maximum
	Lowest No. of Crossbred and Buffaloes Population	CB BF	15
	Lowest No. of Indigenous and Buffaloes Population	Ind. BF.	10
	Lowest No. of Indigenous Population	Ind.	05
	Lowest No. of Crossbred Population	CB	04
	Lowest No. of Buffaloes Population	BF	02
	More than 100000 Animals of any Category.	Ind. CB. & BF	01 Minimum

III. Incentive Amount allotment Index: (Assumed Rate of Incentive Amount is Rs.6/- litre of milk)

Sl.No.	Incentive Amount Rate allocation	Total Marks Range	Rs.
1	Total Marks obtained more than	>75	6=00
2	Total Marks obtained	74-50	5=00
3	Total Marks obtained	49-25	4=00
4	Total Marks obtained	< 24	3=00

IV. Work Sheet for Marks and Incentive Rate allotment per litre of milk

Sl.No.	Districts linked to the District Milk Unions	Marks A	Marks B	Marks C	Marks D	Total Marks	Incentive Amount In Rupees
1.	Ballary District Milk Union						

Evaluation of Milk Incentive Scheme, Department of AH & VS, Bengaluru, Karnataka State

	Ballary District	10	20	18	04	52	05
	Raichur District	10	20	18	04	52	05
	Koppal district	10	20	18	04	52	05
2.	Belagavi District Milk Union						
	Belagavi District	10	20	16	01	47	04
3.	Bengaluru District Milk Union						
	a. Bengaluru (Urban) District	10	20	03	10	43	04
	b. Bengaluru (Rural) District	10	20	03	10	43	04
	c. Ramanagara District	10	20	03	02	35	04
4.	Chamarajanagara District Milk Union						
	Chamarajanagara District	10	20	15	10	55	05
5.	Dakshina Kannada Milk Union						
	Dakshina Kannada District	20	10	17	02	49	04
	Udupi	20	10	17	15	62	05
6.	Dharawada District Milk Union						
	Dharawada District	10	20	15	10	55	05
	Haveri District	10	20	15	04	49	05
	Gadag District	10	20	15	20	65	05
	Uttara kannada District	10	20	15	20	65	05
7.	Hassan District Milk Union						
	Hassan district	30	20	10	01	61	05
	Kodagu District	30	20	10	20	80	06
	Chikkamagaluru District	30	20	10	04	64	05
8.	Kalaburagi District Milk Union						
	Kalaburagi District	20	20	20	04	64	05
	Bidar District	20	20	20	04	64	05
	Yadagiri District	20	20	20	15	85	06
9.	Kolar District milk Union						
	Kolar District	10	20	07	10	47	04
	Chikkaballapura District	10	20	07	10	47	04
10.	Mandya District Milk Union						
	Mandya District	10	20	06	05	41	04
11.	Mysuru District Milk Union						
	Mysuru District	10	20	08	02	40	04
12.	Shivamogga District Milk Union						
	Shivamogga District	20	20	18	04	62	05
	Davanagere District	20	20	18	04	62	05

	Chitradurga District	20	20	18	04	62	05
13	Tumakuru District Milk Union						05
	Tumakuru District	10	30	11	04	55	05
14	Vijayapura District Milk Union						
	Vijayapura District	10	20	19	04	53	05
	Bagalakote District	10	20	19	04	53	05

Expected Out Come:

- This is a dynamic Model of Score Card Method. Based on the variable situations, Incentive Rate also varies, could be adopted once in a year basis.
- In this method, there is an approach to assure equity to support the needy farmers of less developed districts in dairy farming, **if the CoP of milk is calculated on a standard, uniform format.**
- If the CoP of milk is high, PR is low, Milk Pourers' number is less and Productive animals population is less than 1,00,000 nos., (One lakh) those districts would get maximum of Rs.6/- per litre of milk incentive rate. **(High level Priority for Support)**
- If the CoP of milk is Average, PR is Average, Milk Pourers' number is Average and Productive animals population is less than 100000 nos., but on average nos., then those districts would get Average amount of Rs.5/- per litre of milk incentive rate. **(Medium level Priority for Support)**
- If the CoP of milk is High, PR is High, Milk Pourers' number is more than average no., and Productive animals population is less than 100000 nos., but more than average then those districts would get an amount of Rs.4/- per litre of milk incentive rate. **(Low level Priority for Support)**
- It is assumed that this model would be accepted by the milk pourers, since there is justification for the variable incentive rate calculated based on the situation and need for support.

Appendix 11

Nine Indicators for thirteen DMUs of the State

1 Bengaluru (Urban),Bengaluru (Rural) and Ramanagara District Milk Union				
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	1733	1936	11.7
2	Women members in Numbers.	20984	26978	28.6
3	Scheduled Cast in Numbers.	7793	12558	61.1
4	Scheduled Tribe in Numbers.	3075	5240	70.4
5	Total Milk Producers in Nos.	87627	108758	24.1
6	Total Milk purchased in litres.	152573375	384604611	152.1
7	Milk Purchased from Women in litres	30575975	86046928	181.4
8	Milk Purchased from SCs in litres	11086493	36385871	228.2
9	Milk Purchased from STs in litres	4958094	13913283	180.6

2 Tumakuru District Milk Union				
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	766	968	26.4
2	Women members in Numbers.	53823	68937	28.1
3	Scheduled Cast in Numbers.	19057	23579	23.7
4	Scheduled Tribe in Numbers.	15275	19132	25.3
5	Total Milk Producers in Nos.	202637	239077	18.0
6	Total Milk purchased in litres.	53252364	152478392	186.3
7	Milk Purchased from Women in litres	29060962	38972447	34.1
8	Milk Purchased from SCs in litres	4784213	6928767	44.8
9	Milk Purchased from STs in litres	4917672	6438910	30.9

3 Shivamogga District Milk Union				
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	735	890	21.1
2	Women members in Numbers.	19190	22507	17.3
3	Scheduled Cast in Numbers.	3550	4005	12.8
4	Scheduled Tribe in Numbers.	2436	2983	22.5
5	Total Milk Producers Nos.	50121	51306	2.4
6	Total Milk purchased in litres.	74845662	106371129	42.1
7	Milk Purchased from Women in litres	37422831	46722061	24.8
8	Milk Purchased from SCs in litres	5162106	7743734	50.0
9	Milk Purchased from STs in litres	3163242	6882139	117.6

4	Dakshina Kannada District Milk Union			
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	627	648	3.3
2	Women members in Numbers.	20328	25766	26.8
3	Scheduled Cast in Numbers.	684	717	4.8
4	Scheduled Tribe in Numbers.	1084	1559	43.8
5	Total Milk Producers Nos.	41216	48952	18.8
6	Total Milk purchased in litres.	60538900	81539175	34.7
7	Milk Purchased from Women in litres	26878104	42279660	57.3
8	Milk Purchased from SCs in litres	764688	1128480	47.6
9	Milk Purchased from STs in litres	1304832	2475552	89.7

5	Hassan District Milk Union			
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	1001	1278	27.7
2	Women members in Numbers.	47751	76005	59.2
3	Scheduled Cast in Numbers.	10542	13443	27.5
4	Scheduled Tribe in Numbers.	3969	4787	20.6
5	Total Milk Producers Nos.	160382	195923	22.2
6	Total Milk purchased in litres.	121807070	192077346	57.7
7	Milk Purchased from Women in litres	34105980	66878841	96.1
8	Milk Purchased from SCs in litres	4872283	9302465	90.9
9	Milk Purchased from STs in litres	1461685	2445523	67.3

6	Mysuru District Milk Union			
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	946	1312	38.7
2	Women members in Numbers.	75814	106228	40.1
3	Scheduled Cast in Numbers.	28452	35017	23.1
4	Scheduled Tribe in Numbers.	7092	12328	73.8
5	Total Milk Producers Nos.	234829	282774	20.4
6	Total Milk purchased in litres.	28701202	103625393	261.0
7	Milk Purchased from Women in litres	20175707	70618489	250.0
8	Milk Purchased from SCs in litres	5136464	19634183	282.3
9	Milk Purchased from STs in litres	3389029	13372720	294.6

7 Ballary District Milk Union				
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	324	539	66.4
2	Women members in Numbers.	25435	36952	45.3
3	Scheduled Cast in Numbers.	6645	9175	38.1
4	Scheduled Tribe in Numbers.	5336	8107	51.9
5	Total Milk Producers Nos.	64139	86121	34.3
6	Total Milk purchased in litres.	11650653	25596410	119.7
7	Milk Purchased from Women in litres	8473844	18744840	121.2
8	Milk Purchased from SCs in litres	1465631	3158193	115.5
9	Milk Purchased from STs in litres	1711177	3693377	115.8

8 Dharawada District Milk Union				
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	499	776	55.5
2	Women members in Numbers.	31791	37508	18.0
3	Scheduled Cast in Numbers.	9909	11621	17.3
4	Scheduled Tribe in Numbers.	6307	7305	15.8
5	Total Milk Producers Nos.	114374	136083	19.0
6	Total Milk purchased in litres.	25678845	44977855	75.2
7	Milk Purchased from Women in litres	6942665	12810040	84.5
8	Milk Purchased from SCs in litres	1341740	3224775	140.3
9	Milk Purchased from STs in litres	1501975	3089360	105.7

9 Vijayapura District Milk Union				
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	212	260	22.6
2	Women members in Numbers.	48696	68480	40.6
3	Scheduled Cast in Numbers.	9011	13937	54.7
4	Scheduled Tribe in Numbers.	4592	8213	78.9
5	Total Milk Producers Nos.	91695	170532	86.0
6	Total Milk purchased in litres.	17805065	28016670	57.4
7	Milk Purchased from Women in litres	6231773	12349180	98.2
8	Milk Purchased from SCs in litres	1346355	2267497	68.4
9	Milk Purchased from STs in litres	534152	1201612	125.0

10	Kolara District Milk Union			
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	1612	1688	4.7
2	Women members in Numbers.	16159	19319	19.6
3	Scheduled Cast in Numbers.	10246	13321	30.0
4	Scheduled Tribe in Numbers.	7340	8260	12.5
5	Total Milk Producers Nos.	80045	88366	10.4
6	Total Milk purchased in litres.	129305945	308060458	138.2
7	Milk Purchased from Women in litres	26469608	61873502	133.8
8	Milk Purchased from SCs in litres	15902480	41532940	161.2
9	Milk Purchased from STs in litres	10503012	25658273	144.3

11	Belagavi District Milk Union			
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	330	415	25.8
2	Women members in Numbers.	7800	9704	24.4
3	Scheduled Cast in Numbers.	1286	1870	45.4
4	Scheduled Tribe in Numbers.	1165	1255	7.7
5	Total Milk Producers Nos.	10581	13244	25.2
6	Total Milk purchased in litres.	15457703	38241357	147.4
7	Milk Purchased from Women in litres	4321960	10289248	138.1
8	Milk Purchased from SCs in litres	786658	2405033	205.7
9	Milk Purchased from STs in litres	616466	1421244	130.5

12	Mandya District Milk Union			
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	920	1053	14.5
2	Women members in Numbers.	28152	38621	37.2
3	Scheduled Cast in Numbers.	3811	4346	14.0
4	Scheduled Tribe in Numbers.	1506	1677	11.4
5	Total Milk Producers Nos.	78888	89646	13.6
6	Total Milk purchased in litres.	134888349	189700153	40.6
7	Milk Purchased from Women in litres	29120551	84467411	190.1
8	Milk Purchased from SCs in litres	3441441	10293377	199.1
9	Milk Purchased from STs in litres	1060812	2412130	127.4

13	Kalaburagi District Milk Union			
Sl.No.	Parameters	2008-09	2012-13	Growth%
1	Milk Producers Cooperatives, Nos.	415	530	27.7
2	Women members in Numbers.	29023	33474	15.3
3	Scheduled Cast in Numbers.	7792	9126	17.1
4	Scheduled Tribe in Numbers.	1735	2582	48.8
5	Total Milk Producers Nos.	52292	63710	21.8
6	Total Milk purchased in litres.	6459197	22852497	253.8
7	Milk Purchased from Women in litres	6790	14520	113.84
8	Milk Purchased from SCs in litres	1692	4250	151.18
9	Milk Purchased from STs in litres	460	1268	175.65

Appendix 12

Cost of Production (CoP) and Procurement Rate (PR) of One litre of Milk of the District Milk Unions in Karnataka State (2007-2016)

Dharawada District Milk Union				Vijayapura District Milk Union		
Year	CoP(Rs)	PR(Rs)	Difference	CoP(Rs)	PR(Rs)	Difference
2007-08	4.87	10.80	5.93	5.95	10	4.05
2008-09	5.83	10.80	4.97	6.11	11.2	5.09
2009-10	6.22	14.00	7.78	NA	NA	NA
2010-11	6.22	17.00	10.78	7.22	13.7	6.48
2011-12	6.49	18.50	12.01	7.70	18.7	11
2012-13	8.57	22.00	13.43	8.45	19	10.55
2013-14	9.26	22.00	12.74	8.90	21	12.1
2014-15	8.51	21.12	12.61	9.05	22.92	13.87
2015-16	10.22	22.25	12.03	9.11	21.5	12.39

Hassan District Milk Union				Mysuru District Milk Union		
Year	CoP(Rs)	PR(Rs)	Difference	CoP(Rs)	PR(Rs)	Difference
2007-08	12.41	12.90	0.49	8.23	11.31	3.08
2008-09	13.75	12.45	-1.30	9.14	12.33	3.19
2009-10	15.36	12.76	-2.60	10.16	15.16	5.00
2010-11	16.97	15.70	-1.27	11.29	16.22	4.93
2011-12	20.00	19.20	-0.80	12.55	16.22	3.67
2012-13	21.09	19.66	-1.43	13.94	15.75	1.81
2013-14	23.21	22.67	-0.54	15.49	21.60	6.11
2014-15	24.56	23.00	-1.56	17.21	22.00	4.79
2015-16	26.18	21.00	-5.18	19.13	21.00	1.87

Bengaluru District Milk Union				Tumakuru District Milk Union		
Year	CoP(Rs)	PR(Rs)	Difference	CoP(Rs)	PR(Rs)	Difference
2007-08	11	12.44	1.44	11.00	11.92	0.92
2008-09	12.39	12.64	0.25	11.50	12.00	0.50
2009-10	12.39	16.60	4.21	11.50	12.66	1.16
2010-11	12.39	22.16	9.77	12.50	15.38	2.88
2011-12	12.16	19.00	6.84	17.50	18.32	0.82
2012-13	16.88	20.67	3.79	17.50	18.42	0.92
2013-14	16.88	22.50	5.62	20.00	21.23	1.23
2014-15	16.88	22.70	5.82	20.00	21.37	1.37
2015-16	18.28	22.16	3.88	20.00	19.71	-0.29

Kalaburagi District Milk Union				Shivamogga District Milk Union		
Year	CoP(Rs)	PR(Rs)	Difference	CoP(Rs)	PR(Rs)	Difference
2007-08	9.4	10.30	0.90	10.00	11.63	1.63
2008-09	10.3	11.30	1.00	10.00	11.87	1.87
2009-10	13.12	14.52	1.40	11.00	12.31	1.31
2010-11	14.52	17.50	2.98	13.00	15.93	2.93
2011-12	17.13	20.20	3.07	16.00	18.13	2.13
2012-13	19.22	21.70	2.48	17.00	18.46	1.46
2013-14	21.85	23.20	1.35	19.00	21.75	2.75
2014-15	22.86	23.20	0.34	19.00	21.50	2.50
2015-16	23.21	24.70	1.49	21.00	22.71	1.71

Dakshina Kannada District Milk Union				Ballary District Milk Union		
Year	CoP(Rs)	PR(Rs)	Difference	CoP(Rs)	PR(Rs)	Difference
2007-08	10.00	12.70	2.70	9.60	12.7	3.10
2008-09	10.50	13.00	2.50	10.80	13.25	2.45
2009-10	11.08	14.00	2.92	11.26	18.75	7.49
2010-11	16.30	19.50	3.20	13.60	20.75	7.15
2011-12	18.60	23.00	4.40	15.80	23.25	7.45
2012-13	19.80	24.50	4.70	16.20	23.75	7.55
2013-14	21.60	27.00	5.40	16.80	25.5	8.70
2014-15	19.60	24.37	4.77	17.10	24.45	7.35
2015-16	23.00	27.37	4.37	18.00	24.45	6.45

Kolara District Milk Union				Mandya District Milk Union		
Year	CoP(Rs)	PR(Rs)	Difference	CoP(Rs)	PR(Rs)	Difference
2007-08	11.87	12.41	0.54	7.65	12.71	5.06
2008-09	13.00	12.55	-0.45	8.19	13.22	5.03
2009-10	12.80	13.20	0.40	8.53	13.34	4.81
2010-11	14.12	16.91	2.79	10.65	16.39	5.74
2011-12	14.27	19.21	4.94	13.50	20.16	6.66
2012-13	15.09	20.61	5.52	13.58	19.98	6.40
2013-14	14.69	22.52	7.83	16.06	22.95	6.89
2014-15	14.30	22.52	8.22	17.68	24.91	7.23
2015-16	17.54	22.65	5.11	17.14	23.81	6.67

Belagavi District Milk Union						
Year	CoP(Rs)/ Cow	PR(Rs)/ Cow	Difference	CoP(Rs)/ Buffalo	PR(Rs)/ Buffalo	Difference
2007-08	6.60	11.00	4.40	10.50	15.00	4.50
2008-09	6.00	10.00	4.00	9.80	14.00	4.20
2009-10	7.50	12.50	5.00	12.60	18.00	5.40
2010-11	9.60	16.00	6.40	15.40	22.00	6.60
2011-12	10.89	18.15	7.26	16.70	23.85	7.15
2012-13	10.50	17.50	7.00	16.80	24.00	7.20
2013-14	11.70	19.50	7.80	18.90	27.00	8.10
2014-15	12.36	20.60	8.24	20.30	29.00	8.70
2015-16	12.36	20.60	8.24	20.30	29.00	8.70

Appendix 13

Statistical Analysis details for the Parameters

Table 1: Estimates for Milk production before the Scheme and after implementation of the Scheme

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before the scheme implementation_2007_2008 - During the milk incentive scheme implementation_2008_2009	-197.65	1670.76	34.44	-265.17	-130.12	-5.74	2353.00	0.00
Pair 2	Before the scheme implementation_2007_2008 - During the milk incentive scheme implementation_2009_2010	-379.43	2242.84	46.14	-469.90	-288.95	-8.22	2362.00	0.00
Pair 3	Before the scheme implementation_2007_2008 - During the milk incentive scheme implementation_2010_2011	-547.88	2158.17	44.35	-634.85	-460.91	-12.35	2367.00	0.00
Pair 4	Before the scheme implementation_2007_2008 - During the milk incentive scheme implementation_2011_2012	-843.34	2806.85	57.52	-956.14	-730.54	-14.66	2380.00	0.00
Pair 5	Before the scheme implementation_2007_2008 - During the milk incentive scheme implementation_2012_2013	-1463.18	3859.90	77.48	-1615.11	-1311.26	-18.89	2481.00	0.00

Statistical Analysis: Result-In Milk Production in study cluster-measured by total quantity of milk Poured to the MPCs-is highly significant as compared to the control cluster.

Table 2: Estimates for number of milch animals before the Scheme and after implementation of the Scheme

Paired Samples Test									
		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Animals_2007_08 - Animals_2008_09	-.106	.953	.015	-.136	-.076	-6.921	3846.0	0.00
Pair 2	Animals_2007_08 - Animals_2009_010	-.309	1.490	.024	-.356	-.261	-12.842	3846.0	0.00
Pair 3	Animals_2007_08 - Animals_2010_011	-.474	1.656	.027	-.526	-.421	-17.742	3846.0	0.00
Pair 4	Animals_2007_08 - Animals_2011_012	-.641	1.809	.029	-.698	-.584	-21.990	3846.0	0.00
Pair 5	Animals_2007_08 - Animals_2012_013	-.974	2.014	.032	-1.037	-.910	-29.992	3846.0	0.00

Statistical Analysis: Number of milch animals before the Scheme and after implementation of the Scheme in study cluster is highly significant as compared to the control cluster.

Table 3: Estimates for Annual income before the Scheme and after implementation of the Scheme

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before implementation of the Scheme_2007_2008 - During implementation of the scheme_2008_2009	-3914.19	23959.37	475.68	-4846.95	-2981.43	-8.23	2536.0	0.0
Pair 2	Before implementation of the Scheme_2007_2008 - During implementation of the scheme_2009_2010	-6831.43	26541.71	526.85	-7864.52	-5798.34	-12.97	2537.0	0.0
Pair 3	Before implementation of the Scheme_2007_2008 - During implementation of the scheme_2010_2011	-13677.37	33900.78	673.72	-14998.46	-12356.27	-20.30	2531.0	0.0
Pair 4	Before implementation of the Scheme_2007_2008 - During implementation of the scheme_2011_2012	-19017.26	43416.72	863.51	-20710.52	-17324.00	-22.02	2527.0	0.0
Pair 5	Before implementation of the Scheme_2007_2008 - During implementation of the scheme_2012_2013	-28191.69	58096.62	1131.99	-30411.37	-25972.01	-24.90	2633.0	0.0

Statistical Analysis: Annual income before the Scheme and after implementation of the Scheme in study cluster is highly significant as compared to the control cluster.

Appendix 14

Short Biography of Principal Investigator

1	Name	Dr.K.G.Rajagopal
2	Address	Flat No. B-001, CBH Complex, Gubbalala Village, Uttarahalli Hobli; Subramanyapura post, Bengaluru South, Bengaluru 560061.
3	Land Line No.	080 22571201
4	Mobile No.	9480700453
5	Date of Birth and Age	23 rd May 1949 68 years.
6	Qualification	<ul style="list-style-type: none"> •B V Sc., (1971), M V Sc., (AN) - (1976), State Award with Gold Medal. •Research in Poultry Nutrition under post-graduation course and published a paper based on the research thesis.
7	Work Experience	<ul style="list-style-type: none"> •1972-2003- worked as Vet. Asst. Surgeon, Asst. Director (AH) Deputy Director(AH), Mysuru divisional Joint Director and Joint Director (Development) in the department of Animal Husbandry and Veterinary Services. •1974-76- Deputation for Master's Degree by the state government. •During 1993-95, conducted evaluation work of Emergency Veterinary services provided by the Vets under Technology Mission on Dairy Development (TMDD) programme, as one of the committee member. •1995-2001- worked as Registrar of the Karnataka Veterinary Council. During this period KVC rules for IVC central act was drafted and approved by the state government. •Worked in the Directorate of AH&VS., for 9 years in different capacities and also as member of different technical committees, which includes procurement of goods, feed, medicines etc., •Drafted Quality control of livestock and poultry feed Act, which is in vogue and Quality control of Day old chicks and Hatching Eggs Act for approval of the GOI, as one of the committee member. •2003-2007- Worked as Joint. Director (AH) in Watershed Department for the World Bank SUJALA Project. During this period worked as a committee member for drafting implementation guidelines and training manuals for field functionaries and farmers. •2007 - Retired as Joint Director AH. •2007-2009- Consultant Livestock Specialist for the World Bank SUJALA Project.

		<ul style="list-style-type: none">•2010-2011- for 18 months worked as consultant- Capacity Building Expert for German International Cooperation.
8	Trainings	<ul style="list-style-type: none">•Conducted several Training Programmes and vast experience in teaching to the professionals, field workers and farmers as Resource Pearson.•Has sufficient field experience in inspections, investigation, evaluation and preparing reports for action, especially working for the World Bank SUJALA Project.•Has expertise in preparing Frame Work and Action Plans for livestock and watershed projects.•Worked as Consultant co-worker for livelihood Sujala project and for monitoring and evaluation in the same project.•Undergone several trainings as probationer and professional officer's capacity, both in the Dept. of AH & VS and Watershed Department.•Undergone Higher Trainings at Tropical Development Research institute (TDRI) in London during 1986.•Undergone short term post graduate training course in OXFORD, UK.