

Influence of Government schemes and subsidies in the productivity of small holders dairy production system with reference to the North Malabar region of Kerala State

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ABSTRACT The present study was an attempt to get an insight and influence of various schemes and subsidies implemented by government department and other agencies on small holders livestock production system. The study was carried out using a structured questionnaire and personal interview. The result obtained from this study apparently shows that majority of respondents have received subsidy for calf feed subsidy scheme. However 43.7% of respondents have not received any subsidy during the last five years. The correlation between subsidy received and quantity of milk produced per day is .017 with a corresponding p value of .710 and it is concluded that there is positive relationship between the two variables with non rejection of alternative hypothesis. The correlation between subsidy received and number of dairy animals is .103 and it is concluded that there is positive relationship between the two variables however with a weak strength of .103. This finding suggests that in general only 262 beneficiaries out of 501 respondents have received the benefits of subsidy /schemes only once and 18 dairy farmers have received the benefits in between 2 to 5 times.

Key words: Dairy farmers, Dairy production system, North Malabar, Schemes and Subsidies,

INTRODUCTION

In India, the dairy industry plays an important role in the country's socio - economic development and constitutes an important segment of the rural economy out of the total milk production in India, only 35 percent milk is being processed of which the organized dairy industry accounts for 15 percent of the milk produced, while the rest of the milk is either consumed by the producers themselves or sold at the origin through informal channels. The impact of Economic reforms on dairy industry is positive. The growth of milk production in India has increased from 4.32 percent in the year 1991 to 6.15 percent in 2016. Dairy Industry provides livelihood to millions of homes in villages, ensuring supply of quality milk and milk products to people in both urban and rural areas (Suvakkin, M., & Kannammal, G. A 2017) (Sharma, V. P. (2004).

Animal health in Kerala has increased manifold and the animal husbandry, animal management, dairy enterprises have progressively transformed from traditional and smaller system to scientific dairy and animal management. Including animal breeding, rational feeding of animals, disease diagnosis prevention and control of infectious diseases. The demand for milk and milk product has significantly increased due to increase in consumption of milk and milk products (Devendra, C. 2007). The animal husbandry practice was becoming primary occupation among many rural segments of our state which previously was secondary to agriculture. This was generally because of the quick returns and less dependency on rain and on unpredictable climatic conditions. (Ahuja, V. (1998).

Small-scale dairy farming has been suggested as a rural development option for Mexican *campesino* communities. A Kruskal-Wallis test was performed on the arable land area and the number of animals, and analysis of variance for milk yield. Economic analysis was undertaken using activity budgets. Families in only one of the three groups receive incomes from dairying that were above all Mexican poverty indices. This outcome is explained by the intensification in the management of their herds, which is reflected in higher milk yields, higher incomes and better access to government support schemes. Enhancement of milk production in the area studied needs differential policies which take in to account differences between the groups identified. (Espinoza-Ortega, A., Espinosa-Ayala, E 2007)

However all this new changes were not without new challenges and hardship? In fact in the state like Kerala, the dairy enterprise is usually undertaken by marginal farmers in small scale, primarily unorganized and usually supplementary to agriculture practice hence the government intervention has a pivotal role in supporting dairy farmers to sustain in this industry. Additionally the involvement of women in dairy enterprise in Kerala is very significant as it brings income in the form of sales of milk and manure as organic fertilizers, provides self employment and women empowerment with sufficient time to look after

the family affairs and the free time can be devoted to farm management. Research on similar smallholder dairy farms in Kilifi District has reported off-farm income contributing an average of 71% of total household income (Mukhebi et al., 1992)

Secondly this profession is also undertaken by section of people who are aged and cannot go for other employment, few may be illiterate, economically marginalized farmers hence direct government support in the form of milk subsidy, feed subsidy, cattle insurance dairy farmers medical insurance etc becomes imperative. Fundamentally as a means of livelihood and survival, this group of people have poor skill low learning ability and limitation to manage the cross breed animals they are some times supported by other family members as unpaid employees (Ahonan, E., Venalainen, J. M. and Klenk, T. 1990).

Milk production in India is dominated by small and marginal landholding farmers and by landless labourers who, in aggregate, own about 70 percent of the national milch animal herd (Gupta, 1983). As crop production on 78 percent of the agricultural land still depends on rain, it is prone to both drought and floods, rendering agricultural income uncertain for most farmers. Shackled to subsistence production as a result of a shortage of finance and credit facilities, these farmers become entangled in a strangling debt cycle Sharma, V. P. (2004)..

MATERIALS AND METHODS

The current study has used personal interviews supplemented with pre-tested structured questionnaire having a reliability score of .895 with Cronbach's alpha in SPSS. This study was an attempt to gain insight regarding the impact of various schemes and subsidies provided by the different agencies to the dairy farmers of north Malabar region. A detailed questionnaire with personal interview was used as tool to gather information from 501 farmers randomly selected from four districts viz., Kasergode, Kannur, Kozhikode and Wayanad comprising the North Malabar region of Kerala. Correlation analysis cross tabs and central tendencies as statistical tool was employed to determine the strength and relationship between the variables.. This study was undertaken to determine the causal relationship and hypotheses testing between variables by the application of statistical techniques and also by using simple correlation analysis (Naval bajpai, 2015) (Perkio-Makela, M and Hentila, H 2005)

RESULTS AND DISCUSSION

The following hypotheses were statistically analysed to determine the relation of schemes and subsidies provided by the Department of Animal Husbandry and other Government agencies on milk productivity of small scale dairy production system.

Hypothesis 1

H_{01} : There is no statistically significant relationship between capital invested in dairy enterprise and received subsidy/benefits

Table no: 1

Title of the table: Correlation analysis between capital invested in dairy enterprise with subsidy received

		CAPITAL INVESTED IN DAIRY ENTERPRISE	HAVE RECEIVED SUBSIDY /BENEFIT FROM
	Pearson Correlation	1	.103*
CAPITAL INVESTED IN DAIRY ENTERPRISE	Sig. (2-tailed)		.021
	N	501	501

Source: Primary data

Interpretation

Correlation table indicates that the correlation between subsidy received and number of dairy animals is .103 with a corresponding p value of .021 based on 501 participants. Since the p value of .021 is less than .05 the null hypothesis is rejected and it is concluded that there is positive relationship between the two variables however with a weak strength of .103

Table no: 2

Title of the table: cross tab analysis with frequency between age group and schemes for which the subsidy is received

	HAVE RECEIVED BENFIT /SUBSIDY FOR				Total
	CALF FEED SUBSIDY SCHEME	CATTLEFEED	CATTLE SHED	NIL	
20-30	0	0	0	6	6
31-40	1	0	0	35	36
41-50	19	2	0	45	66
51-60	124	1	0	94	219
ABOVE 60	124	0	11	39	174
Total	268	3	11	219	501

Source: Primary data

Table no: 3

Title of the table: Frequency of subsidy received with regards to different schemes.

	Frequency	Percent	Valid Percent	Cumulative Percent
CALF FEED SUBSIDY SCHEME	268	53.5	53.5	53.5
CATTLEFEED	3	.6	.6	54.1
CATTLE SHED	11	2.2	2.2	56.3
NIL	219	43.7	43.7	100.0

Source: Primary data

The result obtained from this study illustrated in table no 3 apparently shows that majority of respondents have received subsidy for calf feed subsidy scheme a flag ship programme under department of Animal Husbandry. However 43.7% of respondents have not received any subsidy during last five years. 3 and 11 respondents have respectively received benefits under cattle feed and cattle shed schemes.

Table no:4

Title of the table: Frequency of subsidy received by the dairy farmers based on numbers

	Frequency	Percent	Valid Percent	Cumulative Percent
ONLY ONCE	262	52.3	52.3	52.3
2 TO 5 TIMES	18	3.6	3.6	55.9
NIL	221	44.1	44.1	100.0
Total	501	100.0	100.0	

Source: Primary data

The results of this study shows that 262 beneficiaries have received the benefits only once and 18 dairy farmers have received the benefits in between 2 to 5 times with 221 respondents having received no subsidy or benefits during the last five years.

Hypothesis 2

H₀₂: There is no statistically significant relationship between have received benefit/subsidy for and quantity of milk produced per day.

Table no 5:

Title of the table: Correlation analysis between benefit /subsidy received by the dairy farmers and the quantity of milk produced

	HAVE RECEIVED BENEFIT /SUBSIDY FOR	RECEIVED /SUBSIDY	QUANTITY OF MILK PRODUCED PER DAY
HAVE RECEIVED BENEFIT /SUBSIDY FOR	1		.017
Pearson Correlation			.710
Sig. (2-tailed)			501
N	501		501

Correlation table no 4 compares the correlation between subsidy received for and quantity of milk produced per day is .017 with a corresponding *p* value of .710 based on 501 participants. since the *p* value of .710 is higher than .05 the null hypothesis is not rejected and it is concluded that there is positive relationship between the two variables ie between subsidy received for dairy enterprise and subsequent production of milk per day.the observation was in concurrence with the findings of Bant Sing., Bal,H.S.,&Narinder Kumar.(1988) our findings are consistent with previous results (Sharma, V. P. 2004)

TABLE NO:6 CROSS TABULATION BETWEEN QUANTITY OF MILK PRODUCED PER DAY AND SUBSIDY AND BENEFITS RECEIVED

QUANTITY OF MILK PRODUCED PER DAY		HAVE RECEIVED BENEFIT /SUBSIDY FOR		
		CALF FEED SUBSIDY SCHEME	CATTLEFEED	CATTLE SHED
	BELOW 5 LIRS	0	1	0
	6 TO 10 LITERS	30	0	0
	11 TO 20 LITERS	128	1	11
	21 TO 50 LITERS	76	1	0
	ABOVE 50 LITERS	34	0	0
Total		268	3	11

Source: Primary data

H₀₃: There is no statistically significant relationship between subsidy received and number of times the benefits received.

Table no:7 : Cross tabulation between the relationship regarding subsidy received and number of times the benefits/subsidy received.

	HAVE RECEIVED BENEFIT /SUBSIDY FOR	HOW MANY TIMES DID YOU RECEIVE BENEFITS(frequency)
HAVE RECEIVED BENEFIT /SUBSIDY FOR	1	.980**
Pearson Correlation		.000
Sig. (2-tailed)		501
N	501	501

Source : primary data

Interpretation

Correlation table indicates that the correlation between “ have received benefit/subsidy for and how many times did you receive benefits” is .980 with a corresponding *p* value of .000 based on 501participants.since

the *p* value of .000 is less than .05 the null hypothesis is rejected and it is concluded that there is high positive relationship between the two variables .

H₀₄: There is no statistically significant relationship between received benefit/subsidy for and received benefit/subsidy from

H₀₅: There is no statistically significant relationship between received benefit/subsidy for and earning through the sales of animals

H₀₆: There is no statistically significant relationship between received benefit/subsidy from and earning through the sales of animals

Table no 8 :Correlation matrix between various variables

	HAVE RECEIVED BENFIT /SUBSIDY FOR	HAVE RECEIVED SUBSIDY /BENEFIT FROM	EARNING THROUGH SALES OF ANIMALS
HAVE RECEIVED BENFIT /SUBSIDY FOR	Pearson Correlation Sig. (2-tailed)	1	.999** .000
HAVE RECEIVED SUBSIDY /BENEFIT FROM	Pearson Correlation Sig. (2-tailed)	.999** .000	1 .000
EARNING THROUGH SALES OF ANIMALS	Pearson Correlation Sig. (2-tailed)	.343** .000	.342** .000
	N	401	401

Interpretation: Correlation table 8 indicates that the correlation between received benefit/subsidy for and received benefit/subsidy from is .999 with a corresponding *p* value of .002. since the *p* value of .000 is less than .05 the null hypothesis is rejected and it is concluded that there is positive relationship between the two variables .

Correlation table 8 indicates that the correlation between received benefit/subsidy for and earning through the sales of animals is .343 with a corresponding *p* value of .002. since the *p* value of .000 is less than .05 the null hypothesis is rejected and it is concluded that there is positive relationship between the two variables

Correlation table 8 indicates that the correlation between received benefit/subsidy from and earning through the sales of animals is .342 with a corresponding *p* value of .002. since the *p* value of .000 is less than .05 the null hypothesis is rejected and it is concluded that there is positive relationship between the two variables .

H₀₇: There is no statistically significant relationship between have received subsidy and number of dairy animals

Table no 9: Correlation analysis between subsidy received and number of dairy animals

	HAVE RECEIVED BENFIT /SUBSIDY FOR	NUMBER OF DAIRY ANIMALS
HAVE RECEIVED BENFIT /SUBSIDY FOR	Pearson Correlation Sig. (2-tailed)	1 .218** .000
	N	501

Source: Primary data

Interpretation:

Correlation table indicates that the correlation between have received subsidy for and number of dairy animals is .218 with a corresponding *p* value of .000. Since the *p* value of .000 is less than .05 the null hypothesis is rejected and it is concluded that there is positive relationship between the two variables

CONCLUSION:

The study shows that that majority of respondents have received subsidy for calf feed subsidy scheme.the evidence from this study also indicates that the correlation between subsidy received and number of dairy animals is .103 and it is concluded that there is positive relationship between the two

variables however with a weak strength of .103. This finding suggests that in general only 262 beneficiaries out of 501 respondents have received the benefits of subsidy /schemes only once and 18 dairy farmers have received the benefits in between 2 to 5 times. 221 respondents received no subsidy or benefits during the last five years. Taken together these results suggest that schemes and subsidies are very essential in small scale dairy enterprises of north Malabar region and should percolate down to be inclusive. The study was conducted with limited availability of information however observation were found similar to the findings of (Barooah, B.B., & Goswami, P.R. 1995)

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REFERENCES

1. Ahonan, E., Venalainen, J.M. and Klenk, T. (1990). The physical strain of dairy farming ergonomics, 33(12) 1549-1555.
2. Bapai, N. 2015 Business research methods, 9th ed. Pearson India education pvt ltd., India 762p
3. Barooah, B.B., & Goswami, P.R. (1995). "Resource Use Efficiency & Output Performance of Dairy Loan Beneficiary & Non-beneficiary Farmers Under Integrated Rural Development Programme in Jorhat District of Assam," Indian Journal of Agricultural Economics, Vol. 50, No. 3, 1995, pp. 349-350
4. Bedi, M.S. 2010. Dairy development marketing and economics growth, New Delhi, Deep and deep publication 2010, p 8.
5. Bant Singh, Bal, H.S., & Narinder Kumar. (1988). "A Feasibility Study of Commercial Dairy Farming along with Crop Cultivation in Ludhiana District of Punjab," Agricultural Situation in India, Vol. XLIII, No. 3, 1988, pp. 199-204
6. Devendra, C. 2007. Small farm system to feed India. outlook on agriculture, 36(1), 7-20
7. Mukhebi, A., Mussukuya, E., Perry, B., Thorpe, W., Baya, M., Kruska, R., Rugema, E., and Maloo, S. (1992). Farm Household Economy in Kaloleni Division, Kilifi District, Kenya (in press). International Labouratory for Research on Animal Diseases Occasional Paper Series, ILRAD, Nairobi
8. Perkio-Makela, M. and Hentila, H. (2005). Physical work strain of dairy farming in loose housing barns. International Journal of Industrial Ergonomics 35(1), 57-65
9. Ahuja, V. (1998). Land degradation, agricultural productivity and common property: Evidence from Cote d'Ivoire. Environment and Development economics, 3(01), 7-34.
10. Suvakkin, M., & Kannammal, G. A (2017) Study on Impact of Economic Reforms in the Dairy Industry in India. TIRUCHIRAPPALLI-620 002, TAMIL NADU, INDIA.
11. Espinoza-Ortega, A., Espinosa-Ayala, E., Bastida-Lopez, J., Castañeda-Martinez, T., & Arriaga-Jordán, C. M. (2007). Small-scale dairy farming in the highlands of central Mexico: Technical, economic and social aspects and their impact on poverty. Experimental Agriculture, 43(2), 241-256.
12. Sharma, V. P. (2004). Livestock economy of India: current status, emerging issues and long-term prospects. Indian Journal of Agricultural Economics, 59(3), 512.