



SPECIO-TEMPORAL CHANGES IN MILK PRODUCTION AND CO-OPERATIVE DAIRIES IN SANGLI DISTRICT (MAHARASHTRA STATE)

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Abstract

Dairy farming is a chief source of direct as well as indirect employment opportunity to the people. A large number of rural people are engaged in this subsidiary activity through which additional income is received. The present stock of food grains in India will not help in providing food for all people. Most of the farmer's landless labor's and the people below poverty line have no money to buy relatively expensive food grain. In Sangli district 16.59% families are under poverty line. There are 14.37 lack total live stocks (2010) in Sangli district, out of these 6.80 lack milch animals. Total milk production in 2012-13 was 18.50 Cores Liters. Co-operative dairies plays vital role in the development of dairy farming in Sangli district.

Key words: Livestock, Correlation, Milch animals, Production.

Introduction:

The study of dairy activity is not complete without taking into account the co-operative movement in India. Co-operation means working together in a team for attaining certain objectives. The spirit of village communities in India was almost entirely based on the philosophy of co-operation. The modern co-operative societies may be found at local, regional, national and international levels, where a distinction is made among them on the basis of the extent of area they cover.

Most of the Indian population regarding in the rural area and agriculture is the main source of their income. Livestock is a sub-sector of Indian agriculture having the contribution of 24% to the agriculture. Dairy farming is again a sub-sector of live-stock sector. The small and marginal farmers and landless labor's each owned one or two milk animal. Hence, at present dairy farming industries is growing at a faster rate in India which needs a special and temporal analysis. Present study is an attempt to the spatial pattern of milch animals and milk production in Sangli district.

Dairy activity is regarded as an integral part of the agriculture in the sangli district. The keen interest of state government and support of farmers are the main reasons for co-operative dairy development in Maharashtra. The dairy activity is now largely based upon a three tier system under which, the primary village co-operative societies are linked with district union and state federation which are guided by the national co- operative dairy federation in India.

STUDY AREA:

The Sangli District is one of the most important District of Maharashtra state. It is situated between the latitudes 16°45' N and

17°33' N and longitudinal of 73°41' East and 75°41' East. The Sangli District is situated in the Southern part of Maharashtra and is a part of Deccan plateau. It is endowed with the gift of fertile black soils in the central parts. The rainfall decreases from west to east. The central part of Sangli District is cultivable area. The eastern part include Jat, Kavathe Mahankal tahsils which are known as drought prone tahsils and have insignificant irrigation facilities. The northern part of Sangli District is also rain shadow area. There is always acute shortage of drinking water. The Sangli District consists of Ten Tahsils, namely Walwa, Shirala, Atpadi, Khanapur, Tasgaon, Miraj, Jat, Kavathe Mahankal, Kadegaon and Palus.

OBJECTIVES

The following are the main objectives is the study.

1. To study the role of co – operative dairy in the Sangli District (MH).
2. To find out the spacio temporal change in milk production in Sangli District (MH).

Data Base And Methodology

A geographical study is based on field work. The present research work is based on both primary and secondary sources of data and information obtained by visiting dudhsangh, milk societies and milk producers through the schedule of interview. To collect data for research work methodology is adopted as under

1. The primary data, pertaining to milk production has been collected through field work by using different interview techniques wherever necessary.
2. Data and information of all dudhsangh and milk societies were collected by annual report of dudhsangh or societies.

3. The secondary quantitative data also collected from District Census Hand book, animal census, District Statistical Abstracts, District Gazetteers and available published and unpublished materials.

EXPLANATION:

Physiographical Sangli district is divided into three parts (1) Western Hilly area, (2) Middle river basin, and (3) Eastern plain. Shirala tahsil is located at the western part fit and Jat tahsil is located in the far east of the district. The Western region experiences heavy rainfall and the eastern part of the district is a drought prone zone.

According to table no.1 the total number of live stock population is high in Jat tahsil and in Walwa, Miraj, Kavathe Mahankal, Shirala and Atpadi tehsil livestock population is moderate and in Palus, Khanapur, Kadegaon tahsil there is low live stock population. As per climatic condition number of cows and buffaloes are more in high rainfall region and sheep's and Goats are more in Jat and Atpadi tahsil where rainfall is low.

The correlation between rainfall and total livestock has been analyzed by using Karl's Pearson correlation method, It shows a negative correlation ($r = - 0.26$); it indicates that there is a low livestock in high rainfall area and high livestock in low rainfall area. Shirala tahsil rainfall is high but total livestock population is low and in Atpadi and Jattahsil rainfall is low but livestock is high.

In dairy farming cows and buffaloes are most important animals. More than 90% of milk is produced by cows and buffaloes. For the study of the spatial pattern of milk production in Sangli district only milk animals are considered.

Distribution of Milch Animals and Milk Production:

Table no.2 indicates that the distribution of milch animal's and milk production in Sangli district. In Walwa there are more milch animal's and milk production, in Miraj, Tasgaon, Shirala and Jat tahsil there are moderate and with animal's while in Khanapur, Atpadi and Kavathe Mankhal there are low number of milk animal. It indicates that Walwa tahsil is leading first in milch animals as well as in milk production, while Kavathe Mahnkhal, Khanapur, Kadegaon tahsil are low in milk production. In Atpadi tehsil milch animals are low but milk production is high while in Jat tahsil milch animals are more but comparatively milk production is low.

In the development of dairy farming green fodder for milch animals is most essential. The availability of green fodder for milch animals depends upon availability of water. In the present study, we have attempted to show the correlation between the percentage of irrigated area, the percentage of milch animals and percentage of milk production

The percentage of milk production and milk animals in Sangli district. Correlates with the percentage of irrigated area to percentage milch animals and milk production have been calculated with the help of Pearson correlation method. After calculating the correlation between these factors we get $r = 0.61$ and 0.64 respectively, which shows positive correlation between irrigated area and milch animals and milk production.

According to table no.2, in Walwa tahsil irrigated area is 39.40 percent. It is the highest in Sangli district as well as Milk production in Walwa thasil is 35.05 percent it is also highest in Sangli district. It reveals that irrigation plays the most important role in the development of dairy farming in Sangli District.

The primary milk co-operatives are the central agency of the grass-root extension activity. These societies collect milk from the individual members and supply it to the dudhsanghs. These societies get financial assistance by way of subsidy towards management for an initial period of three years. A reasonable commission is built in to the pricing structure for the primary milk co-operatives.

The table no.3 reveals that the number of dairy societies in the ten thasils. Table shows that the Walwa tahsil having highest (266) dairy societies, and the member of societies where also high (13566).The second is Shirala tahsil(161) with societies and also member are 8211.The third is Jath (86) and the lowest societies in Palus and Khanapur respectively 29 and 31.

The table no. 4 reveals that the tahsilwise number of dudhsangh and number of workers whose work in dudhsangh and their percentage in the study region.

It is observed that there are 37 dudhsangh or dairies in the study region, provided employment opportunity to 1781 peoples. The highest number of dudhsangh observed in Miraj tahsil (15) and they provided employment to 478 peoples. The highest percentage of workers and their salary is observed in Walwa tahsil that is 37.5 per cent and 49.00 per cent respectively, followed by

Miraj (26.83% and 36.63%) and Palus (7.8% and 3.36%) tahsil. The lowest number of workers worked in dudhsangh has observed in Kavathe Mahankal tahsil that is only 2.5% per cent. Thus dairy sector provided more employment opportunities and it helps the reduction of rural poverty.

The table no.5 reveals that the total number of milk societies, are 854 in the district with 1712 workers having average monthly salary is Rs.4000.

Again the highest number of milk societies observed in Walwa tahsil (266) and lowest in Khanapur tahsil (29).

There is positive correlation between milk societies and employment opportunities. The number of milk societies increased, the number of workers are also increased. Thus, the dairy sector has to give more employment to the people in the study region.

Table – 1 Distribution of Livestock and Rainfall in Sangli Districts (2013)

Sr. No.	Tahsil	Cattle's	Buffaloes	Goats/ Sheep	Other	Total	Rainfall in mm
1.	Shirala	24259	52119	11452	1887	89717	1019
2.	Walwa	36559	107014	43552	2708	189833	692
3.	Palus	13088	42153	17190	821	73252	609
4.	Khanapur	16142	41301	34386	792	92621	589
5.	Atpadi	21913	21525	103167	4730	151335	468
6.	Tasgaon	24230	68713	39007	1136	133086	609
7.	Miraj	31695	85557	55523	4989	177764	643
8.	K. Mahankal	27671	35929	58532	494	122626	558
9.	Jat	78030	51500	195438	1224	326192	569
10.	Kadegaon	20359	28924	30459	128	79870	653
	District total	293946	534735	588706	18909	1436296	6409

Source- Livestock Census Report, 2013.

Table – 2 Irrigation and Milk Production

Sr. No.	Tahsil	Percentage of irrigated area	Percentage of milk animals	Percentage of milk production
1.	Shirala	30.29	9.22	9.66
2.	Walva	39.42	17.33	35.05
3.	Palus	25.05	6.67	7.29
4.	Khanapur	17.93	6.93	3.94
5.	Atpadi	14.03	5.24	8.87
6.	Tasgaon	22.66	11.22	8.67
7.	Miraj	28.99	14.15	7.29
8.	K.Mahankal	14.83	7.67	4.93
9.	Jat	9.84	15.63	8.28
10.	Kadegaon	30.5	5.95	5.52

Source – Live Stock Census Report, Sangli, 2013.

Table-3 Tahsil-wise distribution of milk producers Co-operative Societies and Milk Production In Sangli District (2013)

Sr. No.	Tahsil	Total Member		No. of Co-operative Dairy Societies		Total Milk Collection(000lit.)		Per Day Milk Collection	
		No.	%	No.	%	No. of lit	%	No. lit.	%
1	Walwa	13566	31.1	266	31.14	65700	35.5	180000	35.5
2	Khanapur	1479	3.3	29	3.39	7300	4.0	20000	4.0
3	Kadegaon	2448	5.6	48	5.62	10220	5.5	28000	5.5
4	Tasgaon	2295	5.2	45	5.26	16060	8.6	44000	8.6
5	Palus	1581	3.6	31	3.6	13505	7.2	37000	7.2
6	Miraj	3468	7.9	68	7.9	13505	7.2	37000	7.2
7	KavatheMahankal	2193	5.0	43	5.0	9125	4.9	25000	4.9
8	Jat	4336	9.9	86	10.0	1533	8.2	42000	8.2
9	Shirala	8211	18.8	161	18.8	17885	9.6	49000	9.6
10	Atpadi	3927	9.0	77	9.0	16425	8.8	45000	8.8
Total		43504	100	854	100	185055	100	507000	100

Source – District Milk development office Miraj.

Table-4 Tahsil-wise Employment Provided by DudhSangh in Sangli District (2013)

Sr. No.	Tahsil	No. of Dudh Sangh/ Dairies	Total No. of workers.	%	Monthly salary of total workers in lakh Rs.	%
1	Walwa	05	660	37.5	85.12	49.00
2	Khanapur	01	60	3.3	2.40	1.41
3	Kadegaon	02	68	3.8	1.98	1.14
4	Tasgaon	02	112	6.28	4.22	2.44
5	Palus	03	140	7.8	5.80	3.36
6	Miraj	15	478	26.83	63.22	36.63
7	Kavathe Mahankal	03	45	2.5	1.45	0.84
8	Jat	03	68	3.8	2.03	1.17
9	Shirala	02	90	5.00	3.75	2.17
10	Atpadi	01	60	3.3	2.60	1.50
Total		37	1781	100	172.57	100

Source: - Compiled by the researcher.

Table-5 Employment Provided by Primary Milk Societies in Sangli District(2013)

Sr. No	Tahsil	No. of milk Societies	Total No. of workers	%	Monthly Salary of total workers in 'RS'	%
1	Walwa	266	532	31.0	2128000	31.0
2	Khanapur	29	58	3.3	232000	3.3
3	Kadegaon	48	96	5.6	384000	5.6
4	Tasgaon	45	90	5.2	360000	5.2
5	Palus	31	62	3.6	248000	3.6
6	Miraj	68	140	8.1	560000	8.1
7	KavatheMahankal	43	86	5.0	344000	5.0
8	Jat	86	172	10.0	688000	10.0
9	Shirala	161	322	18.8	1288000	18.8
10	Atpadi	77	154	9.0	616000	9.0
Total		854	1712	100	6848000	100

Source: - Compiled by the researcher

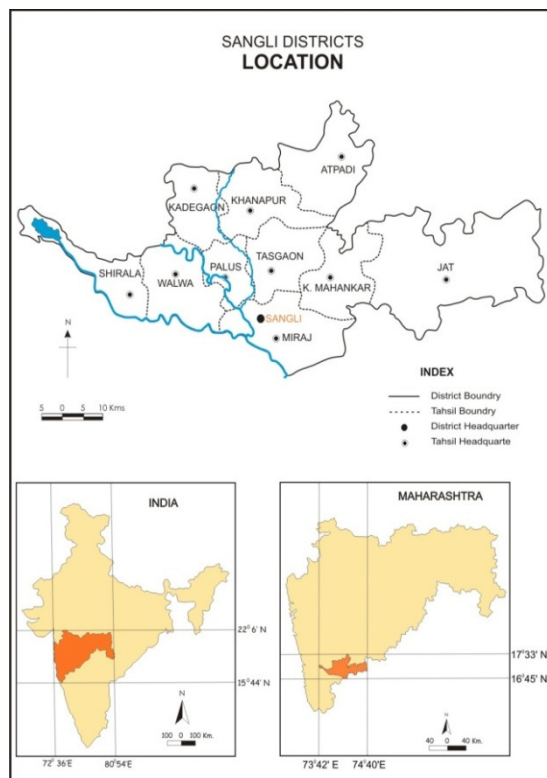


Figure 1

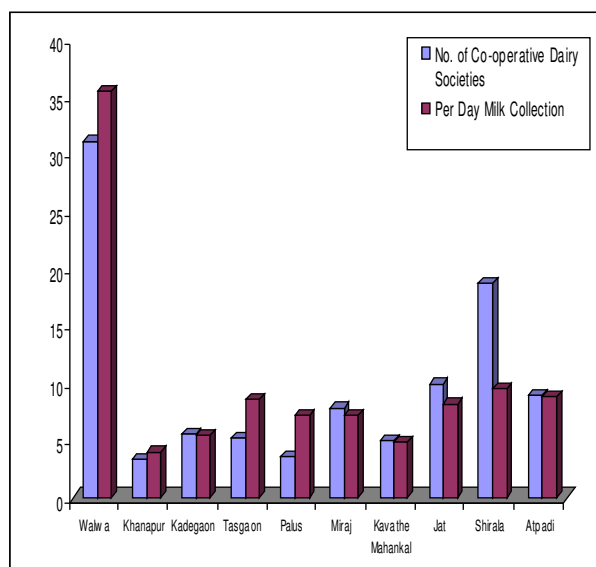


Figure 2 Tahsil-wise distribution of Milk Production of Co-operative Societies in Sangli District-2013

Conclusions and Suggestions:

The above discussion reveals that the spatial pattern of milk production is uneven in Sangli District. Spatial pattern milk production is depends upon distribution of milch animals and intensity of irrigation facilities. Walava tahsil is leading first in number of milch animals as well as in milk production. Through out the year green fodder is most essential for milch animals. Availability of green fodder is related to irrigation facility.

There is positive correlation in between irrigation facilities and milk production. Walava tahsil is leading first in irrigation milch animals and milk production. Jat, Tasgaon, Miraj, Shirala tahsils have milk production is moderate and Khanapur, Kavate Mahankal, Kadegaon tahsil irrigation and milk production is low.

The main aim of practicing the dairy activity is to make more profit from milk, calves and dung. Therefore, it is suggested that high yielding varieties of cows and she buffaloes should be provided to the farmers by dudhsangh. Government should develop small milk processing units which help to increase the income of milk producers.

The Co-operative movement played significant role in the dairy development. There is wide scope and potential for production and marketing of milk through co-operative movement in the region. It helped to increase economic status, mostly of marginal farmers and agricultural labourers in the region. The participation of women is noteworthy in generating income through dairy activity.

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