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Nikita
Ph.D. Research Scholar,
Department of Agricultural
Economics, SKRAU, Bikaner,
Rajasthan, India

Vandana Kumari
Ph.D. Research Scholar,
Department of Agricultural
Economics, SKRAU, Bikaner,
Rajasthan, India

Present status of poultry enterprise in Rajasthan: An overview

Nikita and Vandana Kumari

Abstract

Poultry in agriculture segment is one of the fastest growing sectors in India with an average growth rate of 6 per cent in egg production and 12 per cent for broiler production per annum. Eggs and poultry meat has emerged next to milk as a contributor to the output from livestock sector in recent years. The percentage contribution of eggs and poultry meat was 4.47 percent in 1951-52, which reached to a little over 9 per cent in 2015-16. In Rajasthan, the production of eggs has increased from 710 million in 2005-06 to 1,363 million in 2016-17. Meat production was estimated at 68 thousand tonnes in 2005-06 and it has increased up to 180 thousand tonnes in 2016-17. In Rajasthan, Ajmer district ranks first in both egg and broiler production in the state. There are total 27 lakh poultry birds in Ajmer district and about 95 per cent of eggs are produced by 2,000 farmers and approx 45 lakh layer farming is in this district and it has the highest contribution, *i.e.* 45.12 per cent of total poultry birds in the state during 19th Livestock Census of 2012. The second largest poultry producing district of Rajasthan is Jhunjhunu with 15.78 lakh poultry bird population.

Keywords: poultry, production, population, meat

Introduction

Agriculture sector is the most crucial sector of the Indian economy because the main objectives of economic policy of output growth, price stability and poverty alleviation are best sub-served in this sector. Agriculture has been the main stay of Indian economy as 64 per cent of the population depends on it. It provided employment to 52 per cent of country's work force during the year 2015-16. This sector plays a crucial role in the economic development of the country and contributes nearly 17.4 per cent of country's GDP. It is a rich source of high quality of animal products such as milk, meat and eggs. India has emerged as the largest producer of milk with 18.48 percent share in total milk production in the world and accounts for about 5.25 percent of the global egg production.

Poultry in agriculture segment is one of the fastest growing sectors in India with an average growth rate of 6 per cent in egg production and 12 per cent for broiler production per annum. Eggs and poultry meat has emerged next to milk as a contributor to the output from livestock sector in recent years. The percentage contribution of eggs and poultry meat was 4.47 percent in 1951-52, which reached to a little over 9 per cent in 2015-16.

India is one of the largest producers of poultry meat and eggs in the world. As India is the 3rd largest egg producer after China and USA with annual production of 82.93 billion eggs further India is 7th largest chicken producer after China, USA, Indonesia, Brazil, Iran and Pakistan (Agricultural Statistics at a glance 2016, GoI).

Currently the total poultry population in country is 729.21 million poultry birds (as per the 19th Livestock Census of India). In India out of total meat production, which is 4.7 million tonnes, poultry meat production is 3.26 million tonnes which is almost 47.05 per cent of total meat production in year 2016-17. Buffalo, Goat, Sheep, Pig, and Cattle contribute 19.80 per cent, 14.25 per cent, 7.68 per cent, 6.50 per cent and 4.72 per cent of meat production respectively (Basic Animal and Fisheries Department, 2017).

Rajasthan ranks 14th in egg production and contributes 10 per cent of meat production in India. Rajasthan has 80.24 lakh poultry birds. There are total 20,000 poultry rearers in Rajasthan. From the livestock census 18th to 19th the percent change in poultry bird's population is 60.69 per cent in Rajasthan.

Research Methodology

The data collected during the period of investigation were collected, scrutinized, compiled,

Corresponding Author
Nikita
Ph.D. Research Scholar,
Department of Agricultural
Economics, SKRAU, Bikaner,
Rajasthan, India

systematically arranged, organized and finally subjected to tabular analysis for drawing inferences.

Estimation of availability of poultry egg

$$\text{Per capita egg availability} = \frac{\text{Total egg production of state}}{\text{Total Human Population}}$$

Compound growth rate

Growth pattern was assessed using compound growth rates. Compound growth rate was computed by fitting the following exponential function of the form:

$$Y_t = Y_0 (1 + r)^t \dots\dots(1)$$

Where;

Y_t = Value at t^{th} year

Y_0 = Value at base year

r = Compound growth rate

$t = 1,2,3,\dots$ years

The log transformation of equation no. (1) becomes

$$\text{Log } Y_t = \text{Log } Y_0 + t \text{ Log } (1+r)$$

$$r = (\text{Antilog } (1+r) - 1) \times 100$$

The $(1+r)$ values were tested for statistical significance using the formula

$$t = \frac{\hat{a}}{SE(\hat{a})}$$

Where, $\hat{a} = (1+r)$

SE = Standard error of coefficient \hat{a}

The compound growth rate was worked out for poultry products based on the time series data available.

Results and Discussion

Poultry population of Rajasthan

The livestock census wise poultry population of Rajasthan from the year 1951 to 2012 has been shown in Table 1. Table revealed that the population of poultry birds in Rajasthan state has been gradually increased from year 1951 to 2012 from 2.50 lacs in 1951 to 80.24 lacs in 2012, except during the year 2007. It might be due to the high incidence of disease in various areas of Rajasthan. There was a high increment in poultry population has been seen from year 2007 to 2012, might be due to high returns from poultry farms, implication of various government subsidiary policy schemes by the government of Rajasthan, awareness about employment generation from poultry and changing health diets of peoples. The trend in poultry population from year 1951 to 2012 is shown in Figure 1.

Table 1: Poultry population of Rajasthan from year 1951 to 2012

Years	Population (in Lacs)	Percentage change (%)
1951	2.50	-
1956	4.60	84.00
1961	7.20	56.52
1966	8.70	20.83
1972	12.30	41.38
1977	15.90	29.27
1983	22.10	38.99
1988	25.00	13.12
1992	30.00	20.00
1997	44.00	46.67
2003	61.30	39.32
2007	49.93	-18.55
2012	80.24	60.70

Source: Agricultural Statistics at a Glance 2014

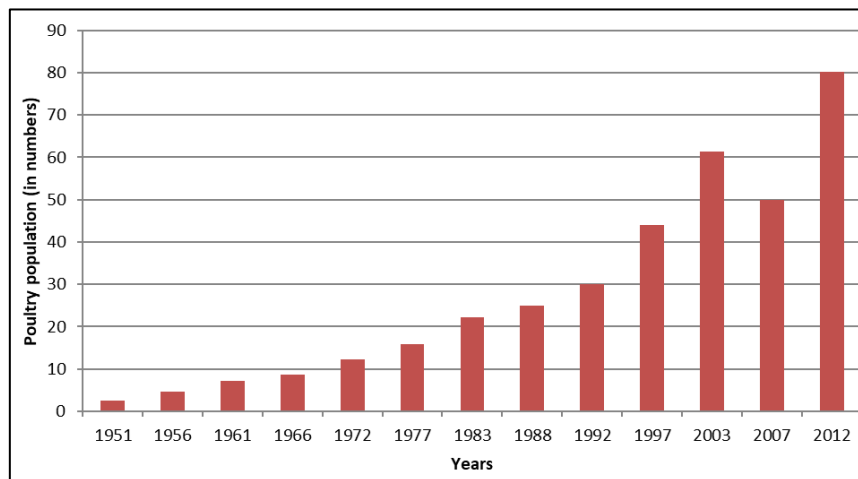


Fig 1: Poultry population of Rajasthan from period 1951 to 2012

District wise poultry bird population of Rajasthan

District wise poultry bird population during Livestock Census, 2012 has shown in Table 2. The poultry bird population has been shown a large variation from district to district both at backyard and on farm level. It has been observed from the table that Udaipur district has highest poultry bird population at back yard 50.43 lacs numbers but the contribution in farm bird population is negligible. It might be due to lack of scientific knowledge of poultry rearing and high input cost for poultry production in this area. Jhunjhunu, Banswara and Jaipur district has second, third and fourth position, respectively in backyard poultry bird population.

Ajmer district has first position in at farm bird population i.e. 26.39 lacs numbers and it alone accounts more than half (52.88 percent) of total bird population at farm, because of a good level of awareness about scientific poultry rearing, government policies, marketing and disposal pattern of poultry products in different areas. Other district like, Jhunjhunu, Churu, Sikar and Jaipur ranks second, third, fourth and fifth, respectively in on farm poultry bird population in Rajasthan.

Ajmer also ranks first in total poultry bird population in Rajasthan. Jhunjhunu, Chittorgarh, Udaipur and Jaipur has second, third, fourth and fifth positions in total bird

population as shown in table 2.

The division wise per cent share in poultry population of Rajasthan has been presented in Figure 2. Figure revealed that the highest per cent share in total poultry population of Rajasthan was observed from the Ajmer division followed by

Jaipur, Udaipur and Bikaner divisions in contribution of total poultry population of Rajasthan. High poultry population in Ajmer division might be due to well maintained poultry farms by scientific way, better knowledge about poultry rearing and availability of better market and prices for their products.

Table 2: District wise poultry bird population in Rajasthan

S. No.	District	Poultry at backyard	Poultry at farm	Total poultry
1	Ajmer	98324 (3.24)	2639518 (52.88)	2737842 (34.11)
2	Alwar	94192 (3.10)	74521 (1.49)	168713 (2.10)
3	Banswara	267610 (8.82)	1097 (0.02)	268707 (3.34)
4	Baran	50785 (1.67)	623 (0.01)	51408 (0.64)
5	Barmer	17348 (0.57)	10 (<0.01)	17358 (0.21)
6	Bharatpur	147542 (4.86)	25806 (0.51)	173348 (2.16)
7	Bhilwara	65861 (2.17)	51144 (1.02)	117005 (1.45)
8	Bikaner	22762 (0.75)	1000 (0.02)	23762 (0.29)
9	Bundi	22341 (0.73)	10594 (0.21)	32935 (0.41)
10	Chittorgarh	66373 (2.18)	45 (<0.01)	66418 (0.82)
11	Churu	65213 (2.15)	484394 (9.70)	549607 (6.84)
12	Dausa	29650 (0.97)	11543 (0.23)	41193 (0.51)
13	Dholpur	9233 (0.30)	8900 (0.17)	18133 (0.22)
14	Dungarpur	177647 (5.85)	160 (<0.01)	177807 (2.21)
15	Ganganagar	44152 (1.45)	13550 (0.27)	57702 (0.72)
16	Hanumangarh	59223 (1.95)	77204 (1.54)	136427 (1.70)
17	Jaipur	185503 (6.11)	152202 (3.04)	337705 (4.20)
18	Jaisalmer	20170 (0.66)	11 (<0.01)	20181 (0.25)
19	Jalore	17038 (0.56)	4 (<0.01)	17042 (0.21)
20	Jhalawar	55932 (1.84)	28250 (0.56)	84182 (1.05)
21	Jhunjhunu	463929 (15.29)	1114605 (22.33)	1578534 (19.67)
22	Jodhpur	30083 (0.99)	35241 (0.70)	65324 (0.81)
23	Karouli	10707 (0.35)	99 (0.002)	10806 (0.13)
24	Kota	19720 (0.65)	1578 (0.03)	21298 (0.26)
25	Nagaur	74245 (2.44)	548 (0.01)	74793 (0.93)
26	Pali	49352 (1.62)	22092 (0.44)	71444 (0.89)
27	Pratapgarh	138149 (4.55)	0 (0.00)	138149 (1.72)
28	Rajsamand	30043 (0.99)	6127 (0.12)	36170 (0.45)
29	Sawai madhopur	22331 (0.73)	707 (0.01)	23038 (0.28)
30	Sikar	85241 (2.81)	216441 (4.33)	301682 (3.76)
31	Sirohi	52209 (1.72)	27 (<0.01)	52236 (0.65)
32	Tonk	35951 (1.18)	13171 (0.26)	49122 (0.61)
33	Udaipur	504353 (16.62)	0 (0.00)	504353 (6.28)
34	Total	3033212 (100.00)	4991212 (100.00)	8024424 (100.00)

Figures in parentheses indicates percentage share of poultry population in total poultry population of the state

Source: 19th Livestock Census of Rajasthan 2012

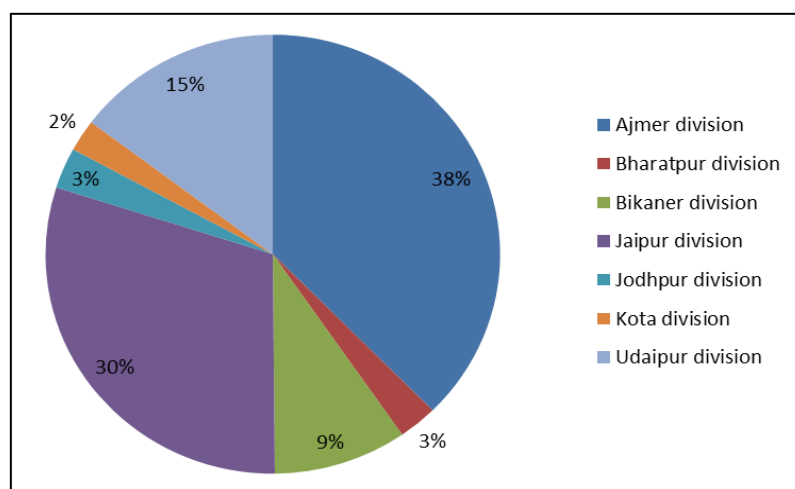


Fig 2: Division wise Per cent share in Poultry Population of Rajasthan

Year wise production, annual growth rate and availability of eggs in Rajasthan

Egg production in Rajasthan during the period between 1985-

86 and 2016-17 has been presented in Table 3. Egg production has increased from 196.58 million numbers in 1985-86 to 1363.00 million numbers in 2016-17. Compound

growth rate (CGR) in egg production was registered around 5.95 per cent (1985-86 to 2016-17). An extreme variation in the annual growth rate of egg production was observed during the period 1985-86 to 2016-17 which varied from -5.66 per cent in the year 2006-07 to 43.43 per cent in the year 2011-12. The per capita availability of egg during the period between 1985-86 and 2016-17 was observed increasing with fluctuations in few years. The per capita per annum

availability of egg in the year 1985-86 was almost 5.14 numbers which has increased up to 19.20 numbers in 2016-17. There was continuous increase in the per capita availability of eggs but the per capita annual availability of eggs in Rajasthan is still lower than ICMR recommendation (180 eggs). Compound growth rate in per capita availability of eggs was found to be around 3.71 per cent (1985-86 to 2016-17).

Table 3: Year wise Production, Annual Growth Rate and Availability of Eggs in Rajasthan

Year	Eggs Production (Million No.)	Annual Growth Rate (%)	Per capita egg available (No./annum)
1985-86	196.58	-	5.14
1986-87	208.93	6.28	5.33
1987-88	213.72	2.29	5.32
1988-89	225.77	5.64	5.49
1989-90	230.00	1.87	5.47
1990-91	280.50	21.96	6.52
1991-92	316.67	12.89	7.20
1992-93	349.20	10.27	7.72
1993-94	395.70	13.32	8.51
1994-95	416.95	5.37	8.73
1995-96	436.39	4.66	8.91
1996-97	482.17	10.49	9.60
1997-98	503.66	4.46	9.78
1998-99	534.36	6.10	10.13
1999-2000	558.22	4.47	10.34
2000-01	571.53	2.38	10.35
2001-02	602.17	5.36	10.66
2002-03	635.91	5.60	11.02
2003-04	672.16	5.70	11.41
2004-05	693.26	3.14	11.53
2005-06	702.90	1.39	11.46
2006-07	663.10	-5.66	10.60
2007-08	673.09	1.51	10.56
2008-09	645.17	-4.15	9.93
2009-10	671.30	4.05	10.14
2010-11	669.70	-0.24	9.94
2011-12	960.54	43.43	14.00
2012-13	1033.49	7.59	14.80
2013-14	1190.17	15.16	16.75
2014-15	1320.20	10.93	18.27
2015-16	1385.00	4.91	19.00
2016-17	1363.00	-1.59	19.20
CGR (%)	5.95**	-	3.71**

** Significant at 1 per cent level

CGR = Compound growth rate

Source: Directorate of Animal Husbandry, Jaipur (Government of Rajasthan) from period 1985-86 to 2016-17

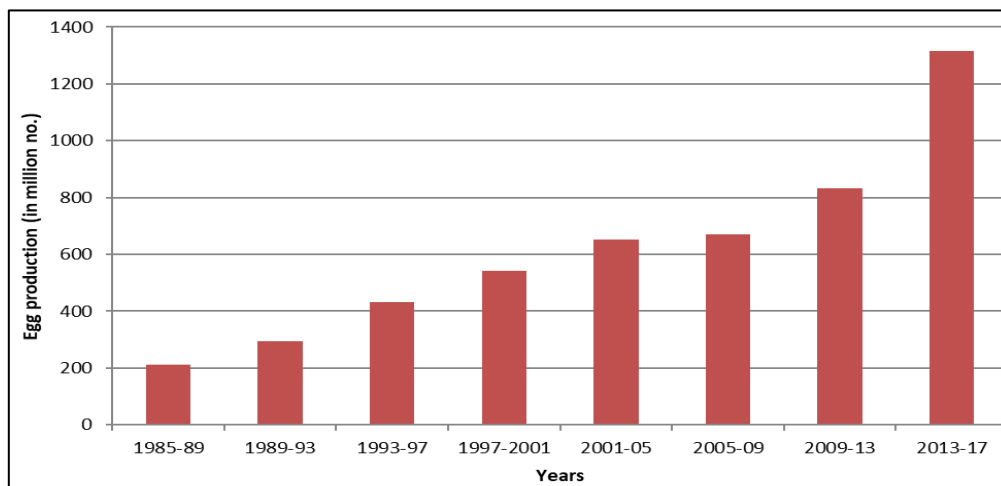


Fig 3: Egg production of Rajasthan from year 1985 to 2017

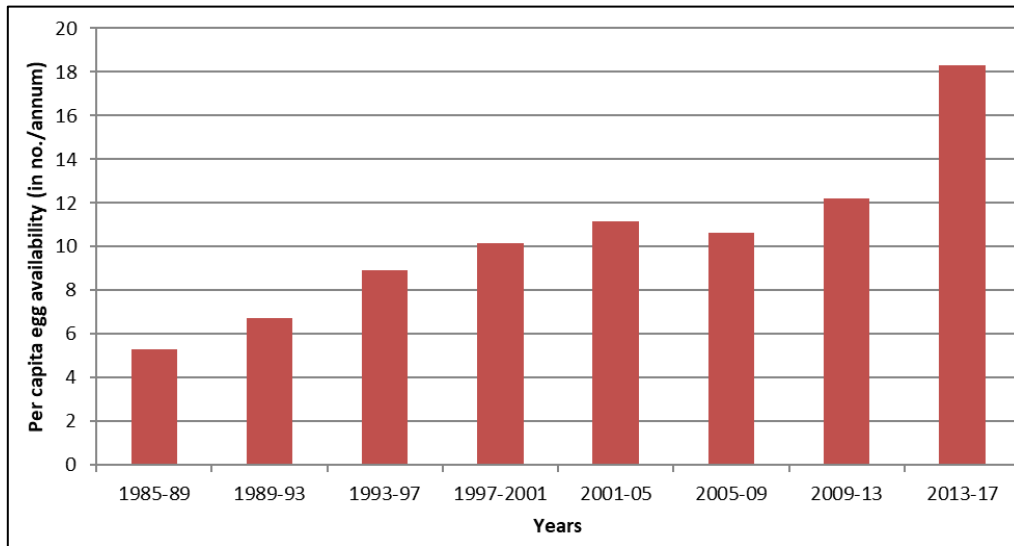


Fig 4: Per capita per annum egg availability in Rajasthan from year 1985 to 2017

Year wise production, annual growth rate of poultry meat in Rajasthan

The production, annual growth rate and compound growth rate in poultry meat production between the period 2007-08 to 2015-16 in Rajasthan has been shown in Table 4. Table revealed that the poultry meat production has been increased from 9.00 thousand tonnes in 2007-08 to 22.92 thousand

tonnes in 2015-16. An extreme variation in the annual growth rate of poultry meat production was observed during the period 2007-08 to 2015-16 which varied from -62.68 per cent annual growth rate in the year 2012-13 to 124.26 per cent in the year 2015-16. Compound growth rate (CGR) was registered around 5.01 per cent (2007-08 to 2015-16).

Table 4: Year wise production and annual growth rate of poultry meat in Rajasthan

Years	Poultry Meat production (000 tonnes)	Annual growth rate (%)
2007-08	9.00	-
2008-09	9.58	6.44
2009-10	10.19	6.37
2010-11	15.21	49.26
2011-12	19.00	24.92
2012-13	7.09	-62.68
2013-14	9.06	27.78
2014-15	10.22	12.80
2015-16	22.92	124.26
CGR (%)	5.01**	-

** Significant at 1 per cent level

CGR = Compound growth rate

Source: Department of Animal Husbandry, Dairying and Fisheries, 2015-16

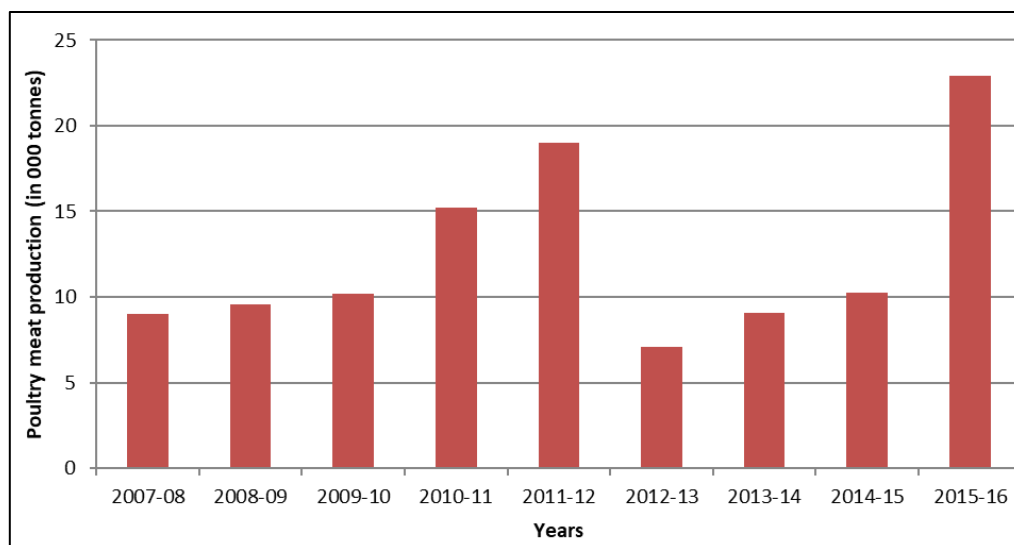


Fig 5: Poultry meat production in Rajasthan from period 2007-08 to 2015-16

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