POULTRY INDUSTRIES AND ITS IMPACT ON PRICE OF EGGS IN SALEM DISTRICT

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ABSTRACT

Poultry industry is one of the important agro-based industries in the world. The industry is associated with the production of eggs (layer industry). The industry plays a significant role in the current scenario of India as a powerful tool to fight the three evils of Modern Society. Viz, Malnutrition, Unemployment and supplementary income. In Salem district poultry industry has shown tremendous growth during the last few years. At present India is the third largest producer of eggs and Salem second largest production of eggs in Tamil Nadu. However, the poultry – Farming units in the Salem are functioning in the unorganized sector. In Salem, Many more new entrepreneurs have entered in the poultry sector. They have adopted new methods of production for getting a fair return. Now these entrepreneurs in Salem are engaging in large scale production of eggs. In this situation it is quite relevant to conduct a working of poultry industry in Salem district of Tamil Nadu. The present study analysed the temporal variation of egg prices in Salem, market using yearly average price of egg for the period from 1991 to 2010.

INTRODUCTION

Agro Industries play a pivotal role in the economic development of a predominantly agricultural country like India. Agricultural sector contributes a sizable portion of national income of the country. Agricultural and allied activities provide employment opportunities, directly or indirectly to about three parts of Indian population. Agricultural sector is the source of raw materials for different industries like cotton textiles, jute, sugar, cashew, coir, rubber etc. Further, agricultural and allied activities enable the country to earn foreign exchange to a considerable extent through export of different items.

The poultry industry is one of the agro-industries in the world. The poultry industry in India is the most rapidly growing segments of the agricultural sector. The industry is concerned with the production of eggs (layer industries) and meat (broiler industry). The poultry constitutes an important item of livestock/animal-husbandry sector of India. The industry provides employment throughout the year on an even basis. The ability to adapt to various areas with varied agro-climatic conditions, low investment and short gestation period are the most attractive features of the poultry industry. The development of the industry through the application of modern science and technology has a significant contribution in improving the socio-economic of rural masses.

In India, poultry industry has made tremendous progress during the last three decades, which evolved from backyard ventures to a full fledged commercial agro industrial business. Now India is the third largest producer of eggs and eighth largest producer of broilers in the world. The industry contributes Rs. 7,500 crores to the Gross National Product of the country. Likewise, the industry employees 2.5 million people, mostly in the rural areas.

In India, the growth of poultry industry has been quite un-even from state to state. Moreover, there is wide variation in the production and consumption pattern of various states. The four states of Andrapradesh, Maharashtra, Punjab and Tamil Nadu jointly accounting for more than 50 percent of the total output of eggs and broilers in the country. But, in the case of broiler production, the states of Tamil Nadu, Andhpradesh, Karnataka, Kerala and Western region of Maharashtra accounts for more than 60 percent of the total production in the country. Currently in India most of the broilers farming units are operating under the system of market integration. However layer industry in the
country has been functioning under unorganized sector.

In the state of Tamil Nadu, the poultry industry has witnessed significant growth after the period of 1970. The technical and infrastructure facilities and ideal agro-climatic conditions are the major factors for this. One of the features of development of poultry in Tamil Nadu is the over concentration of the industry in certain areas and big dominance of big private entrepreneurs including market integrators. The Namakkal zone is the second largest poultry zone and egg Basket of South India. But in the case of broiler production, Palladam area of Coimbatore district is the major poultry pocket of Tamil Nadu. The government agency in the poultry sector viz; Tamil Nadu Poultry Development Corporation, Tamil Nadu Veterinary Colleges and Research Institute and Department of Animal Husbandry undertake various activities for the development of the industry in the state.

POULTRY PRODUCTION

The term poultry includes fowls, ducks, turkeys, geese, quails, swans, ostriches and guinea fowls domesticated for economic purpose. Fowls constitute 99 percent of the total poultry reared in Tamil Nadu. The development of poultry industry is significant in the state. The state occupies 2nd position in egg production of our country. Poultry farming in the state has transformed in to big vibrant industry from a mere backyard enterprise over the past three decades. Now this sector is a dynamic industry having a vast scope for exports and employment generation.

This process was speeded up with the help of poultry extension centres, which acted as demonstration farms and extension centres providing training to farmers to take up poultry farming. Moreover the formation of Tamil Nadu Poultry Development Corporation, government support for establishing poultry units, widespread immunization against ranikhet disease and easy availability of quality feeds, all contributed to development of poultry rating as an industry. Poultry rearing has now become a commercial activity in many places in the districts of Salem, Namakkal, Erode and Coimbatore. In fact the poultry farming has developed in to a big industry.

Birds are on free range and feed on corms, insects, waste grains, white ants etc. and they convey the farm and kitchen waste in to egg and meat. These birds are very susceptible to the highly fatal ranikhet disease. To protect the poultry farms from this disease, the department is providing vaccination against this disease on specified days at the veterinary institutions and sub centre every week and also in the camps conducted under “Kalnadai – Padukappu Thittam”.

It is appropriate to make brief mention about poultry production in India, since it is acclaimed as a success story of rapid growth without government’s financial support. Annual growth rate of poultry production is higher than any other agriculture commodity. It is 10 percent growth for eggs and 15 percent growth for broilers. Annual production is reported to be 33000 million eggs, which ranks third largest in world. For a developing country this is a laudable achievement.

The total poultry population of India is estimated to be 700 million of which about 10 to 15 percent are indigenous or native birds, which accounted for 50 percent of poultry population about 25 years ago. Around 1970 the native birds contributed almost 50 percent of total egg production. However, the picture varies considerably between regions and states of the country. Large commercial poultry farms are concentrated in 5 to 6 states in the country viz., Andrapradesh, Maharashtra, Tamil Nadu, Haryana, Punjab and Delhi. There are many states where native fowl still account for 30 to 40 percent of egg production of poultry population.

Poultry production in India has increased rapidly in the last two decades, but this growth should be delineated from development. When examined against some of important development issues the growth in poultry seems to have many negative characters. An attempt is made to highlight some of these aspects.

India’s poultry sector has growth steadily over the past several years. Broiler production was forecast to increase by 16
percent to 2.2 million tons in 2006, which was 1.9 million tons in 2005. A trend towards forward integration in poultry operations has spread in to the north, after mostly being in the south. A preference for birds with higher dressing yields and price stabilization measure intimated by the industry are also factors supporting growth in production.

The government of India does not classify poultry farming as an industrial or agricultural enterprise, leaving the option of classification up to individual states with agriculture status, farmers could qualify for loans at low interest rates, benefits with respect to sales, taxes, land and labour laws, and other government assistance. Agriculture income is generally tax free, only a few states have given poultry farms the status of agriculture.

India’s 17th livestock census was released in early 2005 with October 15, 2003 as the reference date. The total poultry population in India was 489 million from 337 million in 1997. Andhrapradesh ranked first with 102.3 million followed by Tamilnadu with 86.6 million, Uttaranchal West with 60.7 million and Maharashtra with 38.0 million.

REVIEW OF LITERATURE

1. Marutiram et al (1978) in their study entitled “Estimation of cost of Production of Poultry and Eggs-Hoshiarpur District (Punjab)”. They also secured the information on factors helpful in lowering the cost of production and examined the price spread at various stages from producer to consumer.

2. Velusamy (1981) in their study entitled “A Micro Analysis in Namakkal Block in Salem District”. He analysed the cost of production of eggs for different flock size and reported the cost per 100 eggs on the flock size of 600, 1700 and 2700 birds as Rs.34.13, 32.34 and Rs.30.54 respectively. He states that the increase in flock size resulted in the decrease in cost of production and increase in net profit.

3. Suresh Kumar (1983) in their study entitled “Economics of Egg Production and Marketing in Coimbatore”. He found that the net profit increases and cost of production reduces with increase in flock size. He pointed out that the cost of production for 100 eggs in 1500 and 1600 flock size was Rs.32.18 and Rs.27.09 respectively and net profit earned was Rs.8.67 and 11.84 respectively.

4. Chezhian (1983), in their study entitled “Economics of Egg Production in Vennathur Block, Salem District”. He found that the cost of production per bird’s whole life was Rs 88.76 and revenue as Rs.130.64. He points out that the cost of production of Day old-chicks as Rs.5.11 and major expenses of production cost involve cost of feed.

5. Saminathan (1995) in their study entitled “Marketing Pattern of Egg in Namakkal Poultry Pocket”. He identified three different marketing channels such as the first includes producer, Traders (Namakkal) wholesalers, retailers and consumers; second channel comprises, producer wholesalers,(Namakkal) retailer and consumer; third channel includes, Producer, retailer, consumer (Namakkal). He found that among these three channels 80 per cent of eggs were marketed through the first channel.

6. Kathiravan (1996) in their study entitled “An Economic Evaluation of Marketing of Eggs in Salem District of Tamil Nadu”. He observed that despite the appearance of slightly concentrated oligopoly structure at producer’s level, considering other features such as competitive wholesaler or trader group, product substitution and degree of market intelligence, and it was concluded as pure competitive market.

7. Khan (1999) in their study entitled “Youth in Poultry Development of alleviation Protein Deficiency”. He states that increase of egg per capita consumption would generate 25000 jobs and 100 gm increase in per capita meat consumption would support 40000 jobs.
SIGNIFICANCE OF THE STUDY

The present study assumes greater significance because the development of poultry is the basic strategy for eradicating the rural poverty and to bring the rural poor above the Poverty line. In the tenth five year plan (2002-2007), the Planning Commission of India has framed a Poverty Alleviation Programme of which 50 per cent is meant for livestock associated with poultry in rural areas.

The industry has been identified as a tool to fight the three evils of modern society viz., malnutrition, un-employment and supplementary income. The main thrust of the development of the poultry industry is to provide employment opportunities with high participation of women; cheap and easily accessible source of proteins; and to generate supplementary income for the betterment and improvement of weaker sections of people in the rural areas. Further, the National Commission of Agriculture has suggested poultry programmes on a massive scale, which can generate employment and improve the income of the rural poor through production of eggs.

Even though, India has made rapid strides in the poultry production during the last decades. The annual per capita consumption of eggs is only 35 eggs as against the recommended consumption of 180 eggs by the World Health Organisation. About 75 to 80 per cent of eggs are produced in the country are consumed by just 25 per cent of the population in urban areas. In rural areas, the annual per capita consumption is only 15 eggs.

SCOPE OF THE STUDY

The Poultry industry is a major agro-industry in Salem district. It plays a vital role in developing the districts economy. Eggs provide basic nutrients to the human beings, next to mother feed. The present study deals with the production of eggs and working of its units. This study does not go in to the broiler units. There is very few broiler farms in the study area. Some companies with less living space offer few chicks to households. They provide food and medication facility for the proper nourishment of these chicks. These chicks are collected back by the company after a period of three months.

This study has been undertaken with respect to poultry industry. It review the socio-economic conditions of the poultry entrepreneurs, structural characteristics of the poultry farms and poultry production practices, followed by factors motivating to start poultry farming in the Salem district of TamilNadu. The study also analyses the egg production, cost and profitability of layer farms.

STATEMENT OF THE PROBLEM

The district of Salem, the entrepreneurial base in the poultry sector was much stronger after the Nammakkal district. Moreover, especially after 1990’s many more new entrepreneurs in the sector and forced them to adopt new and innovative methods of production, increase the price value for their survival and earning a fair return. Now these entrepreneurs in Salem are engaging in large-scale production of poultry products and marketing the products at competitive price. Further, they are exporting the poultry product in bulk quantities to neighboring states especially to Kerala and Karnataka and also export to various countries. In this context an in-depth study on various aspects of the workings of poultry industry in Salem becomes relevant and useful. Hence the present study has been undertaken.

OBJECTIVES OF THE STUDY

The following are the specific objectives of the present study.

1. To evaluate the temporal variations in the price of eggs.
2. To present recommendations based on the findings of the study.

METHODOLOGY

The present study is an empirical research based on the survey method. Data have been collected from both primary and secondary sources.
**Primary Data**

The primary data required for the purpose of study have been collected from the poultry industrial units functioning in the district of Salem. The poultry industrial units are engaging in production of eggs. In the district of Salem the layer farming units are majority when compared with broiler units.

**Secondary Data**

Secondary data were collected from the following published sources.

1. Various publication of the foreign agricultural service commodity and marketing programmes dairy, livestock and poultry division (Department of Agriculture, USA).
2. Annual reports of the Department of Animal Husbandry and Dairying (New Delhi), Tamilnadu Poultry Development Corporation Ltd., Chennai.
5. Study reports and other publications of the State Plan Board (Chennai), Planning Commission (New Delhi), Department of Economics & Statistical (Chennai), Evaluation & Applied Research Department (Chennai), Veterinary College & Research Institute (Namakkal and Salem).
6. Books and periodicals dealing with the subject.
7. Dissertations in the related field.

**PRICE ANALYSIS**

There is an unlimited demand for fresh laid eggs. The market has never yet been fully supplied, nor is it likely to be for a very long time to come. The fact that some specially favored small towns may have all the fresh egg they can consume, must not be thought to overthrow this statements the great consuming centers.

The eggs price is most profitable is not so much on account of great demand and high prices as because the cost of production is proportionately less than in other braches of the chicken business. For the eggs such pullets would lay, especially if hatched early enough to begin laying doing October or early November, would be worth several items the marker price that they could command at that season. It is all well enough to sell hens after they have done.

**Analytical Framework**

Time series analysis was carried out to study the behaviour of prices of per over a period of time. A multiplicative model of the following type has been used.

\[ Y = T \times C \times S \times I \]

Where,

- \( Y \) = Actual price in Rupees per qty
- \( T \) = Secular Trend
- \( C \) = Cyclic variation
- \( S \) = Seasonal variation
- \( I \) = Irregular variation

In the present study due to non availability of monthly average price statistics over years, the components were decomposed into three categories namely, secular trend, cyclical variation and irregular variation. The seasonal variation was separately analysed with ten years ‘Monthly data’.

**Secular Trend**

The secular Trend is the basic tendancy of Prices to increase or decrease for a period of time. It describes the pattern of behaviour which has characterized the series in the past. In the present study, the trend of time series of statistics was worked out, with linear regression equation, since the price exhibited secular relationship with time. A trend equation fitted for the Price of egg is

\[ Y = a + bt \]

Where,

\[ Y = \text{Price of egg rupees per qty} \]
a = Constant
b = regression coefficient
t = time in years

Cyclical Variation

A careful study of cyclical variation facilitates to face recession period and to reap the benefits during booms. In the present study, the cyclical variation in annual prices of egg was studied through moving average method. The steps involved are shown below.

Step 1: Dividing the actual average yearly price by the trend price
Step 2: Computation of six yearly centered moving average for the detrended data and this formed cyclical variation

Seasonal Variation

It is a variation which occurs with some degree of regularity within a specific period of one year or shorter. This study is useful to take policy decisions regarding purchase production, inventory control and the like. In the present study the seasonal variation in the monthly average prices were studied for twenty years by applying the moving average method. The steps involved are shown below.

Step 1: Computation of 12 months moving average for monthly average price series of egg.
Step 2: Obtaining the percentage series of actual price to moving average prices and arranging them by month.
Step 3: Calculating median for each month eventually arriving at the seasonal indices through adjustment factor.

Irregular Variation

It is the irregular movement of prices over a period of time due to random factors. In the present study, cyclical – Irregular (CI) components were derived by dividing the actual time series with trend element. Since seasonal element was market in the annual price series. This cyclical Irregular (CI) component was divided by cyclical component (C) to estimate the irregular variation.

Temporal Variation

A study on temporal variation of prices would be useful in forecasting the price movements in future. This would in turn help the producers and traders in marketing effective decision in production and marketing including storage.

The present study analysed the temporal variation of egg prices in Salem, market using yearly average price of egg for the period from 1991 to 2010. Table shows the trend, cyclical and irregular variations of prices of egg in the Salem market.

Table
Trend, Cyclical and Irregular Variations of Price of Egg In Salem Market

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Year</th>
<th>Actual price (Rs. per 100 eggs)</th>
<th>Trend Price (Rs. per 100 eggs)</th>
<th>Index of cyclical variations</th>
<th>Index of irregular variations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1991</td>
<td>68.52</td>
<td>67.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>1992</td>
<td>83.19</td>
<td>74.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>1993</td>
<td>85.21</td>
<td>80.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>1994</td>
<td>97.72</td>
<td>87.09</td>
<td>1.10</td>
<td>1.02</td>
</tr>
<tr>
<td>5.</td>
<td>1995</td>
<td>100.97</td>
<td>93.59</td>
<td>1.10</td>
<td>0.98</td>
</tr>
<tr>
<td>6.</td>
<td>1996</td>
<td>110.18</td>
<td>100.09</td>
<td>1.08</td>
<td>1.02</td>
</tr>
<tr>
<td>7.</td>
<td>1997</td>
<td>125.50</td>
<td>106.58</td>
<td>1.07</td>
<td>1.10</td>
</tr>
<tr>
<td>8.</td>
<td>1998</td>
<td>112.65</td>
<td>113.08</td>
<td>1.04</td>
<td>0.95</td>
</tr>
<tr>
<td>9.</td>
<td>1999</td>
<td>115.16</td>
<td>119.58</td>
<td>1.00</td>
<td>0.96</td>
</tr>
<tr>
<td>10.</td>
<td>2000</td>
<td>130.92</td>
<td>126.08</td>
<td>0.95</td>
<td>1.09</td>
</tr>
<tr>
<td>11.</td>
<td>2001</td>
<td>118.57</td>
<td>132.57</td>
<td>0.91</td>
<td>0.98</td>
</tr>
<tr>
<td>12.</td>
<td>2002</td>
<td>111.70</td>
<td>139.07</td>
<td>0.91</td>
<td>0.90</td>
</tr>
<tr>
<td>13.</td>
<td>2003</td>
<td>122.86</td>
<td>145.57</td>
<td>0.85</td>
<td>0.99</td>
</tr>
<tr>
<td>14.</td>
<td>2004</td>
<td>130.51</td>
<td>152.06</td>
<td>0.83</td>
<td>1.03</td>
</tr>
<tr>
<td>15.</td>
<td>2005</td>
<td>129.39</td>
<td>158.56</td>
<td>0.86</td>
<td>0.95</td>
</tr>
<tr>
<td>16.</td>
<td>2006</td>
<td>118.49</td>
<td>165.06</td>
<td>0.90</td>
<td>0.79</td>
</tr>
<tr>
<td>17.</td>
<td>2007</td>
<td>172.79</td>
<td>171.56</td>
<td>0.97</td>
<td>1.03</td>
</tr>
<tr>
<td>18.</td>
<td>2008</td>
<td>177.56</td>
<td>178.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>2009</td>
<td>225.04</td>
<td>184.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>2010</td>
<td>249.56</td>
<td>191.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed data
Secular Trend

Secular Trend is the basic tendency of prices to increase or decrease over a period of time. The concept does not include short range oscillations in prices but ready movements over along time. To identify the trend in prices of egg at Salem market for a period from 1991 to 2010, the linear regression equation was fitted and the estimated trend function was,

\[ Y = 6.497x - 12868 \]

\[ R^2 = 0.722 \]

A figure in parenthesis is denoting standard error.

Significant at one percent level.

It could be observed from the above function that the co-efficient of determination \((R^2)\) was 0.722 which indicated the 72.20 percent of variation in the price of egg was explained by the dependent variable.

The result also show that there has been a significant increase in the price of egg over the years. The annual average price of egg per quantity has increased at the rate of Rs. 12868 per annum. The actual price series with the estimated trend value is presented in table and is plotted in figure.

Cyclical Variation

Cyclical variation in price of eggs refer to recurrent up and down movements around secular trend levels which have a duration anywhere from 2 to 20 years. These cycles may or may not be periodic. This study is useful in framing variable policies for stabilizing the price level. The cyclical variation in prices of egg is analysed by moving average method. The result are presented in Table and the indicates of cyclical variations have been plotted in Figure.

It could be seen from table that the indices of cyclical variation in the prices of eggs reacted the maximum in 1994 and it started declining until 2000 and again it started increasing and reached the peak level in 2005. The price of eggs started to increase until 2007 and then it recovered.

Irregular Variation

Irregular variation refers to such variations in price of egg which do not great themselves in a definite pattern. Irregular variation in price includes all types of variation. Other than the trend, seasonal and cyclical movement. Irregular variation in price
is caused by certain special isolated occurrence such as sudden storage in demand or rapid technological progress. By their nature these movements are irregular and unpredictable. An analysis of irregular variation in price of egg in Salem market was carried out and the result obtained are presented in table and are depicted in figure.

It could be observed from table that once in five or six years egg varied much by irregular factors. The indices of irregular variations for the price of egg at Salem market ranged from 0.9 to 1.09. The efficient of variation of irregular variation percent. This it is inferred from the table that irregular variation in the price off egg was seen which was confirmed by the co – efficiency of variation of the irregular indice. The irregular variation in price of egg may be due to sudden changes in demand, influenced by the changes in taste and buying behaviour, the price of substitutes, change in relative income level and the like.

In the present study seasonal variations of the monthly average of eggs are studied ten years from 2000 – 01 to 2009 – 2010 by applying 12 months moving average and the results obtained are presented in Table and depicted in figure.

Table 6.17

<table>
<thead>
<tr>
<th>Month</th>
<th>Seasonal Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>89.1</td>
</tr>
<tr>
<td>May</td>
<td>96.2</td>
</tr>
<tr>
<td>Jun</td>
<td>109.2</td>
</tr>
<tr>
<td>Jul</td>
<td>103.9</td>
</tr>
<tr>
<td>Aug</td>
<td>94.9</td>
</tr>
<tr>
<td>Sep</td>
<td>97.2</td>
</tr>
<tr>
<td>Oct</td>
<td>99.5</td>
</tr>
<tr>
<td>Nov</td>
<td>111.6</td>
</tr>
<tr>
<td>Dec</td>
<td>103.5</td>
</tr>
<tr>
<td>Jan</td>
<td>103.9</td>
</tr>
<tr>
<td>Feb</td>
<td>100.2</td>
</tr>
<tr>
<td>March</td>
<td>91</td>
</tr>
</tbody>
</table>

Source: Computed data

There is considerable seasonality associated with poultry consumption for each geography region based on religious beliefs, weather conditions and festivities for example:- Hindu month of puratassi in Sep – Oct and Sabarimala pilygrimage in Dec – Jan result in decline egg consumption in Salem District on the other hand, consumption increases during festive period of October – December (combined with winter season) and during marriage season in various parts of the country. Generally egg production and consumption is lower in summer season then in winter. Hence the exists a regular demand throughout the year. But supply varied with the production season.

Table reveals that much variation exist in the price of egg in the Salem market in different month of a year. It could be observed from the seasonal indices that the lower price prevailed from August – October. This is the religious beliefs and festival season.
Findings

The trend analysis shown in chart 2 depicts the variations of price of egg during the period of 1991 to 2010. There was a steady increase in price levels of egg during 1991 to 1997. But during the period from 1998 to 2006 there was an irregular variation in the price of egg. This was due to low consumption made by the people. Again from 2009 to 2010 there was a steady growth of egg price and it shows that there is a consistency in the demand of egg by the consumers.

Suggestions

The researcher recommends the following guideline for the increase of production of eggs in Sales District.

1. Greater awareness can be given to the small entrepreneur to avail the loan facilities and other concessions avail to start poultry industries.
2. The government may take steps to undertake bulk purchase of eggs and supply them to the poultry industries at reasonable price.
3. Poultry industry needs greater integration, better cost-effectiveness and improvement in the distribution.
4. The banks and other financial institutions have to become more user friendly.
5. Reduce the feed cost by integration and even paisa reduction per Kg of feed can make all the difference in the net realization.

Conclusions

It is clear that production of egg has been growing at an impressive rate. Considering this factor seriously the government should come forward to implement all the various suggestions given above and thereby many people can start more poultry units and thereby many unemployed people get employment opportunities.

References

22. A. G. Khan “ Youth in Poultry Development of Alleviation Protein Deficiency” India Farming 49.7 (1999) 54 -60

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