

REVIEW ARTICLE

A REVIEW ON SCENARIO, CHALLENGES AND PROSPECTS OF POULTRY PRODUCTION IN NEPAL

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ARTICLE DETAILS

ABSTRACT

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Poultry production is a growing industry that accounts about 3.5% of total GDP. The number of commercial farm is concentrated to districts like Chitwan, Kathmandu and Kaski but major of the poultry farming is followed by rural people which is under the free range system and low input production system. This review was written to summarize and study the present status, challenges and potential of poultry farming. In order to meet the demand of the poultry, the commercial poultry population has increased about more than two times than the last decade. Similarly, there has been marked increase in the number of laying birds, meat production and egg production in these recent years. But it has not been able to surpass the demand in the market. To meet the demand through commercialization, people have suffered different challenges like increase cost of production, lack of maintenance of bio-security, improper maintenance of housing, lack of proper knowledge about poultry production, irregular supply of qualifiable chicks, religious and cultural restrictions, outbreak of different diseases, lack of slaughter house and processing plant etc which has threatened the poultry business which can be uplifted through certain management strategies along with policies, programs and awareness campaign.

KEYWORDS

bio-security, commercialization, strategies, demand.

1. INTRODUCTION

Agriculture is an important occupation in the context of Nepal. One of the fastest ways to supply human protein is through poultry. Agriculture accounts for about 33.7% of the national GDP, but the poultry sector accounts for about 3.5% of the TGDGP [1]. Nepal is one of the best places of poultry rearing due to its rich biodiversity. Nepal is one of the highest percentages of Asian livestock (livestock and poultry, 5.8 per family), and is 70 per cent of the population rearing some types of livestock [2]. FAO has recommended as a daily average protein intake by a person should be about 65 g /day of which more than 50% should be from the animal source [2].

Nepal has complex and various topography of land where livestock farming exists in all the regions including poultry farming however most of the farmers raise small numbers of livestock in small land holdings [3]. The major district with higher number of poultry farms in Nepal are Chitwan, Kathmandu and Kaski [4]. The poultry farming as a business seemed to be started since 1980, however the expected achievement has been achieved yet. The fowl population in Nepal is about 47.96 million with 28.3% laying hen, producing 887.24 million table eggs. Average annual growth rate of hen egg production has been 2.43% during last ten years [5]. In the recent years the size of poultry population has significantly increased and the presently population of laying hens is 8233616 and the meat production from poultry 42810 metric tons [6-8]. In rural areas of Nepal, background poultry farming is still an important source of cash generation and protein supplement which are well adapted to the low input production system, tolerance to the diseases, and poor nutrition. Intensive grain-based poultry farming along with extensive free-range system is flourishing day by day with significant contribution on the national GDP. The objective of our review is to study about the present status, problems and potential of poultry production in Nepal.

2. METHODOLOGY

This review is completely based on the secondary data which are collected from the study of different journals, research papers, books, articles and magazines.

3. RESULTS AND DISCUSSION

3.1 Scenario of Poultry Business in Nepal

Nepal lies at 112th position for chicken meat production of world, which is at the 92nd for egg production in world [9]. Currently, total investment in this sector is around 22billion and total number of broiler farm is around 1000 and layer farm are 500. The grandparent stock for the poultry was established by Cobb Nepal with start of production from September 2013 [9]. The total production of broiler is 1170573 and layer chicken per week is 118208. The total feed production is 646845 tonnes in 2010/2011 and demand of poultry meat per day is around 150000kg/day [9].

In spite of the fact that growing prices of feed materials, climatic extremes, and lack of good conductive government policies, poultry industry is growing as the emerging profit-motive industry since past decade. Different components like feed industries, hatcheries, integrated egg producer, meat processor, medicine, packaging and allied agencies, big layer farm, big broiler farm etc are the important components of poultry industry, in use in Nepal. The number of medicine and health institute related to poultry is relatively few but number of feed industries, hatcheries and integrated egg producer has been increased to 111,98 and 150 respectively which is clearly depicted in the table no 1.

Table 1: Different structure of poultry industry in Nepal

S.N.	Poultry scenario	Total no
1.	Feed industries	111
2.	Hatcheries	98
3.	Integrated egg producer	150
4.	Integrated broiler producer	65
5.	Meat Processor	8
6.	Medicine	6
7.	Packaging and allied agencies	50
8.	Big layer farm	>500
9.	Big broiler farm	>1000

(Source: MOAD 2013 [8], Nepal Feed Industry Association Brochure 2011 [10])

3.2 National poultry flock

From the figure 1, it is clearly visible that the population of poultry has been in increasing trend which has increased from 21.37 million in 2002 to 68.6 million in 2016 even though the slight decrease in seen in 2005 and 2009 than that of previous years. However, population of duck has been decreased from 0.41 million in 2002 to 0.39 million in 2012. Similarly, according to the census 2001/2002, the number of pigeons and other birds were reported to be 1845234 and 57313 respectively [11].

In our country, there is the commercial use of exotic breeds such as Cobb 100, Cobb 500, Venn Cobb, Cobb Avian, Lohman Indian River, Hubbard Flex, Ross-308, Kasila, Hyline brown. Lohman brown, H&N Nick brown, Bovans brown, B.V. 380, Isa brown, Dominant CZ and Hisex brown which are the major breed reared under more intensive management systems with adequate housing, nutrition and health control [9]. Similarly, the native breeds of poultry are hardy in nature, suitable for scavenging with high meat quality such as Sakini, Ghanti Khuile and Puwakh ulte (Dumse) [9].

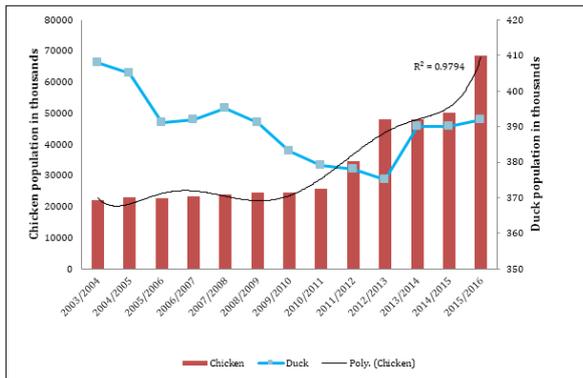


Figure 1: Poultry population (in thousands) in different years (Source: Statistical information on Nepalese Agriculture 2015/16 [12])

3.3 Production

The Figures 2 and 3 is statistics of production of chicken and duck meat along with their egg production. The chicken meat production has increased from 15881 tonnes in 2003/04 to 5504 tonnes in 2015/16 but the duck meat production was almost constant during the period with very slight changes over year.

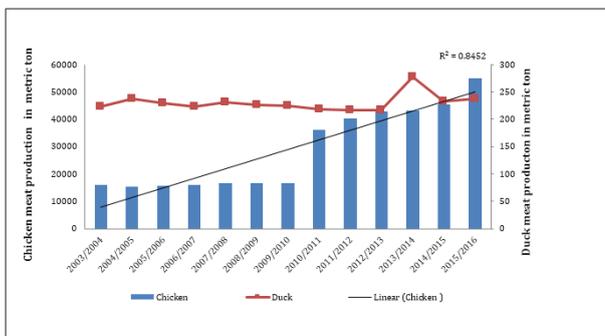


Figure 2: Meat production in different years (Source: Statistical information on Nepalese Agriculture 2015/16, [12]).

Except in 2008/09, there is also increase in egg production from about 560 million in 2003/2004 to 1294 million in 2015/2016 which is clearly seen in fig no 3.

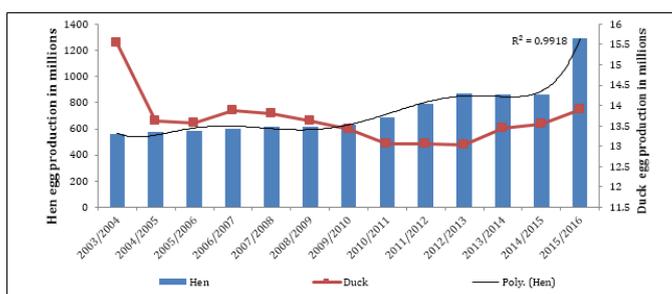


Figure 3: Egg production in different years (Source: Statistical information on Nepalese Agriculture 2015/16, [12]).

Similarly, the numbers of laying hens consistently increased from 6.68 million in 2003/04 to 12.35 million in 2015/16 whereas the population of duck layer has been decreased from 0.21 million in 2003/04 to 0.18 million in 2015/16.

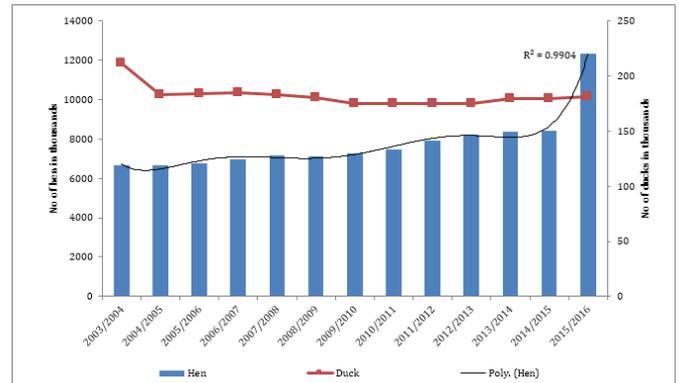


Figure 4: Egg production in different years (Source: Statistical information on Nepalese Agriculture 2015/16, [12]).

Figure 5 shows the contribution from buffalo, mutton, pork and chicken meat represented in 2000/01 around 64 percent, 21 percent, 8 percent and 7 percent, respectively. These proportions remained similar until 2005/06. However, poultry meat production has increased significantly from about 7-8% to 15 % in 2010/2011. This shows the demand of the poultry is increasing widely at the present context.

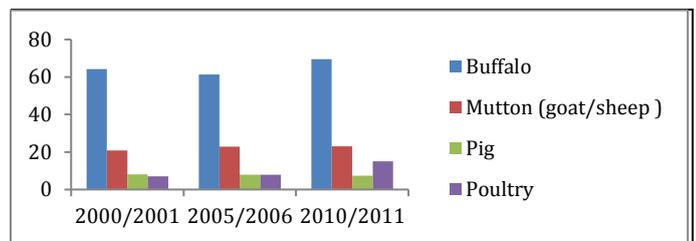


Figure 5: Percentage of share of different animals in meat production. (Source: Statistical information on Nepalese Agriculture 2010/11, [13]).

Fig 6 has clearly showed the distribution of chickens and ducks in different geographical region. The population of chickens is higher in hilly region, followed in terai and mountain region whereas the population of ducks is higher in terai region about 72% , followed in hilly region and lowest in mountain region. Due to unfavorable climate and geographical complexity, the population of poultry is less in mountain region.

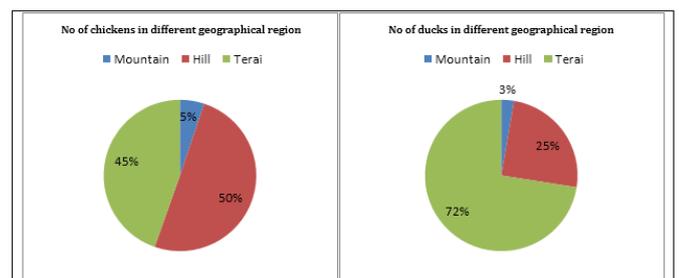


Figure 6: Distribution of poultry by physiographic region. (Source: Statistical information on Nepalese Agriculture 2010/11, [13]).

Poultry is considered as the prime source of protein as it has been providing protein content to lots of household members and also helps in boosting the food security of the nation [14,15,16,17]. Poultry are dual purpose breed which help to increase financial turnover. Poultry farming acts as an employment opportunity to the women and rural people of the country and help to increase the GDP of the country [18]. At present the number of outgoing people has significantly increased and to stop this scenario of brain drain from our country poultry farming can be best alternative for Nepal. Poultry manure is another important aspect of poultry as it contain all 13 essential plant nutrient among which N₂, P₂O₅ and k₂O content is 1-1.8%, 1.4-1.6%, 0.8-0.9% respectively [19]. Furthermore, poultry soft feathers can be important source for making sleeping bag, winter jacket, blanket, pillow etc. Nowadays, they are used in experimental trial for research and other studies. This clearly shows the

importance and increasing demand of poultry production. The demand of poultry meat and eggs is increasing at the annual rate of 25% and 10% respectively in urban areas but the annual growth rate of poultry birds is only 2.38% [20]. This clearly shows huge scope of poultry with increasing demand in the sector.

3.4 Challenges

The poultry business is being challenging day by day. Some of the key points regarding this are explained below:

3.4.1 Increasing cost of production

The cost of feed ingredients are in the scenario of increasing day by day which has increased the per unit cost of production of poultry, which is the major challenges for the poor Nepalese farmers. In more than 75 percent of total cost of production, the high cost of feed and treatment has its share since production of raw ingredients especially the maize sustains only 40-50% of demand for feed production [18].

3.4.2 Irregular supply of qualified chicks at competitive price in the context of Nepalese market

As chicks are the key components for poultry enterprise and the overall production is totally dependent upon the quality of chicks bought. As in the context of Nepal, there is no any such appropriate legal standard for the quality assurance of chicks, which is being hot issue in this sector.

3.4.3 Lack of proper knowledge about poultry production

As poultry is an enterprise requiring intensive care and management for its success. But still we are lagging behind in terms of perfect knowledge for successful poultry production.

3.4.4 Improper maintenance of housing

Scientific housing is the basic requirement for getting profit in rearing any animals. In terms of poultry production, Nepalese are still following the conventional housing. Most of the poultry based farmers are from rural areas where still people follow conventional system of poultry production [2].

3.4.5 Lack of maintenance of bio-security throughout the production

Bio-security is the issue should be kept in mind during any enterprise adoption. Issues like bacteria, virus, theft, etc. have also been troublesome in the context of poultry farming in Nepal. Poor bio-security, inefficient disease diagnosis, treatment as well as prevention are other major problems for poultry raising farmers. About 95% of small-scale poultry entrepreneurs do not have any formal training on farm management [20].

3.4.6 Poor association of poultry farmers across the value or supply chain

For any enterprise to be success, there should be strong association among the different related sectors. Poor association among these sectors have created problem in value and supply chain with is itself a major problem.

3.4.7 Price fluctuation in poultry's meat

Instability in price meat among different times of year has also resulted in hindrance for the success of poultry enterprise in Nepal. Several ups and down in the unit price of poultry has been a challenging problem.

3.4.8 Lack of enforcement of rules, regulations and guidelines

Rules, regulations and guidelines for poultry farming has not been made. The already made rules and regulations are also not being formulated properly.

3.4.9 Lack of grandparent stock farm in Nepal

There is the lack of grandparent stock farms in Nepal which hinders the chicken production thus increasing the cost of chickens. Similarly, grandparents stock farm and hatchery farms are not still flourished in our country [6]. Limited hatchery has also aided in the increase in price of chicks.

3.4.10 Religious and cultural restrictions

Due to the religious and cultural factors, poultry enterprise is not being able to flourish in every community. As the poultry enterprise is still banned in some of the Brahmins communities.

3.4.11 Outbreak of different diseases

Different new diseases are outbreak every year as like Bird Flu, Influenza, H1N1, etc. But among them Bird Flu is the major disease resulting in heavy loss every year. Infectious Bursal Disease (IBD) is one of the major disease problems in Nepal followed by New Castle disease, coccidiosis and pullorum amongst the major infectious diseases.

3.4.12 Inability to maintain the temperature inside the housing

Temperature is a key factor need to be maintained during housing. Proper temperature management is much needed for the success of poultry. Due to improper management of temperature many chickens are dead due to low temperature (in winter) and high temperature (in summer)

3.4.13 Issues on health status due to heavy use of antibiotics

There is heavy use of antibiotics in poultry farming for obtaining fast growth. The antibiotics have created some sort of side effects in human health resulting in health hazards. About 50% of antibiotics are prescribed inappropriately [21]. About 71% of veterinary drugs sale are sold by self-prescription rather than qualified registered veterinarian [22].

3.4.14 Lack of slaughterhouse and processing plant

Slaughterhouse and processing plant are not evenly distributed in all parts of the country. Proper management of available slaughterhouse is also an issue.

3.4.15 Lack of quality feed ingredients

Quality feed ingredients are still lacking. We are not having quality and balanced feed from reliable source containing the standard for quality assurance. Most of the feed are imported from India, low in quality.

3.4.16 Possibility of immediate disease transmission threatening public health

Due to open borders, a large quantity of chickens is being imported from neighboring countries like India and China. Due to the lack of good quarantine control, several zoonotic diseases are also imported in our country.

3.5 Prospects

Nepal is in a way to become a poultry hub and currently Nepal has been able to produce sufficient product but unable to meet all demand of country. Commercial sectors are involving in this sector. Poultry has become a major occupation of most of the people in Nepal. It has largely assisted the GDP of Nepal. People are being aware of their health and most of them have stop to consume meat containing high cholesterol level like goat, buffalo, pig etc. and are heading towards poultry. Being a cheaper source of Protein and nutrient as well as healthy, people are preferring white meat rather than red. It has been emerging as a leading sector in Nepal and has provided job to many youths. Competition has been increased in this sector that has make benefit to consumer but the price of cost of production is not able to reduce. Endorsement of rules and regulation regarding quality of products in market, butcher house etc. will ensure hygienic and healthy product. This will create to avoid price discrimination while selecting quality products.

It has become utmost important to supervise regarding quality, vaccination, feed ingredient, and related product. Technical training and assistant given to farmer must be increased to and ensure bio-security. The unofficial entry of poultry and related product has become threat to poultry industry and will continue in future. The threat of Bird Flu and possible outbreak of other disease will challenge to this industry. The government and related agencies have made some remarkable effort to decreased possible outbreaks in future. Poultry feed industries has able to produced required feed ingredient needed for country. Some unofficial news regarding the export of feed to India and chicks to Bhutan is coming. If it is true, then it would be a great achievement in Poultry sector. We can conclude that, if authority concerned to this sector can minimize the price and diseases regarding poultry as well as ensure healthy product, there will substantial increased in the demand. There is no doubt that poultry sector will be the backbone of national economy in near future.

4. CONCLUSION AND RECOMMENDATIONS

Poultry industry is a growing business in these recent years. The demand of its egg, meat, and chicken is increasing at the increasing rate but the production has not been able to surpass the requirement. There are various hindrances in trade, marketing, health, quality sanitation,

management causing the production inefficient. Such challenges are threatening day by day, causing the poultry business at risk. If certain management strategies like policies, programs and awareness campaign, better quarantine check and quality control, extension of private and public industries and various poultry regarding accessories can be done at time, no doubt poultry business will cover more than today's coverage of TGDP.

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