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Poultry Farming: A promising tool for up-lifting Socioeconomic Standards of Indian Farmers

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ABSTRACT

In current Indian farming scenario characterized by small land-holding and highly volatile weather, poultry farming may serve as a new frontier for upliftment of rural livelihood. Poultry farming which has been an age-old practice of rearing 5-10 birds (mostly (chicken/duck) in the backyard have been explored for its commercial scale farming. Many government-sponsored schemes have been implemented to encourage farmers for poultry farming at a large commercial scale. For small-scale farmers with little land-holdings, rearing poultry provides regular cash-flow, early return as the birds grow fast, serving as an insulation factor when the traditional crop cultivation fails due to volatile weather. Poultry farming needs very less initial capital input, the birds being small, can easily be handled by women. Therefore, it also helps in encouraging gender-equity by making women financial independent and uplifting their status both in family and society. Furthermore, it combats against malnutrition by providing cheaper and high-class animal protein (eggs and meat). Poultry egg and meat are bestowed with high quality macro and micro-nutrients. Poultry farming can promote natural farming by use of poultry wastes in the farming land. This not-only saves big but also boosts soil health. However, poultry sector faces several challenges like man-poultry competition for grains, high rise in feed costs, changing climate, several diseases like avian influenza outbreaks, poultry farming is still helpful in raising farmers income. However, continued support from research organizations for developing technologies for sustainable poultry farming, capacity building of poultry keepers on scientific poultry farming, door-step supply of high-quality germplasm would be helpful. Poultry farmers need consistent support from government through helpful schemes, implementation of policies, facilitating market-network for selling of eggs and meat which are perishable in nature.

Key words: Poultry, Chicken, Egg, Meat, Upliftment, Farmer

INTRODUCTION

Decades ago, the agrarian economy of India was while dependant on crop farming especially the staple crops like rice and wheat. Success was measured in terms of yield of rice and wheat which was highly dependent on the monsoon at every stage starting from sowing to flowering to harvesting. A single bad -weather event can cause 100% loss of labor and money involved in the production cycle leading to debt and severe finance crisis for the farmers. In this context farmers have recognised the potential of poultry birds to change their fate as a relatively lesser weather dependant enterprise unlike the crop. The poultry sector in India, traditionally has been under the backyard system where rural farmers rear 5-10 birds in their backyard under free-range. This low-input system provides supplementary income to the farmers and have been a source of cheaper animal protein (through eggs and meat) in the rural areas. However, only few decades ago, the potential of commercial poultry enterprise has been explored in India. Small-scale and large- scale commercial poultry farming is now serving as a key engine for socio-economic uprising in both urban and rural India. These small birds have been serving as living bank for millions of rural smallholders/landless poultry farmers. Poultry enterprise provide high liquidity, protects farmers from the seasonal instability of traditional crop cultivation. Besides, poultry sector has been a tool for women empowerment by making women financial independence, helps in addressing protein-energy malnutrition, promoting natural farming through organic waste integration to crop farming. Poultry especially ducks can easily be integrated to rice – duck integrated farming, Rice-duck-fish integrated farming to generate maximum profit and boosting the resilience of the farming system as a climate-smart-agricultural practice. Thereby, as India aims to uplift the socio-economic conditions of farmers and strengthen the food security, the role of poultry industry is very crucial and can serve as a viable blue-print for multi-folding farmers' income.

Some unique advantages of poultry products (egg and meat) over grains:

Eggs are economical and easily obtainable source of macronutrients like protein, energy and micro-nutrients like vitamin A, riboflavin, vitamin B_{12}, zinc and iron (Drewnowski 2010). Eggs are also bestowed with adequate quantity of selenium, folate, vitamin K and vitamin D (Applegate 2000). Eggs comprise all the essential nutrients required for the developing embryo also to fulfil human nutritional needs (Vizard 2000). Lutein and zeaxanthin are also found in adequate quantity in eggs that can substantially reduce the risk of night blindness and cataract Egg yolks are rich in essential fatty acids and fat-soluble vitamins (Kumar et al., 2019). Besides egg, poultry meat is also enriched in protein, vitamins and minerals like selenium, zinc, iron, vitamins and omega-3 fatty acids. Additionally, backyard poultry have adequate minerals and vitamins owing to the varied diet these birds obtain by foraging. Indigenous chicken plays crucial role in fulfilling protein needs in developing countries (Mapiye et al. 2008).

Many sources of plant proteins habitually encompass compounds like oxalates and phytates that hinder iron and zinc absorption. However, poultry products lack these anti-nutritional factors. Furthermore, poultry products have "heme" iron and minerals that are efficiently absorbed than plant sources, thereby, right away fighting against the high occurrence of anemia especially in Indian village communities.

SWOT Analysis of Indian Poultry Enterprise:

SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis poultry enterprise in India voices a top potential often affected by volatility w.r.t health, climate and prices.

Strengths

- Gigantic Domestic Market: With the rising population along with a budding middle class with good purchasing power, the demand for reasonable priced high-class animal protein like egg and poultry meat is at high.
- The "Contract Farming" model**:** It has sunk the entry barrier for small-holder farmers by giving them poultry birds, feed, and in-time technical backing.
- Relatively Low Cost of Production**:** Due to availability of cheap labor in India as compared to other parts of the globe, cost of production is comparatively lower.
- Quick return: Contrasting to cows and buffaloes or traditional crop farming, poultry offers quick return from the investment (42 days for broilers), safeguarding a fast cash flow for rural families.

Weaknesses

- Inadequate Infrastructure: A substantial part of the Indian poultry markets still depends on live birds or wet markets. The shortage of a strong cold-chain (transport and storage) restricts the shelf life of the products and range of distribution of products.
- Feed Sensitivity: Feed cost shares approximately 65-70% of total production costs. Thus, any hike in the cost of key poultry feed ingredients like maize, wheat or soybean meal right away tears the profits.
- Inadequate Biosecurity measures in Backyard Poultry: Small-holder backyard poultry farms habitually lack hygiene standards compare to the commercial counterparts, so more vulnerable to disease.

Opportunities

- Production of Value-Added Products: There is a enormous, unexploited market call for "ready-to-cook" and "ready-to-eat" chicken/poultry products, especially in cities.
- Exploring the Export Potential: If India can line up its biosecurity measures to global standard, meeting the international norms, there is a substantial prospect to export eggs and meat to Southeast Asia and the Middle East.
- Digital Integration: precision poultry farming can help in reducing feed and water, improve feed efficiency, bird health etc.
- Exploring potential of indigenous Breeds: Rising consumers' fondness for organic and free-range desi poultry lets farmers to gain a top price for these birds.

Threats

- Disease Outbreaks- Avian Influenza (Bird Flu) outbreaks can result in mass culling, immediate market fears leading to hefty monetary losses.
- Climate Shift: Escalating environmental temperatures causes heat stress in poultry birds, causing high death rates and fall in egg production.
- Social Sensitivities: seasonal drops in consumption of egg and meat especially during certain festivals create loud depressions in returns.

Indian poultry Industry -way forward

Indian poultry sector needs to focus on upgrading infrastructures and adopting modern technologies, value addition to raw products by processing, and risk mitigation to transform from being a living bank for rural communities to an international powerhouse.

Adopting Modern Technologies: can diminish human error and expand efficiency. Investing in cold-chain infrastructures like refrigerated transport and storage can improve the shelf life of poultry products, thereby letting farmers to sell their products at urban markets and export markets without compromising the quality.

Exploring the market -potential for value-added products: In urban cities there is a high demand for ready-to-eat and ready-to cook poultry products like marinated meat, egg powders, etc. These value-added products fetch higher profit compared to the raw products.

Economizing feed cost by use of unconventional feed resources: To reduce the man-poultry -grain competitions, and to reduce the feed cost, the alternate un-conventional poultry feed resources like broken rice, (Naik et al., 2024), cassava roots (Naik et al., 2025) earth-worm meal (swain et al., 2025) and azolla, moringa meals can be included.

Strengthening Biosecurity and Health: It is always advisable to follow proactive preventive measures rather than reactive measures to control once the disease is out breaks. The preventive measures include in-time vaccination and de-worming programs, judicious use of antibiotics for getting antibiotic -free poultry products to meet the global export standards.

Convert poultry manure to Biogas/Organic Fertilizer: to promote natural farming. Integration of poultry to different crop farming system to derive maximum profit from the limited land-labor and finance resources employed. Poultry especially duck suits best for rice-duck, rice-duck-fish integrated farming that encourages resilience of the farming system.

CONCLUSION

Indian poultry industry has shifted from a small-scale backyard unit into a machinery for socio-economic progress and food security. High cash-flow and early returns on investments, makes it a living bank for rural farmers, efficiently safeguarding them against the unpredictable risks linked to traditional rain-dependent crops. Beyond the economic advantages, poultry products are power house of vital macro and micro-nutrients especially the heme iron, letting them an essential device in the national fight against undernourishment and anemia. Indian poultry sector faces several challenges like high feed costs and inadequate cold-chain infrastructure, climate shift and rising

temperature. The industry's strengths lie in contract farming, huge domestic market. Embracing climate-smart practices, exploring potentials of desi breeds for their hardiness, adopting integrated rice-duck farming system to derive maximum profit from resources and the economizing feed-cost through unconventional feed resources, would further augment the resilience and viability. Moreover, concentrating on value-added products and following strict biosecurity measures can facilitate substantial export potential.

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