

Organic Livestock Farming: Scope and Limitations

Saurav Dutta¹, Bhaskar Jyoti Chutia² and Sanghamitra Tamuli³

¹MVSc Scholar, Department of Veterinary & Animal Husbandry Extension Education, CVSc, AAU, Khanapara, Guwahati-22

²MVSc Scholar, Department of Livestock Production and Management, CVSc, AAU, Khanapara, Guwahati-22

³MVSc Scholar, Department of Veterinary & Animal Husbandry Extension Education, CVSc & AH, CAU, Selesih, Aizawl-14

Corresponding Author: saurav.dutta.vmk24@aau.ac.in

Abstract

Organic livestock farming can be considered as an ecologically sustainable and economically inclusive alternative option to traditional animal husbandry practice particularly in developing economies where the smallholder farmers predominate. This article reviews the benefits, scope and the limitations of organic livestock farming in the contexts of today's world. The approach of organic farming aligns very much with the traditional low-input livestock farming systems and also offers a pathway to premium market access, improved welfare of the animals and environmental sustainability. But also this farming system is constrained by productivity challenges, issues with disease management, barriers in certification and underdeveloped market structure. This article also explores pathways to promote organic farming through support and training from the institutional basis, conservation of indigenous breeds and different reforms in the policy making.

Keywords: Organic farming, Animal welfare, Environment sustainability, Traditional livestock practice.

Introduction

Globally livestock plays a pivotal role in the livelihoods of over 1.3 billion people. Farming system contributes to food security, generation of income, cultural identity and gender empowerment (FAO, 2021). Intensive farming, though successful in boosting the production of food, has raised concerns over its long-term sustainability because of the excessive use of synthetic inputs, health risks and environmental degradation. Consumers are getting increasingly aware of the harsh effects of intensive livestock farming system. The visible effects are greenhouse gas emissions, antimicrobial resistance loss of biodiversity etc. So as a solution, organic livestock farming becomes a viable alternative with increasing demand across the globe for organic products driven health consciousness, environmental concerns and animal welfare. Organic livestock farming is a kind of system with a holistic approach of animal production that prioritizes animal welfare, environmental sustainability and food safety. Organic farming combines ecological processes, biodiversity and adapted to local conditions, rather than the use of artificial

inputs. It put together tradition, innovation and science to benefit all involved in the environment and promote fair relationships and good quality of life (IFOAM, 2008). On the other hand, organic livestock farming is a system of livestock production that encourages the use of organic and biodegradable inputs from the ecosystem related to nutrition, health of the animal, housing and breeding. It goes against of the use of synthetic inputs like drugs, feed additives and genetically engineered breeding animals (Chander *et. al* 2011). In organic farming systems, certain values and ideas are forming the framework for the production, governed by some internationally accepted standards such as IFOAM (International Federation of Organic Agriculture movements) and National Organic Programs (USDA). In organic farming systems, certain values and ideas are playing key role in forming the framework for production such as naturalness, harmony in all levels of the production, local circulation of resources, and the principle of precaution. One of the basic principles of organic agriculture is to provide all livestock conditions of life with keeping into consideration for the basic aspects of their innate behavior (Vaarst *et. al* 2005). Organic farming integrates contemporary scientific expertise with the best aspects of traditional knowledge (HDRA, 1998). In 2009, the global sales of certified organic products (food and drinks) reached up to a price of US\$ 54.9 billion (Willer, H. and L. Kilcher, 2012). In recent times, the organic farming is found to be a sustainable option for the developing countries like India, because it constitutes a unique combination of low inputs and technology, environment conservation and input/output efficiency (Augustine *et. al*, 2013). The majority of organic farms have lower operating costs overall than comparable conventional farms. The use of pesticides, fertilizers, and feed concentrates is prohibited on organic farms, which lowers their production costs (Morris *et. al*, 2001). While in developed countries the organic livestock farming is well established, its relevance to the developing countries is growing traction due to the compatibility with traditional farming systems and growing demand for high quality and safe animal products.

Quality control standards

Quality of the organic products is based on certain standards, proper inspection, and certification. Strict rules

are followed during the production and procurement of these organic products, called as 'organic standards. Some of these standards are –

IFOAM (International Federation of Organic Agriculture Movement) basic standards: Started in 1970, this organization now has members more than 750 in over 100 countries, taking the leading position in putting standards for organic agriculture.

National Standards for Organic Production (NSOP): In May, 2001, India has established guidelines for organic farming. The National Program on Organic Production (NPOP) is administered by APEDA, under the Ministry of Commerce to oversee the country's organic production program. It includes production standards, and documentation, inspection and certification guidelines. The government has established the framework for a nation's organic industry, includes the legal status and substance of organic standards, rules governing the use of organic claims and labeling, consumer protection laws, and the accreditation system.

New Standards introduced in NPOP

The NPOP standard, which solely covers criteria for crops and their processing, labeling, storage and transportation, was first announced in 2001 for exports of organic products. The seventh edition of NPOP 2014-15 introduced requirements for organic livestock and products. In India, APEDA oversees the certification of organic products.

Codex Alimentarius guidelines:

Guidelines for the production, processing, labeling and marketing of foods that are produced organically were first developed in 1991 by the Codex Alimentarius Commission, a joint FAO/WHO food standards program.

Scope of organic livestock farming:

Environmental sustainability: Organic livestock farming lowers the chemical runoff, safeguarding the water quality and through natural resource management it fosters biodiversity. It stays away from the inclusion of chemical inputs (P. Corson, 2024). Rotational grazing and composting activities improve the fertility of the soil through application of organic manure. Manure recycling activities lowers the carbon emissions. Organic farming also helps in mitigation of soil erosion and enhance the carbon sequestration (Behera *et. al*, 2024).

Compatibility with traditional systems: In developing countries, most of the farming is done by the smallholder farmers with backyard livestock production systems. These farming communities resemble with organic livestock farming practices due to the use of minimal or no synthetic

inputs. Rearing of indigenous breeds, integration of crop with livestock farming, procurement of ethnos veterinary medicine is widespread practice in organic livestock production (Behera *et. al*, 2024).

Welfare of the animals: In order to meet the guidelines, animals must have access to outdoor pastures and more room for their everyday activities. These approaches can reduce environmental stress while encouraging to demonstrate their natural behaviors. Animal health can be enhanced by prohibiting the use of hormones and antibiotics (Choudhary, K. and Palsaniya, V. K., 2024). Proper animal welfare regulations, which offer support for treating animals humanely ensures ethical slaughtering practice, reduction in stress related diseases, improved productivity. These practices not only meet the consumer expectations but also enhance the productivity.

Healthier food products: Antibiotic and hormone residues are lower in organic meat, dairy products and eggs. These food products also include higher concentrations of beneficial elements like antioxidants and omega-3 fatty acids etc. which are beneficiary to human health (P. Corson, 2024).

Income generation and market access: Milk, meat, and eggs from organic animals fetch high prices in both local and foreign markets, creating new business prospects, particularly for small-scale and rural farmers (Pankaj Kumar, 2022). Organic certification allows the smallholder's farmers to access the supply chains with high values like direct marketing which include farmers markets, online platforms, institutional procurement like schools, hospitals, resorts and other businesses.

Rural development and employment opportunities: Organic livestock production encourages decentralized, labor-intensive practices which can boost the income of the smallholder farmers by generating employment opportunities in rural areas. In addition, also promotes local job opportunities in the production of feed and inputs to the farm, organic certification, processing and the value addition of the products (Pankaj Kumar, 2022).

Limitations and challenges of organic livestock farming

Despite of the great potential holds by organic livestock production, it faces several constraints in many aspects. Some of them are –

Low productivity and yield gaps: since the organic production systems rely on longer natural processes rather than chemical or artificial growth boosters, growth rate and yields of the animals (milk, meat, eggs etc.) may be lower in numbers. This might limit the affordability and accessibility of the products (Behera *et. al*, 2024). The lower production is may be due to limited natural feed and fodder availability

with low quality of the feed, nonuse of growth hormones, disease outbreaks which are harder or impossible to control by using traditional herbal medicine. There is a gap of 20-35% in the yield of organic livestock products compared with the conventional livestock rearing (Seufert *et. al*, 2012). This gap can affect the income of the farmers unless compensated by the premium prices of the products.

Higher production costs: In organic livestock farming, there is requirement of additional laborers, organic certification resulting in higher cost of production as well as higher cost for the consumers. So in the initial years without any large investment, farmers find it difficult to accommodate a large-scale production strategy. Moreover, organic products have a shorter shelf-life as compared to the products of conventional scientific farming.

Animal Health management: In organic farming the major synthetic or chemical medications are prohibited. This complicates the disease condition and prevention or treatment will get difficult. In case of an outbreak, there will be possible risk of compromising the animal welfare. Without the use of drugs, management of pest or diseases in a farm requires great deal of awareness and attention to detail (Ramnjayanelu & V A Chowdappa, 2023). In case of the developing countries, face high burdens of diseases due to poor bio-security measures, limited reach of veterinary infrastructure and endemic diseases. Moreover, natural medicines or local therapies are unavailable in literature and poorly researched.

Certification challenges: Organic certification requires detailed documentation and long record keeping, annual inspections, compliance with restricted inputs along with traceability. Smallholder's farmers with low literacy and digital access find it difficult to understand complex standards (Behera *et. al*, 2024). These things may come as a barrier in the path of many farmers.

Market and supply chain issues: Access to the organic products can be hampered by a lack of availability and also increase in the prices, particularly in the places where conventional agriculture practice is widely performed. The demand of the organic products are low in many countries due to several reasons like limited awareness among the consumers, price fluctuations, lack of trust on the organic labels, poor branding methods and storing capacity (Behera *et. al*, 2024).

Strategies for advancing organic livestock farming

To scale up the organic livestock farming in developing countries, the following measures can be taken into consideration –

Promote indigenous breeds: Compared to the crossbreed or exotic animals, the indigenous breeds have better adaptability to the local conditions, required very less amount of inputs and better disease resistant capacity. Conservation of the breeds and selective breeding programs should be given a priority to get a better resulted progeny for organic farming system.

Strengthen veterinary care and services: To strengthen the veterinary services, government should provide training facilities to the farmers about the integration of fodder crops into their agro-forestry systems. Promotion of the ethno-veterinary medicine and herbal remedies is a good strategy. Veterinary officers should be trained about the organic farming protocols to aware people and encourage the farmer to adopt organic livestock production. Government funding should be there about the research on effective non-antibiotic disease control strategies.

Build domestic market demand: Firstly, people should be aware through campaigns on organic animal products. Labeling as well as traceability systems should be established to build the trust of consumers. Integration of the organic products into school meals and public programs can increase the reach of the products to more and more consumers. The products can also be listed in retail chains and e-commerce platforms.

Research and policy priorities: Focus should be given in research and policy making for organic livestock farming in developing countries. Assessment of GHG emissions should be done during the lifecycle of the animals and focused should be given to reduce that. There should be also capacity building programs for the farmers. The government policies should integrate organic livestock farming to national development plans to support marginal farming communities.

Conclusion

Organic livestock production is a chance to shift animal production systems in poor nations towards sustainability, equity and wellness of the people. It offers several benefits, such as enhanced animal welfare, environmental preservation and market premiums, advantages over the environment and rural potential. There are a number of noteworthy restrictions, such as yield disparities, obstacles to control diseases, long certification process and market vulnerabilities. A multifaceted strategy which includes research, policy, institutional assistance is needed to address issues. The sustained development of organic livestock production as a competitive alternative to conventional systems requires striking balance between its benefits and drawbacks. Organic livestock farming has the potential to become a sustainable agricultural sector and a

viable pillar of rural development through investments in inclusive organic certification methods, indigenous resource usage and capacity building.

References

- Augustine, A. J., Jokthan, G. E., Zarafi, I. C., & Bivan, G. M. (2013). Optimizing opportunities for sustainable development through organic agriculture in Nigeria. *Journal of Agriculture and Veterinary Science*, 4, 7-11.
- Chander, M., Bodapati, S., Mukherjee, R., & Kumar, S. (2011). Organic livestock production: an emerging opportunity with new challenges for producers in tropical countries. *Rev. sci. tech. Off. int. Epiz.*, 30(3), 569-583.
- Choudhary, K., & Palsaniya, V. K. (2024). Embracing Sustainable Practices: The Importance of Organic Livestock Farming.
- Corson, P. (2024). The Benefits of Organic Livestock Farming. *Journal of Fisheries & Livestock Production*, 12(4), 1-2.
- FAO. (2021). *The State of Food and Agriculture 2021*. Rome: Food and Agriculture Organization.
- FiBL & IFOAM. (2023). *The World of Organic Agriculture: Statistics and Emerging Trends 2023*. Research Institute of Organic Agriculture (FiBL), Frick, and IFOAM – Organics International, Bonn.
- HDRA-The Organic Organization, 1998. What is Organic Farming? pp: 1-24. <http://www.hdra.org.uk>
- <https://www.pashudhanpraharee.com/challenges-and-opportunities-in-organic-livestock-farming/>
- <https://www.pashudhanpraharee.com/organic-livestock-farming-in-india/>
- <https://www.pgsindia-ncof.gov.in/>
- IFOAM, 2008. Criticisms and Frequent Misconceptions about Organic Agriculture: The Counter-Arguments. IFOAM (International Federation of Organic Agriculture Movements), www.ifoam.org
- IFOAM. (2022). *Principles of Organic Agriculture*. <https://www.ifoam.bio>.
- Morris, C., Hopkins, A., & Winter, M. (2001). Comparison of the social, economic and environmental effects of organic, ICM and conventional Farming.
- Ramnajayanelu, & V. A. Chowdappa. (2023). *Organic livestock farming benefits, principles, and challenges in India – A review*. International Journal of Commerce and Economics, 5(1), 9-13. Received December 10, 2022; Accepted December 26, 2022; Published January 12, 2023. Online ISSN: 2664-7540; Print ISSN: 2664-7532.
- Seufert, V., Ramankutty, N., & Foley, J. A. (2012). Comparing the yields of organic and conventional agriculture. *Nature*, 485(7397), 229-232.
- UNCTAD (United Nation Conference on Trade and Development), 2013. Make agriculture truly sustainable now for food security in a changing climate. UN.publication. pp: 341. http://unctad.org/en/publicationslibrary/ditcted2012d3_en.pdf
- Vaarst, M., Padel, S., Hovi, M., Younie, D., & Sundrum, A. (2005). Sustaining animal health and food safety in European organic livestock farming. *Livestock Production Science*, 94(1-2), 61-69.
- Wolde, D. T., & Tamir, B. (2016). Organic livestock farming and the scenario in the developing countries: opportunities and challenges. *Global Veterinaria*, 16(4), 399-412.
