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A Review on the Small-scale Native Chicken Production as a Tool for Poverty Alleviation in Rural Communities

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Abstract: Small-scale indigenous chicken production is widely practiced in developing countries and has been recognized as a potential strategy for improving rural livelihoods. This review examined the contribution of indigenous chicken production to rural poverty alleviation through a narrative review of peer-reviewed studies and scholarly publications published between 2016 and 2025. Relevant literature was obtained from Google Scholar and other academic sources and synthesized according to themes related to livelihood development, food security, women's empowerment, sustainability, and production constraints. The reviewed studies consistently indicate that indigenous chicken production contributes to household welfare through multiple pathways. Evidence from Asia and Africa shows that native chicken enterprises provide supplementary income, improve food and nutrition security, strengthen household resilience during economic shocks, and support women's participation in income-generating activities. Indigenous chickens are particularly suitable for resource-poor households because they require relatively low capital investment, utilize locally available feed resources, and are adapted to low-input production systems. Several studies also highlight their contribution to dietary diversity, sustainable rural livelihoods, and the utilization of locally adapted genetic resources.Despite these benefits, disease outbreaks, high mortality rates, inadequate veterinary services, poor management practices, limited technical support, and weak market integration continue to constrain productivity and economic returns. The findings suggest that indigenous chicken production can contribute meaningfully to poverty alleviation when supported by appropriate management, animal health services, institutional assistance, and market development interventions.

Keywords: Native Chicken Production; Indigenous Chicken; Village Chicken; Backyard Poultry Farming; Rural Livelihoods; Food Security; Poverty Alleviation

Introduction

Poverty in rural areas is often portrayed by unstable sources of income, lack of access to productive resources like land, and limited supply of food. In many developing countries, small-scale farming system and animal production is significant in livelihood choices, providing food and income at relatively low levels of financial commitment. In such situations, low-input and resilient livestock systems are particularly critical for resource-

poor households. Among these, indigenous or native chickens have been well recognised for their suitability to rural settings as they use locally available resources while supplying meat and eggs for home consumption (Desta, 2020; Padhi, 2016; Tenza et al., 2024).

In smallholder farming systems, the terms native, indigenous and village chickens are sometimes used interchangeably to refer to locally adapted breeds that thrive under certain agro-ecological circumstances (Padhi, 2016). In this review native chicken refers to chickens reared under scavenging and semi-scavenging production techniques. Indigenous chickens are important asset for rural communities due to minimal input requirement, adaptability and their contribution for livelihood support, nutritional development and social involvement. Empirical studies have proven the various benefits of native chicken production. For instance, Singh et al. (2023) showed that indigenous chicken systems account for food security and economic stability in the Indian Himalayan Region. Similarly, Naldo et al. (2021) defined small-scale native chicken system in Philippine mountain barangays as part of subsistence farming and Loengbudnark et al. (2022) described it as a contributor to rural development in Thailand. These findings suggest that indigenous chicken farming can improve rural livelihoods.

Although indigenous chicken production has been widely studied in relation to food security, household income, production performance, and rural livelihoods, much of the existing literature examines these outcomes separately and within specific geographical contexts. Studies conducted in Asia and Africa have generated valuable evidence regarding the economic, nutritional, and social importance of indigenous chickens; however, the findings remain fragmented across disciplines and production systems. As a result, there is limited understanding of how the multiple functions of indigenous chicken production collectively contribute to rural poverty alleviation. Existing reviews have commonly focused on specific dimensions such as production characteristics, food security, breed improvement, or village poultry development. Comparatively fewer studies have synthesized evidence across livelihood, nutrition, gender, sustainability, and rural development perspectives within a single analytical framework. Furthermore, the interaction between the benefits and constraints of indigenous chicken production remains insufficiently examined, despite its importance for understanding why positive outcomes vary across production environments.

The novelty of this review lies in its integrated examination of indigenous chicken production as a multidimensional poverty-alleviation strategy. Rather than focusing on a single outcome, this review synthesizes evidence on household income generation, food and nutrition security, livelihood resilience, women's empowerment, sustainability, market opportunities, and production constraints. It also incorporates evidence from diverse developing-country contexts across Asia and Africa to identify common patterns, contextual differences, and factors influencing the effectiveness of indigenous chicken production.The contribution of this review is twofold. First, it provides a comprehensive synthesis of the multiple pathways through which indigenous chicken production contributes to rural livelihoods and poverty reduction. Second, it identifies key biological, institutional, technical, and market-related constraints that limit its effectiveness, thereby

providing evidence that can inform future research, rural development programs, and policy interventions.

Taking these considerations into account, the objective of this review is to analyze the role of small-scale native chicken production in alleviating rural poverty. Specifically, the review synthesizes existing literature on its contributions to household income, food and nutrition security, women's empowerment, and sustainable rural farming, as well as the constraints that limit its effectiveness as a poverty-alleviation strategy.

Research Methodology

This study employed a narrative literature review approach to synthesize existing evidence on small-scale indigenous or native chicken production and its contribution to rural poverty alleviation. The review aimed to examine the economic, nutritional, social, and livelihood impacts of indigenous chicken production in developing-country contexts while identifying the constraints and enabling factors that influence its effectiveness as a poverty-reduction strategy.

Relevant literature was retrieved from Google Scholar, peer-reviewed journal databases, institutional repositories, and other credible open-access academic sources. Literature searches were conducted using combinations of the following keywords: indigenous chicken production, native chicken farming, village chicken livelihood, rural poverty, food security, women's empowerment, smallholder poultry systems, backyard poultry, and sustainable rural development. The review focused primarily on studies published between 2016 and 2025 to ensure the inclusion of both foundational and recent developments in the field.

Studies were selected based on their relevance to indigenous or native chicken production and its socioeconomic, nutritional, environmental, or livelihood implications. Both empirical and review articles were included if they addressed themes related to poverty alleviation, household income generation, food security, women's participation, sustainability, market development, or production constraints. Studies unrelated to indigenous chicken production or lacking direct relevance to rural livelihoods and poverty reduction were excluded. Priority was given to peer-reviewed journal publications, although selected scholarly reviews and credible academic publications were also considered when they contributed important contextual or conceptual insights.

The selected literature represented diverse geographical contexts, including South Asia, Southeast Asia, and Sub-Saharan Africa, where indigenous chicken production remains an important component of rural livelihood systems. Following article selection, the literature was organized and synthesized using thematic analysis. Major themes identified included: (1) economic contribution and livelihood development, (2) household resilience, (3) food security and nutrition, (4) women's empowerment and social inclusion, (5) adaptation and sustainability in resource-poor environments, (6) constraints affecting productivity and poverty-reduction outcomes, and (7) policy and development implications. Findings from individual studies were compared and synthesized within these thematic categories to identify recurring patterns, areas of agreement, contextual

differences, and emerging research gaps regarding the role of indigenous chicken production in sustainable rural development.

Result and Discussion

Economic contribution

The reviewed literature consistently demonstrates that small-scale indigenous chicken production generates measurable, if supplementary, economic benefits for rural households across diverse developing-country contexts. A defining characteristic distinguishing indigenous chicken production from other agricultural enterprises is the extremely low capital threshold required for entry. Unlike commercial poultry systems that demand specialized infrastructure, purchased feed, and biosecurity inputs, native chicken production can be initiated and maintained within the household compound using locally available resources. Padhi (2016) described this accessibility as central to the economic role of indigenous breeds in village communities, while Desta (2020) identified the activity as an effective instrument for poverty reduction precisely because its low-input structure places it within reach of the most resource-constrained households.

Across Asia and Africa, empirical evidence supports the economic contribution of indigenous chicken enterprises. In the Indian Himalayan Region, Singh et al. (2023) documented positive contributions to household income and food intake across multiple agro-ecological zones. In the Philippines, Naldo et al. (2021) described native chicken production as a component of integrated crop-livestock systems that sustain smallholder livelihoods in mountain barangays. Indonesian studies present a convergent picture: Asnawi et al. (2020) documented native chickens functioning as a form of household savings, while Wantasen et al. (2024) confirmed positive annual financial returns in Minahasa, and Prabowo et al. (2023) demonstrated income contributions in Batang Regency without requiring specialized technical knowledge. In Bangladesh, Islam et al. (2025) reported positive benefit-cost ratios across all six administrative divisions surveyed among 260 producers, reinforcing the cross-regional generalizability of these findings.

Evidence from Bangladesh further strengthens this pattern. Bhattacharyya and Chowdhury (2018) reported that commercially oriented native chicken production generated regular income opportunities for indigenous households while simultaneously enhancing the economic participation of rural women. When considered alongside findings from India, Indonesia, and the Philippines, the evidence suggests that indigenous chicken enterprises function not merely as subsistence activities but as livelihood assets capable of generating measurable economic benefits under diverse rural production systems. The consistency of these findings across geographically distinct contexts strengthens confidence in the economic relevance of indigenous chicken production as a poverty-reduction strategy for resource-constrained households.

Table 1. Previous Research

Author(s) & Year	Country / Region	Study Type	Key Economic Finding
Padhi (2016)	India	Review	Indigenous breeds are economically affordable; integral to village-level rural economies.
Desta (2020)	Sub-Saharan Africa	Review	Native chicken production identified as an effective instrument for poverty reduction and income diversification.
Asnawi et al. (2020)	Indonesia	Survey	Native chickens function as household savings; sold when financial need arises.
Naldo et al. (2021)	Philippines	Field study	Integrated crop-livestock systems incorporating native chickens support smallholder livelihood sustainability.
Mujyambere et al. (2022)	East Africa	Review	Indigenous chickens contribute to household income and food security within scavenging-based systems.
Prabowo et al. (2023)	Indonesia	Case study	Non-breed native chicken farming measurably increases family income with minimal technical input.
Singh et al. (2023)	India (Himalayan Region)	Survey	Indigenous chicken systems positively contribute to household income and food intake across multiple agro-ecological zones.
Wantasen et al. (2024)	Indonesia	Profit analysis	Native chicken enterprises yield positive annual returns, confirming viability as an income-earning activity.
Islam et al. (2025)	Bangladesh	Survey (n=260)	Positive benefit-cost ratios reported across all six administrative divisions studied.

A critical observation emerging from the reviewed literature is the remarkable consistency of economic outcomes despite substantial variation in production systems, geographical settings, and methodological approaches. Studies conducted in South Asia (Singh et al., 2023; Islam et al., 2025), Southeast Asia (Naldo et al., 2021; Wantasen et al., 2024; Prabowo et al., 2023), and Africa (Adoligbe et al., 2020; Tenza et al., 2024) consistently report that indigenous chicken production contributes positively to household economies through supplementary income generation, livelihood diversification, and asset accumulation. The convergence of findings across diverse production environments strengthens confidence in the economic relevance of indigenous chicken enterprises for rural households. At the same time, the reviewed studies rarely identify indigenous chicken production as a primary source of household income. This recurring pattern suggests that the principal economic value of indigenous chickens lies not in production scale or commercial specialization but in their accessibility, low investment requirements, and ability to complement existing livelihood activities. Structural constraints, including limited market access, disease-related losses, and restricted technical support, further constrain opportunities for expansion and commercialization. Consequently, indigenous chicken production appears to function most effectively as a livelihood-support strategy that enhances household economic resilience rather than as a standalone pathway out of poverty.

Household Resilience

Beyond income generation, indigenous chickens function as a liquid livelihood asset that provides a critical safety net for households facing economic shocks. This resilience dimension is distinct from routine income contribution: native chickens can be rapidly liquidated during financial crises, food shortfalls, or emergency household needs, providing an informal financial buffer that is particularly valuable in rural communities where formal banking and credit services are largely inaccessible. Adoligbe et al. (2020) documented this triple function in Benin, where indigenous chickens simultaneously contribute to household nutrition, income, and financial security. Asnawi et al. (2020) further confirmed that Indonesian smallholders deliberately maintain native chicken flocks as a form of savings, selling birds when cash is needed for consumption or agricultural labor. The strategic asset-holding behavior described in both studies reflects a deliberate livelihood strategy rather than passive subsistence, and underscores the importance of evaluating indigenous chicken production within a household portfolio framework rather than as a standalone enterprise.

Rural Development

Indigenous chicken production contributes to broader rural development through its integration within local farming systems, support for household livelihoods, and compatibility with sustainable agricultural practices. Evidence from Thailand indicates that management improvements aligned with local ecological conditions strengthen both household welfare and sustainable production outcomes (Loengbudnark et al., 2022). Similar observations have been reported in the Philippines, where native chickens form part of integrated crop–livestock systems that support the livelihood strategies of smallholder farming households (Naldo et al., 2021), and in Sub-Saharan Africa, where indigenous chicken production contributes simultaneously to food security, rural livelihoods, and community development objectives (Desta, 2020; Tenza et al., 2024). Collectively, these studies suggest that the development contribution of indigenous chicken production is maximized not through the adoption of standardized high-input production models but through management approaches that are adapted to local socioeconomic, environmental, and institutional conditions. This pattern has important implications for rural development programs, indicating that interventions are more likely to succeed when they build upon existing farming systems and locally available resources rather than attempting to replace them with externally derived production models.

Food Security and Nutrition

The food security and nutritional contributions of indigenous chicken production represent a dimension of poverty alleviation that income-focused analyses frequently underestimate. Multiple studies confirm that native chickens provide reliable supplies of meat and eggs to economically disadvantaged communities where affordable animal-source foods are otherwise scarce (Tenza et al., 2024; Desta, 2020; Henuk, 2018). This nutritional function is significant not only in absolute terms but also in comparative terms: in some rural contexts, the nutritional value of indigenous chicken production exceeds its

income contribution as a poverty-reduction mechanism. Dwesini and Nomnga (2025) documented this pattern in South Africa's Eastern Cape Province, where indigenous chicken farming contributed substantially to household food security while generating comparatively modest cash income. This finding challenges a common implicit assumption in development programming—that income generation is the primary pathway through which livestock ownership reduces poverty—and suggests that nutritional contributions warrant independent policy attention.

The evidence on dietary impacts extends beyond protein provision. Mseleku et al. (2023) found that larger village chicken flocks in South Africa were associated with greater dietary diversity and increased consumption of livestock-derived foods, with implications for child nutritional outcomes along the rural–urban gradient. Singh et al. (2023) documented a positive association between flock ownership and egg consumption at the household level in the Indian Himalayan Region, representing one of the few studies to establish a direct empirical link between production and household dietary intake rather than inferring it. Bharathy et al. (2024) further confirmed dual nutritional and income benefits in Tamil Nadu through a women-led livelihood program.

Collectively, evidence from South Asia and Sub-Saharan Africa indicates that indigenous chickens contribute to food security through multiple pathways, including the direct provision of animal-source foods, improved dietary diversity, and enhanced household access to nutrient-rich products (Mujyambere et al., 2022; Mseleku et al., 2023; Singh et al., 2023). These findings position indigenous chickens not merely as protein sources but as integral components of household food systems that support dietary quality and nutritional resilience across resource-constrained environments. The reviewed evidence further suggests that evaluating indigenous chicken production solely through income-based indicators may underestimate its broader welfare contribution, particularly in communities where nutritional insecurity remains a more immediate concern than cash income constraints.

Women's Empowerment and Social Inclusion

Indigenous chicken production occupies a distinctive position within rural livelihood systems because it provides opportunities for productive engagement that are compatible with the spatial and temporal constraints faced by many women in agricultural communities. Desta (2020) and Bharathy et al. (2024) both identified the household-compound location of indigenous chicken production as a structural feature that enables women to participate in income-generating activities while simultaneously fulfilling domestic responsibilities. This structural advantage is evident across diverse geographical and cultural settings. In East Africa, Mujyambere et al. (2022) reported that indigenous chickens are predominantly managed by women within scavenging-based production systems, providing both household-level income and food provisioning. Similarly, Moussa et al. (2019) found that women constitute a substantial proportion of local poultry producers in Niger and actively participate in both production and marketing activities. The consistency of these observations across Sub-Saharan Africa, South Asia, and West Africa

suggests that the gender dimension of indigenous chicken production is not merely context-specific but reflects a broader structural alignment between the characteristics of indigenous chicken systems and the productive roles women occupy in many rural economies.

Comparable evidence from Bangladesh indicates that native chicken enterprises provide women with opportunities to participate in household income generation and small-scale commercial activities, particularly among marginalized rural communities (Bhattacharyya & Chowdhury, 2018). The recurrence of this pattern across South Asia and Sub-Saharan Africa suggests that the gender dimension of indigenous chicken production is not context-specific but reflects the accessibility of poultry enterprises to women operating within resource-constrained rural environments.

The household welfare implications of women's participation extend beyond individual income gains. Evidence reviewed in the context of indigenous chicken production suggests that women's involvement in poultry management is frequently associated with improvements in household nutrition, food allocation, and livelihood outcomes, particularly when women retain decision-making authority over production and income use (Bharathy et al., 2024; Tenza et al., 2024). Bharathy et al. (2024) documented these outcomes in Tamil Nadu, where women participating in native chicken livelihood programs reported improvements in both income and nutritional status. Likewise, Tenza et al. (2024) observed that village poultry systems characterized by shared management responsibilities between women and men contributed to poverty reduction and household welfare improvement in resource-constrained communities. These findings indicate that indigenous chicken production can generate benefits that extend beyond direct economic returns by strengthening household well-being and supporting social inclusion.

A critical analytical observation emerging from the reviewed literature is that the extent of women's empowerment varies considerably across production contexts and is strongly influenced by the institutional support environment. Studies implemented within structured development programs generally report stronger empowerment outcomes than descriptive assessments of traditional production systems. For example, Bharathy et al. (2024) documented substantial livelihood and welfare improvements among women participating in organized support initiatives, whereas observational studies primarily describe women's participation without demonstrating comparable gains in decision-making authority or economic control. This variation suggests that indigenous chicken production creates conditions that are conducive to women's empowerment but does not automatically generate empowerment outcomes. Rather, institutional support, access to training, extension services, and market opportunities appear to be important mediating factors that determine whether participation in indigenous chicken production translates into meaningful social and economic advancement.

Taken together, the reviewed evidence indicates that indigenous chicken production should be viewed not merely as a livelihood activity for women but as a platform through which broader social and economic development objectives may be pursued when supported by appropriate institutional and policy frameworks. Table 2 summarizes the womens empowerment evidence by regional context and institutional dimension.

Table 2. The womens empowerment evidence by regional context and institutional dimension

Author(s) & Year	Region	Empowerment Dimension	Institutional Support	Outcome Reported
Desta (2020)	Sub-Saharan Africa	Economic self-sufficiency	General program support	Improved women's economic autonomy and growth.
Bharathy et al. (2024)	India (Tamil Nadu)	Income generation; nutrition	Zero-cost livelihood program for women	Improved income and nutritional status in women from economically weaker sections.
Tenza et al. (2024)	Sub-Saharan Africa	Shared management; poverty reduction	Community-based village poultry systems	Shared poultry management between women and men contributes to household poverty reduction.
Mujyambere et al. (2022)	East Africa	Primary flock management	Scavenging-based production system	Women as primary managers provide household food and income provisioning.
Moussa et al. (2019)	Niger	Production and marketing participation	Local poultry production networks	Women constitute a significant share of local producers and actively engage in marketing.

Adaptation, Sustainability, and Suitability for Resource-Poor Communities

The adaptive capacity of indigenous chicken breeds constitutes a biological foundation for the sustainability of low-input production systems in resource-constrained environments. Unlike commercial breeds that have been selectively developed for high-input production settings, indigenous chickens have undergone generations of adaptation under village conditions characterized by nutritional variability, climatic stress, disease exposure, and limited management inputs. Haunshi and Rajkumar (2020) documented that Indian indigenous breeds exhibit tolerance to harsh environmental conditions and resistance to several bacterial and parasitic diseases under low-input management systems. Similarly, Mogano et al. (2024) identified genomic signatures associated with environmental adaptation in South African village chickens, providing molecular-level evidence of ecological fitness across diverse production environments. The reviewed studies collectively indicate that the sustainability of indigenous chicken production is rooted not only in management practices but also in the biological characteristics of the birds themselves. This genetic resilience enables indigenous chickens to maintain productivity under conditions where commercial breeds often require substantial external inputs.

The compatibility of indigenous chicken production with integrated crop-livestock systems further strengthens its sustainability profile. Naldo et al. (2021) documented the integration of native chickens within mixed farming systems in Philippine mountain barangays, where birds convert locally available resources, including household waste, crop

residues, and scavenged feed materials, into meat and eggs without dependence on specialized infrastructure or purchased feed. Similar observations have been reported in Thailand, where production systems aligned with local ecological and socioeconomic conditions generated more sustainable development outcomes than externally imposed production models (Loengbudnark et al., 2022). Tenza et al. (2024) further emphasized that village chicken systems contribute to the achievement of Sustainable Development Goals by supporting environmentally appropriate and economically viable livestock production in resource-constrained communities. Taken together, the evidence suggests that the sustainability of indigenous chicken systems derives from their capacity to utilize locally available resources while remaining compatible with existing rural livelihood strategies.

The reviewed studies also reveal an important trade-off between adaptation and productivity. The same characteristics that enable indigenous chickens to survive under low-input conditions, including disease tolerance, environmental adaptability, and modest nutritional requirements, are often associated with slower growth rates, lower egg production, and smaller body size compared with commercial poultry breeds. This trade-off creates an inherent limitation on production performance under traditional management conditions. However, the available evidence suggests that replacing indigenous breeds with highly productive commercial lines may not represent a sustainable solution for smallholder households because it substitutes biological resilience with production potential that depends on inputs beyond the reach of many resource-poor farmers. Sustainable improvement strategies should therefore focus on enhancing productivity through improved management practices, health interventions, and selective breeding while preserving the adaptive traits that underpin the long-term viability of indigenous chicken production systems.

From a rural development perspective, the sustainability of indigenous chicken production extends beyond environmental adaptation to include livelihood sustainability. The capacity of indigenous chickens to survive, reproduce, and generate economic and nutritional benefits under low-input conditions reduces production risks for smallholder households and strengthens the resilience of rural livelihood systems. This combination of biological adaptability, resource-use efficiency, and livelihood relevance explains why indigenous chicken production continues to serve as a viable component of poverty-alleviation strategies across diverse developing-country contexts.

Constraints Limiting Poverty-Alleviation Impact

Despite the consistently documented livelihood benefits of indigenous chicken production, the reviewed literature identifies a range of structural, biological, and institutional constraints that limit its effectiveness as a poverty-alleviation strategy. These constraints are not isolated production challenges but reflect broader deficiencies in rural support systems, infrastructure, and service delivery. Across Asia and Africa, the evidence consistently indicates that productivity limitations arise from the interaction of animal health challenges, weak management practices, inadequate technical support, and restricted market opportunities.

Disease-related mortality emerges as the most pervasive constraint across all production environments reviewed. Indigenous chickens are predominantly raised under free-range and scavenging systems that expose birds to pathogens while providing limited biosecurity protection. Studies from India, East Africa, Niger, and South Africa consistently identify infectious diseases, parasitic infestations, and predation as major causes of flock losses and reduced productivity (Singh et al., 2023; Mujyambere et al., 2022; Moussa et al., 2019; Dwesini & Nomnga, 2025). Similar observations were reported in women-led livelihood programs in India, where disease-related mortality substantially reduced the economic benefits expected from poultry interventions (Bharathy et al., 2024). Broader assessments of backyard poultry systems further demonstrate that weak biosecurity practices facilitate pathogen transmission and increase disease risks within low-input production environments (Gentile et al., 2024). The consistency of these findings across geographically diverse regions indicates that disease management represents the most critical intervention point for improving the productivity and reliability of indigenous chicken enterprises.

The reviewed studies also highlight deficiencies in management practices and institutional support as major constraints to sustainable production. Indigenous chicken systems frequently operate with limited housing, irregular feeding practices, inadequate health management, and minimal record keeping. Padhi (2016) noted that indigenous chicken flocks managed under traditional systems consistently perform below their productive potential. Across multiple regions, limited access to veterinary services, vaccination programs, extension support, and farmer training restricts the adoption of improved management practices and reduces opportunities for productivity enhancement (Loengbudnark et al., 2022; Tenza et al., 2024). These findings suggest that productivity constraints are not solely biological in nature but are strongly influenced by institutional environments that determine farmers' access to knowledge, technology, and support services.

Although several constraints are consistently reported across studies, important regional differences are evident. In Benin, financial limitations and lack of training were identified as major barriers to production improvement (Adoligbe et al., 2020). Indonesian studies emphasize inadequate housing, sanitation, and vaccination systems as primary constraints (Asnawi et al., 2020). In the Philippines, farmers reported capitalization difficulties, marketing challenges, and climatic stresses as significant obstacles to enterprise development (Vergara & Paglomutan Jr., 2020). These differences indicate that indigenous chicken production systems operate within distinct socioeconomic and institutional contexts, resulting in varying constraint profiles across regions. Consequently, development interventions should be designed around locally identified needs rather than relying on standardized approaches. Programs that address context-specific constraints are more likely to achieve sustainable improvements in productivity, profitability, and poverty-reduction outcomes. Table 3 presents a comparative summary of the major constraints documented across key studies and production environments.

Table 3. Comparative Matrix of Constraints Limiting Indigenous Chicken Production Across Regions

Author(s) & Year	Region	Disease / Mortality	Poor Management	Vet / Extension Gap	Market Access Barriers
Padhi (2016)	India	✓	✓	✓	Limited marketing infrastructure for indigenous breeds.
Adoligbe et al. (2020)	Benin	✓	✓	✓	Absent training, insufficient financial support, no market access.
Asnawi et al. (2020)	Indonesia	✓	✓	✓	Inadequate housing, no vaccination programs, weak market linkages.
Moussa et al. (2019)	Niger	✓	✓	✓	Limited feed resources; no organized marketing channels.
Singh et al. (2023)	India	✓	✓	✓	Low commercial participation; subsistence-oriented production.
Tenza et al. (2024)	Sub-Saharan Africa	✓	✓	✓	Weak value chains prevent price realization.
Mujyambere et al. (2022)	East Africa	✓	✓	✓	Newcastle disease losses undermine market surplus.
Vergara & Paglomutan Jr. (2020)	Philippines	✓	✓	–	Capitalization and marketing difficulties; climatic risks.
Gentile et al. (2024)	Multi-region	✓	✓	✓	Biosecurity gaps in backyard systems facilitate pathogen spread.

Market-related constraints represent a distinct category of barriers that limit the poverty-reduction potential of indigenous chicken production. While biological and management constraints primarily affect productivity, market constraints determine the extent to which producers can convert production gains into economic benefits. Across many rural production systems, farmers face inadequate transportation infrastructure, weak market linkages, poorly organized value chains, and limited bargaining power relative to intermediaries. These conditions reduce producers' ability to capture the full economic value of indigenous chicken products despite favorable consumer demand.

Evidence from multiple countries indicates that consumer demand for indigenous chicken products remains strong. In India, Kathiravan and Chitrambigai (2024) documented consumers' willingness to pay premium prices for indigenous chicken meat because of its perceived superior taste, nutritional value, and natural production characteristics. Similar preferences have been reported in Kenya, where consumers favor indigenous chickens for

their perceived health benefits and meat quality attributes (Ndenga et al., 2017). In the Philippines, Sarabi (2024) identified both direct-to-consumer and intermediary marketing channels as potential mechanisms for improving producer returns and expanding market access.

A notable pattern emerging from the reviewed literature is the coexistence of strong market demand and persistently limited producer profitability. This suggests that the primary constraint is not insufficient consumer demand but inefficiencies within market systems that restrict producers' access to higher-value market opportunities. Consequently, improvements in productivity alone may be insufficient to enhance rural incomes if market barriers remain unresolved. Loengbudnark et al. (2022) argued that value-chain development, including producer cooperatives, improved transportation networks, market organization, and local product branding, represents a practical pathway for increasing producer participation in profitable markets. The reviewed evidence therefore indicates that strengthening market systems is as important as improving production practices if indigenous chicken enterprises are to realize their full potential as a poverty-alleviation strategy.

Integrated Synthesis: Native Chickens as a Conditional Poverty-Alleviation Strategy

The reviewed literature collectively indicates that indigenous chicken production should be understood as a conditional rather than automatic poverty-alleviation strategy. The benefits associated with indigenous chicken farming do not arise solely from the production system itself but depend on the presence of supportive biological, institutional, and market conditions. This observation represents one of the most consistent findings across the reviewed studies and provides an important framework for understanding the variable outcomes reported across different regions and production environments.

Evidence from Asia and Africa suggests that three categories of enabling conditions influence the effectiveness of indigenous chicken production. The first comprises biological and managerial factors, including disease control, appropriate housing, feeding practices, and flock health management that reduce mortality and improve productivity while preserving the low-input nature of the system. The second involves institutional support, particularly access to veterinary services, farmer training, extension programs, and technical assistance. The third relates to structural and market conditions, including value-chain development, market access, producer organizations, and infrastructure that enable producers to convert production gains into economic returns. Across the reviewed literature, stronger livelihood outcomes are consistently associated with contexts where these enabling conditions are present, whereas constrained outcomes are more commonly reported where institutional, technical, and market support systems remain weak. This recurring pattern across studies provides compelling evidence that the poverty-reduction potential of indigenous chicken production is strongly mediated by the broader environment in which production occurs.

The literature further demonstrates that the contribution of indigenous chicken production to poverty reduction extends beyond income generation alone. Economic

benefits, food security improvements, nutritional enhancement, livelihood resilience, and women's participation emerge repeatedly across diverse geographical contexts. Studies from India and the Philippines documented contributions to household income and livelihood security (Singh et al., 2023; Naldo et al., 2021), while evidence from South Asia and Africa highlighted improvements in household nutrition, dietary diversity, and food availability (Mseleku et al., 2023; Mujyambere et al., 2022). Other studies emphasized the role of indigenous chicken production in supporting women's economic participation and social inclusion (Bharathy et al., 2024; Tenza et al., 2024). Taken together, these findings indicate that indigenous chicken production operates through multiple pathways that collectively influence household welfare.

A key implication emerging from this synthesis is that evaluation frameworks relying exclusively on income-based indicators may underestimate the overall contribution of indigenous chicken production to rural development. The reviewed evidence suggests that indigenous chickens function simultaneously as livelihood assets, nutritional resources, risk-management tools, and mechanisms for social inclusion. Consequently, comprehensive assessments of indigenous chicken interventions should incorporate economic, nutritional, social, and resilience dimensions to capture their full contribution to poverty alleviation and sustainable rural development.

Theoretical Framework: Livelihood and Poverty Reduction Perspective

The Sustainable Livelihoods Framework (SLF) provides an appropriate theoretical lens for interpreting the multidimensional contributions of indigenous chicken production to poverty alleviation. The framework conceptualizes poverty reduction as a process through which households strengthen and mobilize different forms of capital, including human, social, financial, physical, and natural capital, in order to achieve sustainable livelihood outcomes. This perspective aligns closely with the findings of the present review, which demonstrate that indigenous chicken production generates benefits extending beyond income generation alone.

The reviewed evidence indicates that indigenous chicken production contributes to multiple livelihood assets simultaneously. Financial capital is enhanced through supplementary income generation and livelihood diversification (Islam et al., 2025; Wantasen et al., 2024). Human capital is strengthened through improved dietary quality, increased access to animal-source protein, and enhanced household nutrition (Singh et al., 2023; Bharathy et al., 2024). Social capital is supported through women's participation in productive economic activities, household decision-making, and community-based production networks (Mujyambere et al., 2022; Moussa et al., 2019). Indigenous chicken production also contributes to natural capital through the productive utilization of locally available resources, including scavenged feed materials, crop residues, and household waste that would otherwise remain underutilized (Naldo et al., 2021; Loengbudnark et al., 2022). Although indigenous chicken systems generally require relatively limited physical capital compared with commercial poultry enterprises, the reviewed literature consistently demonstrates that deficiencies in housing, feeding infrastructure, biosecurity facilities, and

production equipment constrain productivity and limit the full realization of livelihood benefits. This observation highlights the interconnected nature of livelihood assets within the SLF, where weaknesses in one capital category can reduce the effectiveness of others.

A central proposition of the Sustainable Livelihoods Framework is that livelihood outcomes are shaped not only by the assets households possess but also by the institutional and vulnerability contexts within which those assets are utilized. The reviewed literature provides strong support for this proposition. Studies conducted in environments characterized by access to veterinary services, extension support, farmer training, market opportunities, and organized development programs generally report stronger economic, nutritional, and social outcomes than studies conducted in contexts where such support mechanisms are absent (Bharathy et al., 2024; Loengbudnark et al., 2022; Tenza et al., 2024). These findings suggest that indigenous chicken production should not be viewed as a self-sustaining poverty-reduction mechanism. Rather, its effectiveness depends on the extent to which supportive institutions enable households to transform available livelihood assets into sustainable welfare gains.

From an SLF perspective, the poverty-alleviation potential of indigenous chicken production arises not from a single pathway but from the cumulative interaction of economic, nutritional, social, and environmental benefits. This interpretation reinforces the conclusion that indigenous chicken production should be evaluated as a multidimensional livelihood strategy whose contribution extends beyond income generation to include household resilience, food security, social inclusion, and sustainable rural development.

Market Dynamics and Economic Potential

Evidence from India, Kenya, and the Philippines consistently indicates that indigenous chicken products command premium market prices because consumers perceive them to possess superior taste, texture, nutritional quality, and cultural value compared with commercial poultry products (Kathiravan & Chitrambigai, 2024; Ndenga et al., 2017; Sarabi, 2024). The consistency of consumer preferences across geographically distinct markets suggests that indigenous chicken products occupy a favorable market position and possess substantial economic potential for rural producers.

A notable finding emerging from the reviewed literature is the coexistence of strong consumer demand and persistently modest producer returns. This pattern indicates that the economic underperformance of indigenous chicken enterprises is not primarily a consequence of weak market demand. Instead, the evidence suggests that institutional and infrastructural barriers constrain producers' ability to access profitable market opportunities. Limited transportation infrastructure, fragmented value chains, inadequate market coordination, and weak bargaining power relative to intermediaries reduce the share of market value captured by smallholder producers. Consequently, a gap often exists between consumers' willingness to pay premium prices and the prices ultimately received by rural farmers.

The reviewed studies collectively indicate that improving market access may represent one of the most effective pathways for increasing the economic contribution of

indigenous chicken production without fundamentally altering the low-input character of existing production systems. Value-chain development initiatives, including producer cooperatives, local branding strategies, direct marketing channels, and improvements in transportation and market infrastructure, have been identified as mechanisms capable of strengthening producer participation in higher-value markets (Loengbudnark et al., 2022; Sarabi, 2024). From a poverty-alleviation perspective, these interventions are particularly significant because they focus on increasing returns from existing production activities rather than requiring resource-poor households to adopt costly production technologies. The evidence therefore suggests that strengthening market systems may generate substantial livelihood gains while preserving the accessibility and sustainability that characterize indigenous chicken production systems.

Technological and Management Interventions

The reviewed literature consistently indicates that productivity improvements in indigenous chicken production are achievable without abandoning the low-input characteristics that make these systems accessible to resource-poor households. Across diverse production environments, successful interventions are characterized not by technological complexity but by their compatibility with existing livelihood systems and local resource conditions. Evidence from India and Thailand demonstrates that improvements in management practices, flock health, and production efficiency can be achieved through context-specific interventions that build upon rather than replace traditional production systems (Singh et al., 2023; Loengbudnark et al., 2022).

A recurring theme across the reviewed studies is the importance of appropriate technology. Unlike commercial poultry systems that depend on substantial capital investment and continuous external inputs, indigenous chicken production benefits most from interventions that are technically simple, economically accessible, and locally adaptable. Improved housing structures, basic vaccination programs, strategic supplementary feeding during periods of nutritional stress, and selective breeding within indigenous populations have repeatedly been identified as practical approaches for improving productivity and reducing mortality while maintaining the resilience of traditional systems. These interventions address key production constraints without fundamentally altering the low-cost production model upon which smallholder participation depends.

The reviewed evidence further suggests that the effectiveness of technological interventions is strongly influenced by their alignment with local socioeconomic conditions. Technologies that exceed the financial, managerial, or institutional capacities of rural households are unlikely to achieve sustainable adoption, regardless of their technical effectiveness. This observation highlights an important distinction between productivity enhancement and production intensification. While productivity enhancement seeks to improve performance within existing livelihood systems, production intensification often requires input levels that are incompatible with the realities of resource-constrained households. Consequently, interventions based on adaptive management, farmer training,

preventive health care, and incremental technological improvements appear more sustainable than approaches modeled on commercial poultry production.

From a poverty-alleviation perspective, the primary objective of technological intervention should not be the transformation of indigenous chicken systems into commercial enterprises but the gradual improvement of productivity, survivability, and profitability while preserving accessibility. The reviewed studies therefore suggest that the most effective development strategies are those that balance productivity gains with the maintenance of the adaptive, low-input characteristics that underpin the long-term sustainability of indigenous chicken production systems.

Policy Implications for Rural Development

The reviewed literature consistently indicates that the poverty-alleviation potential of indigenous chicken production depends not only on household-level production practices but also on the broader institutional environment within which production occurs. Across diverse geographical contexts, the most successful indigenous chicken systems are those supported by complementary investments in training, animal health services, market development, and gender-inclusive programming. Consequently, the findings of this review support four interconnected policy priorities for governments, development agencies, and rural development practitioners.

First, indigenous chicken production should be formally integrated into rural development, food security, and poverty-reduction strategies. The reviewed evidence demonstrates that indigenous chicken systems contribute simultaneously to income generation, food security, livelihood resilience, and women's economic participation. Despite these multidimensional benefits, indigenous chicken production remains underrepresented in many agricultural development frameworks, where policy attention is often directed toward commercial livestock systems. Recognizing indigenous chicken production as a legitimate livelihood development strategy would facilitate more targeted investments and strengthen its contribution to rural welfare.

Second, strengthening producer capacity should be treated as a foundational component of indigenous chicken development programs. Across the reviewed studies, limited technical knowledge, weak management practices, and restricted access to extension services emerge as recurring constraints to productivity improvement. Evidence from Asia and Africa suggests that interventions focusing on flock management, disease prevention, nutrition, housing, and market participation can enhance production outcomes when delivered through accessible and locally relevant extension approaches. Community-based and decentralized training models are particularly important in reaching resource-constrained producers who may face barriers to participation in centralized programs.

Third, investments in animal health infrastructure should be prioritized because disease-related mortality is the most consistently reported production constraint across regions. Studies conducted in India, East Africa, Niger, the Philippines, and other developing-country contexts repeatedly identify infectious diseases and inadequate veterinary support as major causes of productivity losses (Singh et al., 2023; Mujyambere et

al., 2022; Moussa et al., 2019; Vergara & Paglomutan Jr., 2020). The cross-regional consistency of these findings suggests that improvements in veterinary service delivery, vaccination coverage, biosecurity awareness, and community-based animal health programs are likely to generate substantial gains in productivity and household welfare. In practical terms, animal health support should be regarded not as a supplementary intervention but as a prerequisite for sustainable indigenous chicken development.

Fourth, indigenous chicken development programs should adopt explicitly gender-responsive approaches. The reviewed literature consistently demonstrates that women are primary participants in indigenous chicken production systems across Africa and Asia (Mujyambere et al., 2022; Moussa et al., 2019; Bharathy et al., 2024). However, participation alone does not guarantee empowerment outcomes. Studies indicate that stronger social and economic benefits occur when women have meaningful access to training, productive resources, market opportunities, and decision-making authority. Gender-responsive program design should therefore address structural barriers affecting women's participation while ensuring that women retain control over the benefits generated through indigenous chicken enterprises.

Taken together, these policy priorities reflect a broader conclusion emerging from the reviewed literature: indigenous chicken production is most effective as a poverty-alleviation strategy when embedded within supportive institutional systems. Programs that combine technical assistance, animal health services, market development, and gender-inclusive approaches are more likely to generate sustainable improvements in rural livelihoods than interventions that focus exclusively on production enhancement. This finding reinforces the central argument of the review that indigenous chicken production should be understood not as an isolated agricultural activity but as part of a broader rural development strategy.

Research Gaps and Future Directions

The reviewed literature demonstrates the growing recognition of indigenous chicken production as a livelihood strategy for rural development. Nevertheless, several important knowledge gaps continue to constrain a comprehensive understanding of its poverty-alleviation potential.

First, robust longitudinal evidence remains limited. Most studies employ cross-sectional surveys, descriptive analyses, or short-term project evaluations, which provide valuable snapshots of production systems but offer limited insight into the long-term effects of indigenous chicken farming on household welfare. Consequently, current evidence remains insufficient to determine whether observed improvements in income, food security, and livelihood resilience are sustained over time. Longitudinal and panel-based studies would provide stronger evidence regarding the durability of poverty-reduction outcomes across multiple production cycles.

Second, methodological inconsistency across studies limits comparative analysis. Existing research varies substantially in research design, sampling approaches, poverty indicators, and outcome measurements. As a result, direct comparison of findings across countries and production systems remains difficult. Future studies would benefit from the

adoption of standardized indicators for income generation, dietary contribution, women's empowerment, livelihood resilience, and poverty reduction to facilitate stronger cross-regional comparisons and future meta-analyses.

Third, market and value-chain research remains underrepresented relative to production-focused studies. While the reviewed literature consistently identifies market access as a major determinant of economic performance, relatively few studies examine the effectiveness of producer cooperatives, contract marketing arrangements, product branding strategies, digital marketing platforms, or alternative distribution channels. Additional research is needed to identify market models capable of increasing producer profitability while preserving the accessibility of indigenous chicken production for smallholder households.

Fourth, the implications of climate change for indigenous chicken production remain insufficiently explored. Indigenous chickens are widely recognized for their adaptability to harsh environments, yet limited empirical evidence exists regarding their resilience under increasing climatic variability, changing disease dynamics, and extreme weather events. Future research should investigate breed-specific adaptive traits, climate-related production risks, and management strategies that enhance resilience under changing environmental conditions.

Fifth, important geographical gaps remain evident within the existing literature. Although indigenous chicken production has been extensively studied in parts of Africa and South Asia, evidence from Southeast Asia remains comparatively limited, particularly within the Philippine context. Given the widespread practice of native chicken production in rural Philippine communities and its potential contribution to poverty reduction, food security, and livelihood diversification, additional empirical studies are needed to generate context-specific evidence capable of informing local development policies and programs.

Finally, the reviewed literature remains largely fragmented across disciplinary boundaries. Agricultural studies frequently emphasize productivity and management, economic studies focus on profitability and income generation, while nutrition and social studies examine food security and gender dimensions separately. This fragmentation limits understanding of how these outcomes interact within rural livelihood systems. Future research should adopt interdisciplinary frameworks that integrate agricultural, economic, nutritional, social, and environmental perspectives to provide a more comprehensive assessment of the contribution of indigenous chicken production to sustainable rural development chicken farming to sustainable rural development.

Conclusion

The reviewed literature demonstrates that small-scale indigenous chicken production contributes meaningfully to rural livelihoods through multiple pathways, including income generation, food security, dietary improvement, household resilience, and women's economic participation. Evidence drawn from Asia and Africa consistently indicates that indigenous chickens remain valuable livelihood assets because they combine biological adaptability with low-input production requirements, making them accessible to

resource-constrained households that often have limited opportunities to engage in more capital-intensive agricultural enterprises.

The review further reveals that the contribution of indigenous chicken production to poverty alleviation is shaped by a complex interaction of biological, institutional, and market factors. Although indigenous chicken systems possess inherent advantages associated with adaptability and low production costs, their effectiveness is frequently constrained by disease-related mortality, inadequate management practices, weak veterinary and extension services, limited access to productive resources, and poorly developed market systems. These constraints reduce productivity and restrict the ability of rural households to fully capture the economic and social benefits associated with indigenous chicken production.

A central finding emerging from the synthesis is that indigenous chicken production should be understood as a conditional livelihood strategy whose poverty-reduction outcomes depend on the presence of supportive institutional and market environments. Consequently, sustainable improvements in welfare outcomes require coordinated investments in animal health services, farmer training, market development, and gender-responsive rural development programs. Such investments enhance the capacity of rural households to translate available livelihood assets into tangible and sustained benefits.

Taken together, the reviewed evidence indicates that indigenous chicken production extends beyond its traditional role as a subsistence activity. When supported by appropriate policies, institutional services, and market opportunities, it functions as a multifunctional livelihood strategy capable of contributing simultaneously to economic development, nutritional security, social inclusion, and rural resilience. Its accessibility, adaptability, and compatibility with smallholder production systems position it as a practical and contextually relevant component of sustainable rural development initiatives in developing countries.

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