

Livestock Sector's Economic Significance and Livelihood Support in Afghanistan: A Focus on Small Ruminants

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ABSTRACT

Afghanistan predominantly an agrarian nation with a significant rural population, relies heavily on livestock for various purposes. Despite its pivotal role in the country's economy and the sustenance of rural communities, the livestock sector, particularly small ruminants like sheep and goats, often lacks the attention it deserves. This review seeks to evaluate the economic importance of small ruminants and address the challenges faced by livestock farmers, including insufficient pastures, imbalanced nutrition, and limited access to clean water. The analysis encompasses the contribution of small ruminants to the national economy, their impact on rural livelihoods, and the impediments encountered by small-scale farmers. Additionally, the study delves into the intricacies of production systems, market dynamics, and value chains associated with small ruminants, highlighting their role in income generation, employment, and food security. Exploring socio-cultural dimensions, the paper acknowledges the significance of small ruminants in traditional practices and social norms. However, it also underscores challenges in animal health, breeding, feeding, marketing, and infrastructure that hinder the sector's growth. The review underscores the necessity for targeted interventions, including improved veterinary services, enhanced extension support, better market linkages, and policy reforms, to fortify the small ruminant sector. By offering recommendations, the paper aims to guide policymakers, researchers, and practitioners toward fostering sustainable development and inclusive expansion of the small ruminant sector, ultimately uplifting the livelihoods of Afghanistan's small-scale livestock farmers.

Keywords: Small Ruminants, Livestock Sector, Economic Significance, Livelihood Support

INTRODUCTION

The livestock sector stands as a crucial cornerstone of Afghanistan's economy, offering vital support to a significant proportion of its populace (Khaliq & Boz, 2018). With historical significance, the sector has been a key contributor to the daily diet and income of over 80% of the population. Notably, small ruminants, comprising approximately 25 million sheep and goats before the upheaval initiated by the Soviet invasion in 1979, have played a pivotal role in the livestock landscape (Livestock Census, 1969). The subsequent decade of war resulted in the destruction of much of Afghanistan's infrastructure, causing a severe setback to the livestock population due to the disruption of veterinary services in rural areas. By 1988, agricultural surveys conducted by the Swedish Committee for Afghanistan (SCA) indicated a significant decline, with livestock numbers dropping to approximately half of pre-1979 figures (SCA, 1988). This study delves into the economic significance and livelihood support of small ruminants within Afghanistan's livestock sector, particularly sheep and goats.

Insights from livestock censuses and agricultural surveys underscore the substantial presence of small ruminants in Afghanistan, fulfilling the domestic demand for meat, milk, and fiber (Bates, 2012). Market analyses further emphasize the importance of small ruminants in generating income through local transactions and international trade. The market value of small ruminants and their products showcases their potential to contribute significantly to income generation and alleviate poverty, particularly among small-scale farmers. This paper seeks to assess the economic and socio-cultural significance of small ruminants in the daily lives of the Afghan people (Khaliq & Boz, 2018).

Economic Contributions of Small Ruminants

Two distinct livestock production systems, sedentary and nomadic, characterize agricultural practices in Afghanistan. Most farmers employ sedentary techniques, maintaining a combination of sheep, goats, and cattle on small agricultural holdings. In contrast, nomadic farmers, particularly the Kuchis, heavily rely on livestock as their primary source of livelihood, producing a significant share of market-bound meat, skins, cashmere, wool, and dairy products through migratory grazing patterns (MAIL, 2020).

Anticipated to surpass USD 7 billion by 2020-21, Afghanistan's livestock sector holds substantial economic value. Women play a crucial role in this sector, dedicating their farm labor to raising livestock. However, their authority over household resources and decision-making varies. The livestock industry contributes significantly to the income and sustenance of farmers and herders, constituting around 15% of the agricultural GDP. For nomadic communities, predominantly the Kuchis, livestock is the sole source of income, representing 5% of the national population (NSIA, 2020).

According to a report by the Ministry of Agriculture, Irrigation, and Livestock, Afghanistan has an average of 5.2 million cattle, 13.3 million sheep, 7.4 million goats, 0.17 million camels, 0.17 million horses, 1.4 million asses, and 11.9 million chickens. The livestock sector plays a pivotal role in Afghanistan's agricultural economy, with a significant population of livestock, including cattle, sheep, goats, camels, horses, asses, and chickens. This sector provides livelihood, income, and nutrition for approximately 75% of the rural population through the production of meat, milk, and dairy products, which contribute approximately 15% to the agricultural GDP. The livestock sector is of particular importance to the nomadic Kuchi population, and it plays a significant role in empowering women through livestock rearing activities. However, the sector faces severe challenges, including conflict, drought, and political instability, which have led to livestock losses and jeopardized the livelihoods of many dependent on this sector. These challenges must be addressed in order to bolster Afghanistan's agricultural economy and ensure food security (Khaliq & Boz, 2018).

A comprehensive evaluation of the economic contributions of ovine breeding in Afghanistan is essential to grasp its significance in the national economy and rural livelihoods. (Rahimi *et al.*, 2016) conducted a study focusing on the economic analysis of sheep production across four provinces in Afghanistan. The research meticulously examined the profitability and economic indicators of sheep farming, encompassing income, costs, and returns. The findings underscored the considerable potential of sheep farming for income generation and poverty reduction.

In a separate study, (Noori *et al.*, 2018) delved into the economic efficiency of sheep production systems in Herat province, Afghanistan. The research compared traditional extensive systems with semi-intensive systems,

revealing that the semi-intensive approach demonstrated greater economic efficiency, resulting in higher income and productivity.

The livestock sector in Afghanistan has historically held significant economic importance, supplying essential components for daily nutrition and serving as a primary income source for over 80% of the population (Bartels *et al.*, 2017). The majority of Afghanistan's populace resides in rural areas, facing severe poverty and deprivation. As agriculture plays a pivotal role in the economy and the livelihoods of rural households, it becomes a key driver of growth and development (Diao *et al.*, 2007).

Before the onset of the war in 1979, sheep and goats constituted the most crucial animal group, numbering approximately 25 million heads (Bartels *et al.*, 2017). Livestock rearing, particularly sheep and goat husbandry in rain-fed regions such as the southern parts of Afghanistan, remains a traditional occupation for economically vulnerable segments of society. With around 68% of the population economically impoverished, programs focused on small ruminant development directly benefit this segment. The adaptability of sheep and goats to diverse agricultural climatic conditions and their relatively smaller body size make them well-suited for impoverished communities. In Afghanistan, communal pastures, agricultural by-products, and forested areas commonly serve as the rearing grounds for sheep and goats, with family labor being a typical component of animal grazing practices. While the economic returns from sheep farming may be comparatively lower than other livestock sectors, sheep and goats play a crucial role as insurance for rural communities (Deshpande & Joshi, 1999).

Globally, small ruminant production is of significant socioeconomic and environmental importance. These animals are traditionally raised in grazing systems, with more fertile lands dedicated to feeding cows and sheep. In contrast, goats are often found in less fertile lands, mountainous regions, and arid or semi-arid zones. This distribution is a key factor in sheep and goats' global prevalence and breed diversity. Small ruminants have been present in the Mediterranean Basin for centuries. However, the demand for their milk and meat increased notably in the latter half of the 19th century. The evolution of production methods, including mechanization and genetic breed improvement, allowed intensified production to meet growing food demand at a reasonable cost. These changes were initially implemented in developed countries but have since proliferated worldwide in recent decades. In the 1990s, experienced a gradual increase in industrial sheep and goat production systems (Bai *et al.*, 2018).

In Afghanistan, prolonged foreign occupations and wars have impeded the progress in animal husbandry. The livestock population, which stood at 25 million in 1979, has dwindled to 3.6 million (ASA, 1992). Approximately 8.8 million sheep, representing various native breeds like Karakul, Arabi, Turki, Ghiljai, Baluchi, Kandahari, Gadik, and Hazaragie, are reported by (Rashiq, 2004) and (Musavi *et al.*, 2013). These breeds have adapted well to the diverse agricultural climatic conditions in their respective regions. Unfortunately, comprehensive documented information about the characteristics of most of these breeds is lacking.

The repercussions of war and occupation have significantly impeded the acquisition of reliable research and information concerning the presence, characteristics, and production values of sheep and goat breeds adapted to diverse climatic regions in Afghanistan.

In the United States, the market value of goat meat is influenced by seasonal fluctuations in the availability of live goats. The price per kilogram of goats reaches its peak in late winter and early spring (Farris, 2003). These price fluctuations frequently coincide with religious and ethnic holidays (FAO, 2009), while the lowest

prices are observed during the summer months, when demand is minimal and supply is abundant (Rushton, 2009). The conflict in Afghanistan has resulted in significant data gaps, and the available data are often of uncertain quality, marked by noteworthy contradictions. The conflict-ridden period witnessed a scarcity of field-based studies on crucial agricultural issues. Additionally, many agricultural activities either failed or faced disruptions during the conflicts, resulting in few successful models that can be scaled up (Khaliq & Boz, 2018).

Conservation breeding raises a crucial concern regarding the establishment of a market for traditional and regional products linked to local sheep and goat breeds (Kawęcka, 2014 & Kawęcka, 2020). In Afghanistan, products derived from native breeds hold significant value. Mountain sheep and goats, which align with centuries-old shepherding traditions, are the only dairy and meat-producing breeds in Afghanistan. These breeds produce traditional items, such as cheese, yogurt, curd, wool, mohair, hides, and meat. They are valued by consumers both within Afghanistan and internationally (Kawęcka, 2014 & Kawęcka, 2020). The current importance of native breeds lies in their role in the development of their respective regions. These breeds serve as a testament to the traditions and material culture of local communities by fulfilling essential natural, landscape, social, and cultural functions. Conservation programs for farm animal genetic resources have been implemented in numerous countries to safeguard native breeds for future generations.

Livestock production plays a crucial role in Afghanistan's agricultural economy. In the 1970s, Afghanistan exported about one million sheep to neighboring countries, mainly Iran and other livestock species (FAO, 2009). Producers face significant economic challenges due to livestock diseases. Diseases that reduce production, productivity, and profitability are linked to treatment costs, disruptions in local and international markets, and exacerbate challenges in rural, local, and regional communities. Livestock diseases can result in direct losses, such as deaths, stunting, reduced fertility, and changes in herd structure. Additionally, they can lead to indirect losses, including increased costs for drugs and vaccines, higher labor expenses, and reduced profits due to limited access to better markets and the use of suboptimal production technology (FAO, 2009).

The livestock sector in Afghanistan confronts a multitude of challenges and impediments impeding its progress and advancement. Nonetheless, potential solutions exist to mitigate these issues and enhance the sector. Here are some recommendations for tackling the problems.

Infrastructure Development: The devastation of infrastructure during years of conflict has severely affected the livestock sector. It is imperative to reconstruct and enhance infrastructure, encompassing veterinary clinics, animal health centers, slaughterhouses, and cold storage facilities. This revitalization is crucial for delivering improved healthcare services, ensuring food safety, and facilitating market access for livestock products (Graham, 2011).

Veterinary Services: The restoration and fortification of governmental veterinary services are pivotal. Training and support to veterinarians and para-veterinary staff can augment animal health management, disease control, and prevention measures. Collaboration with international organizations and NGOs can further enhance veterinary services in rural areas.

Breed Improvement and Conservation: Researching native sheep and goat breeds, documenting their characteristics, and promoting conservation efforts are vital steps. Programs centered on breeding and selection can enhance local breeds' productivity, adaptability, and genetic diversity. This can be achieved through artificial insemination, breed improvement initiatives, and meticulous maintenance of breeding records (Escareño *et al.*, 2012).

Market Development: Establishing domestic and international markets for livestock and livestock products is indispensable for income generation. This involves facilitating market access, improving transportation and logistics, and ensuring quality standards and export certification (Bates, 2012). Market analysis and research are pivotal for understanding consumer preferences, market demands, and price trends. The market development process has great consequences for the economy, as it enhances the profitability and sustainability of the livestock sector. By enhancing market access and infrastructure, producers can expand their reach to broader domestic and international markets, leading to increased sales and income. Implementing quality standards and certification for exports enhances the competitiveness of livestock products in global markets. Despite its importance, market development may not have been adequately addressed due to limited resources, lack of infrastructure, political instability, and insufficient focus on market-oriented strategies in policy planning. It is imperative to address these issues to fully leverage the livestock sector's economic potential.

Capacity Building and Training: Implementing training and capacity-building programs for livestock farmers on enhanced animal husbandry practices, herd management, disease control, and value-added product development can amplify productivity and income. Forming farmer cooperatives and associations can foster knowledge sharing and collective marketing. Implementing training and capacity-building programs for livestock farmers is paramount for enhancing productivity and revenue through improved practices in animal husbandry, herd management, disease control, and value-added product development. Previous initiatives have included implementing training programs, providing agricultural extension services, and establishing farmer cooperatives to facilitate knowledge exchange and collective marketing. However, these initiatives frequently lack comprehensive and continuous training, fail to reach remote areas, suffer from inadequate infrastructure and resources, and have limited farmer participation and support for value-added product development. Furthermore, robust monitoring and evaluation mechanisms are required to assess the efficacy of these programs and facilitate improvements where necessary. It is imperative to address these shortcomings to fully actualize the potential benefits of capacity building in the livestock sector.

Research and Development: Continuous research and development efforts are necessary to address specific challenges in the livestock sector. This encompasses studying the impact of climate change, identifying resilient and adaptable breeds, improving feeding and nutrition practices, and exploring innovative technologies for disease diagnosis and treatment. It is imperative that the livestock sector engage in continuous research and development in order to address the challenges posed by climate change, the identification of resilient breeds, improved feeding practices, and the development of innovative disease management technologies. Previous research has encompassed investigations into the impacts of climate change, the promotion of breeds with enhanced resilience, enhanced nutritional practices, and the exploration of advanced diagnostic and treatment tools. However, there are deficiencies in comprehensive climate adaptation strategies, the widespread implementation of resilient breeds, access to improved feeding practices, affordable advanced disease management technologies, and adequate funding and collaboration. These gaps must be addressed to enhance the resilience, productivity, and economic contribution of the livestock sector in Afghanistan.

DISCUSSION

The livestock sector plays a pivotal role in sustaining the livelihoods of the rural population in Afghanistan, serving as a crucial source of income and food security. Milk and dairy products, integral to the daily sustenance and revenue generation of numerous Afghan households, contribute significantly to the national economy. Agriculture, encompassing farming, herding, livestock keeping, poultry keeping, and forestry, remains indispensable for the well-being of a substantial proportion of Afghan men and women.

Sheep and goats, characterized by higher reproductive efficiency than beef cattle, exhibit earlier puberty, shorter gestation periods, and increased prolificacy with multiple births. Proficient foragers capable of thriving solely on pasture are considered less vulnerable to climate change than cattle, with goats recognized as one of the most climate-resilient domestic species (Kerr *et al.*, 2022; Hebte *et al.*, 2022). In a country facing escalating drought, climate change, and food shortages, the resilience of goats and sheep to challenging conditions underscores their pivotal role in sustaining the economy and livelihoods of farmers.

The study underscores the critical role of small ruminants in Afghanistan's livestock sector and their substantial contribution to rural livelihoods. The economic significance of small ruminants is evident in their considerable population, market value, and impact on domestic consumption and trade. The sector provides income opportunities for small-scale farmers and contributes to poverty reduction in rural areas.

Beyond economic contributions, small ruminant rearing holds cultural and social importance in Afghan communities. It is a repository of traditional knowledge and practices, fostering social cohesion and resilience. The multifaceted significance of small ruminants is evident in their role in meeting diverse needs, including food, fiber, and social standing.

Despite these positive aspects, challenges persist that impede the full realization of the economic potential of small ruminants and the improvement of livelihoods. Issues such as limited market access, inadequate veterinary services and healthcare, susceptibility to climate change and natural disasters, and a lack of technical knowledge and training need concerted attention. Addressing these challenges necessitates coordinated efforts from government agencies, NGOs, and other stakeholders, focusing on infrastructure development, capacity building, market access, and policy support.

CONCLUSION

The livestock sector, with a particular focus on small ruminants, holds tremendous economic significance in Afghanistan, playing a crucial role in bolstering rural livelihoods. The substantial population, market value, and contribution to domestic and international trade underscore the economic importance of small ruminants to the national economy. Beyond economic contributions, these animals offer social and cultural benefits, serving as a source of food security, social standing, and resilience within rural communities. To unlock the full potential of small ruminants in enhancing livelihoods, it is imperative to address the prevailing challenges. This necessitates comprehensive efforts in key areas such as improving market access, developing infrastructure, enhancing veterinary services, and disseminating knowledge. By effectively tackling these challenges and fostering a supportive environment, Afghanistan can further amplify the economic significance of the livestock sector, particularly small ruminants, thereby fostering sustainable livelihoods for its rural population.

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