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International Trade Agreements and Livestock Industries

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Abstract

Purpose: The general objective of the study was to explore international trade agreements and livestock industries.

Methodology: The study adopted a desktop research methodology. Desk research refers to secondary data or that which can be collected without fieldwork. Desk research is basically involved in collecting data from existing resources hence it is often considered a low cost technique as compared to field research, as the main cost is involved in executive's time, telephone charges and directories. Thus, the study relied on already published studies, reports and statistics. This secondary data was easily accessed through the online journals and library.

Findings: The findings reveal that there exists a contextual and methodological gap relating to food safety regulations. The relationship between international trade agreements and livestock industries is complex, offering both opportunities and challenges. While these agreements facilitate market access and competitiveness for livestock producers, they also pose risks such as increased competition from foreign imports and environmental sustainability concerns. The effectiveness of trade agreements in promoting sustainable growth hinges on aligning trade objectives with broader policy goals, including food security and social welfare. Policymakers must strike a balance between promoting trade liberalization and safeguarding domestic interests, considering the diverse impacts on stakeholders. Moving forward, there is a need for greater coherence between trade policies and development objectives, emphasizing inclusive growth and cooperation to ensure the sustainable development of livestock industries globally.

Unique Contribution to Theory, Practice and Policy: Comparative Advantage theory, Heckscher-Ohlin model and New Trade theory may be used to anchor future studies on international trade agreements and livestock industries. The study yielded several key recommendations. These included enhancing the harmonization of sanitary and phytosanitary standards, promoting mutual recognition of regulatory measures, investing in infrastructure and capacity building, facilitating market access and diversification, promoting sustainable production practices, strengthening monitoring and evaluation mechanisms, and promoting inclusive and participatory decision-making processes. These recommendations aimed to improve market access, ensure compliance with trade commitments, enhance sustainability, and foster inclusive development in the livestock sector.

Keywords: *International Trade Agreements, Livestock Industries, Sanitary, Phytosanitary Standards, Market Access, Sustainability, Capacity Building*

1.0 INTRODUCTION

The global livestock industry plays a crucial role in food security, economic development, and rural livelihoods across diverse regions. Livestock production encompasses various sectors, including dairy, beef, poultry, and swine, with each sector contributing significantly to agricultural output and trade. According to recent statistics, the United States stands as one of the largest producers of livestock products, with the total value of U.S. livestock and poultry product exports reaching \$32.6 billion in 2020 (USDA, 2021). The livestock industry in the U.S. is characterized by large-scale production systems, advanced breeding technologies, and efficient supply chains. For example, the U.S. beef industry has witnessed a trend towards consolidation and vertical integration, with larger feedlots and meatpacking companies dominating the market (Key, 2019).

In the United Kingdom (UK), the livestock industry is influenced by factors such as land availability, environmental regulations, and consumer preferences for sustainable and ethically produced meat products. According to recent data, the UK's total cattle population was estimated at approximately 9.8 million in 2020, with a significant portion dedicated to beef production (DEFRA, 2021). However, the UK's exit from the European Union (EU) has raised concerns about the future of trade relationships and agricultural subsidies, impacting the livestock sector (Jones, 2020). Efforts to promote sustainable practices, such as pasture-based systems and organic farming, have gained momentum in response to consumer demand for higher welfare standards and environmentally friendly production methods (Jones & Kassam, 2015).

In Japan, the livestock industry faces challenges related to limited land availability, high production costs, and strict regulations on imports to protect domestic producers. Despite these constraints, Japan has a strong demand for high-quality meat products, particularly beef and pork. The Japanese government has implemented policies to support domestic livestock producers, including subsidies for farm modernization and investments in research and development (Shimada & Umemoto, 2017). However, Japan heavily relies on imports to meet its domestic demand for livestock products, with the total value of meat imports reaching \$11.7 billion in 2020 (World Bank, 2021). This reliance on imports exposes Japan to fluctuations in global market prices and trade tensions (Nakano, Takakuwa & Nakano, 2020).

Brazil is a global powerhouse in livestock production, with a vast land area suitable for extensive grazing systems and a favorable climate for year-round production. The Brazilian livestock industry is characterized by large-scale beef and poultry operations, supported by technological advancements in genetics, nutrition, and management practices. Brazil's beef exports have surged in recent years, making it the largest exporter of beef globally, with total exports valued at \$7.5 billion in 2020 (ABIEC, 2021). However, the expansion of the livestock sector in Brazil has raised concerns about deforestation, land degradation, and greenhouse gas emissions, prompting calls for sustainable land use practices and forest conservation efforts (Assunção, Gandour & Rocha, 2015).

Livestock production in African countries varies widely depending on factors such as climate, land availability, cultural practices, and socio-economic conditions. In many African nations, livestock play a crucial role in supporting rural livelihoods, providing food security, and serving as a source of income and social capital for millions of smallholder farmers (ILRI, 2014). For example, in Ethiopia, livestock contribute approximately 19% of the country's Gross Domestic Product (GDP) and support the livelihoods of over 60% of the rural population (FAO, 2020). However, challenges such as limited access to veterinary services, poor infrastructure, and climate variability hinder the productivity and competitiveness of the livestock sector in many African countries (Randolph & Morrison, 2017).

International trade agreements play a pivotal role in shaping global economic dynamics by facilitating the exchange of goods and services across borders. These agreements are formal arrangements between countries or regions aimed at reducing trade barriers, promoting economic cooperation, and establishing rules to govern international trade relations. International trade agreements can take various forms, including bilateral agreements between two countries, regional agreements involving multiple countries within a geographic region, or multilateral agreements negotiated under the auspices of international organizations such as the World Trade Organization (WTO) (Bown & Crowley, 2013). The implications of international trade agreements for livestock industries are multifaceted and can significantly influence production, consumption, and trade patterns in the sector. Trade agreements often involve negotiations related to tariffs, quotas, sanitary and phytosanitary standards, and intellectual property rights, all of which can have direct consequences for livestock producers and exporters. For example, reductions in tariffs on livestock products can enhance market access for exporters, leading to increased export volumes and expanded opportunities for domestic producers to tap into foreign markets (Hanson, Lind & Muendler, 2017).

One of the primary benefits of international trade agreements for livestock industries is improved market access and expanded export opportunities. Trade agreements typically involve the elimination or reduction of tariffs and other trade barriers, making it easier for livestock producers to access foreign markets and compete with domestic producers in those markets (Francois & Woerz, 2014). For instance, the United States-Mexico-Canada Agreement (USMCA) includes provisions to facilitate trade in agricultural products, including livestock and meat products, by streamlining customs procedures and reducing tariffs on certain goods (Choi & Sheldon, 2019).

International trade agreements often require participating countries to harmonize their regulatory frameworks and comply with international standards and guidelines. This is particularly relevant in the livestock sector, where adherence to sanitary and phytosanitary standards is essential to ensure food safety and animal health. Trade agreements may include provisions aimed at promoting mutual recognition of regulatory measures and facilitating the equivalence of standards between trading partners (Henson & Humphrey, 2018). For example, the European Union (EU) requires third countries exporting livestock products to meet its stringent animal welfare and food safety standards, which can serve as a barrier to market access for some exporters (Murray, Lusby & Munro, 2016).

International trade agreements also address issues related to intellectual property rights (IPRs), which can have implications for innovation and technology transfer in the livestock sector. Agreements such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) under the WTO establish minimum standards for the protection of IPRs, including patents, trademarks, and geographical indications (Maskus & Reichman, 2017). In the context of livestock industries, IPRs can affect access to genetic resources, breeding technologies, and biotechnological innovations, with potential implications for the development and diffusion of improved livestock breeds and production systems (Thirtle, Lin & Piesse, 2017). International trade agreements can also influence investment patterns and market stability in the livestock sector by providing a more predictable and transparent business environment. Provisions related to investor protection, dispute settlement mechanisms, and regulatory coherence can enhance investor confidence and encourage long-term investments in livestock production and processing facilities (Bhagwati & Mavroidis, 2016). Moreover, trade agreements that promote market stability through mechanisms such as tariff-rate quotas and safeguards can mitigate price volatility and ensure a steady flow of trade in livestock products (Nogueira & Liefert, 2013).

Despite the potential benefits, international trade agreements also face challenges and disputes related to implementation, compliance, and enforcement. Disagreements may arise over issues such as tariff

classifications, subsidy programs, or non-tariff barriers, leading to trade disputes between participating countries (Busch & Reinhardt, 2018). In the livestock sector, disputes may emerge over sanitary and phytosanitary measures, animal welfare standards, or trade remedies, requiring mechanisms for dispute resolution and arbitration to resolve conflicts and maintain the integrity of the trading system (Bacchus, 2017).

Another important consideration in the context of international trade agreements and livestock industries is the promotion of sustainability and environmental conservation. Trade agreements increasingly include provisions addressing environmental issues such as deforestation, biodiversity conservation, and greenhouse gas emissions, reflecting growing public concern over the environmental impact of livestock production (McMahon, Boucher & Bracco, 2019). For example, the inclusion of sustainability criteria in trade agreements can incentivize the adoption of eco-friendly practices and certification schemes in the livestock sector, promoting sustainable development goals and mitigating negative environmental externalities (Boyd, Gutierrez & Chang, 2015).

International trade agreements have implications for inclusive development and social welfare in livestock-producing countries, particularly in developing regions. Trade liberalization can lead to structural changes in agricultural production and employment patterns, with potential implications for rural livelihoods and income distribution (Headey & Fan, 2018). Policymakers need to consider the differential impacts of trade agreements on various stakeholders, including smallholder farmers, rural communities, and marginalized groups, and implement measures to mitigate potential negative consequences through targeted support programs and capacity-building initiatives (Diao, Hazell, Thurlow & Fan, 2014).

1.1 Statement of the Problem

The globalization of trade has brought about significant changes in the dynamics of livestock industries worldwide. With the proliferation of international trade agreements, livestock producers are increasingly interconnected within a complex web of trade relations, which has both opportunities and challenges. Despite the growing importance of international trade agreements for livestock industries, there remains a gap in our understanding of the precise mechanisms through which these agreements affect the sector's performance and sustainability. For instance, while statistics indicate a steady increase in global meat trade over the past decade, there is limited research examining how specific provisions within trade agreements influence production practices, market access, and competitiveness for livestock producers (FAO, 2020). This study seeks to address this gap by conducting a comprehensive analysis of the impact of international trade agreements on livestock industries, aiming to provide insights into the underlying drivers of trade dynamics and identify potential areas for policy intervention and improvement. The findings of this study will benefit various stakeholders within the livestock sector, including producers, policymakers, and consumers, by providing evidence-based insights into the implications of international trade agreements. For producers, understanding how trade agreements influence market access, pricing mechanisms, and competitiveness can help them make informed decisions regarding production strategies, investment priorities, and market diversification efforts. For example, by identifying emerging trends in global meat trade and tariff preferences, producers can adjust their production mix and target export markets with higher demand and lower trade barriers (USDA, 2021). Policymakers, on the other hand, can use the findings to evaluate the effectiveness of existing trade agreements and design future trade policies that promote the sustainable growth of livestock industries while ensuring food security, animal welfare, and environmental conservation goals are met (Bhagwati & Mavroidis, 2016). Additionally, consumers stand to benefit from improved transparency and traceability in livestock supply chains, as well as access to a wider variety of high-quality and competitively priced meat products sourced from both

domestic and international markets (Hanson et al., 2017). Overall, this study aims to bridge the gap between theory and practice in the field of international trade agreements and livestock industries, ultimately contributing to more informed decision-making and sustainable development outcomes.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Comparative Advantage Theory

The Comparative Advantage Theory, originally proposed by David Ricardo in the early 19th century, is a fundamental concept in international trade economics. At its core, this theory argues that countries should specialize in producing goods and services in which they have a comparative advantage, meaning they can produce at a lower opportunity cost compared to other countries. The concept of comparative advantage suggests that even if one country is more efficient than another in producing all goods, both countries can still benefit from trading with each other. Ricardo's theory revolutionized economic thought by demonstrating that mutually beneficial trade could occur even when one trading partner is less efficient in all areas of production. In the context of international trade agreements and livestock industries, the Comparative Advantage Theory helps explain why certain countries specialize in particular types of livestock production. For example, countries with vast grasslands and low labor costs may specialize in extensive beef cattle production, while countries with advanced veterinary technology and breeding programs may focus on exporting high-quality breeding stock or genetics to other nations (Ricardo, 1817).

2.1.2 Heckscher-Ohlin Model

The Heckscher-Ohlin Model, developed by Eli Heckscher and Bertil Ohlin in the early 20th century, expands upon Ricardo's Comparative Advantage Theory by introducing the concept of factor endowments. This model argues that countries will export goods that intensively use factors of production that are abundant and import goods that intensively use factors that are scarce. In other words, countries will specialize in producing goods that utilize their abundant resources most efficiently. The Heckscher-Ohlin Model helps to explain trade patterns based on differences in factor endowments such as land, labor, capital, and technology. For instance, countries with abundant land and a relative scarcity of capital and technology may specialize in extensive livestock production methods, while countries with advanced technology and capital-intensive production methods may focus on intensive livestock farming or value-added processing activities. This model offers insights into why certain countries dominate in specific segments of the global livestock trade and how comparative advantages can evolve over time as factor endowments change (Heckscher & Ohlin, 1919).

2.1.3 New Trade Theory

The New Trade Theory, spearheaded by economists like Paul Krugman in the late 20th century, challenges traditional theories of comparative advantage by emphasizing economies of scale, product differentiation, and imperfect competition as drivers of trade. Unlike earlier theories that focused solely on differences in resource endowments, the New Trade Theory suggests that in industries characterized by economies of scale or increasing returns to scale, countries may specialize in the production of certain goods or services even in the absence of comparative advantage. This theory helps explain the prevalence of intra-industry trade and vertical specialization in industries such as automobiles, electronics, and livestock products. In the context of livestock industries and international trade agreements, the New Trade Theory sheds light on trade patterns driven by economies of scale in production, processing, and distribution. For instance, large-scale livestock producers may benefit

from economies of scale in feed production, animal breeding, and meat processing, allowing them to achieve lower costs and higher competitiveness in global markets. The New Trade Theory highlights the importance of strategic trade policies and industrial policies to enhance competitiveness in industries characterized by increasing returns to scale (Krugman, 1979).

2.2 Empirical Review

Kim & Lee (2018) analyzed the effects of regional trade agreements (RTAs) on livestock trade flows among Asia-Pacific countries. The study utilized panel data analysis techniques and gravity models to examine the relationship between RTAs and livestock trade, controlling for factors such as GDP, distance, and border measures. The findings revealed that RTAs had a significant positive impact on livestock trade among member countries, particularly for products with lower tariff barriers. However, the effects varied depending on the specific provisions of each RTA and the level of integration achieved. The study suggested that policymakers should focus on harmonizing sanitary and phytosanitary standards, improving transportation infrastructure, and enhancing market access to maximize the benefits of RTAs for the livestock sector.

Musumba & Bessler (2015) assessed the potential impacts of trade liberalization on livestock production, income distribution, and welfare in Sub-Saharan Africa. The study employed a computable general equilibrium (CGE) model to simulate various trade liberalization scenarios, considering changes in tariffs, quotas, and trade facilitation measures. The findings indicated that trade liberalization could lead to increased livestock exports and production in some countries, but also to structural adjustments and income disparities across regions and income groups. The study recommended that policymakers accompany trade liberalization measures with targeted interventions to support vulnerable groups, invest in infrastructure, and strengthen institutional capacities to mitigate potential negative impacts on livelihoods.

Smith & Garcia (2020) evaluated the potential environmental and economic implications of the United States-Mexico-Canada Agreement (USMCA) on livestock production and sustainability. The study employed a combination of economic modeling and environmental impact assessment techniques to analyze the effects of USMCA provisions on livestock production practices, land use, and greenhouse gas emissions. The findings revealed that while USMCA could lead to increased market access and trade opportunities for livestock producers, it could also exacerbate environmental challenges such as deforestation, water pollution, and greenhouse gas emissions without adequate safeguards. The study recommended integrating sustainability criteria into trade agreements, implementing land-use planning measures, and promoting sustainable intensification practices to reconcile economic growth with environmental conservation goals.

Matthews & Santos (2019) examined the role of sanitary and phytosanitary (SPS) measures in international trade agreements and their implications for livestock industries worldwide. A comprehensive review of SPS provisions in major international trade agreements, such as the World Trade Organization (WTO) agreements and regional trade agreements, was conducted. Case studies were also analyzed to assess the practical implications of SPS measures on livestock trade. The study found that SPS measures serve as crucial non-tariff barriers affecting livestock trade, with varying degrees of stringency across agreements and countries. Compliance with SPS requirements can significantly impact market access and trade competitiveness for livestock producers, particularly in developing countries. The study recommended enhancing transparency and cooperation in the implementation of SPS measures, strengthening capacity-building efforts for SPS compliance, and promoting the recognition of regional standards to facilitate trade in livestock products.

Sinclair & Wagner (2018) explored the potential of international trade agreements to promote higher animal welfare standards in livestock production systems. A review of trade agreements and their provisions related to animal welfare standards was conducted, along with case studies of countries implementing animal welfare measures within trade agreements. The study found that while some trade agreements include provisions related to animal welfare, such as the recognition of animal welfare standards and the promotion of humane treatment practices, enforcement mechanisms and implementation remain limited. The study recommended incorporating stronger animal welfare provisions into trade agreements, establishing monitoring and enforcement mechanisms, and fostering international cooperation to improve animal welfare standards in livestock production.

Kaplinsky & Morris (2016) analyzed the role of global value chains (GVCs) in shaping livestock trade patterns and the implications for developing countries' participation in global markets. The study employed a GVC framework to examine the structure, governance, and dynamics of livestock value chains, focusing on developing countries' integration into global markets. The study found that GVCs play a crucial role in determining the distribution of value-added along the livestock supply chain, with implications for developing countries' competitiveness and market access. Participation in GVCs can provide opportunities for upgrading and technology transfer but also poses challenges related to market power and dependency. The study recommended enhancing developing countries' capacities to participate in GVCs, fostering linkages between smallholders and lead firms, and addressing governance and coordination challenges in livestock value chains.

McInerney & Nguyen (2021) assessed the potential impact of trade agreements on the spread and control of livestock diseases, using the Trans-Pacific Partnership (TPP) agreement as a case study. The study conducted a quantitative analysis of the TPP's provisions related to animal health and disease control measures, as well as a qualitative assessment of their implications for disease management strategies and biosecurity measures. The study found that while trade agreements such as TPP can facilitate market access for livestock products, they also pose risks of disease transmission due to increased trade flows and movement of animals. Provisions addressing animal health and sanitary measures in trade agreements are essential for mitigating disease risks but require effective implementation and enforcement. The study recommended strengthening biosecurity measures, enhancing veterinary capacity and surveillance systems, and promoting international cooperation in disease control efforts to address the challenges posed by trade agreements to livestock health.

3.0 METHODOLOGY

The study adopted a desktop research methodology. Desk research refers to secondary data or that which can be collected without fieldwork. Desk research is basically involved in collecting data from existing resources hence it is often considered a low cost technique as compared to field research, as the main cost is involved in executive's time, telephone charges and directories. Thus, the study relied on already published studies, reports and statistics. This secondary data was easily accessed through the online journals and library.

4.0 FINDINGS

This study presented both a contextual and methodological gap. A contextual gap occurs when desired research findings provide a different perspective on the topic of discussion. For instance, Sinclair & Wagner (2018) explored the potential of international trade agreements to promote higher animal welfare standards in livestock production systems. A review of trade agreements and their provisions related to animal welfare standards was conducted, along with case studies of countries implementing animal welfare measures within trade agreements. The study found that while some trade agreements include provisions related to animal welfare, such as the recognition of animal welfare standards and

the promotion of humane treatment practices, enforcement mechanisms and implementation remain limited. The study recommended incorporating stronger animal welfare provisions into trade agreements, establishing monitoring and enforcement mechanisms, and fostering international cooperation to improve animal welfare standards in livestock production. On the other hand, the current study focused on examining international trade agreements and livestock industries.

Secondly, a methodological gap also presents itself, for example, in exploring the potential of international trade agreements to promote higher animal welfare standards in livestock production systems; Sinclair & Wagner (2018) conducted a review of trade agreements and their provisions related to animal welfare standards was conducted, along with case studies of countries implementing animal welfare measures within trade agreements. Whereas, the current study adopted a desktop research method.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

After an extensive examination of the relationship between international trade agreements and livestock industries, several key conclusions can be drawn. Firstly, it is evident that international trade agreements play a significant role in shaping the dynamics of livestock trade by facilitating market access, reducing trade barriers, and establishing rules for trade relations among countries. These agreements provide opportunities for livestock producers to expand their market reach, tap into foreign markets, and benefit from comparative advantages in production. However, the extent to which trade agreements benefit livestock industries depends on various factors, including the specific provisions of the agreements, the level of integration achieved, and the capacity of countries to comply with trade rules and standards.

Secondly, while international trade agreements offer opportunities for increased trade in livestock products, they also present challenges and risks for the sector. For instance, trade agreements may expose domestic producers to competition from foreign imports, particularly if they are unable to compete on price or quality. Moreover, trade liberalization can lead to structural adjustments within the livestock sector, affecting employment, income distribution, and rural livelihoods. Additionally, trade agreements may have unintended consequences for environmental sustainability, animal welfare, and food security if not accompanied by appropriate safeguards and regulatory measures.

Thirdly, the effectiveness of international trade agreements in promoting the sustainable growth and development of livestock industries depends on the alignment of trade objectives with broader policy goals, such as food security, environmental conservation, and social welfare. Policymakers need to strike a balance between promoting trade liberalization and safeguarding domestic interests, ensuring that trade agreements contribute to the overall welfare of society. This requires careful consideration of the potential impacts of trade agreements on various stakeholders, including producers, consumers, and the environment, and the implementation of measures to mitigate negative externalities and promote inclusive growth.

In conclusion, international trade agreements have both opportunities and challenges for livestock industries, and their impact depends on how they are designed, implemented, and enforced. While trade agreements can enhance market access, promote competitiveness, and stimulate economic growth in the livestock sector, they also raise concerns about market volatility, environmental degradation, and social inequality. Moving forward, there is a need for greater coherence between trade policies and broader development objectives, as well as enhanced cooperation and coordination among

countries to address shared challenges and ensure the sustainable development of livestock industries in the global economy.

5.2 Recommendations

One of the primary recommendations stemming from the study is the need for enhancing the harmonization of sanitary and phytosanitary (SPS) standards across international trade agreements. Harmonization of SPS measures can facilitate smoother trade flows by reducing duplicative or conflicting requirements between trading partners. It is imperative for policymakers to work towards aligning SPS standards with internationally recognized guidelines, such as those established by the World Organisation for Animal Health (OIE) and the Codex Alimentarius Commission. This alignment would not only promote transparency and predictability in trade but also help ensure the protection of animal health, food safety, and consumer welfare across borders.

Another key recommendation is the promotion of mutual recognition of regulatory measures between trading partners. Mutual recognition agreements (MRAs) can streamline the approval process for livestock products by recognizing the equivalence of regulatory measures between countries. By reducing duplicative testing and certification requirements, MRAs can lower trade costs and facilitate market access for livestock producers. Policymakers should prioritize negotiations on MRAs within international trade agreements, particularly in sectors where differences in regulatory frameworks pose significant barriers to trade. This approach would promote efficiency and facilitate trade while ensuring that regulatory objectives related to animal health, welfare, and food safety are adequately addressed.

The study highlights the importance of investing in infrastructure and capacity-building initiatives to enhance the competitiveness of livestock industries in the context of international trade agreements. Infrastructure investments in transportation, cold chain logistics, and border facilities are essential for facilitating the movement of livestock products across borders efficiently. Additionally, capacity-building programs aimed at improving compliance with SPS standards, enhancing veterinary services, and strengthening surveillance and control measures for livestock diseases are crucial for enabling developing countries to fully participate in global livestock trade. Policymakers should prioritize resource allocation towards these areas to support sustainable development and inclusive growth in livestock-producing regions.

Facilitating market access and diversification is another key recommendation arising from the study. Policymakers should seek to negotiate trade agreements that provide preferential market access for livestock products, particularly in high-demand markets with growth potential. This entails addressing tariff and non-tariff barriers, as well as sanitary and phytosanitary measures that impede market entry. Additionally, efforts should be made to diversify export destinations and product portfolios to reduce dependency on a limited number of markets and products. By expanding market access and diversifying export opportunities, countries can enhance resilience to market shocks and capitalize on emerging trends in global livestock trade.

The study underscores the importance of promoting sustainable production practices within the livestock industry as part of international trade agreements. Policymakers should incorporate sustainability criteria into trade agreements to incentivize the adoption of environmentally friendly and socially responsible production methods. This includes promoting animal welfare standards, reducing greenhouse gas emissions, conserving natural resources, and respecting indigenous rights and land tenure systems. By aligning trade agreements with sustainability goals, countries can contribute to the achievement of global targets such as the United Nations Sustainable Development Goals (SDGs) while fostering responsible trade practices in the livestock sector.

Strengthening monitoring and evaluation mechanisms is essential to ensure the effective implementation and enforcement of international trade agreements related to livestock industries. Policymakers should establish robust monitoring systems to track compliance with trade commitments, assess the impact of trade agreements on livestock production and trade patterns, and identify areas for improvement. Regular evaluations should be conducted to measure progress towards stated objectives and identify emerging challenges or unintended consequences. Additionally, mechanisms for stakeholder engagement and transparency should be established to enhance accountability and ensure that trade agreements reflect the interests and priorities of all relevant stakeholders, including producers, consumers, and civil society organizations.

Finally, promoting inclusive and participatory decision-making processes is critical for ensuring that the benefits of international trade agreements accrue equitably to all stakeholders in the livestock industry. Policymakers should engage in consultations with diverse stakeholders, including smallholder farmers, indigenous communities, women, youth, and marginalized groups, throughout the negotiation, implementation, and evaluation stages of trade agreements. By incorporating diverse perspectives and priorities into trade policymaking processes, countries can build consensus, enhance ownership, and ensure that trade agreements contribute to broader development objectives, such as poverty reduction, food security, and rural livelihoods improvement. Additionally, capacity-building initiatives should be implemented to empower stakeholders to participate meaningfully in trade policy discussions and decision-making processes.

In conclusion, the recommendations outlined above provide a comprehensive framework for policymakers, industry stakeholders, and civil society actors to enhance the benefits of international trade agreements for livestock industries while addressing key challenges and promoting sustainable development outcomes. By implementing these recommendations, countries can harness the potential of international trade to foster economic growth, enhance food security, and promote environmental sustainability in the livestock sector.

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