

## THE IMPORTANCE OF THE 'ONE HEALTH' CONCEPT IN AGRIBUSINESS AND COMBATING FOOD INSECURITY IN RURAL AREAS

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### REVIEW

#### Abstract

*The “One Health” concept emphasizes the interconnectedness of human, animal, and environmental health. This paper explores how integrating this concept into agribusiness, particularly within mixed agropastoral systems, can address food insecurity and rural poverty. The increasing cost of basic foods, combined with rapid urbanization and liberalized markets, has placed significant pressure on rural food systems, especially in developing countries. By fostering partnerships between agribusiness and family farming, supported by biotechnology and innovative resource management, food security and socio-economic development can be sustainably achieved. This paper proposes an interdisciplinary strategy leveraging mixed agropastoral systems within a “One Health” framework to strengthen food systems resilience and promote equitable rural development.*

#### INTRODUCTION

Food security and poverty reduction are increasingly tied to the health of agricultural systems. The “One Health” paradigm, promoting healthy agro-food products and sustainable environmental interventions, has gained importance in the face of rising global food prices and agro-economic crises. Urbanization has changed consumption patterns, elevating the demand for quantity over quality, predominantly supplied by large industrial farms. This trend has marginalized smallholder and family farms, despite their critical role in food system resilience.

Agribusiness, when integrated with the “One Health” approach, has the potential to transform rural agricultural sectors. It encompasses all activities involved in the production, processing, storage, and distribution of agricultural goods, particularly those ensuring public and environmental health. This paper aims to demonstrate how mixed agropastoral systems—combining crop cultivation and animal husbandry—offer a sustainable model for rural agribusiness that aligns with “One Health” principles.

The “One Health” concept aims to promote healthy agri-food products and to reduce food insecurity and poverty—issues that increasingly require intervention in rural areas. The rise in prices of staple foods since the end of the 2000s has triggered an agro-economic crisis with continuing effects, particularly in the agri-food and livestock sectors, especially in developing countries.

Urbanization has changed consumer lifestyles. Increasing urban incomes are associated with growing needs, particularly in food consumption, creating pressure on food sources, which are predominantly supplied by large industrial farms and to a lesser extent by family farms. In this asymmetric paradigm, the emphasis is placed more on quantity than on quality.

The importance of the “One Health” concept in agribusiness is significant for both the agricultural and livestock sectors, where agro-industrial development can reshape rural agriculture through the implementation of productive and profitable chains, increasing traceability between producers and consumers and ensuring the health of agri-food products. Agribusiness is a concept that encompasses all

operations involved in the production and distribution of healthy agricultural products. In other words, it refers to activities directly or indirectly related to the production, processing, storage, or distribution of “One Health” agricultural products.

However, it is important to distinguish between agribusiness and family farming. The existing literature differentiates and defines these two forms: while agribusiness includes all farms engaged in commercializing products or acquiring raw materials—including small family farms—family farming primarily aims to ensure subsistence for its members. Therefore, a favorable framework must be developed to enable the sale of self-produced or processed goods, in order to increase income and create paid activities, with the ultimate goal of preventing and combating food insecurity. Supporting agribusiness thus plays an important role in economic growth and poverty reduction.

A viable solution to maintaining food security would be to build a constructive “One Health” management partnership between agribusiness and family farming. This way, the private agricultural sector can enhance local competitiveness through smart, integrated agriculture, where biotechnology and integrated systems improve yields and living standards in rural areas.

Agribusiness could develop the entire agri-food industry by increasing productivity and investment at a global level, as well as profits for all stakeholders involved—including small producers and vulnerable populations. Thus, it is necessary to implement an integrated value chain that improves regional competitiveness through a mixed agro-pastoral system.

In such a system, crop cultivation and livestock farming are complementary activities within agribusiness that support each other to maintain a balance in food security. Combining agriculture with animal husbandry for both personal consumption and commercialization has significantly expanded due to population growth and the rising need to satisfy basic needs—especially food.

## MATERIAL AND METHOD

This study is based on a qualitative analysis of existing literature, institutional reports (e.g., FAO 2001), and conceptual models related to agribusiness, “One Health,” and food security. The analytical framework focuses on:

- Differentiation between agribusiness and family farming systems;
- Evaluation of mixed agropastoral models and their socio-economic and environmental functions;
- Identification of vulnerabilities in liberalized market systems affecting small producers;
- Assessment of interdependencies between crop and livestock production in rural development strategies.

The research method involves a conceptual synthesis approach, highlighting complementarities and conflicts between industrial agribusiness and family-based production within the “One Health” paradigm.

## RESULTS AND DISCUSSIONS

### 1. Agribusiness and Family Farming Synergy

While agribusiness generally includes commercial-scale operations, family farms—although often subsistence-based—can play an essential role in agro-industrial chains. The key distinction lies in the motivation: capital return in large farms versus labor return in family farms. Bridging these models through integrated management fosters traceability, food safety, and economic inclusion.

### 2. Mixed Agropastoral Systems: A Resilient Model

Mixed farming systems present multiple benefits:

- Risk diversification across crop and livestock sectors;
- Nutrient recycling through the use of manure;
- Income stability via both crop and livestock sales;
- Enhanced land productivity and environmental restoration;

- Improved food security by ensuring year-round availability of food and income.

These hybrid systems, when aligned with agrobusiness logistics and markets, offer a sustainable model adaptable to ecological zones and sociocultural contexts.

### 3. Market Liberalization and Local Vulnerabilities

Liberalized food markets favor large-scale industrial farms with capital and export power, marginalizing smallholders who lack access to:

- Secure resources (land, water, capital);
- Competitive markets;
- Infrastructure and support services.

### 4. Strategic Role of “One Health” in Agribusiness

By embedding health, sustainability, and food safety into agribusiness operations, the “One Health” approach can:

- Promote biosecurity in animal husbandry;
- Foster consumer trust in agro-food products;
- Improve environmental stewardship through circular agriculture;
- Strengthen community health by reducing zoonotic and food-borne risks.

### 5. Agricultural Typologies in Agribusiness

Two types of farms dominate agribusiness:

- Market-oriented farms, often monocultural and vulnerable to global price shocks;
- Diversified farms, better positioned for adaptive risk management.

Mixed agropastoral systems combine both strengths, providing resilience and economic flexibility.

Livestock farming plays a multifaceted role in mixed systems and can serve as:

- a) a source of income through the sale of animals and processed animal products;
- b) a source of household consumption and organic fertilizer (manure);
- c) an enhancer of agriculture (e.g., through traction and fertilization) or utilization of pastures and uncultivated land;
- d) a contributor to environmental

sustainability by reducing soil degradation through nutrient recycling; e) a means to maintain food security (via commercialization of animals and basic food products).

These hybrid systems are essential because livestock farming provides energy and fertilizer for crop development. In turn, animals benefit from the feed provided by cultivated lands, creating an interdependence between the systems: income from crop farming can finance livestock expansion, which in turn generates new income streams, either for family subsistence or commercialization.

The typologies of mixed agro-pastoral systems associated with agribusiness management can be characterized by the way family farms operate—either in a rudimentary or modern way. Agribusiness brings together economic operators whose activity is to generate a significant surplus of commercial agricultural production. Many of these actors are large producers with advanced financial and technical resources. However, small farms also have the potential to commercialize their production surplus, contributing equally in this complementary and interdependent system.

In general, within the agro-pastoral systems of the agribusiness sector, two types of farms can be identified: large farms and family farms.

- Management in large industrial farms: These farms are typically owned and operated by individuals who may lack agricultural experience. The owner provides capital and hires staff to run the farm, aiming to maximize return on investment—unlike family farms, which prioritize labor profitability and subsistence.

- The organization and implementation of agricultural systems depend greatly on agro-ecological zones, geographic space, and socio-cultural groups.

The two main types of farms in agribusiness are:

- Agro-pastoral farms focused on commercial markets, typically centered around productive crops (vegetables,

berries—aligned with the “One Health” model) or livestock (e.g., cattle, sheep, goats, pigs, poultry, beekeeping, and aquaculture). However, monocultures can become vulnerable to global price fluctuations.

- Farms oriented toward crop diversification, which can adapt more easily to risks and still ensure profitability on at least one production segment regardless of financial flow.

Nevertheless, in the context of population growth, urban development, and market liberalization, the major challenge lies in developing a constructive management system that ensures food security and food sovereignty. This can be achieved through integrated mixed agro-pastoral systems, united by the agribusiness framework within the “One Health” concept.

Furthermore, market liberalization compromises food security by favoring large industrial farms with export-import capabilities, creating unfair competition that disadvantages small producers. In this context, small producers face several vulnerabilities and challenges, such as:

- Securing access and availability of resources (financial, water, lack of local-level management);
- Securing markets and adding value to their own products;
- Developing and enhancing the economic viability of agricultural and livestock production activities.

In conclusion, it is crucial to increase local competitiveness and focus on the optimal management and security of scarce resources—arable land, pastures, potable

water, labor force, and capital allocation for subsistence farms. This can only be achieved through innovative and high-performance agribusiness, implemented via rural mixed agro-pastoral systems. In the current context of globalization, an interdependent approach between agribusiness and mixed agro-pastoral systems becomes both a solution and a necessity in combating food insecurity. It offers a multi-sectoral and interdisciplinary approach, enhancing the role of both everyday farmers and agricultural professionals.

## CONCLUSIONS

To address the current challenges in global food systems, especially in developing economies, an integrated agribusiness strategy rooted in the “One Health” concept is essential. Mixed agropastoral systems offer a viable solution by harmonizing crop and livestock production, fostering ecological balance, and supporting sustainable rural livelihoods.

Building synergistic partnerships between agribusiness and family farms is key to maintaining food sovereignty and security. Policymakers should support the development of integrated value chains, invest in rural infrastructure, and ensure equitable access to resources for all producers.

A restructured, inclusive agribusiness model can help mitigate the negative impacts of market liberalization, increase local competitiveness, and empower vulnerable communities. In the era of global interdependence, adopting a plurisectoral and interdisciplinary “One Health” framework is no longer optional—it is imperative.

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