NOVATEUR PUBLICATIONS
JournalNX- A Multidisciplinary Peer Reviewed Journal
ISSN No: 2581 - 4230
VOLUME 9, ISSUE 10, October -2023

FINANCING THE SUSTAINABLE DEVELOPMENT OF THE LIVESTOCK SECTOR

Azizov Shahsuvor Yuldashevich
Tashkent Financial Institute
Economic Security Department Associate Professor

Abstract
In this article, scientific proposals and recommendations on innovative infrastructure development have been developed that serve the livestock sector for further sustainable development. This activity is scientific research and development or production.It is created as a result of the use of best practices for the purpose of modernization and market capture.Production efficiency increases as a result of innovative development of the livestock industry, and in order to accelerate this process, it is necessary to provide socio-economic conditions that encourage the use of new means of development and intensification. Also, in the article the main directions of the sphere of livestock services and the conceptual direction on innovative development of animal husbandry are developed.

Keywords: innovation, scientific proposals, economic growth, livestock sector, sustainable development, regulatory environment, investment, research and development (r&d).

INTRODUCTION

The livestock sector is a pillar of the global food system and a contributor to poverty reduction, food security and agricultural development. According to the FAO, livestock contributes 40% of the global value of agricultural output and supports the livelihoods and food and nutrition security of almost 1.3 billion people. At the same time, there is wide scope to improve livestock sector practices so that they are more sustainable, more equitable, and pose less risk to animal and human health.

Livestock play a major role in sustainable food systems—for example, manure is a critical source of natural fertilizer, while livestock used as draft animals can help boost productivity in regions where there is low mechanization. Livestock are important assets for vulnerable communities. Globally, around 500 million pastoralists rely on livestock herding for food, income, and as a store of wealth, collateral or safety net in times of need. Locally, livestock production systems have the potential to contribute to the preservation of biodiversity and to carbon sequestration in soils and biomass. In harsh environments, such as mountains and drylands, livestock is often the only way to sustainably convert natural resources into food, fiber, and work power for local communities.

Increasing incomes, changing diets, and population growth have led to increased demand and made the livestock sector one of the fastest growing agricultural sub-sectors in middle- and low-income countries. This represents a major opportunity for smallholders, agribusiness, and job creators throughout the livestock supply chain. However, if not properly managed, this growth risks accentuating sustainability issues that span equity, environmental impacts, and public health.

The transformations that accompany growth are an opportunity to move the livestock sector toward more sustainable development and improved contribution to human diets. Productivity levels and practices can be managed in ways that address adverse impacts on land, water, and the environment, as well as the risks posed to animal and human health.

Currently, the livestock sector emits an estimated 7.1 GT of CO2-equivalent per year, representing 14.5% of human-induced greenhouse gas (GHG) emissions. Increasing the efficiency of livestock supply chains is key to limiting the growth of GHG emissions in the future. The World Bank is committed to improving the livestock sector's contribution to sustainable development. The Bank supports countries to manage and respond to growing demand for animal protein in ways that are significantly less harmful for the environment and contribute significantly less to climate change.

Investing in veterinary services and animal disease surveillance is also crucial to improve animal health and welfare, reduce economic impact of animal diseases, improve food safety, and reduce risks of antimicrobial resistance. The prevention of animal diseases can limit transfer of animal pathogens to humans and control the emergence of deadly zoonotic diseases at the animal source, where action is most cost-effective. Improved livestock management is an integral part of the "One Health" approach, which seeks to optimize human, animal, and planetary health.

Requests for World Bank support to livestock operations have increased from an average of US$150 million in annual lending commitments at the beginning of the decade, to about US$700 million in new lending per year in the last three years. Most of the growth has been in Africa, South Asia, and Central Asia. Currently, the World Bank has US$1.9 billion in active investments in livestock.

As part of its commitment to helping countries build sustainable, nutritious food systems, the World Bank is moving its livestock investments towards greater sustainability and climate-smart outcomes. All investments are designed with mitigation and adaptation in mind, and an average of 61% of livestock financing over the last three years is directly tied to climate co-benefits (up from 55% in the previous period).

Bank-supported projects seek to improve various dimensions of livestock systems and value chains, using levers such as efficiency gains, balancing of animal rations and sustainable sourcing of feeds, carbon sequestration in agricultural landscapes, energy-efficient technologies and renewable energy sources, animal health and welfare, and better manure management.

For example, the Sustainable Livestock Development Program in Kazakhstan, approved in 2020, includes ambitious environmental objectives to develop a sustainable beef sector and contribute to diversifying the economy away from oil and mineral resources. The program aims to increase beef production while pursuing an absolute reduction of GHG emissions. This will be achieved in three ways: by increasing productivity and decreasing GHG emissions per unit of product through improved livestock management practices; by increasing soil carbon sequestration through improved grazing management practices; and by adopting energy-efficient equipment and renewable energy to reduce and displace fossil fuel use.

Similarly, ongoing projects in Ethiopia and in Bangladesh are anticipated to dedicate US$108.8 million and US$259 million, respectively to climate co-benefits. They promote the use a climate-smart practices among farmers and processors, enhance GHG emission monitoring and reporting capacities, and address the particular issue of clean cooling technology along the value chain.

LITERATURE REVIEW

Credit funds for financing projects in the livestock sector are allocated to the following areas:

- Poultry farming;
- Fishing;

- Beekeeping;
- Rabbit farming;
- Processing, packaging and storage of livestock products (milk, meat);
- Purchase of equipment (goods) related to veterinary services and provision of services;
- Filling projects in the field of animal husbandry with working capital;
- Agricultural machinery, technology (livestock feed) and equipment required for livestock development;
- Other areas related to the livestock industry (purchase of water and energy saving technologies, solar panels).

An additional resource will also be allocated for the purchase of ruminants (large and small horns) for farms with more than 50 cattle.

Another important direction, this credit line envisages the provision of a preferential loan for livestock farmers to reconstruct their existing livestock buildings. In this case, a loan is allocated in the amount of 70 percent of the construction project estimate. (loans are not given for the construction of new livestock complexes).

Loans equivalent to a maximum of 1 million euros are allocated only in the national currency - soums. Loans are allocated to clients for a period of up to 10 years, including a grace period of up to 3 years. Loan funds are given in the soum of the Republic of Uzbekistan. The annual interest rate is 14-15%. It is known that the infrastructure network of the country is social and economic as a result of its development, its importance as a network has increased goes and improves the task it performs. In our opinion, on the one hand representing the material content of the infrastructure, the economic possibility, providing the conditions for the formation of market relations. If we look at it as a system, on the other hand, the market aimed at forming commodity-money relations between its subjects should be studied separately as economic relations.

He is a service provider in the development of the livestock industry A.R.Baycherova in the development of fields: veterinary services depending on the level of development of livestock industry in the regions differentiated development; Sh.A. Jantemirov, A.Sh. Zhantemirova and E.I. Artyomova: livestock industryby product type and directions in innovative development organization of clusters; L.I. Kovalyov : technician in the livestock sector service development; Q. J. Mirzaev: in animal husbandry scientific and practical proposal aimed at the organization of agroservice and who developed the recommendations in their scientific research work.

However, it was present in the development of the livestock industry new organization of infrastructure services and innovation processes development of these services in a complex manner increases efficiency Loans are allocated through Xalqbank, Hamkorbank, Mikrokreditbank and Qishloqkurilishbank. Currently, all the above banks have credit resources.

The loan consists of two lines:

65.9 million euros have been allocated in the first credit line. In this line, you can get a loan in soums up to the equivalent of 1 million Euros.

24 million euros have been allocated in the second credit line. In this case, a loan in soums in the national currency is allocated up to a maximum equivalent of 100,000 Euros.

7.7 million Euros of non-refundable funds of the European Union, i.e. grant funds, will be allocated to the entrepreneurs who received a loan from the second credit line as a component of the project and

will cover a part of the cost of the investment project. Grant funds will be allocated up to 40% of the project amount for climate-friendly sub-projects up to 100,000 euros. Grant funds are not provided to farms that have purchased ruminant (small and large horned) livestock.

RESEARCH METHODOLGY

According to the agreement signed between Uzbekistan and the French Development Agency (FTA) on June 28, 2021, a loan in the amount of 100 million euros is provided for the financing of the project "Financing for the sustainable development of the livestock sector". The duration of the project is 5 years (2022-2026).

The total cost of the project is equivalent to 147.07 million euros, of which: 100 million euros is the debt of FTA; 29.96 million euros - the share of project participants (beneficiaries); 17.1 million euros (including funds in the form of taxes and customs payments) - the share of Uzbekistan.

Based on the Customs Code, the goods brought into the customs territory by legal entities at the expense of debts (credits) given by international financial institutions and foreign government financial organizations are exempted from customs duty.

As specified: VAT is paid by importers (importers, purchasers of services) on the import (purchase) of goods (works, services) and special vehicles purchased at the expense of FTA debt within the framework of project implementation; the funds released as a result of these customs duty concessions and the amount of value added tax paid by the importers of goods are considered as Uzbekistan's share in the implementation of the project.

The project will be implemented initially in Karakalpakstan, Tashkent, Jizzakh, Syrdarya, Kashkadarya, Samarkand and Bukhara regions. The measures envisaged within the framework of the project will be implemented in all regions of the republic after more than 50 percent of the financing is done.The State Veterinary and Animal Husbandry Development Committee is the executive body responsible for the timely and complete implementation of the project, its coordination and management, as well as monitoring and reporting during the project implementation period.

The functions of managing the credit line, ensuring the timely appropriation and targeted use of FTA's debt, as well as monitoring and reporting on the implementation of sub-projects are assigned to the commercial banks participating in the project.All payments incurred within the framework of the loan agreement will be covered from the state budget until the re-crediting agreements are signed with the banks participating in the project, and after the re-crediting agreements are signed, they will be returned to the republican budget of Uzbekistan in proportion to the amount of funds allocated to them by the commercial banks participating in the project.

ANALYSIS AND RESULTS

Development of agricultural production of regions Natural-climatic conditions, soil fertility of cultivated areas, the level of provision of agricultural resources and other similar factors affect the territorial location of infrastructure entities serving the network and the development of service areas. Such effects directly or indirectly.

The above-mentioned feature in the development of infrastructure entities serving the livestock industry requires taking into account a number of factors. Among such factors, the following can be included: natural and economic conditions of the regions, agriculture infrastructure, taking into account

the specialization directions of the livestock industry, the location of livestock industries, the growth rate of the population of the region, the change in the level of employment of the population and similar factors organization and development of its subjects is appropriate. That is why it is appropriate to take into account the following factors in the organization and development of infrastructure entities serving the livestock industry, taking into account the location and functioning of the regions and the livestock industry:

➢ the sale of livestock products and the formation of demand for livestock products have regional characteristics. Also, the national composition and traditions of the local population have a great influence on the consumption of products. Therefore, the livestock products grown should be approached taking into account the availability of sales markets and the size of markets. That is, the development of services in the direction of trade and commerce, mainly in the areas of dairy and meat cattle breeding, also contributes to the effective operation of infrastructure facilities and also to the production of products creates favorable conditions for the development of the field;

➢ specialization directions of livestock industries and changes in the growth dynamics of the number of livestock and the volume of production should be taken into account. Due to the variety of specialization in the livestock sector, the composition of products is different from each other, so there is a demand for different services;

➢ Livestock farms in livestock regions dispersion and geographic location at different distances from markets and service centers should be taken into account. This is on the one hand to the livestock industry on farms has a negative impact on the quality of service, on the other hand, it has a negative impact on the financial situation of service providers;

➢ It is necessary for permanent network in livestock areas the lack of information on purchasing resources, owning breeding stock, using services, and selling the grown products with maximum profit should be taken into account in the organization of service industries. Because it's about market conditions information is equally important to the farmer engaged in animal husbandry and to the subjects of the service sector;

➢ Due to the fact that the product sales system does not meet the market requirements and the activity characteristics of livestock production industries, it is necessary to take into account the high risk of the return of the investment of the farmer involved in the production. This situation should be taken into account in the development of infrastructure entities, as financial risks arise for both the product manufacturer and the service provider;

➢ Infrastructure providing services to livestock industry the conditions created for the free economic activity of agricultural enterprises and the production of local government offices and farmsit is also necessary to take into account the level of administrative interference in its activities. Because experience shows that excessive administrative levers used in the production of agricultural products are infrastructure operating on the basis of market requirements has a negative effect on the activity of its subjects, and this, in turn, is a factor that leads to a decrease in the quality of services provided and an increase in their prices.

Of three alternative approaches to future funding of international agricultural research, yield-improving interventions provided the greatest benefits to consumers in S. Asia and SSA through lowered food prices. This has implications for food security, including of the rural and urban poor. While

interventions under MARKETS led to increased supplies of LDF relative to the reference case, they did not incentivize the adoption of yield-enhancements, so that the potential to improve resource-use efficiency or minimize environmental impacts was more limited (than the yield-improving investments). The market-facilitating intervention provided cost-reducing benefits to consumers and producers alike, with the greatest benefits going to producers. Both scenarios of increased productivity and the one on improved markets added benefits in terms of kilocalorie availability, and in reduced shares of population at risk of hunger and rates of underweight among children. The productivity-enhancing interventions made the most impacts in these regards. It is important to note that our analysis covered only a partial assessment of food security. Important measures of undernutrition such as micronutrient deficiency, stunting and wasting, have not been considered. Issues of overnutrition or of food safety have also not been assessed. From the limited perspective of the hunger and undernutrition measures included, the results seem to prioritize more direct investments in livestock assets (e.g., through increased animal productivity) over those that promote changes in market conditions. For as long as market access does not impose a binding constraint, therefore, targeted investments to increase production should have the most impacts.

Other levels of analysis are needed to ascertain how welfare benefits will be distributed, e.g., between urban and rural consumers, large and small-scale producers, or at sub-national, inter or intra-household levels. Given that smallholder producers currently account for the majority of the production of meat and milk in both regions (Robinson et al., 2011), and barring major changes to these dynamics, it is likely that the benefits of production-side investments as simulated in this analysis, will accrue, at least partially, to smallholders. While not addressed here, a factor that seems to matter for accessing livestock sector benefits to economic resilience and human nutrition and health in poor regions, is the appropriate empowerment of women (Dolberg, 2001). In this regard, improving linkages of global models such as IMPACT to lower-level biophysical and economic models as well as to qualitative processes that could factor in gender issues, will improve its future application. Follow-on studies that assess the impacts of livestock sector-specific, rather than agricultural sector wide interventions will also be needed to correctly anticipate impacts.

LDF production is projected to expand significantly in both regions, placing the spotlight on potential externalities and environmental effects that could arise. Imports of poultry products as well as poultry stocks expand in both regions, albeit more rapidly in S. Asia than in SSA. One implication of this is that the competition for feed grains that is already a big challenge in S. Asia could get even tougher. Unlike in Asia, poultry flocks in SSA expand only a little more than dairy, and not as much as beef. This is in contrast, at least over the time horizon of our analysis, to the narrative that patterns of LDF demand will generally lead to large shifts from ruminant to monogastric production systems (Steinfeld et al., 2006). Further, while there is the recognition that diets high in red meat are associated with negative health outcomes, this may not be so much a problem in the regions highlighted in this work. As in many LMICS, diets in S. Asia and SSA are generally quite low in ASF; such that consumers in the region could actually benefit from increasing ASF consumption (Randolph et al., 2007, Springmann et al., 2018b).

CONCLUSION

While significant growth in the demand for livestock-derived foods is widely envisaged in the future of LMICs, not enough attention has been paid to important contexts of this narrative. Much is still unknown

about the levels of benefits and potential risks that simultaneous growth in consumption and production of livestock-derived foods will impose, or what bearing these should have today on forward-looking management of the global food and agricultural system, including the prioritization and distribution of research and development funding. This study aimed to provide some insight into the potential impacts, and thus relevance to livestock sector development, of a set of technology and market-improving intervention options targeted to two developing regions particularly important to the global agenda for development.A review of the literature identified both positive and negative potential impacts of increased demand and supply of foods of animal origin in South Asia and sub-Saharan Africa. These impacts lead to trade-offs as well as complementarities between the multi-objectives of sustainable development. A quantitative scenario assessment, using a multi-market model of demand and supply of agricultural and livestock commodities to 2050 highlights the significance of alternative investment options in terms of their impacts on food and nutrition security, rural incomes, and environmental impacts. While additional analysis is needed to ascertain potential levels and distributional effects of impacts, what emerges from this and previous research is that direct investments to improve animal productivity, e.g., through technological advancement and context-adaptation of livestock genetics, feeds and animal health solutions, have potential as integral components of development strategies to enhance human welfare and natural resource management. Implementing scientific innovations in the field, developing breeding work, expanding the level of artificial insemination of cows, creating a solid feed base, establishing intermediate and repeated cropping, effectively using fodder fields, producing at least 12-14 tons of fodder per hectare per year. accumulation, organization of primary seeding of fodder crops, preservation of the gene pool of Bushuev cattle, increase and productivity are important tasks. In conclusion, while Uzbekistan has made significant strides towards fostering innovation, there is still work to be done. By addressing challenges, embracing a comprehensive approach, and prioritizing investments in R&D, intellectual property protection, entrepreneurship, education, and digitalization, Uzbekistan can position itself as a leading innovative nation and drive sustainable economic growth in the years to come.

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