



Food and Agriculture
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WORLD LIVESTOCK

Transforming the livestock sector through the Sustainable Development Goals



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THE UNITED NATIONS

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Introduction

We are facing a time of immense challenges: one in eight people in the world live in extreme poverty; 815 million people are undernourished; 1.3 billion tonnes of food is wasted every year; six million children die before their fifth birthday each year; 202 million people are unemployed; our soils, freshwater, oceans and forests are being rapidly degraded and biodiversity eroded; and climate change is putting even more pressure on resources we depend on, disrupting national economies and blighting many people's lives. For decades, the livestock debate has focused on how to increase production in a sustainable manner. However, the UN 2030 Agenda for Sustainable Development has added a new and broader dimension to the debate. It has shifted the emphasis of the discussion from fostering sustainable production *per se*, to enhancing the contribution of the sector to the achievement of the Sustainable Development Goals (SDGs).

The livestock sector can contribute directly or indirectly to each of the SDGs: strengthening the assets that rural households use to achieve their livelihood objectives; helping to generate income; supporting the creation of employment opportunities; providing the world with sufficient and reliable supplies of meat, milk, eggs and dairy products; improving children's cognitive and physical development as well as school attendance and performance; empowering rural women; improving natural resources use efficiency; broadening access to clean and renewable energy; supporting sustainable economic growth; generating fiscal revenue and earning foreign exchange; offering opportunities for value addition and industrialization; stimulating smallholder entrepreneurship and closing inequality gaps; promoting sustainable consumption and production patterns; increasing the resilience of households to cope with climate shocks; and bringing together multiple stakeholders to achieve all these goals.

However, a number of complex interactions also need to be addressed. Low levels of factor endowments in developing countries might prevent poor livestock keepers from benefiting from the sector's fast economic growth; increasing short-term production through the overuse of resources can result in lowered productivity in the long term; although emission intensity is declining, a rise in production will lead to higher overall GHG emissions; competition over land for the production of feed can constrain the availability of resources to produce food; emergence or spread of transboundary animal diseases can pose major threats to public health and upset trade; promoting a more competitive sector with higher levels of market concentration will likely hamper the capacity of small-producers to participate in markets. There is also an urgent need to curb the negative effects of livestock production on biodiversity and the environment and to stop the improper use of antimicrobials in animal health. Failure to address these interactions could result in positive synergies being precluded and in the predominance of negative trade-offs.

In other words, enhancing livestock's contribution to the SDGs will require a profound transformation of the sector. This will involve, *inter alia*, looking beyond policies and investments specific to livestock. It will require the formulation of strategies to remove the barriers keeping poor livestock farmers from access to productive assets and rural services; to allow animal-source food (ASF) prices to better reflect negative externalities; to strengthen livestock organizations, with emphasis on small-scale producers together with their associations and cooperatives. It means that efforts to increase productivity must focus on small producers; and that extension services must be more gender-responsive. Equally important is the institutionalisation of planning in routine disease prevention, including generalized adop-

tion of One Health approaches. Essential too are trade reforms, investment in infrastructure, better access to financial resources, technology innovation and institutional development, while livestock markets must be made more transparent and efficient.

A major challenge will be to translate the role of livestock in the SDGs into national policies and strategies. The SDGs and targets are aspirational and global. Thus, each country will have to decide how the role of livestock in the SDGs

should be incorporated into national planning processes, policies and strategies, and how to set national targets guided not only by the global level of ambition but taking into account national contexts. To better support the transformation needed in the livestock sector and enhance its contribution to the Sustainable Development Goals, this report examines the sector's interaction with each of the Goals, as well as the potential synergies, trade-offs, and complex interlinkages involved.



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Key messages

The World Livestock report “Transforming the livestock sector through the Sustainable Development Goals” shifts the focus of the debate from fostering sustainable production *per se* to enhancing the sector’s contribution to the achievement of the SDGs. It calls for an integrated livestock sustainable development approach, and highlights the effective translation of the SDGs into specific and targeted national policy action as the major challenge ahead.

BOOSTING ECONOMIC GROWTH THROUGH THE LIVESTOCK SECTOR’S MULTIPLIER EFFECTS

Livestock systems make a major contribution to national economies worldwide. The value of livestock production accounts for 40 and 20 percent of total agricultural output in developed and developing countries respectively. However, the contribution of livestock to economic growth can be boosted through vertical and horizontal multiplier effects that go beyond production. Indeed, the non-agricultural sector tends to have a higher response to changes in

livestock production than agriculture itself. Policies should promote livestock system models that lead to higher labour productivity, facilitate value-addition, and are labour-intensive.

TRANSLATING FAST LIVESTOCK GROWTH INTO FASTER POVERTY REDUCTION

Given the livestock sector’s expected rapid growth, and the fact that many of the poor rely on livestock for their livelihoods, livestock’s contribution to poverty reduction has sometimes been taken for granted. Livestock undoubtedly can play a key role in preventing people from falling into poverty, but the sector’s ability to move them out of that trap is more debatable. With global population increasing, demand for livestock products in developing countries is expected to grow, therefore ways must be found to ensure that this growth effectively helps reduce poverty. However, a better understanding of the relationship between economic growth and poverty reduction, as well as of the factors that can make livestock growth more pro-poor is needed.

REALIZING THE POTENTIAL OF THE LIVESTOCK SECTOR TO END HUNGER AND MALNUTRITION

The livestock sector can contribute in multiple ways to ending hunger and all forms of malnutrition. They include: increasing the direct consumption of nutritious animal-source foods; helping to generate income; supporting the creation of employment; and generating fiscal revenue and earning foreign exchange. The sector must, however, overcome some new, interconnected challenges. Increased demand for livestock products will add to existing pressure on ecosystems; livestock producers will face greater competition for resources so that while productivity should increase, it will likely do so more slowly. Furthermore, the ongoing transformation of the sector's market structure may hinder small producers and poor consumers from benefiting from economic growth and productivity improvements.

PREVENTING ANIMAL DISEASES TO ENSURE HEALTHY LIVES

Throughout the world, livestock and derived products are assets to human livelihoods and, through quality nutrition, to human health and well-being. However, animals, including farm animals and their products, also pose risks to human health. Increasing livestock numbers, intensified management, faster animal turnover, confinement of large numbers of animals in small spaces as well as habitat fragmentation through expansion of livestock production, all increase the probability of outbreaks of high-impact animal diseases. Inappropriate use, overuse and abuse of antimicrobials in animal production contributes to an increase in antimicrobial resistance in pathogens causing human infections worldwide. Ensuring collaboration between animal production and health specialists, public health officials, and the commercial sector, including the feed industry, through a “One Health” approach is crucial to achieving an integrated and preventive strategy on livestock-associated human health risks.

BALANCING ANIMAL-SOURCE FOOD INTAKE TO INCREASE CHILDREN'S COGNITIVE DEVELOPMENT, SCHOOL ATTENDANCE AND PERFORMANCE

Animal-source foods (ASFs) provide high-quality and readily digested protein, are rich in energy and provide readily absorbable and bioavailable micronutrients. These nutrients are more easily obtained from ASFs than from plant-based foods. Providing adequate amounts of foods of animal origin in the diets of school-children can add much-needed diversity and sustain and improve cognitive performance, micronutrient status, growth, physical activity, academic achievement, and appropriate response to vaccines while also fending off opportunistic microbes.

FOSTERING WOMEN'S PARTICIPATION AND DECISION-MAKING POWERS IN THE LIVESTOCK SECTOR

Throughout the developing world, women and girls in rural and peri-urban areas are deeply involved in livestock systems. However, women, as compared with men, have poorer access to resources, which means women livestock keepers typically face greater economic, social and institutional barriers. To enable women to meaningfully operate in, and benefit from, the livestock sector, policies and programmes should work to remove root causes of gender inequalities as well as the obstacles and constraints facing women.

INCREASING WATER-USE EFFICIENCY IN LIVESTOCK PRODUCTION TO ADDRESS WATER SCARCITY

Agriculture withdraws approximately 70 percent of all available freshwater, and livestock production uses roughly 30 percent of that. To meet rising demand for animal products, the livestock sector is currently making growing use of agricultural water, thus increasing competition with other human and crop-agriculture water needs. Given the very substantial water footprint of livestock production, improving water use efficiency and policy guidance throughout



the production system is important in ensuring access to safe water sources and sanitation.

TURNING ANIMAL MANURE INTO CLEAN, RENEWABLE ENERGY

Around 17 percent of the global population lacks access to electricity, and 38 percent is without clean cooking facilities. Almost 80 percent of these people live in rural areas. Converting livestock manure into biogas could make a major domestic renewable fuel source available to more than a billion people, giving them access to affordable, reliable, and sustainable energy. This would be of particular importance in sub-Saharan Africa and Southern Asia, where rural villages often lack direct connections to national electricity grids, locking them in poverty and underdevelopment.

ADDING VALUE AND COMPLEXITY TO LIVESTOCK PRODUCTS THROUGH INDUSTRIALIZATION

In many developing countries livestock products contribute to value chains by providing unsophisticated products to downstream actors, representing a very small share of agro-process-

ing and of total exports. Since not all products have the same impact in terms of economic growth, concentrating on unsophisticated products is keeping the livestock sector in many developing countries from achieving faster economic growth. Economic development is not just about constantly improving the production of the same set of goods but also means acquiring more complex capabilities to diversify production towards more sophisticated products and higher productivity levels. Industrialization offers great opportunities for developing countries to add value and complexity to livestock primary products, allowing the sector to enter the downstream end of global value chains and thus accelerate economic development.

ACCOMPANYING OPENNESS TO TRADE WITH INFRASTRUCTURE AND FINANCIAL AND INSTITUTIONAL DEVELOPMENT POLICIES TO REDUCE INEQUALITIES AMONG NATIONS

The argument that openness to trade contributes to narrowing the development gap between countries is well grounded in conventional economic theory. However, potential gains from



trade liberalization will not necessarily affect all countries and groups within society in the same way. There are likely to be significant differences between developed and developing countries, net-exporting and net-importing countries, and, both within and across countries, among small-scale and commercial farmers, and rural non-farm producers and urban consumers. The livestock sector in developing countries often has not been well placed to benefit from trade liberalization. In order to lead to a reduction in inequality among nations, trade reform needs to be accompanied with appropriate infrastructure, financial and institutional development policies.

MAXIMIZING THE BENEFITS WHILE MANAGING THE RISKS OF URBAN LIVESTOCK

Urban agriculture, including livestock production, was recognized by the 1996 United Nations Conference on Human Settlements as one of the “desirable practices” for sustainable cities. Livestock production has a variable and controversial, but often essential role to play in and for cities, especially in developing countries. The main benefits of urban livestock production in-

clude the generation of income, the creation of jobs, and the delivery of improved food security and nutrition. Yet urban livestock also present significant risks since, in the absence of proper sanitation and infrastructure, they can pose environmental and public health hazards. In order to make cities more sustainable, specific measures to reduce such risks are required, including improved coordination between health, agriculture, municipal and environmental departments.

PRODUCING MORE WITH LESS, WHILE BALANCING CONSUMPTION, AND REDUCING LOSSES

As consumption of animal products is expected to increase, the livestock sector needs to produce more with less. Unsustainable production and consumption not only contribute to inefficient use of resources but are also the source of lost economic opportunities, environmental damage, and poverty and health problems. Adoption of best practices can lead to large gains in natural resource-use efficiency. Rebalancing diets to reach nutritional recommendations can also have significant impact on natural resource use and GHG emissions. Efficiency can further

be improved by reducing food waste and losses along supply chains. Because improvements are needed along the whole life cycle of products, this goal requires the involvement of various stakeholders, including consumers, policymakers, retailers and industry representatives. However, adapting and enforcing new technologies in local environments, and instituting supporting policies and infrastructure to encourage adoption, will be the greater challenge.

COMBATING CLIMATE CHANGE AND ITS IMPACTS THROUGH IMPROVING LIVESTOCK RESOURCE-USE EFFICIENCY

The relationship between livestock and climate change works two ways. On the one hand, livestock make a significant contribution to climate change. On the other hand, climate change affects livestock production. Efficiency is key to both reducing emissions and building resilience. A number of mitigation and adaptation options are available to improve natural resource-use efficiency while also increasing soil carbon and recycling nutrients from within food chains. Their implementation requires a transfer of technology and knowledge, together with the right incentives and a conducive regulatory framework. However, measures that go beyond the farm gate are also required, including institutional changes, disaster risk management, and social safety nets.

REDUCING THE IMPACT OF LIVESTOCK ON MARINE ECOSYSTEMS BY PREVENTING POLLUTION AND CONTAINING THE USE OF FISH PRODUCTS IN ANIMAL FEED

The world's ocean fish face serious threats both in terms of biodiversity and declining stocks. The principal source of pressure is overexploitation by fisheries. A substantial part of the global fish catch is turned into fishmeal and fish oil, and used to feed terrestrial animals. However, the use of a number of plant-based feeds, together with synthetic amino acids and enzymes, has

led to a substantial reduction of fishmeal in the diets of both livestock and aquatic species, thus contributing to conservation of marine ecosystems. More effective coastal/watershed planning and close collaboration between the livestock, feed and fisheries sectors would help promote sustainability of both land- and marine-based food production systems.

ENHANCING THE PROVISION OF ECOSYSTEM SERVICES THROUGH SUSTAINABLE GRASSLAND MANAGEMENT AND IMPROVEMENTS IN FEED-USE EFFICIENCY

Across the globe, natural resources are deteriorating, ecosystems are under stress and biological diversity is being lost. Land used for grazing and feed production has major environmental impacts. While the livestock sector plays a part in biodiversity reduction, land degradation and deforestation, it also provides invaluable services that protect, restore and promote sustainable use of terrestrial ecosystems, combat desertification, reverse land degradation and halt biodiversity erosion. Whether the environmental effects of the livestock sector are detrimental or positive depends on the livestock production and management system. Livestock production can be crucial in, for example, supporting sustainable rangeland management, preserving wildlife, and enhancing soil fertility and nutrient cycling.

PROMOTING PEACE AND SOCIAL STABILITY THROUGH LIVESTOCK

A stable and peaceful environment is the basis for sustainable development. In many communities in developing countries, social and economic well-being is closely linked to the livestock sector. During crises, and particularly during rehabilitation and recovery, livestock are essential in order to restore the supply of animal protein. In terms of public health, animal disease outbreaks can spread quickly and evolve into major health, social and economic crises at regional and sometimes global level. Further, disputes among populations over lands and pas-

tures can be sources of conflict. Mechanisms such as well-defined property rights, clear legislation, sound livestock policies, and confidence in local institutions can enhance the sector's role as a catalyst for social peace and stability.

BUILDING INCLUSIVE AND EFFECTIVE PARTNERSHIPS IN THE LIVESTOCK SECTOR TO SUPPORT THE ACHIEVEMENT OF AGENDA 2030

Strong commitment to partnership and co-operation is central to the achievement of the 2030 Agenda for Sustainable Development. The breadth of knowledge, experience and expertise required implies mobilizing a broad range of competences and the participation of multiple stakeholders. Multi-stakeholder processes aim at building a consensus on sustainable solutions and catalyse change through dialogue, consultation and joint analysis. The livestock sector already counts on a number of multi-stakeholder partnerships at global, regional and national levels. They play a key role in ensuring sustainable growth in livestock production, meeting rising global demand while addressing related environmental, social and economic challenges. Although the need for multi-stakeholder partnerships to scale up the impact of public-private initiatives is recognized, more understanding is required concerning the legitimacy, inclusiveness, governability, effectiveness and development impact of joint actions.

TRANSLATING THE KEY ROLE OF LIVESTOCK IN THE SDGS INTO NATIONAL POLICIES AND STRATEGIES

The SDGs and targets are aspirational and global. Thus, each country will have to decide how the role of livestock in the SDGs should be incorporated into national planning processes, policies and strategies, and how to set national targets guided by the global level of ambition but taking account of national circumstances. In the global livestock policy arena, recent discussions have revolved around the potential contribution of the sector to the 2030 Agenda for

Sustainable Development. However, at present, there is no comprehensive policy framework to assess and more effectively support the integration of issues relating to livestock and sustainability into national policy processes. To better support integration of livestock policy and practices with sustainable development strategies, World Livestock presents a Livestock-SDGs Policy Framework as a tool to enhance the impact of livestock policy analysis in accomplishing the 2030 Agenda.

ADVANCING TOWARDS AN INTEGRATED LIVESTOCK SUSTAINABLE DEVELOPMENT APPROACH

Traditionally livestock sustainability analysis has been conducted using a partial sectorial approach that assesses the effects of the sector's development on one specific dimension of sustainability. In contrast to the Rio "pillars" concept of sustainable development, in the 2030 Agenda the social, environmental and economic dimensions of sustainable development are intertwined and cut across the entire framework. The World Livestock report calls for an integrated framework towards sustainability that simultaneously addresses the environmental, social and economic dimensions in a more balanced manner.

SHIFTING THE FOCUS OF THE DEBATE FROM FOSTERING SUSTAINABLE PRODUCTION *PER SE* TO ENHANCING THE LIVESTOCK SECTOR'S CONTRIBUTION TO THE ACHIEVEMENT OF THE SDGS

For decades, the livestock debate has focused on how to produce more from less to feed 9.8 billion people by 2050. However, the UN 2030 Agenda for Sustainable Development has added a new and broader dimension to the debate. It has shifted the emphasis of the discussion from fostering sustainable production *per se*, to enhancing the contribution of the sector to the achievement of the SDGs.

The infographic displays the 17 Sustainable Development Goals (SDGs) arranged in a grid, with lines connecting them to show their interrelationships. The goals are:

- 1 NO POVERTY** (Red square, top right)
- 2 ZERO HUNGER** (Yellow square, bottom center)
- 3 GOOD HEALTH AND WELL-BEING** (Green square, top left)
- 4 QUALITY EDUCATION** (Red square, middle left)
- 5 GENDER EQUALITY** (Red square, middle right)
- 6 CLEAN WATER AND SANITATION** (Blue square, middle left)
- 7 AFFORDABLE AND CLEAN ENERGY** (Yellow square, middle right)
- 8 DECENT WORK AND ECONOMIC GROWTH** (Dark red square, top center)
- 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE** (Orange square, top right)
- 10 REDUCED INEQUALITIES** (Pink square, top right)
- 11 SUSTAINABLE CITIES AND COMMUNITIES** (Orange square, bottom right)
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION** (Brown square, middle left)
- 13 CLIMATE ACTION** (Green square, middle left)
- 14 LIFE BELOW WATER** (Blue square, top left)
- 15 LIFE ON LAND** (Green square, middle left)
- 16 PEACE, JUSTICE AND STRONG INSTITUTIONS** (Blue square, bottom right)
- 17 PARTNERSHIPS FOR THE GOALS** (Dark blue square, center)

Legend:

- Direct:** Solid black line with dots at both ends.
- Indirect:** Dashed black line with dots at both ends.
- Induced:** Dotted black line with dots at both ends.
- Opportunities:** Blue dot.
- Challenges:** Red dot.

