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EXECUTIVE SUMMARY

Agriculture is a major source of income in Africa, with 50-70% of Africans relying on agriculture for their livelihoods but the sector's true potential remains untapped, limiting economic development and contributing to persistent poverty and deteriorating food and nutrition security across the continent. The continent is seeing demand for animal source foods increase rapidly as incomes rise, driven by population growth, economic growth and urbanisation, which offers an unprecedented opportunity to reposition livestock as a business activity with the potential to significantly improve food and nutrition security, drive inclusive growth, create millions of new jobs along several value chains and support the continent's efforts to become a major player in global export markets.

The African Development Bank (AfDB) is implementing its 'Feed Africa' strategy to help the continent achieve food self-sufficiency and which is an essential component of the Bank's overarching 10-Year strategy (2013-2022). These priorities created the impetus for the Bank to develop a holistic Livestock Investment Master Plan (LIVEMAP) to help operationalize the Bank's livestock transformation agenda. It provides the comprehensive framework within which individual country priorities can shape investment in the livestock sector in the most coherent and efficient way.



**THE AIM OF
LIVEMAP IS TO
SUPPORT AND GUIDE
THE DEVELOPMENT
OF A PORTFOLIO OF
INVESTMENTS COMPRISING
INTEGRATED LIVESTOCK
SOLUTIONS FOR RMCS**

The World Health Organization recommends that even sedentary adults should consume about 50 grams of protein per day. Animal source foods, high in bio-available protein and micronutrients, are essential to mother and infant health during the first 1,000 days and supplementing children's diets with animal source foods has been shown not only to reduce stunting but to improve learning ability and cognitive and social skills. The World Bank estimates that Africa is losing about \$10 billion per year in GDP due to childhood stunting. Increased livestock productivity and higher consumption can thus not only play a significant role in improving food security and nutrition in Africa but have both direct and indirect effects on overall economic development.

The aim of LIVEMAP is to support and guide the development of a portfolio of investments comprising integrated livestock solutions for RMCs that will sustainably raise the productivity and profitability of selected high priority livestock systems, create inclusive employment along the value chains and contribute to food and nutrition security. The LIVEMAP is designed around four pillars:



To sustainably increase livestock productivity through targeted genetic improvement, animal health and better feeds by improving access to supplies, services and knowledge. This will include fostering resilience of climate-smart livestock systems.



To develop market and value chains. This will include: commercialization of livestock production and animal products; developing market infrastructure; introducing digital innovations and platforms; linking smallholder farmers to markets; improving processing and value addition of animal products; and cold chain development.



Recognizing that the increasing intensification of the livestock sector could potentially also carry risks to health through food safety, zoonotic diseases and antimicrobial resistance, the third pillar will adopt a holistic 'One Health' approach to these challenges, bringing together animal, human and environmental health.



To promote sustainable, safe and healthy diets, food security and nutrition through animal source foods, ensuring that investments are nutrition sensitive and consumer awareness among vulnerable population is increased.

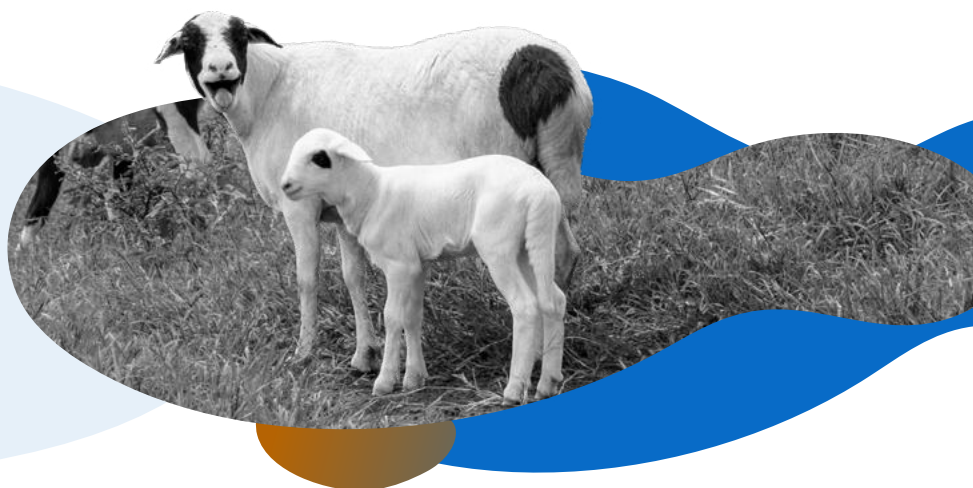
A cross-cutting approach will ensure that equity is applied across all LIVEMAP investments so that women's contribution to the livestock sector is recognized and opportunities to promote gender equity and youth employment are mainstreamed. The policy support theme will provide evidence based assessment of policy options to help focus investments by national and international, public and private sector investors in the livestock and associated sectors to be prioritized according to impacts. It will also provide advocacy for greater investment in the livestock sector.

LIVEMAP will guide the investments made by regional member countries and the Bank in alignment with country and continental priorities, and maximize benefits from proven livestock technologies, innovations and research providing solutions to development challenges. The LIVEMAP is designed to fit with the operational procedures of the Bank and be aligned with regional member countries' priorities and needs. It follows the guiding principles required for implementation and sound partnerships providing:

- a.** subsidiarity, complementarity and comparative advantage;
- b.** transparency and mutual accountability; and
- c.** mutually beneficial partnerships.

The allocation of the Bank's financial resources will be based on an overall 'return on investment' philosophy. The Bank intends to become a major source of catalytic funding and use blended financing to attract private sources of finance – especially from capital markets and the African financial sector – to support the scale of investments required. The Bank also aims to catalyze inclusive agricultural growth and will act with additionality, investing into areas likely to remain sub-commercial for some time.

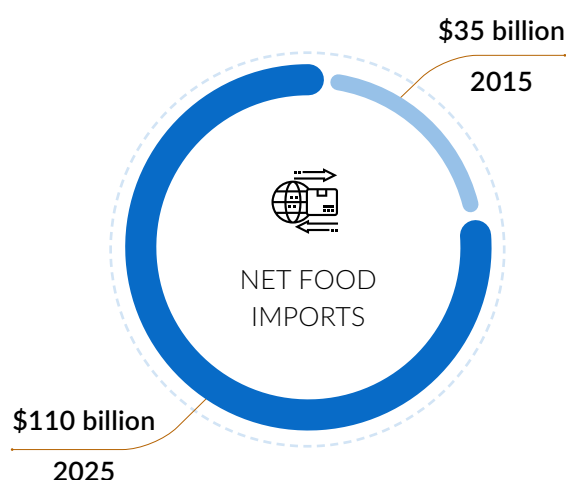
LIVEMAP WILL
 INTEGRATE THE TOOLS,
 TECHNOLOGIES AND
 INNOVATIONS TO SUPPORT
 IMPLEMENTATION AND
 THE DEPLOYMENT OF
 SUITABLE INVESTMENT



As a continental livestock-specific framework, LIVEMAP will integrate the tools, technologies and innovations to support implementation and the deployment of suitable investment. The Bank will curate a multi-lingual website featuring cumulative knowledge, livestock solutions and tools for a range of livestock commodities, geographic locations, and type of solutions. LIVEMAP will ensure that proven solutions are scaled up effectively, and both regional member countries and the Bank will see better returns on investments in the sector. Founded on strategic planning and drawing together evidence-backed interventions, LIVEMAP represents the opportunity to stimulate jobs, boost the economy and improve nutritional outcomes in a sustainable way.

ABOUT THE AFRICAN DEVELOPMENT BANK, FEED AFRICA STRATEGY AND LIVESTOCK INVESTMENT MASTER PLAN (**LIVEMAP**)

Agriculture is a major source of income in Africa, with 50-70% of Africans relying on agriculture for their livelihoods. However, the agricultural sector's true potential remains untapped, limiting economic development and contributing to persistent poverty and deteriorating food and nutrition security across the continent. Low agricultural productivity and the lack of modern agricultural management have led to the sector contributing only 25% of GDP and producing low yields. As a result, the number of undernourished people in Africa is projected to rise from \$240m in 2015 to \$320m by 2025. This gap will be exacerbated by increased food demands and the changing consumption habits driven by rising incomes and demographic factors such as population growth and urbanization. These trends are anticipated to lead to rapidly rising net food imports: expected to grow from \$35 billion in 2015 to over \$110 billion per year by 2025. These imports represent both an economic cost to be avoided and a commercial opportunity. The scale of imports demonstrate that a demand exists if a vibrant agribusiness sector in Africa can be stimulated to service it: Africa's food and agribusiness sectors are projected to be worth a significant \$1 trillion by 2030.



The continent is seeing demand for animal source foods increase rapidly as incomes rise, driven by population growth, economic growth and urbanisation. These megatrends offer an unprecedented opportunity to create an intentional paradigm shift in the African livestock sector. This change can reposition livestock to become a business activity with the potential to significantly improve food and nutrition security, drive inclusive growth, create millions of new jobs along several value chains and support the continent's efforts to become a major player in global agro-related export markets. This vision is not without challenges. The livestock sector faces a number of issues including climate change and other environmental challenges (air, land, soil, water, and biodiversity), and the impact on human health of zoonotic diseases and food safety, all of which must be factored into transitional plans.

The African Development Bank (AfDB) is implementing its 'Feed Africa' strategy – a bold and ambitious plan to help the continent achieve food self-sufficiency. The Feed Africa strategy is an essential component of the Bank's overarching 10-Year strategy (2013-2022), together with its other strategic priorities: 'Light Up and Power Africa'; 'Integrate Africa'; 'Industrialize Africa'; and 'Improve the Quality of Life for the People of Africa'. Collectively, these priorities are referred to as the Bank's 'High 5' Agenda, intended to be a game changer in African development.

The Feed Africa Strategy for Agricultural Transformation in Africa (2016-2025) took a targeted and coordinated approach, prioritizing an initial set of commodity value chains and agro-ecological zones for a competitive and inclusive agribusiness sector. The strategy set out the path to self-sufficiency in key commodities; moving up the value chain in export commodities; creating a food secure Sahel and realizing the potential of the Guinea Savannah. This initial set of priorities aimed to create a sustaining engine of jobs and wealth thus alleviating poverty, enhancing nutrition, food security and safety, supporting the export of African agricultural commodities, driving value addition while protecting the environment. The agricultural strategy is therefore closely aligned to the dual principles of the Bank's 10-Year strategy of inclusive growth and a gradual transition to green growth. It identifies several specific priorities for transforming Africa's livestock subsector, including:



Increasing production, productivity, and processing in a cost-effective, gender-responsive and environmentally sustainable way with a focus on the dairy, red meat, poultry and pork value chains. It promotes good feed, health and reproductive management for livestock; and stresses the quality and safety of products and improvements in storage and cold chains to reduce production losses.



Adopting a nuanced regional approach, leveraging the potential of under-tapped regions and adapting technological and policy solutions to match local natural resources and ecosystem comparative advantages in order to maximise domestic, regional and global market opportunities.



Adopt a dual approach to strengthen both smallholder and large production systems while linking them to integrated and equitable value chains to most efficiently reach the market.



Put in place and enforce policies and regulations that are conducive to accelerating private and public investments and strengthening the capacity of producers, producers' organizations and public institutions. Address infrastructure gaps such as air and water quality, roads networks, communication, storage facilities and market platforms, while stimulating job creation.

These priorities created the impetus for the Bank to develop a holistic Livestock Investment Master Plan (LIVEMAP) to help operationalize the Bank's livestock transformation agenda. The LIVEMAP is founded on the Bank's High 5 agenda, and builds on decisive continental and regional commitments, such as the 2003 Maputo Declaration and the 2014 Malabo Comprehensive Africa Agriculture Development Programme (CAADP) commitments. It will also support the achievement of more universal priorities such as the global sustainable development goals (SDGs), the AU's Agenda 2063, the Livestock Development Strategy for Africa (LiDeSA) and the African Food Security Dialogue. It will provide the comprehensive framework within which individual country priorities can shape investment in the livestock sector in the most coherent and efficient way.



THE LIVESTOCK OPPORTUNITY AND CHALLENGES IN AFRICA

The livestock sector has an opportunity to help support the achievement of the global sustainable development goals by 2030. The potential role of the livestock sector is underscored by population growth and the increasing demand for animal source foods, which are themselves reinforced by the many multiplier effects of livestock production in low and middle income countries. Here, livestock are the mainstay of household economies, food and livelihoods, especially in rural areas. Livestock have some connection to all sustainable development goals (see *Figure 1*) but make important direct contributions to **eight**:



No poverty

- Many rural poor rely on livestock
- Livestock provide 3 major pathways out of poverty: (1) securing assets, (2) improving productivity and (3) increasing market participation



Zero hunger

- Food (energy and high value protein)
- Traction and fertilizer for crop production
- Income



Good health and well being

- Essential micronutrients, especially for children, women and the elderly
- Majority of animal diseases could cause human pandemics
- Use of antimicrobial expected to rise in livestock
- Diseases limit livestock productivity



Quality education

- A healthy diet is key to learning capacities (e.g. school milk programs)
- Livestock provides income, which supports education



Livestock provides income, which supports education

- Majority poor livestock keepers are women, especially with small ruminants and poultry
- Women have less access to resources (land and capital)



Clean water and sanitation

- Livestock use large amount of water
- They are source of water pollution (e.g. nitrates)
- Water contaminated by livestock causes hygiene problems
- Livestock can contribute to protect water quality



Affordable and clean energy

- Livestock are an energy sink and source
- Recycling animal manure (e.g. biogas) provides an alternative to fossil fuels or wood



Decent work and economic growth

- 40% of agricultural GDP is provided by livestock
- The sector is growing at a fast rate
- High rate of child labour and occupational hazards



Industry, innovation and infrastructure

- Many depend on livestock, including from jobs provided in the value chain (feed, processing, retailing)
- Small scale livestock keepers lack market access and inclusion
- Livestock products are mainly consumed locally and marketed informally



Reduced inequalities

- Livestock are a source of income, create employment opportunities and provide market participation to poor rural households



Sustainable cities and communities

- Hundreds of million of people in cities keep livestock
- Benefits for food security, nutrition, jobs creation
- Potential threat to health and sanitation
- Supports rural-urban linkages



Responsible consumption and production

- Wastes and losses along livestock supply chains are high
- Rebalancing diets and the share of animal products can contribute to sustainability and health



Climate action

- Poor livestock keepers are among the most vulnerable to climate change.
- Livestock are responsible for a significant share of GHG emissions but have large mitigation potential, including through soil carbon sequestration in grasslands



Life below water

- Livestock use large amounts of fishmeal, which leads to overexploitation of marine resources and losses of biodiversity
- Eutrophication and hypoxic water conditions



Life on land

- The major part of land is used for livestock
- Livestock contribute to biodiversity losses through impacts on habitats, LUC, water, land-use change, soil pollution, grassland species, etc.
- They also contribute to preserve biodiversity and domestic animals are part of biodiversity



Peace, justice and strong institutions

- Numerous conflicts in areas where access to land creates tensions between communities (e.g. pastoralists)
- Livestock can also be a threat to biosecurity

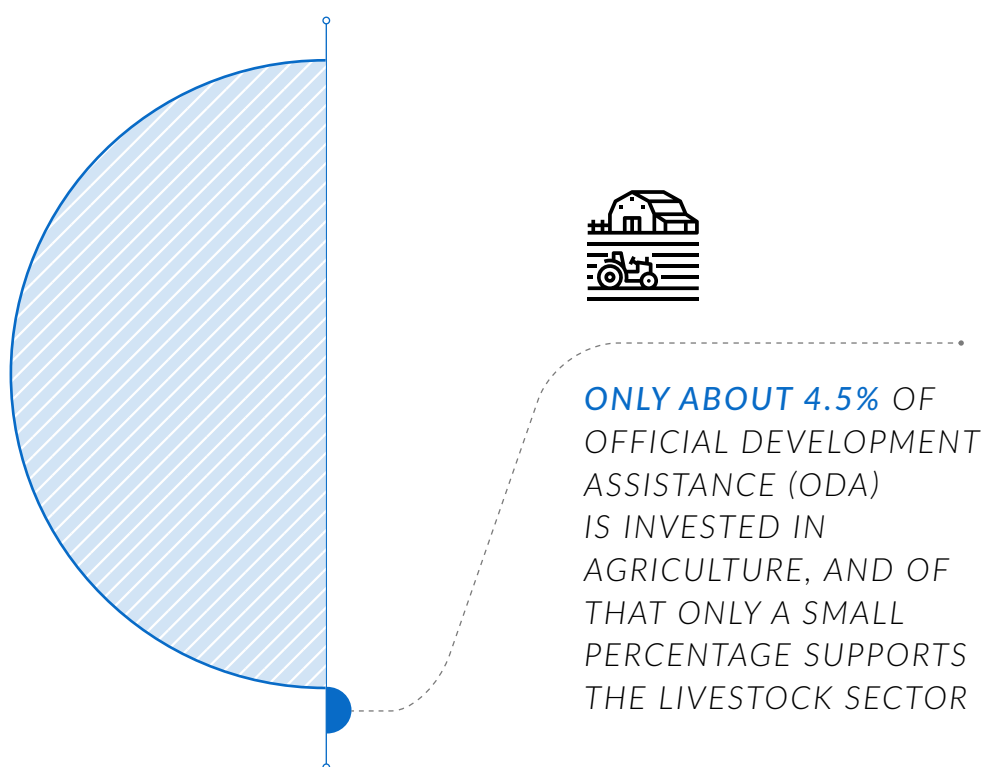


Partnership for the goals

- Stakeholders of the livestock sector have come together to form the Global Agenda for Sustainable Livestock and recognize the UN SDGs in their strategy

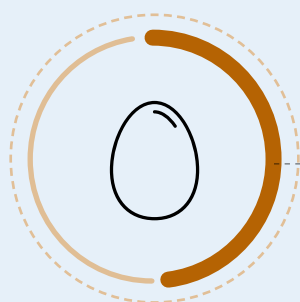
The LIVEMAP capitalizes on solutions that are proven and research-derived and that work in a development context. They aim, in the words of SDG2, to help end hunger, achieve food security and improved nutrition and do so sustainably, safely and equitably through supporting Africa's small and medium scale livestock farmers.

Globally and across Africa, the livestock sector accounts for about 40% of agricultural GDP, although that percentage varies from 15–80% across countries in the developing world. Despite the importance of the sector demonstrated by these figures, the level of investment in livestock remains low. Only about 4.5% of Official Development Assistance (ODA) is invested in agriculture, and of that only a small percentage supports the livestock sector. In most African countries public expenditure on livestock is less than 10% of the agricultural budget and it is considerably less in many countries.



Demand for animal-source foods is rising rapidly across the African continent and this growth is projected to increase for several decades to come, driven by increasing population, urbanization and shifts in consumer preference as incomes improve. While per capita consumption is still relatively modest in Africa, as incomes continue to rise the demand for milk, meat and eggs will increase for the foreseeable future. The African Livestock Futures study (Herrero, 2014) predicts that demand for animal source foods will double or triple in Africa, depending on the region and commodity. While the growing market for animal source foods may be partially met by imports or local industrial-scale production, for most developing countries the starting point for an inclusive and sustainable transformation of the livestock sector is the hundreds of millions of small to medium scale farmers who already practice mixed or pastoral animal husbandry.

Meat, dairy, eggs and fish provide 40% of the world's protein and 18% of its calories. The daily protein supply from animal products varies hugely between continents, from more than 60% in North America (nearly 70 grams of protein per person per day) to slightly over 20% (15 grams per person per day) in Africa. The World Health Organization recommends that sedentary adults should consume about 50 grams of protein a day. Animal source foods, high in bio-available protein and micronutrients, are essential to mother and infant health during the first 1,000 days and ideally up to at least 3,000 days. One egg added to a child's diet daily for six months has been shown to reduce stunting by 47%, and supplementing children's diets with animal source foods has been shown not only to reduce stunting but to improve learning ability and cognitive and social skills. The World Bank estimates that Africa is losing about \$10 billion per year in GDP due to childhood stunting¹ and the costs of investment in improving nutrition among stunted children were estimated to have significant long-term economic benefits - conservatively estimated at 15 times the initial investment. Increased livestock productivity and higher consumption can thus not only play a significant role in improving food security and nutrition in Africa but have both direct and indirect effects on overall long-term economic development.



ONE EGG ADDED TO A CHILD'S DIET DAILY FOR SIX MONTHS HAS BEEN SHOWN TO **REDUCE STUNTING BY 47%**

Although 'livestock' is commonly considered a single sub-sector, its constituent parts are diverse, including cattle (for meat and dairy products), sheep and goats (for small ruminant meat and dairy products), pigs (for meat), camels (for meat and milk), poultry (preponderantly chicken for eggs and meat), as well as 'micro livestock' such as guinea pigs, grass cutters, insect-rearing and game ranching. Production systems vary hugely according to agroecology, farm size and structure, and access to markets. Smallholder farmers provide the bulk of today's staple foods and livestock products in African countries, and economic and demographic projections suggest that this will continue for the foreseeable future (Masters et al., 2013). Post-farm gate small-scale abattoirs, traders, food processors and retailers continue to add value to livestock production. Such enterprises present multiple synergies: to harness the diversity of livestock production systems to meet the rising demand for milk, meat and eggs; to improve the incomes, livelihoods and nutrition of poor households; and to reduce the potential risks posed by livestock farming to human and environmental health. For many marginal livestock farmers, incentives and opportunities to strengthen their capacity to adapt and resilience to shocks will be critical. These opportunities may span opportunities to access new markets and obtain information and insurance that support their roles in environmental stewardship.

¹ <http://pubdocs.worldbank.org/en/536661487971403516/PRN05-March2017-Economic-Costs-of-Stunting.pdf>

While there are exciting transformational opportunities for the livestock sector and for small- and medium-scale producers, a number of challenges also need to be addressed. These include:



i) climate change, both mitigating greenhouse gas emissions and adaptation to future climate scenarios;



ii) food safety, to ensure consumers can access safe food, especially in informal markets where most animal source foods are sold;



iii) reducing the risk of pandemic and endemic zoonotic diseases;



iv) reducing the threat of antimicrobial resistance; and



v) ensuring equitable development of the sector, benefitting women and youth among others.

Small and medium-sized livestock producers, and post-farm enterprises in developing economies face many complex and interlinked constraints, including:



i) the emergence and reemergence of animal diseases;



ii) policies, coupled with technical and financial conditions that favour large-scale livestock operators;



iii) insufficient access to relevant knowledge, technologies and innovations, particularly those which enhance livestock health, genetics and feeds and result in low productivity;



iv) the effects of climate change as well as dealing with the negative environmental impacts of intensive rural and peri-urban production systems;



v) poor infrastructure limiting their access to services and to livestock markets;



vi) limited storage/cold chain, abattoir and meat processing capacities; and



vii) competition from imported livestock products. Unless millions of small and medium-scale livestock keepers are supported to manage these challenges and seize opportunities, they will not be able to improve their family livelihoods on an individual level and overall economic development will be hindered.

STRATEGIC FOCUS OF THE LIVESTOCK INVESTMENT MASTER PLAN

The purpose of the LIVEMAP is to support the Bank's Feed Africa strategy by guiding and prioritizing investment options made by the Bank and Regional Member Countries (RMCs) on the basis of evidence and in a way that aligns with global, continental and country priorities. The plan will also steer benefits from proven livestock technology, innovation and research to deliver enhanced solutions for development challenges.

To attain a sustainable and inclusive transformation of Africa's livestock sector, the Bank and its implementing partners will focus on those investments which realize the full potential of the livestock sector to contribute to the plan's goals. The aim is to support and guide the development of a portfolio of integrated livestock solutions for RMCs that will sustainably raise the productivity and profitability of selected high priority livestock systems, create inclusive employment along the value chains and contribute to food and nutrition security. The LIVEMAP is designed around four pillars and two cross cutting themes.



The aim of the **first pillar** is to increase livestock productivity through targeted genetic improvement, animal health and better feeds by improving access to supplies, services and knowledge. This will include fostering sustainability and resilience at the same time with respect to the climate-readiness of livestock systems, improved biodiversity and agro-ecological systems.



The **second pillar** will focus on market and value chain development. This will include: commercialization of livestock production and animal products; developing market infrastructure; introducing digital innovations and platforms; linking smallholder farmers to markets; improving processing and value addition of animal products; and cold chain development. Targeted opportunities for supplying local, regional and international markets will also be identified.



Recognizing that the increasing intensification of the livestock sector could potentially also carry risks to both animal and human health through food safety, zoonotic diseases and antimicrobial resistance, the **third pillar** will adopt a holistic 'One Health' approach to these challenges, bringing together animal, human and environmental health.



Given the critical importance of animal source foods in human nutrition and health, the **fourth pillar** will focus on promoting sustainable, safe and healthy diets, food security and nutrition through animal source foods, ensuring that investments are nutrition sensitive. This pillar will also promote consumer awareness among the population sectors that would most benefit from consuming more animal sourced foods (e.g. parents of children under 8, women of child bearing age) and promote access for them.

In addition to the above four pillars there are two cross-cutting themes.



The gender, youth and social inclusion theme will ensure that equity is applied across all LIVEMAP investments so that women's contribution to the livestock sector is recognized and opportunities to promote gender equity and the empowerment of women are mainstreamed in investment design. Opportunities for youth employment along livestock value chains will also be promoted.



The policy support theme will provide evidence based assessment of policy options to help focus investments by national and international, public and private sector investors in the livestock and associated sectors to be prioritized according to impacts. It will also provide advocacy for greater investment in the livestock sector.

This comprehensive package of evidence-backed solutions will be accompanied by a communication and advocacy strategy to support investors to be fully informed and confident when investing in sustainable livestock systems. Investment decisions by developed countries may be influenced by negative perceptions of the livestock sector in relation to climate change, the potential effects of the consumption of animal products on public health and concerns about animal welfare. Investment decisions are complex and without pertinent data and evidence and a clear communication of the strategic intent of livestock investment, investors may fail to recognize the critical role that livestock could play in the nutrition, livelihoods and economic development of low-to-middle income countries and its irreplaceable function in a number of semi-arid and arid zones in Africa.

Lack of human and institutional capacity can be a major impediment to the development and growth in the livestock sector. Therefore capacity development at a range of levels, from training farmers and value chain actors to building capacity in government departments will be fully integrated into all pillars and themes.





Pillar 1. Sustainably raising livestock productivity

Productivity enhancing technologies and innovations

Productivity levels in Africa's livestock sector are currently very low. For example, the average annual milk production of a cow in sub-Saharan Africa is 6% of that in OECD countries. At the village level, rural African farmers typically raise flocks of 20-50 chickens, which produce 60 eggs per hen per year and take more than a year to achieve live market body weight of 1.5 kg. In commercial peri-urban operations, broiler chickens are sold at six weeks of age (weighing 1.75-2 kg each) and hens produce more than 300 eggs per year. East African dairy demand is growing by 5% per annum, with production dominated by small-scale producers that have an average herd size of three cows; the opportunity to improve productivity to meet this growing demand is huge.



AFRICAN FARMERS TYPICALLY RAISE FLOCKS OF **20-50 CHICKENS**, WHICH PRODUCE **60 EGGS** PER HEN PER YEAR

Improving the productivity of livestock systems requires improvements in the genetics, feeding and health care of animals. The genetic potential of many livestock breeds is low, but they are often well adapted to the local environment. However improved and adapted genotypes can be introduced through targeted cross-breeding and using new genetic tools such as within-breed genomic selection coupled with digital tools to collect phenotypic information directly from smallholder farmers. Animal feeding is very often a critical limiting factor to better productivity. Climate smart and gender responsive interventions to improve animal nutrition can make a significant difference to productivity. These include: improving specific fodder crops: up-grading the nutritive value of crop residues; better use of by-products such as cassava peels; feed processing; and pasture management. Access to effective veterinary products and services to improve animal health and so reduce animal mortality and losses in productivity are also important to raise productivity. The delivery of products and services to livestock producers, backed by surveillance systems and diagnostic capacity will also be supported. Many diseases are transboundary and will require cross-border or regional cooperation to ensure they are better controlled. Insurance for livestock assets against health and climatic risks, through methods like index-based insurance and strengthened early warning systems can help de-risk investments for small farmers.

Technologies and innovations need to be responsive to, and appropriate for, a range of different categories and both genders of farmers, including livestock keepers with different sizes of enterprises. For example, vaccinations which are only available in packs of 50 doses are of little use to a livestock keeper with three animals. Sustainable improvements in productivity require targeted and integrated solutions combining the management of production, genetics, health and sustained supply of feeds, with the right infrastructure and biosecurity. For example, there is little point in improving the genetics if there is insufficient feed available to support increased production, or if improved breeds are more susceptible to disease. Too often in the past, technologies and innovations have been introduced in isolation, thereby decreasing the chances for overall impact and sustainability. Innovations benefit from being bundled to ensure success and this approach requires linkages between investors, government, farmers, private sector companies, and banks each contributing their product, service or knowledge.

Much of the livestock in Africa today is found in the pastoral and agro-pastoral systems which provide multiple benefits. They produce not only meat, milk and skins but also manure and the animal power to support agricultural activities. Animals on the move provide critical environmental services such as helping to maintain biodiversity and soil fertility, sequestering carbon, regulating waters, and dispersing seeds. Pastoralism though is under threat from climate change effects, especially droughts, the encroachment of agriculture, and the breakdown of traditional land management practices. Innovative ways of increasing the resilience of these systems, including putting in place early warning systems, index-based insurance and other financial products as well as improved animal health services and effective marketing channels are needed. Animals from these systems are often traded regionally (e.g. from the Sahel to the large coastal cities in West Africa) or internationally (e.g. from the Horn of Africa to the Gulf States), but transboundary animal diseases, the lack of veterinary support services and the lack of traceability systems can disrupt and threaten this trade. The World Organization for Animal Health's (OIE) Terrestrial Animal Health Code² contains both general principles on the conflict and traceability of live animals together with guidance on the design and implementation of identification systems to achieve animal traceability.

² <https://www.oie.int/doc/ged/D10905.PDF>



It is important to recognize that increasing the productivity per animal, especially for ruminants, can have a significant impact on the reduction of greenhouse gas emission intensities (the amount of greenhouse gas emitted per unit of product) as

Figure 2 shows. This may also translate to reduced absolute emissions if fewer, but more productive animals are kept.

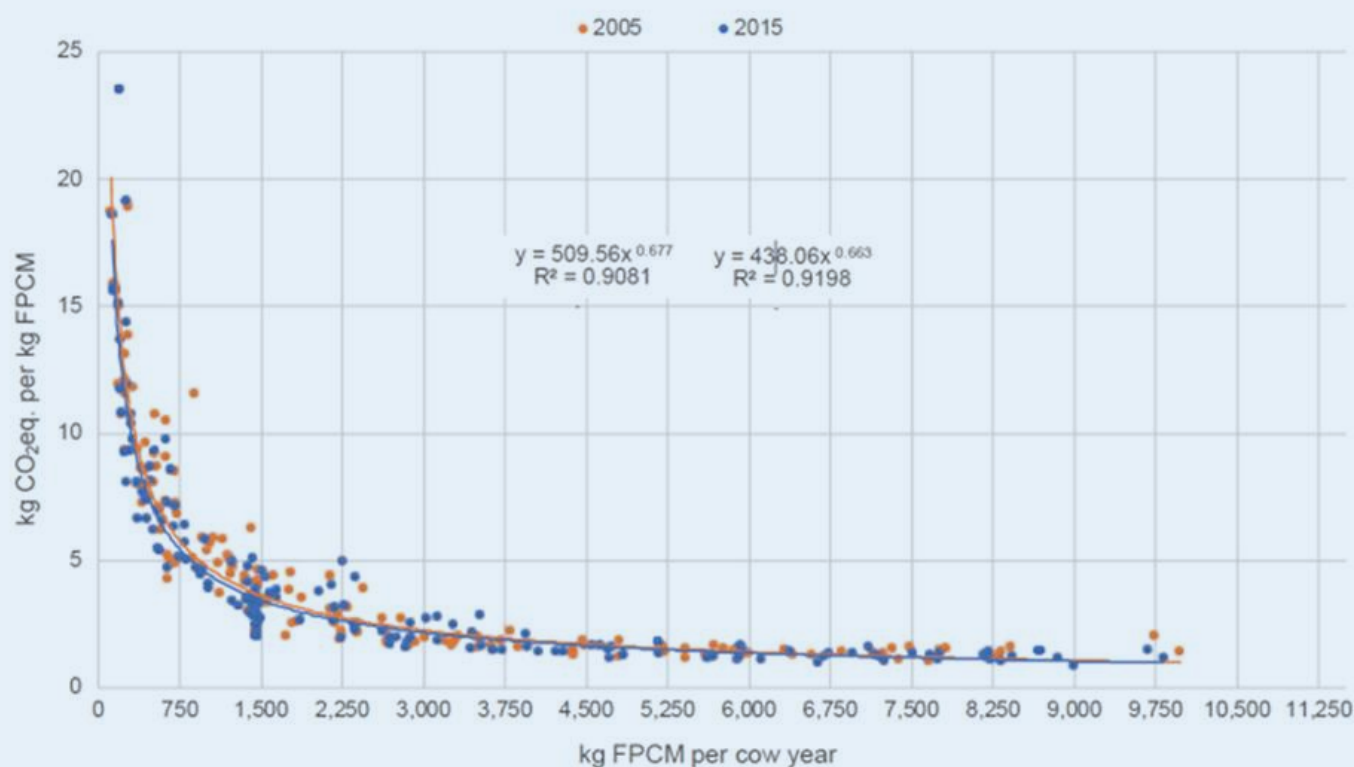


Figure 2. Reduction in GHG emissions' intensity (CO₂ equivalent) with increase in milk yield per cow per year expressed as fat and protein-corrected milk yield (FPCM)³.

Promoting improved access to livestock inputs and services

Improving the productivity and profitability of livestock can only be achieved through better access to services and supplies such as artificial insemination, veterinary services, nutritious feeds, forage seeds, financial and business development services as well as extended knowledge of livestock production, processing and marketing. Suppliers are involved with extension and advisory services (EAS) programmes in most countries and are major drivers of agricultural innovation and productivity improvement.

³ FAO and GDP. 2018. Climate change and the global dairy cattle sector – The role of the dairy sector in a low-carbon future. Rome. 36 pp. Licence: CC BY-NC-SA- 3.0 IGO <http://www.fao.org/3/CA2929EN/ca2929en.pdf>

Private suppliers have largely replaced parastatals and now provide an increasing volume of diverse products – including digital tools to promote knowledge and advise on available services. Future extension and advisory systems will likely feature an expanded role for private suppliers. Public programmes, policy development, and supporting strategies should help ensure the quality of extension and advisory services linked to supply. With an increased role for the private sector in supplying important inputs to farmers such as veterinary services, feeds, and animal health products, governments can support efforts by creating a business enabling environment and to ensure effective regulatory and control functions, rather than providing unsustainable subsidies for commercial services. They also need to focus on strengthening public goods services which are not currently offered by the private sector, such as infrastructure or veterinary laboratory services and the delivery of public private partnership models, where the private sector can deliver more efficiently with targeted public sector support. For example, OIE has produced guidelines for public-private partnerships in the veterinary domain⁴. It has also developed the performance of veterinary services (PVS) pathway⁵, a capacity building platform to improve national veterinary services sustainably. This enables countries to steer and prioritize enhancements to their animal health system.

These functions will require better coordination (for example across national and local government), an increase in government services capacity to ensure equitable access to services and better inclusion of the most vulnerable. Activities might include:

- 1 | **Strengthening the supply sector** by improving the public policy environment and national food quality and safety systems, promoting sound business planning, and improving management and logistical systems to encourage profitability as a base for provision of extension and advisory services.
- 2 | **Promoting market demand projections** to suppliers and establish supplier procurement standards of good business practice, service quality, and professional ethics and – where appropriate – encourage certification systems to ensure quality.
- 3 | **Providing training and technical support** for suppliers working through associations and trade groups rather than individually.
- 4 | **Promoting climate smart livestock systems.**
- 5 | **Ways to protect assets** against shocks or transfer risks for farmer protection.

It should be recognized that women and men livestock keepers may have very different access to supplies, services and information. As a result, the plan will make a targeted effort to ensure that support services are equitably designed and delivered to all livestock keepers, regardless of their gender.

⁴ https://www.oie.int/fileadmin/Home/eng/Media_Center/docs/pdf/PPP/oie_ppp_handbook-20190419_ENint_BD.pdf

⁵ <https://www.oie.int/solidarity/pvs-pathway>



Pillar 2. Improved marketing and value chain development including enhancing value addition through processing

The Bank's analysis (2014) showed that even the most complex livestock commodities still use low technology solutions for their processing, i.e. no medium or high-tech processes are required to produce livestock commodities. Despite this, most African countries do not have the capabilities to transform raw materials into manufactured products. Instead, they import ready processed products. These are mostly dairy (milk and cream) products which account for 25% of total livestock commodity imports, and prepared and edible products (22%), although the picture varies by region and country. These commodities are largely processed with considerable value-addition, while the most exported products are: live animals (14%), unfinished leather and hides/skins (27%), largely without any value-addition.

This shows clearly that despite the enormous livestock potential, Africa spends a significant amount on importing processed livestock commodities to meet domestic needs. By ramping up local production of both simple and complex livestock products, coupled with post-farm gate investments to ensure food safety and quality assurance systems to match those of competing imports, Africa can stimulate economic growth by adding more value to raw livestock products.

Opening access to markets for smallholder livestock keepers is vital to improve profitability and incentivize increased productivity. The starting point is a sound analysis of the value chain to identify any constraints across it. Such tools are already available for example FAO's value chain analysis tool.⁶ Depending on the commodity and context, improvements may occur through:

- A better understanding of market demand and market information systems.
- Collective action among producers such as creating or improving cooperatives or producer groups to work on issues such as sustainability of supply, bargaining power or economies of scale. Care needs to be taken to ensure that these groups avoid benefitting only larger producers.
- Collective action among post-farm gate actors responsible for adding value and ensuring the delivery of safe and high-quality livestock produce to consumers - such as traders, abattoirs, meat and dairy processors, butchers and food retailers.
- Institutional and value chain capacity building in food safety practices and standards along the entire value chain.

⁶ http://www.fao.org/docs/up/easypol/432/value_chain_analysis-brochure-e-version.pdf

Improved processing infrastructure and cold chains management (by public or private sector) of processing and packaging facilities, e.g. milk collection and processing facilities, abattoirs, livestock markets.

Digital technologies and products such as digital finance, e-commerce and other innovations.

Post production handling and technology for livestock products for small and medium sized enterprises.

Improved waste management capacities e.g. biogas production from abattoir and farm waste.

Policies to promote interregional markets for live animals and animal products.

Improved branding and certification as well as the development of new products and capacity to comply with both statutory product quality standards and characteristics required by the market, driven by either consumer preferences or retailer demand.

Partnerships between livestock producers and buyers to ensure market access and price negotiation coupled finance to ensure necessary capital investment.

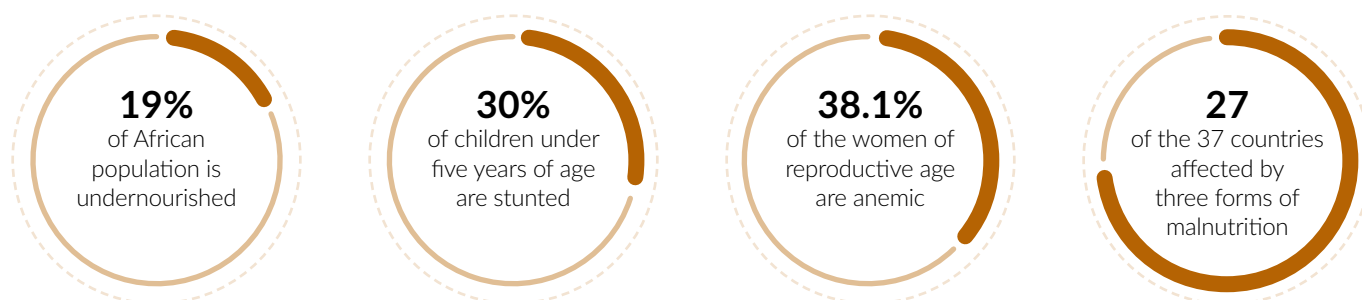
Two key approaches - market development and targeting agro-industrialization initiatives supported with investments in RMCs that are net animal source food importers - will help achieve the dual benefits of import substitution and value addition through processing. The Bank has already prioritized the creation of Special agro-industrial Processing Zones (SPZ) across key agro-ecologies, and livestock value chains from animal feeds to finished products can be readily incorporated.





Pillar 3. Promoting sustainable food security and nutrition through animal source foods.

Globally, Africa is the region most affected by undernutrition. 19.1% of its population is undernourished and 256 million people go hungry (SOFI, 2020). The extent of the undernutrition gap makes the goal of eliminating hunger by 2030 doubtful. Despite countries' serious efforts to address malnutrition, it continues to rise, and the progress is too slow to meet the World Health Assembly (WHA) nutrition targets⁷. About 30% of children under five years of age are stunted, meaning they have impaired growth and development through undernutrition, which will inhibit their ability to reach their potential throughout their lives, measured by lack of growth (being significantly shorter than they should be at their age.) In addition, 38.1% of the women of reproductive age are anemic, risking both their health and that of their future infants, and 17% of women are obese (Global Nutrition Report, 2020). Africa is the region most affected by overlapping forms of malnutrition. Indeed 27 of the 37 countries affected by three forms of malnutrition – childhood stunting, overweight in women and anemia in women of reproductive age - were in Africa (Global Nutrition Report, 2020).



Addressing hunger and all forms of malnutrition (undernutrition, micronutrient deficiencies, overweight and obesity) requires not just quantities of food, but sufficient nutritious food, which is most easily found in animal source foods (ASFs). Animal source foods can be critical to meet nutrient gaps, especially among young children and pregnant and lactating women who also have increased nutritional needs. Micronutrients like iron and zinc and Vitamins A, B and D are essential for proper foetal development, prevention of birth complications and the avoidance of congenital defects. Globally, WHO estimates that anaemia affects 42% of children below 2 years old and 40% of pregnant women. Acknowledging that nutrient dense dairy, fruit, vegetables and protein-rich foods (both plant and animal-sourced) are the most expensive food groups globally (SOFI, 2020), it is clear that making such foods affordable and supporting low-income households to access them is an essential step to combat hunger and malnutrition.

⁷ World Health Assembly Nutrition Targets for 2025: 40% stunting; 50% anemia reduction; 30% reduction in low birth weight; No increase in childhood overweight; At least 50% increase exclusive breastfeeding; Reduce and maintain childhood wasting to less than 5%

The dimensions of food security have usually been considered to be: food availability in the marketplace, access to food by individual households, food utilization through adequate diet, water, sanitation and healthcare, and nutritional stability. These have been supplemented in some frameworks with affordability and sovereignty as additional important dimensions. Sovereignty refers to people's fundamental right to nutritious food, putting people at the center of policies and viewing food as far more than a commodity.⁸ The LIVEMAP will address and promote the role of animal source foods in healthy diets as a route to achieving nutrition and food security objectives. It will be based on this theoretical framework, as well as understanding the different pathways through which livestock can increase consumption such as direct household consumption, school feeding programmes (e.g. supplying milk or eggs) or sale of livestock products for income to buy food. Nutritional education and behavioural change communication will be integrated into programmes to ensure that the important role of animal source foods within balanced diets in complementing plant-based foods is widely understood. Finally, the LIVEMAP will also highlight where possible the growing challenge of increased consumption of processed foods with high sugar, sodium and fat content, including processed animal sourced foods. This pattern of consumption is leading to obesity and associated public health problems, often alongside under-consumption.

The LIVEMAP will specifically:



Seek to lower prices of animal source foods to make them affordable through technologies and innovations that increase productivity. Value addition, such as milk processing, will ensure availability all year round, stabilize prices for continuous supply, increase shelf life, and reduce losses.



Provide higher income from increased profitability of livestock, so families can purchase foods not produced at household level or non-food items beneficial for nutrition. Increased incomes are associated with increased dietary diversity and increased consumption of animal source food. The LIVEMAP will provide opportunities for increased income through more profitable participation in the livestock value chain. It is important that women's income is increased as they play a key role in food acquisition and preparation.



Mainstreaming social behaviour change which will increase the potential of the intervention. As productivity increases, driving higher income and lower prices this should translate into higher consumption of animal source foods and better nutritional outcomes on the ground. Nutritional social behaviour change will centre on three approaches **i)** advocacy to governments to mainstream animal source foods in their nutrition investments; **ii)** support for institutions and networks to understand and support the role of animal source foods in food systems to prevent malnutrition; and **iii)** promoting individual dietary advice to consume adequate amounts of animal source foods - especially among children and women. This will be done cautiously to avoid over-consumption. Conscious of the role animal source foods can play in food borne diseases, food safety issues will also be addressed, as described under the 'One Health' approach.

A gender sensitive approach will be taken throughout these interventions to promote equality, taking into account women and men's different roles in livestock production and food provision.

⁸ FAO, Food Security and Sovereignty, Gordillo & Méndez Jerónimo, 2013.



Pillar 4. One Health

It has been clear to many for some time that the health of animals, humans and the environment are inextricably connected. The Covid 19 pandemic has brought this connection sharply into focus and brought it to the attention of decision makers at the highest levels of governments. A 'One Health' approach to dealing with these interconnected issues has developed over the past 20 years. There are many definitions of One Health and the related field of ecohealth: common to all is the idea that human health is dependent on the health of the environment and animals, both wild and domesticated. From a livestock sector perspective, the areas most conducive to a One Health approach are zoonotic diseases (emerging zoonoses with pandemic potential and endemic zoonoses), food safety and antimicrobial resistance (AMR).



'One Health' is an approach to designing and implementing programmes, policies, legislation and research in which multiple sectors work together to achieve better public health outcomes.

The areas of work in which a One Health approach is particularly relevant include food safety, the control of zoonoses and combatting antibiotic resistance.

(World Health Organization)

The LIVEMAP will facilitate cross-sectoral coordination and collaboration in these areas, based on One Health principles. It will ensure coordination and collaboration among, for example ministries of agriculture or livestock, health and the environment. There are a few examples of cross ministry initiatives such as the Kenya Zoonotic Diseases Unit which is a joint unit of the Ministry of Health and the Ministry of Agriculture, Livestock and Fisheries.

The One Health approach helps to manage the risks connected with our use of livestock. 60% of existing human infectious diseases are zoonotic. At least 75% of emerging human infectious disease pathogens (such as ebola, HIV and influenza) are of animal origin. 80% of pathogens with potential use for bioterrorism (such as anthrax, brucellosis or Q Fever) are zoonotic and five new human diseases occur every year of which three are of animal origin. The transition from subsistence to semi-commercial and commercial livestock farming is associated with greater zoonotic spillovers, linked to higher animal numbers and greater density in close proximity to people, often with limited infrastructure and knowledge to maintain recommended standards of hygiene. Supporting effective disease surveillance systems, linking veterinary and human surveillance, improving diagnostic capacity and general knowledge about zoonotic diseases has never been more important.

A large part of the burden of foodborne disease falls on the poor in low and middle income countries who mainly obtain their animal source foods from informal, traditional markets which may lack high standards of hygiene and food safety. However research has also shown that in low and middle income countries, modern industrial animal production and retail is not necessarily safer. Ensuring that food is not only sustainable

but safe has been an under-invested area and most of the investment in food safety in Africa has been in the formal sector relying on regulation. Over 80% of food is sold through the informal sector where applying such regulations is challenging. While an overall regulatory framework is important, successful upgrading in the informal sector relies on risk-based approaches. An understanding of risks and possible mitigations include increasing the awareness of food safety among all stakeholders and building their capacity (including the use of simple IT), leveraging consumer demand for food safety and improving the governance of food safety systems technologies. (GFSP, 2019).

A World Bank report (World Bank, 2017) found that if antimicrobial resistance is not brought under control, it is likely to kill more people than cancer by 2050. Animal agriculture is by far the greatest user of antimicrobials with fast growth in low and middle income countries, although the extent of the contribution of the livestock sector to the overall problem of antimicrobial resistance is not yet known. While the use of antimicrobials is probably high in intensive pig and poultry units in Africa, there also appears to be some misuse of antimicrobials across the smallholder livestock sector. More information on the use and mis-use of antimicrobials is needed, together with increased awareness of the problem at all levels, better laboratory testing capacity and incentives for more rational use of antimicrobials and the promotion of alternatives such as improved management and biosecurity.





Cross-cutting theme 1: Policy support to transform the livestock sector

Several initiatives provide high-level frameworks for developing further policy support to the livestock sector. These include the 2003 Maputo Declaration and 2014 Malabo Comprehensive Africa Agriculture Development Programme commitments, the AU's Agenda 2063 and the Livestock Development Strategy for Africa (LiDeSA) and the African Food Security Dialogue.

The Livestock Development Strategy for Africa provides a framework to build consensus, mobilize stakeholders, and establish strong coordination and partnerships to drive the livestock transformation in Africa by coordinating policy support.

The LIVEMAP will support RMCs to create an inclusive and enabling environment for business-led change by creating evidence-based policies (such as livestock data availability and analysis) to stimulate both Bank and private sector investments. Examples may include simplifying business registration and licensing; improving tax policies; promoting cross-border and intra-regional trade and dialogue (such as removing trade barriers, building sanitary and phytosanitary governance and capacities in support of the agreement establishing African Continental Free Trade Area (AfCFTA), harmonizing standards and improving security); enabling better access to finance; enhancing public-private dialogue and partnerships; developing appropriate quality standard; and facilitating the harmonization of food controls. The Bank will look to cover other areas of policy support, including: regulating the negative consequences of intensification; increasing resilience among pastoralists; and addressing income inequalities while protecting the land rights of smallholders and pastoralists. Land access, rights and titles is an important if complex and sensitive issue but one that is often critical for the development of the livestock sector, especially in pastoral areas, where these issues can lead to serious conflict. The Bank will equally support efforts to ensure coherence of policies and policy frameworks across actors in Africa to avoid overlaps or duplication of mandates and efforts.

While creating a more enabling environment for private sector initiatives, it is crucial that policies also safeguard the interests of the most vulnerable. These groups often operate in the informal sector, and thus may lose critical income opportunities when the livestock sector becomes more regulated.

More generally, LIVEMAP aims to integrate across critical dimensions: productivity, nutrition, health, environment, climate change, inclusiveness, gender etc. There will be some challenging policy trade-offs and investment prioritizations which will be guided by RMC policies and priorities while also carefully assessing and mitigating possible unintended consequences.

The availability of high quality data is required to inform policy and prioritize investments as well to monitor their impacts. Unfortunately the quality of available livestock data, even for the most basic indicators such as livestock numbers is questionable and national household, agricultural or farm surveys tend to marginally appreciate livestock.⁹ The LIVEMAP will work with the Regional Member Countries to improve the relevance of national surveys for the livestock sector and to improve the quality of data, including building on the Animal Resources Information System (ARIS) of AU-IBAR.

⁹ <http://documents1.worldbank.org/curated/es/850001468149370813/pdf/857320WP0REPLA00LivestockSourcebook.pdf>

Support for the development and implementation of National Livestock Master Plans¹⁰ will be a key part of such policy and investment support as described in the 'development of national livestock plans' section of this document.



Cross-cutting theme 2: Gender equality, youth and social inclusion

Women and youth provide most of the labour required in small livestock production and processing and the marketing of livestock-related products but do not participate equally in control or decision-making in livestock management, which is male dominated. Livestock is an important asset for households. It increases the resilience of households and communities by providing income and food as well as offering a safety net in times of crisis.

The role of women in livestock production is largely undervalued and undocumented. As a result, the gender dimension in livestock production and animal health remains invisible at policy level and its potential is untapped not only in production but also in providing opportunities for women and youth in processing, value addition and marketing. Few women and youth have formal and remunerative access to the sector, which has become unattractive to them despite its potential for income generation and job creation. Livestock policies and market systems are often designed without sound gender and intersectional analyses based on gender, or benefitting from sex and age disaggregated data. Therefore, they often reproduce or exacerbate existing gender inequalities hampering the achievement of more sustainable and inclusive outcomes.

Documenting the contribution of women and youth to the sector is urgently needed as is the design of differentiated and inclusive plans, strategies and policies which take into account and address their specific needs and constraints, and foster inclusive dialogue and participation in decision-making of women, youth and their organizations. Activities targeting value chains in which women are very active such as smallholder dairy and the production of small ruminants and poultry should be actively supported.

In particular, integrated business development will be designed to target women and vulnerable groups by introducing gender-friendly technologies, such as milk processing, trading in livestock products, and labour-saving feed milling machines into projects. The LIVEMAP will drive the development of inclusive livestock value chains and business models in order to ensure that men, women and youth benefit equitably from productive and profitable value chains.

¹⁰ <https://www.ilri.org/news/using-livestock-master-plan-process-boost-investment-livestock-development>



OPERATIONAL AND IMPLEMENTATION ARRANGEMENTS

The purpose of the LIVEMAP is to guide the investments made by regional member countries and the Bank to ensure alignment with country and continental priorities, and to maximize benefits from proven livestock technologies and research providing development solutions. As such, the LIVEMAP is designed to fit with the operational procedures of the Bank and be aligned with regional member countries' priorities and needs. It follows the guiding principles required for implementation and sound partnerships providing: a) subsidiarity, complementarity and comparative advantage; b) transparency and mutual accountability; and c) mutually beneficial partnerships.

The role of the Bank

The Livestock Investment Master Plan will serve as a platform for catalyzing:



the scaling of proven, cutting-edge, context-specific technologies and innovations;

a shift to business-enabling policies; and

leveraging both sovereign and non-sovereign investments.

The Bank will prioritize investments in livestock value chains, aligned to national development priorities. It will also seek to map priority investments and initiatives that will complement the comparative advantages of regional member countries and agro-ecological zones (AEZs).

The Bank has already prioritized the development of core value chains and agroecological zones. However, the LIVEMAP will not be prescriptive about the priority livestock value chains or initiatives that regional member countries should pursue but rather will engage with other national, regional and international entities who will also contribute to the livestock transformation agenda according to their specific mandates. The regional member countries will be the owners of the transformation agenda, working with the Bank and other stakeholders at the national, regional and continental levels.

Roles and responsibilities of different partners

Both public and private actors across livestock value chains at national, regional and continental levels will play different roles as follows:



a) International research institutions such as ILRI/CGIAR, CIRAD, the National Agricultural Research Systems (NARS) and the private sector, have many proven technologies, innovations and partnership arrangements that are ready for introduction into the livestock transformation agenda. Potential collaborations within the CGIAR will be implemented under the new 'One CGIAR' system with centres working together in alignment with unified goals and deliverables. For LIVEMAP, given the focus on livestock, the International Livestock Research Institute (ILRI) - the only CGIAR Research Centre dedicated exclusively to livestock – will play a key role in such engagements;



b) International organisations such as FAO and OIE have vast experience of providing technical backstopping and policy support and their expertise will be leveraged in support of LIVEMAP;



c) The public sector, including national and local governments, will play policy, regulatory and enforcement roles as well as create a conducive environment for business and in some cases, a lead role on extension and other public good services such as zoonotic, priority animal disease surveillance and prevention. It will also lead on antimicrobial resistance and antimicrobial use control and regulation; food safety compliance; convening multisector public sector actors to identify solutions that cut across institutions and sectors; and data collection (census, information management, monitoring and evaluation);



d) the private sector including producers, service providers, processors and marketing experts, will have an important role in financing and scaling agribusiness initiatives in collaboration with regional member countries and other partners. This will include establishing platforms to advocate for the needs of the sector that will enable the identification of investment opportunities and capacity building services;



e) civil society and stakeholder organizations will play a key role of advocacy and in organizing the value chain actors to perform a range of roles including value chain quality assurance;



f) banks and financial institutions who provide the credit required by value chain actors have a role to ensure financial products are designed for the needs of the livestock sector;



g) RECs will take the lead in dealing with harmonization of institutional frameworks and trade facilitation instruments including the harmonization of standards and norms;



h) the African Union acting at the continental level provides harmonization, coordination and technical backstopping;



i) Multi-lateral Development Banks (eg Islamic Development Bank, World Bank) have a role to scale up their involvement in the sector by deploying their full array of instruments across sovereign and non-sovereign investments to respond to the diversity of RMC financing needs.



Creation of a database of frameworks, tools, technologies and innovations

The LIVEMAP represents the development of a continental livestock-specific framework. It integrates the tools, technologies and innovations that can support its implementation and guide the development and deployment of suitable investment. To accomplish this, the Bank will curate a dedicated website featuring livestock solutions and tools, with interactive search capabilities across the thematic areas of this report, covering a range of livestock commodities, geographic locations, and type of solutions. African and international organizations will be invited to propose ongoing additions and developments. The website will be multilingual, to facilitate usage across regional member countries. Individual livestock solutions will feature short descriptions of the innovations and links to more information, which will be available to regional member countries and other Bank partners as they design and implement livestock investments. This will ensure that proven solutions are scaled up effectively, and the regional member countries and the Bank see better returns on investments in the sector.

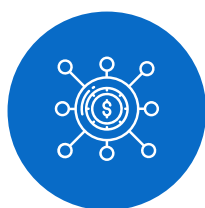
Investment identification, structuring and operationalization

In line with the Bank's Feed Africa strategy implementation plan, the Bank will proactively approach regional member countries that demonstrate a 'readiness to transform' and a large 'scale of transformation opportunity' as starting points for immediate and early execution. Frameworks and tools that help incorporate such assessments of readiness to transform at scale will be embedded into the design processes. An important assessment of readiness is the perspective of the livestock farmer and his or her willingness to participate in commercial market-driven activities. Livestock are kept for many purposes – as insurance, for draught power and to fulfil social and cultural obligations and the potential needs to be clarified in advance.



This approach will help identify where the Bank is best positioned to drive large-scale results quickly, and take a differentiated approach in countries where conditions such as the business-enabling environment and underlying market institutions still need improvements to support the transformation agenda. This approach excludes no regional member country from the transformation agenda, but does suggest the Bank will take nuanced approaches to engagement whether formulating country-level strategy papers or directing its lending (especially sovereign lending).

The allocation of the Bank's financial resources will be based on two principles that drive an overall 'return on Investment' philosophy, namely:



Catalyze additional funding: the Bank intends to become a major source of catalytic funding but the scale of investments required for the overall Feed Africa Strategy are substantial. Approximately \$315 – \$400 billion should be invested in addressing prioritized agricultural commodity value chains including livestock, and potentially \$1.8 trillion to pursue full transformation over a 10-year period. Thus, over the past 5 years, the Bank has invested around USD 600 million in the livestock sector. As a result, the Bank aims to use blended financing to attract private sources of finance – especially from capital markets and the African financial sector – to support the scale of investments required.



Make investments with high 'additionality': the Bank aims to catalyze inclusive agricultural growth. For some key commodities and target agro-ecological zones (such as the compelling case for transforming the Sahel region) the commercial business case for investments across the value chain and underlying infrastructure is challenging. These investments remain critical to support a broad-based and systemic agricultural transformation; as a result, the Bank will act with additionality, investing into areas likely to remain sub-commercial for some time.

The following section on links with ongoing agriculture investments and resourcing the African livestock agenda provides additional details on how the financing of the Livestock Investment Masterplan will be designed to leverage existing financing while also stimulating new sources of funding.

LINKS WITH ONGOING LIVESTOCK AND AGRIBUSINESS INVESTMENTS PLANS AND DEVELOPMENT OF NATIONAL LIVESTOCK MASTERPLANS

The LIVEMAP and its complementary livestock transformation investments should address this key question: “How should resources be deployed in the livestock sector to most effectively and efficiently achieve national policy objectives for agriculture, food security, and rural incomes?”

African governments have developed National Agriculture Investment Plans (NAIPs) to guide them in increasing sector investments to meet the Comprehensive Africa Agriculture Development Programme mandated goals. The NAIP translates a country's priorities into realistic objectives and targets and assesses the financing gaps required to implement them. The NAIP is validated by all the national stakeholders and, after passing a technical review by the development agency of the African Union, (NEPAD-AUDA), is presented for endorsement.

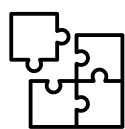
A NAIP is a sector-wide plan that maps the investments needed in food security, nutrition and agricultural research and development to achieve national development targets over a defined timeframe. In the context of CAADP, the target is to reach a minimum of 6% annual growth in the GDP of the agricultural and food sector.

Greater advocacy is required to secure adequate resources for Africa's livestock transformation within the broader framework of agricultural investment. In particular there is a need for the potential of the livestock sector to be more widely recognized within NAIPs. However, there is a significant lack of quantitative analyses that demonstrate the potential return on investment in the sector and its likely contribution to long-term national economic development. ILRI, OIE and FAO and the African Union Inter-African Bureau for Animal Resources (AU-IBAR) have supported countries to undertake sector gap analyses together with predictive analyses to inform longer-term strategies and action plans.



**THE TARGET IS TO REACH A
MINIMUM OF 6% ANNUAL GROWTH
IN THE GDP OF THE AGRICULTURAL
AND FOOD SECTOR**

A National Livestock Master Plan is an effective, data-backed advocacy and planning tool for engaging with policymakers, private investors and development partners and could contribute significantly to NAIPs and align more closely to the NAIP process of analysis and implementation. Specifically, Livestock Master Plans (LMPs) provide an evidence base detailing:



**CURRENT CONTRIBUTIONS
AND CONSTRAINTS OF THE
LIVESTOCK SECTOR**



**THE POTENTIAL OF THE
SECTOR TO CONTRIBUTE TO
NATIONAL DEVELOPMENT
OBJECTIVES**



**PRIORITY LIVESTOCK
COMMODITIES AND VALUE
CHAINS AND PROPOSED
INVESTMENT OPTIONS
(COMBINING BOTH
TECHNOLOGIES AND POLICIES)**



**THE IMPACT OF TARGETED
INVESTMENTS IN LIVESTOCK
ON THE ECONOMIC
PERFORMANCE AND
LIVELIHOODS IN THE SECTOR**

The development of LMPs requires a heavy investment in capacity building of national staff, mainly drawn from the relevant ministries (often agriculture-livestock-fisheries-trade-finance) to collect data and conduct diagnosis of the livestock sector and its value chains. The LIVEMAP should strengthen this component, which could be linked to the monitoring and evaluation of NAIPs, to track progress and make further adjustments to investment road maps. The Livestock Sector Investment Policy Toolkit (LSIPT) developed by FAO, the World Bank, ILRI and CIRAD is an important part of the toolkit for development of LMPs and supports socio-economic and technical analyses of livestock at household, regional and national levels. The suite of tools used is being expanded to include environmental and gender dimensions in LMPs.

Where relevant, the development of national Livestock Master Plans will form a critical component of investments by the Bank in livestock projects.

Sustainability

The concept of sustainability and its three elements – economic, environmental and social – is a guiding principle of the LIVEMAP and will be embedded in the fundamental design of all livestock investments.



Economic

A key objective of the LIVEMAP is to promote the commercialization of livestock production, through productivity enhancing technologies and interventions, improved services, more effective marketing, efficient value chains and value addition. Linking livestock farmers to markets as described in Pillars 1 and 2 will significantly improve the economic viability of livestock enterprises. Key to economic viability is a vibrant private sector encouraged by a conducive business environment and policies. The recent report by the Alliance for a Green Revolution in Africa (AGRA) 'The Hidden Middle'¹¹ highlights the central role of the private sector, especially small and medium sized enterprises, in driving agricultural transformation in Africa.



Environmental

Livestock can be a source of environmental damage but can equally offer solutions to environmental challenges. For example, poorly managed livestock can lead to ecological degradation of grazing lands, but well-managed livestock grazing can equally help restore degraded land, enhance biodiversity and offers huge potential for the sequestration of carbon by rangelands. Investments under the LIVEMAP will be designed so that they do not compromise environmental services such as biodiversity, water availability and water quality and will be supported by expertise from the Bank's extensive work on climate change. Special attention will be given to climate-smart livestock development, both to adapt livestock systems to future climate change and mitigate greenhouse gas emissions. As described under Pillar 1, increasing productivity per animal has a significant impact on greenhouse gas emission intensity (the amount of greenhouse gas emissions per unit output). In addition, if fewer but more productive animals are kept, absolute emissions can be reduced. Therefore, productivity enhancing interventions such as better feeding, health and genetics will also deliver environmental benefits. The LIVEMAP will also deliver livestock systems that are better adapted to future climate change scenarios, for example by increasing resilience to drought by risk mitigation such as index-based insurance and other financial services. It will also ensure better animal health care services to combat climate-based change in disease distribution, better adapted breeds and more climate resilient feeds.



Social

Gender, youth and social equity is a primary cross-cutting theme in the LIVEMAP as outlined above. The LIVEMAP provides the framework within which investment by the Bank and its partners can be designed to ensure that the opportunities and the benefits from livestock and livestock value chains can be shared equitably. Special attention will be paid to ensuring that small-scale producers, women and young people as well as men can benefit from investments in livestock, and that such benefits are not skewed to one sector of the population.

¹¹ <https://agra.org/wp-content/uploads/2019/09/AASR2019-The-Hidden-Middleweb.pdf>

RESOURCING THE AFRICAN LIVESTOCK TRANSFORMATION AGENDA

Share of agriculture in the African Development Bank's funding portfolio

In 2016, the bank supported the acceleration of the economic development of regional member countries through the disbursement of around \$6.4 billion in support of the bank's High 5 strategy. The Feed Africa strategy received 20% of the allocation of the High 5s in the 2018-20 funding, indicating that the Bank is prioritizing funding to agriculture including livestock. For 2019-21 the share of Feed Africa is projected to be 18%,¹² translating into planned investments of around \$4.36 billion in agriculture operations.

These figures show that the Bank's resource allocation to agriculture while both impressive and growing, falls short of expected cost of financing the livestock transformation which is estimated to be in the range of \$9.2 – \$11.8 billion each year. Therefore, in order to finance the transformation, the bank will endeavour to make more efficient use of existing capital, but also 'crowd in' additional financing. Current sources of finance for agricultural development are primarily from four areas: funds from the Bank's sovereign and non-sovereign investments into agriculture; other multi-lateral and bilateral donors; public sector spending; and commercial lending and private sector investments into agriculture.

RMCs, multilateral actors, private sector & foreign direct investment

There are sufficient resources within Africa and key potential partners for the Bank to meet this gap. What is required is a combination of increased government investment on agricultural transformation, raising more catalytic funding from the Bank and other multilateral and bilateral institutions, and stimulating greater investments from the private sector.



African governments spent approximately \$12 billion on agriculture in 2014. Meeting the Malabo commitments of allocating 10% of public budgets to agriculture would imply raising this level of spending to around \$40 billion based on 2014 budgets, which would be more than sufficient to meet the entire financing needs of transformation on a per annum basis. However, the feasibility of raising public spending to this level is low, given the original Maputo declaration was made in 2003; financing a business-led transformation agenda completely through government funding is unlikely to achieve desired results without significant distortionary effects. A partial raising of government investment in transformation is important, especially for country-level ownership, but other levers are also required.

¹² AfDB 2019- 2021 Work Program and Budget Document. <https://www.afdb.org/en/documents/2019-2021-work-programme-and-budget-document>



Multilateral and bilateral donors, with foundations and non-governmental organizations spent around \$3.8 billion on agriculture in Africa in 2014. The Bank intends to raise its average annual investments into agriculture by \$1.8 billion to reach \$ 2.4 billion per year, raising the total level of available funds from this category of financing to about \$ 5.6 billion per year. For the year 2021, the Bank plans to invest USD 378 million in the livestock sector.



Private sector and institutional capital will be a critical source of financing. Commercial bank lending to agriculture is around \$660 million per year, of a total of about \$14 billion, or 4.8% of annual lending.¹³ Existing net assets in Africa are also material: net banking assets are \$800 billion in sub-Saharan Africa alone. African sovereign wealth funds have assets under management ('AUM') of \$160 billion, pension funds constitute \$380 billion AUM, while Africa-based or heavily Africa weighted private equity funds are estimated to have \$25 – 35 billion AUM at the end of 2014, investing \$900 million in agriculture in Africa annually.^{14,15} In total, sovereign, pension, and private equity funds constitute net assets of \$550 – 600 billion. Leveraging commercial bank lending and private investment sources would require the use of innovative finance, in particular blended finance structures, to leverage government and donor financing to catalyze these sources. The Bank will play a critical leadership role in developing and assisting the development of innovative financial instruments.¹⁶



Foreign direct investment in agriculture and agribusiness in Africa was worth \$10 billion in 2014.¹⁷ Creating the right conditions for agribusiness growth and shifting the existing investment strategies of the private sector to the goals of transformation, should as a marker of success, increase the attractiveness and flows of foreign direct investment into the African agribusiness sector.

¹³ Based on the World Bank's definition of commercial bank lending (public and publicly guaranteed, plus private non-guaranteed) and other private credits, for Sub-Saharan Africa and North Africa, for 2014

¹⁴ KPMG. 2014.s

¹⁵ Convergence Historical Deal Database. 2015.

¹⁶ Detail on the array of facilities and funds that are anticipated to be developed for the Agricultural Transformation Agenda, as well as adaptation of existing Bank funds and facilities, is provided in the Implementation Plan annex to this report; a high level overview is also provided in Annex III.

¹⁷ An outline of potential scenarios for financing the Agricultural Transformation Agenda is provided in an 'Implementation Plan' annex to the strategy

**AFRICAN GOVERNMENTS
SPENT APPROXIMATELY
\$12 BILLION ON
AGRICULTURE IN 2014**



How the Bank's financing will be channeled to regional member countries

The Bank will need to channel these funds in a manner that is not only responsive to the goals of RMCs but also contributes directly to meeting the goals of the common strategic agenda. It is also important to clearly delineate 'Feed Africa' priorities from those of the other High 5s where there are overlaps so as to avoid duplication in lending. 'Feed Africa' will not finance rural energy investments, general (non-agriculture-specific) Special Economic Zones, or small and middle sized enterprise lending not performed through an agriculture facility or using funds set aside specifically for agriculture. However, opportunities exist to finance agriculture infrastructural projects through the Agropoles (staple crops processing zones) and market centers as well as hard infrastructure project allocations.

In future, the Bank will also aim to increase its use of innovative financial instruments and structures, such as:



Guarantees and other de-risking tools: these tools are not designed to address intrinsic underlying risk, but rather strategically shift risk from private investors to public actors such as national governments or development banks; they can also include reinsurance, grants for risk mitigation, and public co-equity investments.



Blended finance structures: these describe the use of public funds to attract private capital towards impact investments by mitigating risk or enhancing potential returns in line with market expectations.



Risk capital equity investments in dedicated funds: investing capital into funds dedicated to riskier sectors to give other public and private investors the assurance necessary to invest alongside the Bank.



Risk participation agreements for banks: agreements in which banks can sell their risk exposure to other financial institutions and reduce the risk of default thereby incentivizing them to lend when they would otherwise have declined the opportunity.

MONITORING AND EVALUATION FRAMEWORK

The Bank is a major contributor to the transformative agricultural agenda and its performance must be evaluated accordingly, using indicators that are in line with the four goals of the Feed Africa strategy results framework: (1) ending extreme poverty, (2) eliminating hunger and malnutrition, (3) becoming a net agricultural exporter, and (4) moving towards the top of strategic agricultural value chains (Feed Africa Strategy 2015).

1

The inclusion of the livestock transformation agenda in Bank-wide performance management systems will ensure adequate monitoring and accountability for the proposed activities. The strategy makes use of existing Bank systems and will support increased monitoring across the Bank as well as at the department and project level. Further, new indicators will be added to the One Bank Results Measurement Framework and the Executive Results Dashboard so that the Bank can monitor progress on indicators related to the agricultural transformation agenda.

2

The results framework specific to the livestock transformation agenda will specifically capture related investments: Bank facilities to countries, the development of national LMPs, the size of facilities supported by the Bank and leveraged with partners, the number and size of private sector initiatives supported, and alignment with CAAPD, NEPAD, AU-2063 goals and the sustainable development goals. For all commodities, agro-ecological zones, and intervention mechanisms, monitoring and evaluation will entail the inclusion of agricultural transformation indicators in project results-based logical frameworks. Measurement of outcomes will also be strengthened by additional monitoring and evaluation throughout each project's lifecycle.

3

Monitoring and evaluation requires collaboration across Bank departments and flagships. Efforts to monitor operations will be led by AHAI and a number of other Bank departments, including ORQR. Successful monitoring and evaluation will also require close collaboration between the Bank, RMCs, private sector and partner organizations, in order to invest adequate human and financial resources in measuring progress and results. To do so, monitoring and evaluation will build on the Bank's broader capacity development efforts, and Bank departments and staff will be held accountable for delivery, through the Executive Results Dashboard and other mechanisms.

ABBREVIATIONS AND ACRONYMS

| | |
|-------------------|---|
| AEZs | Agro-ecological zones |
| AfCFTA | African Continental Free Trade Area |
| AfDB | African Development Bank |
| AGRA | Alliance for a Green Revolution in Africa |
| AHAI | Agriculture and Agro-Industry Department |
| ARIS | Animal Resources Information System |
| ASFs | animal source foods |
| AU | African Union |
| AUDA-NEPAD | African Union Development Agency - New Partnership for Africa's Development |
| AU-IBAR | African Union Inter-African Bureau for Animal Resources |
| AUM | assets under management |
| CAADP | Comprehensive Africa Agriculture Development Programme |
| CGIAR | Consultative Group for International Agricultural Research |
| CIRAD | French Agricultural Research Centre for International Development |
| EAS | extension and advisory services |
| FAO | Food and Agriculture Organisation |
| FPCM | fat and protein-corrected milk yield |
| GDP | gross domestic product |
| GHG | Green House Gas |
| HIV | Human Immunodeficiency Virus |
| ILRI | International Livestock Research Institute |
| LiDeSA | Livestock Development Strategy for Africa |
| LIVEMAP | Livestock Investment Master Plan |
| LMPs | Livestock Master Plans |
| LSIPT | Livestock Sector Investment Policy Toolkit |
| NAIPs | National Agriculture Investment Plans |
| NARS | National Agricultural Research Systems |
| ODA | Official Development Assistance |
| OECD | Organisation for Economic Co-operation and Development |
| OIE | World Organization for Animal Health |
| One CGIAR | One Consultative Group for International Agricultural Research |
| ORQR | Quality assurance and results department |
| PVS | Performance of veterinary services |
| RECs | Regional Economic Communities |
| RMCs | Regional member countries |
| SDGs | Sustainable Development Goals |
| SPZ | Special agro-industrial Processing Zones |
| WB | World Bank |
| WHA | World Health Assembly |
| WHO | World Health Organization |



THANK YOU