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Unlocking Africa's agricultural potential for transformation to scale African livestock development

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Background

Africa is the best-placed continent to take advantage of the 'sustainable intensification' of agricultural, particularly livestock, systems, producing significant benefits in terms of increased food security, incomes, trade, and smallholder competitiveness, as well as improved ecosystem services (Herrero et al. 2014). Low crop and livestock yields suggest substantial scope for increasing productivity through increased provision of services and inputs, and enhanced institutional support and market efficiency, i.e. sustainable intensification.

Rapid growth in demand for animal-source food in Africa—stimulated by rapid increases in population, urbanization and per capita incomes—offers a major opportunity to achieve these objectives and the United National Sustainable Development Goals (SDGs). Livestock are critical to smallholder mixed crop/livestock and pastoral systems in much of Africa. In most African countries 60–80 % of rural households keep livestock as mobile and liquid assets, income generators, and for household food security and nutrition. Organic fertilizer (manure) and animal traction also make indirect and critical contributions to crop production.

In 2005/07, the average African consumed about 11kg of meat and 35 litres of milk per year, expected to rise to 26kg and 64 litres respectively by 2050 (Alexandratos and Bruinsma 2012). Notable per capita consumption increases are more striking when population increases between 2007 and 2050 of more than 100% are taken into account.

Although encouraging, expected consumption levels are still far lower than FAO recommended levels of 50kg of meat, 200 litres of milk, and 300 eggs per capita needed for sustainable human development (FAO 2009).

Projections following a 'business as usual' scenario by Herero et al. 2014 indicate that, despite increases in investment and technological change, African producers would not be able to satisfy the growing demand for livestock products, including: expected consumption increases of 300% for milk and more than 600% for pork and poultry. Rising demand could only be met by increases in imports, causing the trade deficit to double to 20%. Untenable for producers, consumers and continental food security, this is not a 'sustainable' scenario.

As part of its strategy to realize the livestock sector's potential, the African Union's Inter-African Bureau for Animal Resources (AU-IBAR) has coordinated the formulation of the 20-year Livestock Development Strategy for Africa (LiDeSA) designed to fast track policy reform in the sector, transformative technological change and productivity improvement. The LiDeSA also highlights the contribution of livestock to the Africa Accelerated Agricultural Growth and Transformation Agenda (Malabo Declaration (Assembly/AU/ / Decl.1(XXIII)).

Sustainable intensification scenario

Only annual livestock productivity growth of 6% will be able to meet rising demand domestically (Herrero et al. 2014). This can only be achieved under a 'sustainable intensification' scenario, meeting priority development goals and maintaining the current trade deficit until 2050. Such projected increases in demand under this scenario offers major opportunities for market-driven growth for smallholder farmers and large-scale commercial producers.

Both improved smallholder family and large-scale commercial specialized systems can play complementary roles in bringing about African livestock transformation. Large-scale commercial specialized farms and processors can act as innovation leaders providing examples which act as 'pull' factors for productivity improvement in smallholder systems. The strategy for African livestock sector thus needs to have a dual-track approach: Support potential market-oriented producers to enhance livestock production and productivity, generating spill-over benefits in terms of employment and lower animal-source food prices for consumers; and build the capacity of poor smallholder livestock keepers capacity to fully utilize their livestock assets, helping improve their livelihoods in the short to medium term.

The 'sustainability scenario' would involve rapid global progress in reducing fossil fuel dependency. Low-income countries would grow more rapidly, inequality between and within economies fall, technology spread, and more action to reduce the environmental costs of growth would be taken. Investments in education would help cut population growth. The SDGs would be achieved by 2030, resulting in educated populations being given access to safe water, improved sanitation and medical care. Other factors reducing vulnerability to climate and other global changes would include the implementation of stringent policies to control air pollutants and rapid shifts towards universal access to clean and modern energy in the developing world (Herrero et al. 2014).

Meeting SDGs through the sustainable intensification strategy would require substantial increases in livestock productivity, as well as increases in total cattle numbers. Reducing greenhouse gas emissions could be meet by increasing the share of chicken meat in total meat consumption, reducing the share of larger high emitting ruminants. This would require substantial investments in promotional activities to change tastes and preferences from red to high yielding crossbred chicken meat and eggs.

Even under the sustainable intensification strategy smallholder African livestock keepers will only realize the potential benefits if their competiveness is enhanced and policy makers maximise economic and social benefits of growth, thereby contributing to their food security, improved nutrition and poverty reduction and minimizing the negative effects to the environment and public health. Realistic goals for African livestock transformation over the next 15 years include a doubling of livestock production, of the contribution of livestock inputs into domestic industrial sectors and of exports and export earnings, a halving of domestic livestock product prices and the achievement of livestock relevant SDGs. Indirectly the livestock sector could contribute to higher incomes, job creation, downward pressure on animal-product prices and increased supply of agricultural inputs for industrial production.

In line with the findings of Africa Livestock Futures (Herrero, et al. 2014) and the Livestock development Strategy for Africa (AU-IBAR 2014), investment in the priority technology and policy interventions proposed in this brief are crucial to successful transformation of African livestock sectors. They would help reorganize traditional smallholder family farms into improved market-oriented, profitable and sustainable systems, as well as substantially enhance profitability and sustainability of large commercial specialized systems. This would help meet the livestock-related SDGs and national livestock development objectives driving investment interventions and policy change initiatives (Shapiro 2015), such as:

- Reducing poverty
- Achieving food and nutritional security
- Contributing to economic growth (GDP)
- Contributing to exports and foreign exchange earnings
- Contributing to environmental sustainability
- Contributing to climatic resilience
- Protecting human health from zoonotic diseases

Priority technology interventions

Based on these, and some country-specific, development objectives, African Livestock Futures identifies four key commodity livestock value chains with the most long-term potential to transform the continent's livestock production by 2050. They involve investing in both ruminant and monogastric livestock systems: red meat and milk (from cattle, sheep, goats, and camels); poultry meat and eggs; pork; and specialized dairy (from cattle, goats and camels) (Herrero et al. 2014). Depending on biophysical, agro-ecological, and market conditions facing livestock, it was found that various combinations of three standard types of livestock technology interventions—improved genetics, health and feed—were best placed to increase productivity and incomes, and thus help achieve most national development objectives and SDGs. They include:

- Improvements in cattle and goat dairy breeding by combining artificial insemination using exotic semen with oestrus synchronization in dairy shed and peri-urban areas.
- Investment in the animal health of local meat and dairy ruminants, undertaking critical vaccinations and parasite control measures, designed to reduce young and adult stock mortality and increase productivity.
- Public investment in rehabilitating range and pasture lands to improve feeding and animal management.
- Private and/or public-private investment in the importation and dissemination of improved semi-scavenging poultry breeds and exotic pig breeds, together with improved animal health and extension services.
- More specialized commercial production units, i.e. animal numbers in all value chains, wherever conducive agro-ecological and market conditions prevail, and employ appropriate genetic, health and feed technologies.

Priority policy interventions

The public sector will need to create an 'enabling business environment' for the livestock sector. It will need to not only supply key public goods—such as infrastructure and an animal health disease and control system—but also facilitate social desirable private sector innovation by providing tax and other incentives to entrepreneurs willing to enter the livestock value chains or expand their livestock. Public policy should also ensure that medium-scale livestock farmers and commercial farms tap into the growing animal food market and that small livestock producers sustainably maximize the contribution of animals to their livelihoods.

Attracting substantial levels of private investment in post-production and processing will be required to achieve revolutionize African livestock sectors. In line with the African Livestock Future study findings, incentives should be focused on smallholder farms and small-scale post-harvest agro-industries (Herrero et al. 2014). Realizing the potential of the technological interventions will require complementary policy changes, governments should:

- Promote substantial private investment in livestock product transformation, by incentivizing 'value-added' processing.
- Promote private-sector investment in flour and oil mills to encourage the production of additional feeds from agro-industrial by-products by introducing tax and/or land-lease incentives, and protective policies against flour and cooking oil imports;
- Boost the availability of credit and simplify the investment licensing process to facilitate investment in value-adding processing plants and feed production and mills.
- Introduce policy and legislation to promote the establishment of forage seed industries, the production of improved forage and fodder, and trade in feed.
- Promote and enforce outsourcing contracts for forage and forage seed production.
- Introduce policy measures to rationalize public and private sector roles in the provision of veterinary services, leading to transition to private provision of clinical services wherever feasible.
- Promote feed-use efficiency by removing VAT and duty on feed mill ingredients, and introducing quality control enforcement measures.
- Promote exports to more remunerative markets through the introduction of a practical and affordable system of animal ID and traceability, as well as programs to ensure food safety and animal health through monitoring of abattoirs and disease surveillance.

Proposed interventions to strengthen institutional capacity

The transformation of the sector has been hindered by a lack of institutional capacity at national, regional and continental level to develop and implement strategies driving sustained growth. Building the capacity of farmers and institutions, in line with the Comprehensive African Agricultural Development Program (CAADP) results framework would enhance the ability of the livestock sector to significantly contribute through balanced and inclusive socio-economic growth, helping achieve multiple development objectives of African governments. Policy makers need to ensure:

- Improved and inclusive evidence-based policy design, development planning and implementation capacity focusing on poverty, food security and health.
- More effective and accountable planning to drive implementation of public policies and investment programs.
- Improved coordination, partnership, and alliance within and across sectors and countries.
- Increased public investment in agriculture achieving better value for money.
- Enhanced knowledge support and skills development through improved science and technology, education and training, analytical capacity peer learning.

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