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Report No: PAD2553

INTERNATIONAL DEVELOPMENT ASSOCIATION

# PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED CREDIT

IN THE AMOUNT OF SDR 359.3 MILLION
(US$500.0 MILLION EQUIVALENT)

TO THE

FEDERAL REPUBLIC OF NIGERIA

FOR A

# LIVESTOCK PRODUCTIVITY AND RESILIENCE SUPPORT PROJECT

February 25, 2022

Agriculture and Food Global Practice
Western and Central Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective January 31, 2022)

| | |
|---|---|
| Currency Unit = | Nigerian Naira (NGN) |
| NGN 415.75 = | US$1 |
| SDR 0.718 = | US$1 |

FISCAL YEAR
January 1 - December 31

| | |
|---|---|
| Regional Vice President: | Ousmane Diagana |
| Country Director: | Shubham Chaudhuri |
| Regional Director: | Simeon K. Ehui |
| Practice Manager: | Chakib Jenane |
| Task Team Leader: | Abel Lufafa |

ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ABMD | Agri-Business and Market Development Department |
| AfDB | African Development Bank |
| AFD | Agence Française de Développement (French Development Agency) |
| AI | Artificial Insemination |
| AMR | Antimicrobial Resistance |
| AWPB | Annual Work Plan and Budget |
| BCR | Benefit Cost Ratio |
| BPP | Bureau of Public Procurement |
| CBN | Central Bank of Nigeria |
| CHS | Community Health and Safety |
| CE | Citizen Engagement |
| CERC | Contingent Emergency Response Component |
| COVID-19 | Coronavirus Disease 2019 |
| CPF | Country Partnership Framework |
| DA | Designated Account |
| DAHS | Department of Animal Husbandry Services |
| DBN | Development Bank of Nigeria |
| DVS | Department of Veterinary Services |
| ECOWAS | Economic Community of West African States |
| EIRR | Economic Internal Rate of Return |
| EMP | Environmental Management Plan |
| ERGP | Economic Recovery and Growth Plan |
| ESMF | Environmental and Social Management Framework |
| ESIA | Environmental and Social Impact Assessment |
| ESMP | Environmental and Social Management Plan |
| EX-ACT | Ex-Ante Carbon-balance Tool |
| FAO | Food and Agriculture Organization of the United Nations |
| FCV | Fragility, Conflict, and Violence |
| FGN | Federal Government of Nigeria |
| FM | Financial Management |
| FMARD | Federal Ministry of Agriculture and Rural Development |
| FPFMD | Federal Project Financial Management Division |
| FPM | Financial Procedures Manual |
| GAHPs | Good Animal Husbandry Practices |
| GBV | Gender-based Violence |
| GCA | Global Center on Adaptation |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas |
| GRM | Grievance Redress Mechanism |
| GRS | Grievance Redress Service |
| IBRD | International Bank for Reconstruction and Development |
| IDA | International Development Association |
| IFC | International Finance Corporation |
| IFR | Interim Financial Report |
| IPF | Investment Project Financing |
| IPMP | Integrated Pest Management Plan |
| LMP | Labor Management Procedure |
| LPRES | Livestock Productivity and Resilience Support Project |
| LSC | Livestock Service Center |

| | |
|---|---|
| M&E | Monitoring and Evaluation |
| MFD | Maximizing Finance for Development |
| MTR | Mid-Term Review |
| NAFDAC | National Agency for Food and Drug Administration and Control |
| NAPRI | National Animal Production Research Institute |
| NCO | National Coordination Office |
| NDC | Nationally Determined Contribution |
| NLTP | National Livestock Transformation Plan |
| NPC | National Project Coordinator |
| NSC | National Steering Committee |
| NTC | National Technical Committee |
| OAGF | Office of the Accountant General for the Federation |
| OHS | Occupational Health and Safety |
| OIE | World Organization for Animal Health |
| OP/BP | Operational Policy/Bank Procedure |
| PBC | Performance Based Condition |
| PDO | Project Development Objective |
| PFIs | Participating financial institutions |
| PFMU | Project Financial Management Unit |
| PIM | Project Implementation Manual |
| P&PC | Planning and Policy Coordination Department |
| PPP | Public-Private Partnership |
| PPSD | Project Procurement Strategy for Development |
| PRAPS | Projet Régional d'Appui au Pastoralisme au Sahel (Regional Sahel Pastoralism Support Project) |
| PPR | Peste des Petits Ruminants (Small Ruminant Plague) |
| PVS | Performance of Veterinary Services |
| RAP | Resettlement Action Plan |
| RBIA | Risk-based Internal Audit |
| REDISSE | Regional Disease System Support Enhancement |
| RPF | Resettlement Policy Framework |
| SCO | State Coordination Office |
| SDGs | Sustainable Development Goals |
| SEA/SH | Sexual Exploitation and Abuse/ Sexual Harassment |
| SEP | Stakeholder Engagement Plan |
| SMARD | State Ministry of Agriculture and Rural Development |
| SMEDAN | Small and Medium Enterprises Development Agency |
| SMEs | Small and Medium Enterprises |
| SMP | Security Management Plan |
| SORT | Systematic Operations Risk-Rating Tool |
| SPC | State Project Coordinator |
| SSC | State Steering Committee |
| STC | State Technical Committee |
| SPD | Standard Procurement Documents |
| STEP | Systematic Tracking of Exchanges in Procurement |
| ToC | Theory of Change |
| ToRs | Terms of Reference |
| TLU | Tropical Livestock Unit |
| VCN | Veterinary Council of Nigeria |
| WBG | World Bank Group |
| WMP | Waste Management Plan |

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DATASHEET

## BASIC INFORMATION

| Country(ies) | Project Name | |
|---|---|---|
| Nigeria | Livestock Productivity and Resilience Support Project | |
| **Project ID** | **Financing Instrument** | **Environmental Assessment Category** |
| P160865 | Investment Project Financing | B-Partial Assessment |

### Financing & Implementation Modalities

| | |
|---|---|
| [ ] Multiphase Programmatic Approach (MPA) | [✓] Contingent Emergency Response Component (CERC) |
| [ ] Series of Projects (SOP) | [✓] Fragile State(s) |
| [✓] Performance-Based Conditions (PBCs) | [ ] Small State(s) |
| [✓] Financial Intermediaries (FI) | [ ] Fragile within a non-fragile Country |
| [ ] Project-Based Guarantee | [✓] Conflict |
| [ ] Deferred Drawdown | [ ] Responding to Natural or Man-made Disaster |
| [ ] Alternate Procurement Arrangements (APA) | [ ] Hands-on Enhanced Implementation Support (HEIS) |

| Expected Approval Date | Expected Closing Date |
|---|---|
| 18-Mar-2022 | 31-Mar-2028 |
| **Bank/IFC Collaboration** | **Joint Level** |
| Yes | Complementary or Interdependent project requiring active coordination |

### Proposed Development Objective(s)

To improve productivity, commercialization, and resilience of targeted livestock production systems in Nigeria.

### Components

| Component Name | Cost (US$, millions) |
|---|---|

| | |
|---|---|
| Institutional and Innovation System Strengthening | 95.00 |
| Livestock Value Chain Enhancement | 275.00 |
| Crisis Prevention and Conflict Mitigation | 100.00 |
| Project Coordination and Management | 30.00 |
| Contingency Emergency Response Component | 0.00 |

### Organizations

| | |
|---|---|
| Borrower: | Federal Republic of Nigeria |
| Implementing Agency: | Federal Ministry of Agriculture and Rural Development |

## PROJECT FINANCING DATA (US$, Millions)

### SUMMARY

| | |
|---|---|
| **Total Project Cost** | 500.00 |
| **Total Financing** | 500.00 |
| **of which IBRD/IDA** | 500.00 |
| **Financing Gap** | 0.00 |

### DETAILS

**World Bank Group Financing**

| | |
|---|---|
| International Development Association (IDA) | 500.00 |
| IDA Credit | 500.00 |

### IDA Resources (in US$, Millions)

| | Credit Amount | Grant Amount | Guarantee Amount | Total Amount |
|---|---|---|---|---|
| **Nigeria** | 500.00 | 0.00 | 0.00 | 500.00 |
| National PBA | 500.00 | 0.00 | 0.00 | 500.00 |

| | | | | |
|---|---|---|---|---|
| **Total** | **500.00** | **0.00** | **0.00** | **500.00** |

### Expected Disbursements (in US$, Millions)

| WB Fiscal Year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
|---|---|---|---|---|---|---|---|
| Annual | 0.00 | 50.00 | 60.00 | 90.00 | 110.00 | 130.00 | 60.00 |
| Cumulative | 0.00 | 50.00 | 110.00 | 200.00 | 310.00 | 440.00 | 500.00 |

## INSTITUTIONAL DATA

### Practice Area (Lead)

Agriculture and Food

### Contributing Practice Areas

Environment, Natural Resources & the Blue Economy, Social Sustainability and Inclusion, Urban, Resilience and Land

### Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

## SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

| Risk Category | Rating |
|---|---|
| 1. Political and Governance | Substantial |
| 2. Macroeconomic | Substantial |
| 3. Sector Strategies and Policies | Moderate |
| 4. Technical Design of Project or Program | Moderate |
| 5. Institutional Capacity for Implementation and Sustainability | Substantial |
| 6. Fiduciary | Substantial |
| 7. Environment and Social | Substantial |
| 8. Stakeholders | Substantial |
| 9. Other | High |
| 10. Overall | High |

## COMPLIANCE

### Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

| Safeguard Policies Triggered by the Project | Yes | No |
|---|---|---|
| Environmental Assessment OP/BP 4.01 | ✓ | |
| Performance Standards for Private Sector Activities OP/BP 4.03 | | ✓ |
| Natural Habitats OP/BP 4.04 | | ✓ |
| Forests OP/BP 4.36 | | ✓ |
| Pest Management OP 4.09 | ✓ | |
| Physical Cultural Resources OP/BP 4.11 | ✓ | |
| Indigenous Peoples OP/BP 4.10 | | ✓ |
| Involuntary Resettlement OP/BP 4.12 | ✓ | |
| Safety of Dams OP/BP 4.37 | | ✓ |
| Projects on International Waterways OP/BP 7.50 | | ✓ |
| Projects in Disputed Areas OP/BP 7.60 | | ✓ |

### Legal Covenants

Sections and Description

Section I Part A(1.2)(a). The Recipient shall, no later than three (3) months after the Effective Date, duly establish and thereafter maintain throughout the Project implementation a National Steering Committee at Federal level ("NSC") with functions, composition and resources satisfactory to the Association.

Sections and Description

Section I Part A(1.3)(a)The Recipient shall, [no later than [three (3) months] after the Effective Date,] duly establish and thereafter maintain throughout Project implementation a National Technical Committee ("NTC"), as a sub-committee of the NSC, with functions, composition and resources satisfactory to the Association.

| Sections and Description |
|---|
| Section 1 Part H(d). Within six (6) months after the Effectiveness Date, the Labor Management Procedures and the SEA/SH Action Plan shall have been prepared and publicly disclosed. |

**Conditions**

| Type | Financing source | Description |
|---|---|---|
| Effectiveness | IBRD/IDA | The NCO has been duly established in accordance with Section I.A.1.4 of Schedule 2 of the Financing Agreement. |
| Type | Financing source | Description |
| Effectiveness | IBRD/IDA | The Project Implementation Manual (excepting the annexures setting out the LMP, the SEA/SH Action Plan, CLF Manual and RSF Manual) has been duly adopted in accordance with Section I.C of Schedule 2 to the Financing Agreement. |
| Type | Financing source | Description |
| Disbursement | IBRD/IDA | Section III Part B(1). Notwithstanding the provisions of Part A above, no withdrawal shall be made.<br>(b) with respect to any payment to a Participating State under Categories 1 through 11, unless and until the Recipient and said Participating State has (i) executed a Subsidiary Agreement in accordance with the provisions of Section [I.C] of Schedule 2 to this Agreement; (ii) established an SSC, an STC and a SCO in accordance with Section I.A.2 of this Schedule 2; and (iii) duly adopted the PIM;<br>(c) for payments made under Categories 2 through 5, unless and until the Recipient has furnished evidence satisfactory to the Association, including verification reports from the Verification Agent, that: (i) payments for the relevant Eligible Expenditures for the relevant PBC have been made in accordance, and in compliance, with the procedures set forth in the Verification Protocol; and (ii) the PBC for which payment is requested have been met on terms and conditions and in a manner satisfactory to the Association and verified in accordance with the Verification Protocol;<br>(d) with respect to any payment made to DBN under Category 6, unless or until (i) DBN has executed the DBN Subsidiary Agreement and the Memorandum of Understanding in accordance with the provisions of Section I.C.1 of Schedule 2 to this Agreement and (ii) the CLF Manual has been duly prepared, adopted and appended to the PIM; |

| | | |
|---|---|---|
| | | (e) with respect to any payment made to IMPACT under Category 7, unless or until (i) IMPACT has executed the IMPACT Subsidiary Agreement in accordance with the provisions of Section I.D of Schedule 2 to this Agreement and (ii) the RSF Manual has been duly prepared and appended to the PIM. |

## I. STRATEGIC CONTEXT

### A. Country Context

1. **Nigeria is central to the World Bank Group (WBG) mission of eliminating global poverty.** A multi-ethnic and diverse federation of 36 autonomous states, Nigeria is Africa's most populated country (over 200 million people) and largest economy - nominal Gross Domestic Product (GDP) of around US$405 billion in 2020. With an abundance of resources and a young and dynamic society, it has the potential to be a giant on the global stage. But with over 40 percent of its population (over 80 million people) in poverty, Nigeria is also among the countries with the largest number of people living below the poverty line. Economic growth, at -1.8 percent in 2020, has been below the rate of population growth since 2016, when Nigeria experienced its first recession in two decades. Fragility, conflict, and insecurity afflict many parts of the country, in particular the northeast. Insufficient capacity constrains the public sector, and on many human development indicators, Nigeria ranks amongst the lowest in the world. To realize its considerable potential, and to fulfill the government's ambition to lift 100 million Nigerians out of poverty by 2030, Nigeria has to make tangible progress on multiple fronts, at both the federal and sub-national levels.

2. **The COVID-19 pandemic and the depressed oil prices over the last two years are likely to lead Nigeria into its deepest recession in four decades**. At the onset of COVID-19, the Nigerian economy was still recovering from the 2015-2016 oil-price shock which swung Nigeria into its first recession in 25 years. The 2020 contraction would follow four years of low growth and rising unemployment, due to various factors including multiple foreign exchange rates, trade restrictions, deficit monetization, combined with long-standing development challenges to mobilize domestic revenues, reduce infrastructure gaps, and strengthen governance. Nigeria's economy contracted by 6 percent (year-on-year) in quarter 2 2020. The oil sector was hit by tumbling prices and Organization of the Petroleum Exporting Countries quotas. Measures to contain the COVID-19 outbreak had an immediate impact on economic activity across the non-oil industry and services sectors. Agriculture growth slowed amidst difficulties in moving inputs and outputs. In services, only telecoms (on the back of higher data demand) and financial services (benefitting from pre-crisis credit growth and shielded by forbearance and stimulus measures from the Central Bank of Nigeria - CBN) registered growth. Annual inflation accelerated to 16 percent by the end of 2021, with hikes in food and healthcare prices.

3. **The crisis has severely impacted employment: between mid-March and May 2020, the share of working Nigerians almost halved as Nigeria implemented strict lockdown measures that limited access to workplaces**, with service-sector workers hit the hardest. Most Nigerians have subsequently returned to work (many entering agriculture), but their incomes remain precarious. Households adopted drastic coping mechanisms with likely negative long-term impacts: 51 percent reduced food consumption and 29 percent drew down savings. Fewer than 2 percent of households are covered by social safety net programs. Despite import contraction (reduced port activities and forex restrictions) mirroring oil dominated export contraction, the current account deficit hovered around 3 percent of GDP in quarter 2, aggravated by a sharp (40 percent) drop in remittances.

4. **Even before the COVID-19 pandemic, low revenues, rising debt service and large public subsidies limited the fiscal space for productive investments in infrastructure and human capital.** At 8 percent of GDP in 2018-2019, Nigeria's general government revenues were very low by the standards of comparable countries. Consequently, general government expenditures were small relative to the size of the economy

(12 percent of GDP, about half the level expected for its level of development), and unable to meet the needs of its growing population. Oil revenues were volatile and reduced by sizeable deductions (including for the unbudgeted petrol subsidy), while growth in non-oil revenues (about 4 percent of GDP) was constrained by slow tax policy and administration reforms. Public debt was relatively modest as a share of GDP (20-25 percent) but had been rising due to sustained fiscal deficits. With low revenues and high domestic interest rates, the Federal Government of Nigeria (FGN) was spending a significant share of its revenues to service its debt (since 2016, FGN spends an estimated 60 percent of its revenues to pay interests on its debt). Unproductive, regressive subsidies (main ones being fuel and power) further limited fiscal space for productive investments in infrastructure and human capital. The annual power sector tariff shortfalls requiring FGN funding reached NGN524 billion (US$1.36 billion) in 2019, equivalent to 0.4 percent of GDP and 11 percent of FGN revenues – more than the NGN428 billion (US$1.11 billion) provided in the federal budget for health.

5. **Given the COVID-19 crisis and natural population growth, the number of people living below the international poverty line is likely to rise by 16 million by end of 2022.** Before the pandemic, Nigeria's poverty reduction efforts already faced major challenges, as population growth (2.6 percent) persistently outpaced GDP growth rates and job creation remained weak. In 2018/2019, four in ten Nigerians were living below the US$1.90 per person per day (2011 purchasing power parity) poverty line[1] and millions more were vulnerable to falling into poverty. In the absence of a robust response to the crisis, the poverty rate is projected to 44 percent by 2022. Households deriving income from informal activities (50 percent of GDP) that rely on close physical proximity and those close to conflict-prone areas are particularly vulnerable.

6. **Climate change is gathering force as a source of vulnerability.** Mean annual temperatures are projected to increase by 1.1–2.5°C by the 2060s, with greater warming in the North. Climate and disaster risk screening projects longer heat wave durations, again with the largest increases in the North. Most projections show that mean annual precipitation will increase slightly across Nigeria, but the rainy season will start later. According to vulnerability analyses, the areas that are most threatened by climate change are the Northeast and Northwest, where rising temperatures and declining rainfall has hastened desertification and loss of wetlands, and also reduced the amount of surface water, flora, and fauna. To the South, the Delta region is the most vulnerable due to the rising sea level and increased precipitation, coastal erosion, and flooding. Throughout the country, livestock already suffer from higher heat stress and new or changing pest and disease pressures. As these problems become more frequent and severe - especially as heat stress alters disease and pest patterns - they will reduce fodder quantity and quality and increase mortality. Without strategies to mitigate and adapt to climate change, the productivity of agriculture in general and livestock in particular will decline, disproportionally affecting the rural poor.

7. **Climate change is causing conflicts over natural resources.** Farmers and herders may be able to adjust production patterns to a changing climate, but these new patterns have led to conflict between these groups. For instance, the traditional symbiosis in which transhumant herds fertilize harvested fields in exchange for farmers' permission to browse on the crop residues depends critically on the timing of the harvest and livestock movements, which have been disrupted as the rains and agricultural seasons change due to climate change. The rise in conflict induced by climate change and increasing population is fostering insecurity and limiting livelihood opportunities, especially in rural areas.

[1] US$1.90 per person per day (2011 purchasing power parity).

## B. Sectoral and Institutional Context

8. **The livestock sector is vital to Nigeria's socioeconomic development.** Forty-two percent of Nigeria's population own at least one type of livestock, 30 percent of the population - mainly the poor, eke out a living directly from livestock production, while an estimated 5 million people are productively engaged in upstream segments of the livestock value chain. For the poor, livestock enable asset accumulation, serve as a store of value, and provide buffers and resilience against shocks such as crop failure, drought, and family emergencies. The sector is also important to the country's food and nutrition security as it is a major source of foods that are high in nutritional value and with micronutrients (critical to children's cognitive and physical development) that supplement Nigeria's typically low-quality basal diets. Livestock recycle nutrients, including from crop residues, and their manure replenishes soil fertility, particularly on the farms of poor smallholders, many of which are degraded, and their draught power is relied upon for cultivation and transporting farm produce to markets. Over the past 20 years, the expanding livestock sector has made important contributions to poverty reduction, especially in rural areas. In 2020, the sector accounted for 9 percent of agricultural GDP and 1.7 percent of national GDP.

9. **Nigerians raise a wide array of livestock, of which cattle, sheep, goats, pigs and poultry are the most important species for the national economy and individual livelihoods.** The national herd consists mostly of large ruminants (20.7 million head of cattle), small ruminants (81.9 million goats, 46.9 million sheep), pigs (8 million), and poultry (167.8 million). Smallholders predominantly own cattle, sheep, and goats, which account for over 83 percent of Nigeria's Tropical Livestock Units (TLUs), 58 percent of meat production (Table 1), and all domestic milk production and draft power, aside from underpinning the important leather sector (supplying 26 percent of non-oil exports, leather is the largest non-oil foreign exchange earner after cocoa).

**Table 1: Livestock sector composition and meat output, Nigeria**

| Species | Stock (million) | TLU share (%) | Meat production (t) | Share in meat production (%) |
|---|---|---|---|---|
| Cattle | 20.70 | 47.00 | 329,616.00 | 25.50 |
| Goats | 81.90 | 21.00 | 266,638.00 | 20.60 |
| Sheep | 46.90 | 15.00 | 153,163.00 | 11.90 |
| Pigs | 8.00 | 11.00 | 302,027.00 | 23.40 |
| Poultry | 167.80 | 6.00 | 239,947.00 | 18.60 |
| **Total** | **30.60** | **100.00** | **1,291,391.00** | **100.00** |

*Source:* FAOSTAT, 2020.

10. **The greatest numbers of livestock are raised in the northern two-thirds of the country, in pastoral production systems focused on large and small ruminants (see Annex 8).** These animals are moved across large areas of relatively marginal land to exploit seasonally available water, pasture, crop residues, fallow land, and open rangeland. A typical herd consists of 35 - 100 head of indigenous breeds, mostly raised for subsistence. Productivity and quality are low, and off-take is limited, as animals are mainly slaughtered as culls. The continued viability of this system has increasingly been weighed down by climate change and environmental degradation which are reported to have mediated declines in pasture availability and rangeland carrying capacity, reduced water availability, increased the incidence and severity of important diseases and conflict, and also now threaten to imperil the stock of animal genetic resources and biodiversity on which the system relies.

11. **In contrast, the mixed crop-livestock production system preferred by sedentary (usually small-scale) farmers represents a shift toward intensification**. In this closed system, which is most common in central and southern Nigeria, one enterprise (crop production) depends on the other (animal production). Animals supply draft power for crop production and transporting produce to markets, provide manure to restore soil nutrients for cropping, and consume crop residues in the dry season. Producers mainly keep 20–100 head of indigenous breeds. This rapidly expanding production system offers prospects for farmers to enter the market economy, although some contend that it is expanding at the expense of grazing resources hitherto used by pastoralists. Commercial systems are few, but their number is increasing, especially in the poultry, beef (feedlot[2]), and dairy subsectors. These systems produce livestock for maximum output. They rely on improved breeds, high-quality feed, and specialized animal production technology. Their small number is symptomatic of the limited private sector investment in commercial livestock production.

12. **Gender gaps heavily influence women's roles and prospects in the livestock sector.** Nigeria's national gender policy and myriad policy documents for agriculture and livestock[3] commit to gender equality. Yet in practical terms, differences in the types of livestock owned by women and men, and in the resources that women and men can access, create barriers to women's participation in the livestock sector (Box 1).

**Box 1: How gender gaps limit women's opportunities in the livestock sector**

**Gender differences in livestock holdings prevent women from building wealth.** Women tend to own and control smaller and less valuable goats, sheep, and poultry, whereas men tend to own and control larger and more valuable cows, bulls, and oxen.[a] Lower-value livestock are a less stable and concentrated store of wealth, with less potential to grow and buffer shocks.[b] Women contribute significantly to the care of livestock—their own animals and those owned by the men in the household—but sociocultural norms assign household authority to men and limit women's power over decisions related to livestock products (manure, milk, draft power) and money derived from those products or animal sales.[c] These disparities in assets and decision-making power can lead households to liquidate the small ruminants owned by women to raise cash, further eroding women's capacity to build wealth.[d] Over time, these asset and ownership inequalities multiply, perpetuating economic, social, and empowerment gaps between men and women.[e]

**Gender differences in access to productive resources reduce women's opportunities in the livestock sector and relegate them to lower positions in the value-chain.** Women own fewer collateralizable assets that can unlock financing to invest in their current livestock enterprises or to buy higher-value large ruminants to gain a better position in the value chain.[f] Differential access to services (extension advice, animal health) also limits the productivity of women's livestock enterprises. Less information flows to women on new technologies and best practices, potentially putting their animals at greater risk and their livestock activities at a competitive disadvantage relative to men's.

*Source:* (a) Gbemisola, O., G. Markus, and U. Amarachi (2013), "Gender Dimensions in Nigerian Agriculture." World Bank Group Africa Region Gender Practice Policy Brief: Issue 6. Washington, DC.; (b) Dillon, A., and E.J. Quiñones (2010), "Gender Differentiated Asset Dynamics in Northern Nigeria." International Food Policy Research Institute (IFPRI), Washington, DC.; (c) World Bank, FAO, and IFAD (2009), "Gender in Agriculture Sourcebook." Washington, DC: World Bank; Assan, N. (2014), "Gender Disparities in Livestock Production and Their Implication for Livestock Productivity in Africa." *Scientific Journal of Animal Science* 3(5): 126–38; (d) Ayinde, Y.O., V.E. Epunam, and O.B. Oyesola (2015), "Gender Differential in Livestock Production within Agro-pastoral Households in Ido Local Government Area of Oyo State, Nigeria." *Nigerian Journal of Rural Sociology* 16(2); (e) Sabates-Wheeler, R. 2006. "Asset Inequality and Agricultural Growth: How Are Patterns of Asset Inequality Established and Reproduced?" World Development Report Background Paper, World Bank, Washington, DC; O'Sullivan, M. (2017), "Gender and Property Rights in Sub-Saharan Africa: A Review of Constraints and Effective Interventions," World Bank, Washington, DC.; (f) The concentration of women in less productive segments of the value chain drives the gender gap in profits between female and male entrepreneurs in Nigeria. See World Bank (2021), "Closing Gaps, Increasing Opportunities: A Diagnostic on Women's Economic Empowerment in Nigeria." Washington, DC.

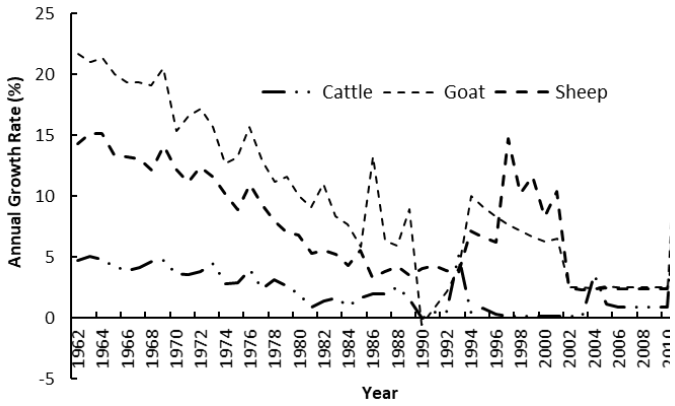
[2] Pastoral systems often provide animals that are then fattened in feedlots before slaughter.

[3] For example, the Agriculture Promotion Policy and the National Livestock Transformation Plan (NLTP).

13. **The livestock sector's remarkable expansion has been accompanied by suboptimal performance, which has become a key concern of public policy for several reasons.** First, poor performance prevents the sector from supplying products that replace costly imports. Even as the population expands and as diets change with rising affluence, Nigeria should be able to meet its domestic demand for livestock products and export them to the regional market. It has abundant land and water, a favorable climate, and large livestock numbers. Yet Nigeria remains a net importer of livestock products. Milk is imported to the tune of US$1.3 billion per annum, and 25 percent of national beef consumption is linked to imports, partly because the dairy and beef value chains are uncompetitive. Reliance on imports places most livestock products, especially beef, out of reach for the poor, increases Nigeria's wide trade deficit, and suppresses job creation and economic growth. A key cause of the gap between demand and supply is that most species and production systems are relatively unproductive—average milk yield is 1 liter of milk per cow per day in Nigeria and 9 liters in Kenya; for beef, average carcass weight is 103 kg in Nigeria and 150 kg in Kenya. The rate of growth in the national ruminant herd has also gotten slower since the 1960s (Figure 1). Even under the most optimistic scenario, Nigeria will still need to import certain livestock commodities to meet demand,[4] but on the upside, as soon as the country gears up its production and marketing of livestock products, major opportunities for rapid growth in rural employment and incomes will open up.

14. **Second, cattle, sheep, and goat production are implicated in conflict, with costly impacts well beyond the livestock sector.** Today, many parts of Nigeria are affected by conflicts between sedentary farmers and pastoralists. Although competition over natural resources, mainly land and water, encroachment on traditional migration routes, livestock theft/rustling and crop damage – tend to trigger these disputes, their roots run deeper. Climate change and human activity have depleted pastures and water sources across Nigeria's far-northern Sahelian belt, forcing large numbers of herders southward into agricultural areas before the harvest, along transhumance routes that increasingly pass through agricultural land.[5] Whereas transhumant pastoralists traditionally had free use of flooded grassy riverbeds (fadama lands) for pasturage in the dry season, as a result of climate change, farmers now use that land to grow more off-season crops, and no process exists for herders and farmers to negotiate access. Since 2015, farmer-herder struggles over land have evolved into more widespread violence involving an array of armed groups, militias, vigilantes, and criminal gangs. This violence, particularly armed attacks on communities, has killed thousands, disrupted rural economies, and threatened national stability. As more pastoralists migrate southward to escape the Boko Haram insurgency and the less-publicized banditry and cattle

**Figure 1: Annual growth in cattle, goat, and sheep stock, 1962–2016**




*Source:* Central Bank of Nigeria.

[4] Food and Agriculture Organization (FAO) (2019), "The Future of Livestock in Nigeria: Opportunities and Challenges in the Face of Uncertainty."
[5] McGuirk, E.F., and N. Nunn (2021), "Transhumant Pastoralism, Climate Change and Conflict in Africa," Working Paper. National Bureau of Economic Research, 2021 - Climatic changes.

rustling, further disputes erupt with sedentary crop farmers, from the north-central zone down to the three southern zones. Multiple observers have noted the ethnic and religious undertones and increasing politicization of these conflicts. Aside from the lives lost, herdsmen-farmer conflicts cost Nigeria an estimated US$14 billion per year,[6] with negative impacts on livelihoods and their resilience, food security, basic services, human capital development, and poverty reduction.

15. **Third, serious public health and environmental costs are associated with the livestock sector.** Besides their impacts on livestock health, diseases like brucellosis, bovine tuberculosis, salmonellosis, and anthrax are widespread among livestock keepers and consumers in Nigeria. The public health costs of these zoonoses are huge. In 2016, the costs of brucellosis were estimated at US$1.013 billion; bovine tuberculosis, at US$7.86 billion; and salmonellosis, at US$0.523 billion.[7] In 2015, Highly Pathogenic Avian Influenza (H5N1) resurfaced in Nigeria and has since spread to various countries in the region; and in 2020, the first detection of Highly Pathogenic H5N6 Avian Influenza virus on the African continent was reported from a live bird market in Nigeria. The ongoing shift of livestock production into densely populated areas and rising cases of zoonotic diseases raise the specter of new pandemics, which COVID-19 has made all too real. Additionally, inappropriate use of antibiotics in livestock production will reduce capacity to treat animal diseases and has been linked to antimicrobial resistance (AMR) in humans, presenting a daunting challenge to the fight against infectious diseases, an important cause of death in Nigeria.

16. **At the same time, the resource requirements, and environmental impacts of livestock production in the country are rapidly increasing.** Already, the sector is a major user of land and water (affecting both quality and quantity) and is implicated in biodiversity loss (through deforestation/land use change, and inadequate resource management) and as a major contributor to the shrinking of the Lake Chad through such mechanisms as increased soil erosion. The sector is also a key generator of Greenhouse Gas (GHG) emissions - accounting for almost 70 percent of total agriculture sector emissions - mainly from enteric fermentation in ruminants. The characteristically low productivity levels in the sector imply high resource use and GHG emission intensities for most livestock products (for example, 5kg CO2eq per liter of milk in pastoral systems compared to < 1kg CO2eq per liter of milk in intensive systems). In a business-as-usual scenario, growing demand for livestock products will intensify increasing resource constraints and exacerbate climate change. Ironically, even when the sector is a major source of GHG emissions, it is also part of the potential solution to the peril of climate change as it provides important entry points for mitigating climate change, for example through reduction of methane emissions related to enteric fermentation[8], reducing emissions through manure management[9], improved land use, pasture and rangeland management, and better ruminant feeding and improved animal health, and provision of incentives to herders to store carbon in rangelands.

17. **Key weaknesses in the livestock sector ecosystem blunt the capacity to address longstanding productivity constraints, mitigate emerging threats to environmental and social sustainability (disease, resource degradation, climate change, conflict), and tangibly strengthen the resilience of livestock-**

[6] Includes destruction of property and community infrastructure as well as internal displacement of tens of thousands of persons (NLTP 2019).
[7] Food and Agriculture Organization (FAO) (2018), "The Monetary Impact of Zoonotic Diseases on Society: Evidence from Four Zoonoses." Nigeria. Africa Sustainable Livestock 2050. *https://www.fao.org/3/CA2146EN/ca2146en.pdf*.
[8] Substantial reduction of GHG emissions per unit of milk and beef produced can be achieved through the increase of milk and meat off-take per animal: productivity improvement, achieved through traditional technical packages (for example, breeding, feeding, housing), allows reducing the herd at constant overall production level. Dietary adjustments to increase digestibility and reduce the share of energy intake that is lost as methane is another way to reduce emissions from enteric fermentation.
[9] For example, through biogas production.

**based livelihoods.** A large body of evidence points to critical weaknesses in three areas: the livestock innovation system, the incentives for private investment in livestock value chains, and the governance of the sector.

18. **Weaknesses in the livestock innovation system[10] have locked producers in a low-productivity equilibrium.** Weaknesses persist in the development/acquisition, diffusion, and use of technologies in all aspects of livestock production, especially in pastoral and mixed crop-livestock systems. A clear example is genetic improvement. Although improved breeds can deliver significant leaps in productivity,[11] profitability, disease resistance, and resilience to climate stress, more than 90 percent of livestock production in Nigeria relies on unimproved indigenous breeds. The perceived advantages of local breeds—disease resistance, tolerance to harsh climates, and the ability to thrive on poor diets—partly explains the low adoption of improved breeds, but the most binding constraint is their limited availability and knowledge around their management. Nigeria has no national policy for livestock genetic resource improvement and little expertise in genomic research to support the breeding, selection, and evaluation of animals with traits that increase productivity. Other inadequacies in research and extension[12] constrain the availability of productivity-enhancing technologies, husbandry practices, and disease surveillance and control systems.[13] In 2019, OIE concluded that many critical competencies in Nigeria's veterinary services had deteriorated since the prior evaluation in 2007.[14] This loss of capacity makes it difficult to stem the rising disease burden[15] that is responsible for higher animal morbidity and mortality and emerging threats to food safety and human health. Institutional mandates that split the responsibilities for animal, human, and environmental health lead to inefficiencies and poor coordination of disease prevention and control.

19. **Incentives for private investment in livestock value chains are weak.** Limited private investment reflects institutional and policy deficiencies related to access to finance (detailed in Annex 6), property rights, marketing inefficiencies,[16] standards and their enforcement, and livestock processing facilities. Livestock investments are regarded as risky because of disease and mortality, theft and other security issues, public sector intervention in the value chain (in vaccine manufacture and delivery of animal health care, for instance), and the high costs of business in the relatively narrow market for livestock products, with its myriad low-volume transactions.

20. **Sector governance is weak, and governance frameworks are outdated.** A vibrant livestock sector demands an updated, comprehensive policy, and regulatory framework that embraces economic and social objectives and incorporates standards for environmental sustainability, food safety, and health.

[10] The innovation system consists of the individuals, institutions, organizations, and networks necessary to identify and develop localized solutions to livestock production system problems.

[11] In Nigeria genetically improved crossbred cattle yield over 14 times more milk than local *bunaji* breeds and have superior returns per naira invested (3.7 for the crossbreed against 2.5 for the *bunaji*).

[12] Including the generally low number of livestock extension agents, outdated knowledge of technologies and practices, and limited use of digital technologies. Many remote areas lack extension services, leaving farmers to improve animal health and productivity on their own.

[13] Disease reporting is based on passive rather than active surveillance due to the lack of funds, resulting in under-reporting. Clinical diagnosis is infrequently supported by laboratory diagnosis, as Nigeria has no reliable network of accredited, regulated laboratories. There is poor collaboration in disease reporting and control across States (which is key, as disease spreads without regard to boundaries).

[14] World Organization for Animal Health (OIE) (2019), PVS [Performance of Veterinary Services] evaluation mission follow-up report, *https://rr-africa.oie.int/wp-content/uploads/2020/02/20190626_nigeria-pvs-fu-report_final-1.pdf*.

[15] Many contagious diseases are endemic and hinder sustainable growth. Peste des petits ruminants (PPR), for example, is associated with the annual loss of over 40 percent of Nigeria's sheep and goat population. See the National Strategy for the Control of Peste des Petits Ruminants in Nigeria (March 2017), *http://extwprlegs1.fao.org/docs/pdf/nig201717.pdf*.

[16] For example, the value chain lacks marketing facilities near production enclaves. Cattle often are driven over 1,000 km to markets and require protection against rustlers, as well as intermediate fattening before being sold.

Nigeria lags on most of these fronts. Federal and state policies and laws on grazing reserves and livestock movement[17] are no longer adequate in an environment of heightened population pressure and climate stress. With the exacerbation of conflicts, public policy and discourse understandably tend to frame transhumance as a backward way of life that disrupts security and should be curbed, underestimating however its value as a valid economic path for poor people in fragile northern environments adapting to the evolving water and pasture scarcity. As a result, traditional institutions and local committees that were the key arbiters of herder-farmer conflicts are inactive. Although Nigeria was a foremost proponent of the Economic Community of West African States (ECOWAS) protocol that recognizes the economic value of cross-border transhumance and guarantees freedom of movement for pastoralists, it has no corresponding national law or implementation framework. There are no coherent policies and regulations dealing with priority zoonotic diseases, emerging infectious diseases, veterinary medicines, including antimicrobial use, and livestock production in urban and peri-urban areas which is known to amplify the risk of disease transfer from animals to humans. There are also deficiencies in coordination mechanisms between the federal and the state governments on sector policy, planning, and strategy and a lack of sufficient orientation towards climate change adaptation and mitigation across many relevant policies.

21. **The proposed Livestock Productivity and Resilience Support Project (LPRES) will build on recent FGN strategies and policies to promote a productive, and resilient livestock sector.** The Agriculture Promotion Policy (2017) emphasizes more productive and modern livestock production systems, facilitated by private investment. The National Livestock Transformation Plan (NLTP) (2019) supports the transformation of the livestock sector through strategic interventions to improve performance, sustainability, and value addition; a key goal of the NLTP is to mitigate the escalating crisis between farmers and pastoralists. Under its Nationally Determined Contribution (NDC), Nigeria has committed to improve livestock management for climate change adaptation and mitigation. Accordingly, the project will focus on: (i) strengthening sector policy and institutional foundations for improved sector productivity and resilience to climate change - tailored to the various production systems; (ii) improving value chain performance for increased smallholder market orientation and private sector investment; and (iii) mitigating farmer-herder conflict in selected areas which is mainly driven by climate change. These investments will help to build the resilience of livelihoods dependent on livestock in the near term, and in the longer term they will create jobs, strengthen food security, and improve Nigeria's trade balance by reducing livestock imports.

## C. Relevance to Higher Level Objectives

22. **LPRES broadly seeks to improve livestock sector management to: (i) increase productivity, food and nutrition security, income growth, social cohesion between farmers and herders, and resilience in the sector and relevant local communities to environmental degradation, climate change, and conflict; and (ii) reduce GHG emissions related to livestock.** The project therefore contributes to the Sustainable Development Goals (SDGs) on ending hunger, achieving food security and improved nutrition (SDG2); ending poverty (SDG1); ensuring health and well-being for all (SDG3); resilient communities (SDG 11); combating climate change and its impacts (SDG13); and fostering peaceful and inclusive societies (SDG16). Because the project will contribute to poverty reduction, it supports the WBG strategic goal of ending extreme poverty by 2030 and promoting shared prosperity. In helping to improve livestock sector

[17] The Grazing Reserve Law (1965), which empowers FMARD and native authorities to acquire, preserve, control, and manage grazing resources; the Land Use Act (1978); the Animal Diseases Control Decree (1988); and laws dating to the 1960s that established grazing reserves in several northern states, such as Kaduna, Katsina, and Plateau States.

productivity, the project will also contribute to Nigeria's National Development Plan (2021-2025) objectives of diversifying the economy. To the extent that project interventions enhance climate adaptation and mitigation, they will also contribute to Nigeria's NDC climate commitments.

23. **The project will support key objectives framing the World Bank partnership with Nigeria and strategies on climate change, Africa, and conflict.** The four pillars of the Country Partnership Framework (CPF- Report No. 153873-NG) 2021–25 include one pillar on *"enhancing resilience"* and another on *"promoting jobs and economic transformation and diversification."* The project supports the resilience pillar through interventions that build climate resilience, reduce fragility in areas affected by conflict (especially the Northeast), and modernize agriculture. LPRES Project interventions to increase private sector participation in the livestock sector will support the CPF jobs pillar by catalyzing investment and economic diversification. By strengthening the climate resilience of livestock producers, the project comports with the WBG Climate Change Action Plan (2021–25) and Next Generation Africa Climate Business Plan, which emphasize resilient rural livelihoods and economies. LPRES efforts to increase resilience throughout the livestock sector while mitigating farmer-herdsmen conflict align directly with the World Bank Strategy on Fragility, Conflict, and Violence and with two of six priorities set out in the World Bank Africa Strategy (2019–23) (climate change mitigation and adaptation; addressing the drivers of fragility, conflict, and violence). The project risk-sharing facility is meant to increase commercial lending to the livestock sector and is consistent with the IDA19 commitment on Maximizing Finance for Development (MFD).

## II. PROJECT DESCRIPTION

### A. Project Development Objective

**PDO Statement**

24. The Project Development Objective (PDO) is to improve productivity, commercialization, and resilience[18] of targeted livestock production systems in Nigeria.

**PDO Level Indicators**

25. The key PDO-level results indicators are:

(i) percentage increase in productivity of livestock species in targeted production systems (carcass weight in kilograms, liters of milk per cow per day);
(ii) share of beneficiary livestock producers' stock that is marketed (sex-disaggregated number);
(iii) farmers adopting climate-smart technologies (number);
(iv) farmers adopting improved agricultural technology (number);
(v) reduced incidence of resource-based farmer-herder conflicts (percentage);
(vi) share of target beneficiaries with rating "Satisfied" or above on process and impact of project interventions (percent); and
(vii) direct project beneficiaries (sex-disaggregated number).

[18] Including resilience to climate change, environmental degradation, and herder-farmer conflict.

## B. Project Components

26. The LPRES Project will have three interrelated technical components as detailed below.

**Component 1: Institutional and Innovation System Strengthening (US$95.0 million equivalent)**

27. This component will strengthen the policy and institutional foundations for improving the performance and governance of the livestock sector, with due regard to the needs for climate change adaptation and mitigation. Project support will focus on: (i) strengthening the livestock policy and regulatory framework, planning, and monitoring at the federal and state levels; and (ii) improving the capacity and capability of key institutions in the livestock innovation system to deliver public goods and services essential for improving sector productivity, increasing the resilience of the livelihoods anchored in the sector (including livelihoods in pastoral systems), reducing competition for natural resources, and reducing the sector's negative externalities. Project support will be provided through three synergistic subcomponents.

***Subcomponent 1.1: Support to Policy Formulation, Planning, and Capacity Strengthening (US$15.0 million).***

28. This subcomponent aims to strengthen the policy environment, knowledge base, and human resource capacity of the livestock sector as a springboard for enhancing livestock productivity, resilience, and value chain performance. It will finance five activities, beginning with preparation of a comprehensive Livestock Master Plan [19] and follow-up analyses to guide the development of a sustainable, efficient livestock sector in the short to medium term. The Livestock Master Plan will address the spectrum of ruminant production systems (pastoral, mixed, intensive) and their trade-offs in terms of economic, social, environmental, and public health risks and opportunities (including the strengthening of One-Health approaches to pandemic and other public health risks mitigation), in the context of a changing climate. Second, Subcomponent 1.1 will finance feasibility studies of cost-efficient tools and systems (such as digital technologies) to improve the collection, analysis, and dissemination of data adapted to public and private stakeholders' needs, including data on herd population characteristics and dynamics, productivity trends, animal movements (linked to transhumance and trade), market prices, and other variables. Based on those studies, the third activity under this subcomponent is to develop and pilot promising prototypes of data tools and systems in selected states. The fourth activity is to develop sub-sector policies related to feeding, breeding, dairy production and animal health, and roll out a competitive scholarship program for postgraduate studies (targeting at least 50 percent women beneficiaries), as well as continuing education and capacity-building programs for key stakeholders at the federal and state levels to improve livestock policy and regulation formulation, enforcement, monitoring and evaluation (M&E), and technical knowledge related to the different production systems. Lastly, this subcomponent will provide financing to explicitly mainstream climate change adaptation and mitigation objectives across all relevant policies and strategies (including the Livestock Master Plan and NLTP) and regulations to strengthen the foundation for addressing climate change challenges in the sector.

29. The sub-component will disburse through inputs-based financing and results-based financing based on achievement of Performance Based Conditions (PBCs). The PBCs under this sub-component are: (i)

[19] Livestock Master Plans are developed through a systematic process using global reference tools available in the Livestock Sector Investment and Policy Toolkit (LSIPT). See *https://www.fao.org/3/ca7635en/CA7635EN.pdf* and *https://www.ilri.org/livestock-master-plans*.

preparation of a comprehensive Livestock Master Plan, and (ii) development of national livestock sub-sector policies on feeding, breeding, dairy, and animal health. These two indicators were selected as PBCs because the institutional strengthening and policy reforms captured by the PBCs will directly enhance the effectiveness of project investments and achievement of the development objective. Progress towards achieving the PBCs under the project will be measured using not only actions and outputs, but also process indicators to ensure that reforms are inclusive and have ownership at the state level. The focus on ownership at state level enables the PBCs to serve as a commitment device for effective action at the state level on key technical areas supported by the project, including animal health, breeding, feeding, etc. Project funds will be disbursed up to capped amounts conditional on achievement of the agreed targets for the indicators and demonstration of sufficient eligible expenditures. More detailed information on the definition of all PBCs, the indicators and targets, and detailed verification procedures are reported in Annex 1.

***Subcomponent 1.2: Support to Animal Husbandry and Advisory Support Services (US$40.0 million).***

30. Subcomponent 1.2 will build producers' resilience to climate change and reduce the sector's GHG emissions and other negative environmental externalities by improving the availability and adoption of superior livestock breeds, Good Animal Husbandry Practices (GAHPs), and feed resources adapted to the diversity of ruminant production systems. It will finance four sets of activities that contribute directly to climate change adaptation and mitigation by reducing methane emissions per unit of meat or milk produced (based on improved feeding and manure management) and by increasing carbon sequestration (based on improved pasture and rangeland management).

31. The first set of activities will support the development and implementation of a genetic resource management strategy, with large ruminants as a priority. Aside from traits preferred by producers (increased productivity, early maturity) and markets, breed improvement and selection will emphasize traits that confer resilience to climate-induced stresses, enabling livestock performance to improve as the climate changes. This strategy will be supported through corresponding investments in building (or rehabilitating) and equipping artificial insemination (AI) and breed improvement centers, and in strengthening the technical capacity of breed improvement extension agents to guide breed selection and improvement and increase access to services for farmers (including pastoralists through provision of mobile AI services, for example). Second, Subcomponent 1.2 will finance the development of user-friendly, comprehensive extension training materials (including digital guides) on GAHPs. These materials will cover the range of ruminant production systems and incorporate approaches for climate change adaptation and mitigation. Farmer Field Schools will also be supported to facilitate applied research and learning for groups of herders. Technical support for breed improvement and the introduction of GAHPs will give preference to female producers and be adapted to their needs, to overcome the challenges and risks that often limit women's experimentation with new technology.

32. The third set of activities under this subcomponent is the promotion of improved feed production techniques (the use of agricultural by-products, composition of balanced feed, feed storage technologies); improved feeding practices adapted to animal needs, with potential to reduce methane production; and improved grazing and rangeland management practices (individual or community based) that increase soil carbon stocks, biodiversity, and reduce erosion. Fourth, this subcomponent will finance training of state-level extension agents to use the new materials, guides, and approaches to improve service delivery. Extension agent training, extension protocols, and extension and advisory services for livestock producers

will incorporate content and approaches to close gender gaps in livestock ownership and value-chain position, such as training in socio-emotional skills to support women's successful entrepreneurship, or adjustments in training content, delivery modalities, and timing to accommodate gender differences in digital literacy, digital access, and household responsibilities. This sub-component will disburse through input-based financing.

***Subcomponent 1.3: Support to Animal Health Services Strengthening (US$40.0 million).***

33. Subcomponent 1.3 will strengthen the delivery of livestock health services and improve the coordination between animal, human, and environmental health services, as embodied in the One-Health concept. Improvements in the delivery of animal health services will increase productivity by reducing livestock morbidity and mortality, in turn improving the resilience of livestock and livestock-based livelihoods[20] to climate shocks, including diseases induced by climate change. By contributing to greater efficiency (increased milk yield, daily weight gain, reproductive performance, feed conversion ratio), improvements in animal health will also reduce the intensity of GHG emissions from the livestock sector and help to mitigate climate change, as well as reduce food loss. Expanding the capacity of animal health services and improving their coordination with human health services is also the key to preventing and responding to public health threats such as AMR and zoonotic diseases, including those with pandemic potential.

34. In this context, Subcomponent 1.3 will strengthen national animal health services, building on recommendations of the 2019 OIE PVS report through several activities. First, it will improve the organization and procedures of the national Veterinary Services by establishing a program to support the development of private veterinary services delivery, opening the way for future delegation of selected official tasks to private veterinary professionals for the prevention and control of regulated diseases of economic and public health importance (under a sanitary mandate). Second, it will finance infrastructure and equipment (including solar-powered cold chains, which contribute to climate change mitigation), inputs, training, communication/awareness, and operating costs of selected nationwide programs for disease surveillance, clinical and laboratory diagnostics, and disease control and eradication, with Peste des Petits Ruminants (PPR) as a priority.[21] The third activity under this subcomponent is to improve quality control for veterinary medicines (including antimicrobial agents) and ensure their prudent use to reduce risks to public health and food loss and waste. Fourth, Subcomponent 1.3 will finance the establishment of One-Health platforms at the subnational level to increase collaboration and encourage the development of joint programs with other sectors and disciplines (human health, environmental health). This activity will complement and be implemented in collaboration with the WBG-financed Regional Disease System Support Enhancement (REDISSE - P154807) Project in Nigeria.[22] The fifth activity focuses on working with the private sector to expand the national capacity to produce and commercialize vaccines and other biologicals.

[20] Over 25 percent of smallholder stock is lost to preventable and treatable diseases.
[21] Nigeria participates in the global PPR eradication program, and under the Regional Sahel Pastoralism Support Project, Phase 2 (PRAPS-2) will receive support to develop national strategic plans for PPR eradication and Contagious Bovine Pleuropneumonia (CBPP) control, harmonized with plans developed by other PRAPS-2 countries.
[22] This regional program supports a coordinated approach among countries in West and Central Africa to detect and respond to disease outbreaks and public health threats of regional and international importance (P154807: Guinea, Sierra Leone, Senegal; P159040: Guinea-Bissau, Liberia, Nigeria, Togo; P161163: Benin, Mali, Niger, Mauritania; P167817: Angola, the Central African Republic, Chad, the Republic of Congo, and the Democratic Republic of Congo).

35. The sub-component will disburse through inputs-based financing and results-based financing based on the achievement of one PBC – the establishment of a private veterinary practice program. The indicator is selected as PBC because it encapsulates project's efforts to encourage private sector participation in delivery of livestock services. The provision of veterinary services by the private sector not only improves effectiveness, but also enables scarce public funds to be used towards delivery of truly public services, thereby expanding the number of farmers receiving services which is key to achieving the PDO.

**Component 2: Livestock Value Chain Enhancement (US$275.0 million equivalent)**

36. Component 2 builds on herd-level improvements in productivity arising from investments under Component 1 (improved breeds, animal health, and GAHPs) to expand overall production of meat and milk and reduce imports of those commodities. To that end, it will enhance and modernize the value chain for livestock products, promote a stronger commercial/market orientation among small and medium producers, and encourage increased private investment in priority segments of the value chain, while mainstreaming climate change adaptation and mitigation measures. In addition to augmenting national production, these activities will build more resilient livelihoods, create jobs, promote rural economic growth, and improve food safety. An enhanced value chain will help to ensure the sustainability of project investments and foster intensification, which will reduce the environmental (and carbon) footprint of the livestock sector. Project support will be provided under four subcomponents.

***Subcomponent 2.1: Support to Market Linkages and Market Development (US$160.0 million).***

37. Subcomponent 2.1 will foster a market orientation among small and medium producers by ensuring: (i) market access/availability; (ii) that producers capture a fair share of product/commodity value; (iii) transparency in market prices; and (iv) the highest level of appropriate value addition at the farm level through primary processing (bulking, cooling, sorting, packing, and so on) to increase profits and reduce food loss and waste. The demand-supply balance for meat (beef) and milk in Nigeria (which will be reconfirmed through rapid localized supply and demand studies during implementation), as well as consultations held during project preparation, indicate that prospective off-takers and markets for these commodities abound in the country, including small and medium agribusinesses working or seeking to work in partnership with organized livestock producers. In this context, Subcomponent 2.1 will support and strengthen collective action by small-scale producers to "create volume," add value, reduce transaction costs, and increase their bargaining power in identified commodity markets. Concurrently it will raise producers' awareness of modern, climate-smart production technologies to increase efficiency (for example, in using land and feed, reducing feed loss along the value chain, and managing manure and waste) while reducing emissions and mitigating the negative ecosystem effects of livestock production.

38. To achieve these objectives, this subcomponent will finance: (i) the organization of livestock producers/herders into viable groups (cooperatives, associations, organizations, and the like) or the strengthening of existing groups; (ii) training and advisory services; and (iii) common assets for value addition (milking equipment, cooling centers, transport, services, and so on) that also serve to increase resilience and mitigate climate change. The PIM will elaborate eligibility criteria for common assets as well as their management. To facilitate women's progression within value chains where they already participate—such as dairy—or their entry into traditionally male-dominated livestock value chains, activities under this subcomponent will take care to avoid reinforcing gender segregation in the value chains. The project will consider men's engagement programming designed to ease restrictive social

norms and promote women's entry into higher-value livestock value chains.[23] Support for value addition will be coordinated with related activities implemented under the WBG-financed Agro-Processing, Productivity Enhancement and Livelihood Improvement Support Project (P148616) to ensure synergies and avoid duplication. Women borrowers seeking to enter value chains for large ruminants will be connected with livestock extension services and receive soft-skills training to facilitate success.

39. This subcomponent will also finance complementary activities to support market linkages and development, including an online market information system capable of reaching widely dispersed producer populations with information on buyer preferences, commodity prices, livestock supply and demand at the national and regional level, and other market variables. In tandem, it will support climate-smart upgrading/establishment of livestock markets with perimeter fencing, simple administrative buildings, water sources, weighbridges (to sell animals by actual weight rather than the more common visual estimates of size and weight), paddocks, loading ramps, and veterinary outposts, all with the aim of improving animal welfare and marketing efficiency. The establishment of markets closer to production areas is a mechanism to prevent conflict, as herders will not have to move stock over long distances. Livestock markets will be equipped with biogas and/or manure composting facilities as a climate mitigation measure to reduce GHG emissions. Data recording systems at livestock markets will contribute to emerging traceability activities of the Federal Ministry of Agriculture and Rural Development (FMARD) and states.

40. Most public abattoirs operating in Nigeria lack cooling facilities, sufficient water, and proper waste/effluent management systems, in violation of public health regulations. Working with local governments, Subcomponent 2.1 will provide support to rehabilitate/upgrade a network of strategically located abattoirs that will be operated under improved food safety, environmental, and public health regulations. Based on assessments to be conducted during implementation, new models for operationalizing these abattoirs—for example, concessions,[24] public-private partnerships (PPPs), or fully private operators—will be explored and adapted to specific contexts. Special care will be taken to ensure that abattoir rehabilitation/upgrading is climate smart. The project will provide capacity building on slaughter processes, including aspects of health and hygiene, sanitary and phytosanitary regulations, and adherence to food safety standards. State Veterinary Departments will ensure compliance with animal and public health regulations through pre- and post-mortem inspections, improving traceability and disease surveillance. Based on assessments to be conducted during implementation, the project will also develop and support an incentive framework for private sector investment in markets and abattoirs.

41. Finally, Subcomponent 2.1 will support the provision of business development services through dedicated technical assistance to enable value chain actors (producers, producer organizations, small aggregators, and others) to develop their entrepreneurial capacity, develop business plans that build climate resilience into their operations, and improve their access to finance and markets. Viable businesses will be introduced to the financial institutions in subcomponent 2.2 as well as other lenders and investors to crowd in private capital. This sub-component will disburse through input-based financing.

[23] A recent impact evaluation documented the potential of light touch interventions: a couples training and planning intervention targeting the rubber value chain yielded significant agricultural productivity increases.
[24] Following the example of the NGN 66 billion publicly financed silo complexes, grain aggregation centers, and Blumberg warehouses, which have been privatized through concessionary arrangements.

***Subcomponent 2.2: Support to Increased Access to Finance (US$70.0 million).***

42. This subcomponent builds on activities under Component 1 and Subcomponent 2.1 to further de-risk the livestock value chain, expand commercial lending in the livestock sector, and promote climate adaptation and mitigation. It will address critical challenges in providing credit to livestock value chains, particularly loan duration and realistic risk-adjusted pricing. Accordingly, Subcomponent 2.2 will finance three main activities: a credit line, risk-sharing facility, and technical assistance through input-based financing.

43. **Credit line (US$50.0 million).** The credit line will enable viable and bankable firms across the livestock value chain to boost the value chain's productivity, enhance its resilience, reduce its emissions footprint, and upgrade its performance through access to long-term debt. This type of financing will facilitate long-term investments, particularly in fixed assets, advanced technology, or equipment that can also serve as security for the financing.[25] The Development Bank of Nigeria (DBN), a majority - publicly owned wholesale bank for small and medium enterprises (SMEs), will be the implementing partner for managing and disbursing the line of credit to participating financial institutions (PFIs) for on-lending to end-borrowers. DBN is equipped with a strong governance structure and operational capacity, as proven under past and current WBG-funded projects (for details on DBN's operations and performance, see Annex 6).

44. DBN will select PFIs pursuant to criteria agreed upon with IDA, which will be defined and reflected in the Project Implementation Manual (PIM) and ensure compliance with IDA's financial intermediary financing guidelines. The criteria will prioritize and ensure that every eligible investment takes climate adaptation and mitigation considerations into account, in line with DBN's increased attention to climate change, as well as food loss and waste considerations where applicable. PFIs are expected to offer term loans for capital investments as well as working capital loans for business expansion. Loan appraisals will follow each PFI's normal credit policies and appraisal procedures. PFIs will be encouraged to set loan durations in accordance with the cashflow projections of the end-borrowers' subprojects. In addition, technical assistance for financial institutions (discussed below) will promote asset-lending products and structures that circumvent excessive collateral requirements. Funds offered by DBN will reflect DBN's cost of funds and a spread to cover DBN's cost of operations plus a risk premium. The interest rates offered by PFIs to end-borrowers will not be subsidized or capped; rates will be risk adjusted and will include, at a minimum, the cost of the project funds provided from DBN to PFIs – including DBN's administrative cost and the financing risk margin, plus an on-lending margin reflecting PFIs' administrative costs, and the PFIs credit and market risk margins. Since the PFIs will use their normal credit policies to conduct loan appraisals, they will assume the end-borrowers' credit risk.

45. **To be eligible for financing, the PFI must:** (i) be duly licensed by CBN and at least three years in operation; (ii) have "fit and proper" owners and board of directors; (iii) have qualified and experienced management, adequate organization and institutional capacity for its specific risk profile; (iv) be in "good standing" with its supervisory authority (i.e. it should meet all prudential and other applicable laws and

[25] Empirical evidence from cross-country and within-country studies suggests that long-term finance has a positive effect on firm investment and performance. See Chapter 2 of World Bank (2019), *Global Financial Development Report 2019/2020: Bank Regulation and Supervision a Decade after the Global Financial Crisis.* Washington, DC (*https://www.worldbank.org/en/publication/gfdr/gfdr-2016/report/chapter-2*); see also *https://documents1.worldbank.org/curated/en/576961468197998372/pdf/101769-REVISED-ENGLISH-Principles-CGS-for-SMEs.pdf;* and *https://thedocs.worldbank.org/en/doc/304771507314954144-0340022017/original/productnotefinancialmobilizationtomeet developmentneeds.pdf*.

regulations) and remain in compliance at all times; (v) have well defined policies and written procedures for management of all types of financial risks (liquidity, credit, currency, interest rate and market risk, as well as risks associated with balance sheet and income statement structures); (vi) maintain capital adequacy as prescribed by prudential regulations as promulgated by CBN; (vii) have adequate liquidity; (viii) have positive profitability for at least the latest two years of its operations and an acceptable risk profile; (ix) have adequate portfolio quality; (x) have adequate internal audits and controls for its specific risk profile; (xi) have adequate management information systems; and, (xii) demonstrate commitment to serving the MSME sector and have in place satisfactory MSME loan approval processes and risk management procedures. These minimum PFI eligibility criteria will be confirmed in an annual due diligence process conducted by DBN, that is acceptable to IDA.

46. Eligible end-borrowers will be micro, small and medium-sized agribusiness companies and producers (including producer cooperatives), primarily in the beef, dairy, sheep, goats, pigs and poultry value chains—in other words, value chain actors such as off-takers, processors, transporters, and input suppliers. The borrowers will present financially viable expansion plans involving linkages to smaller businesses and producers in their value chains that meet the eligibility criteria for MSMEs defined by the Development Finance Project (P146319). For the purposes of the LPRES Project, micro, small and medium-sized companies will be defined as firms satisfying the following criteria including a maximum loan size:

| | **# Employees[26]** | **Annual Turnover US$ (000)** | **Total Assets US$ (000)** | **Max. Loan Size US$ (000)** |
|---|---|---|---|---|
| Micro | < 10 | < 50 | < 50 | < 50 |
| Small | 10 - 49 | 50 - 500 | 50 - 500 | < 200 |
| Medium | 50 - 249 | 501 - 15000 | 501 - 15000 | < 2000 |

47. The project will introduce a pipeline of viable value chain actors – beneficiaries from Subcomponent 2.1 - to PFIs capitalizing on the technical assistance linking small-scale livestock producers and other value chain actors. Such linkages will extend the benefits of greater access to finance to smaller players in the value chains, while supporting the expansion of climate-smart livestock production and markets in the country. The credit line would also support medium-sized companies in the livestock sector primarily off-taking from project beneficiaries.

48. **Risk-sharing facility (US$15.0 million).** To moderate perceptions that lending to the livestock sector is highly risky, this activity will finance a sustainable risk-sharing facility that provides first-loss coverage to PFIs that extend loans to commercially viable firms across the livestock value chain. The IMPACT credit guarantee fund, a subsidiary of DBN, will administer and issue partial credit guarantees to banks and financial intermediaries that will support the livestock value chain. The implementation arrangements for this activity will be identical to those under the Development Finance Project (P146319). The eligibility criteria will be the same as for the credit line and will include climate change adaptation and mitigation considerations. The level of loan loss coverage and pricing of the guarantees will be defined in consultation with the market players through technical assistance, discussed next.

49. **Technical assistance for commercial banks and other non-bank financial institutions and lenders (US$5.0 million).** Both the credit line and risk-sharing facility will be complemented by technical assistance for implementing partners and PFIs to: (i) dimension the underlying credit risks of financing this value

[26] Firm size is defined based on employment as per SEMDAN's definition, please see: https://www.smedan.gov.ng/images/PDF/MSME-National-Policy.pdf

chain; (ii) structure and price the financial products; (iii) develop the capacity to implement the credit line and risk-sharing facility effectively; and (iv) acquire an understanding of climate risks, resilience planning, and climate-smart livestock production systems. While some commercial banks have relatively high exposure to livestock borrowers, their lending appears to favor poultry businesses, which have a well-known risk profile. The growing livestock market in Nigeria will most likely allow banks to continue accumulating knowledge and expertise focused on this narrow subsegment, but they may fail to capture business opportunities in other livestock subsegments. Technical assistance provided under this subcomponent will enable PFIs and other lenders to assess the risks of lending to subprojects and companies in the beef and dairy value chains, with the aim of expanding PFIs' outreach and widening access to finance across the livestock sector. Training will provide a general overview of livestock businesses, review case studies of lending products from other countries, and introduce the credit line and risk-sharing facility and their beneficiaries, including value chain actors. As noted, technical assistance will also support the development and introduction of new asset-based lending products for capital investments that can circumvent excessive collateral requirements. DBN will manage this technical assistance, maximizing synergy with the Development Finance Project.

50. The technical assistance provided to PFIs will address gender gaps in access to finance in the livestock value chain. It will support the development of financial products that use alternative credit scoring methods based on psychometric testing to lift the collateral constraints facing women. A psychometric testing platform will be developed and linked with the risk-sharing facility described earlier to cover potential losses from loans issued in the learning phase, while the psychometric testing instrument is being refined to successfully identify predictors of loan performance.[27]

***Subcomponent 2.3: Support to Selected Livestock Service Centers (US$45.0 million).***

51. Activities under this subcomponent will complement activities under Subcomponents 2.1 and 2.2 by accelerating the momentum of smallholder commercialization and private sector investment in the livestock value chain, while scaling up climate-smart livestock production systems. In line with the NLTP, this subcomponent will provide support to create Livestock Service Centers (LSCs) in selected areas to promote commercialization, reduce open grazing, and attract private investment in the livestock sector. Conceived as pilots and modelled along the lines of agri-parks, the LSCs will be a community of businesses with a common interest in livestock and livestock products, situated in gazetted grazing reserves or other such land with unencumbered titles provided by the relevant states. The LSCs will complement the technical activities of federal and state entities and promote better integration of their services at the local level, supporting the broader territorial development needs of local livestock communities.

52. In line with the findings of detailed engineering and financial feasibility studies[28] conducted during implementation, as well as the outcomes of demand-driven planning processes involving local communities, potential private sector investors, and other stakeholders, Subcomponent 2.3 will finance: (i) the detailed design and supervision of works, including verification that they are climate-smart; (ii) the development of the sites and construction of the essential infrastructure, based on the masterplan of the

[27] Preliminary results from an impact evaluation in Ethiopia suggest that psychometric testing reliably predicts whether an entrepreneur will repay a loan. Customers who scored at a high threshold on the test were seven times more likely than other customers to repay their loans.

[28] These studies will include: (i) market assessment; (ii) preliminary design, including programming of climate-proof and energy-efficient construction; (iii) the study of options for optimal financing and management models—PPPs, build-operate-transfer (BOT) arrangements, or other concessionary agreements; and (iv) related Environmental and Social Impact Assessments (ESIAs).

LSCs; (iii) the provision of selected climate-smart goods and services (knowledge and training centers, veterinary facilities, livestock breeding services, livestock markets, market information systems, milk collection and cooling facilities to reduce food loss and waste, water points, input outlets, rotational grazing areas, and others) to catalyze intensification and increase livestock production, product handling, processing, and marketing; and (iv) tailor-made technical assistance to bring the LSCs to full operational capacity. The design and construction of the LSCs will incorporate Eco-Industrial Park Guidelines[29] and focus on mitigating climate change through resource-efficient technologies (for example, photovoltaic energy) and buildings that reduce GHG emissions. The gender gap in access to services will be reduced by ensuring that LSC facilities are designed to accommodate women's requirements (for example, separate women's and men's restrooms). The LSCs will also prioritize accessibility to women by establishing service hours, such as weekend hours, that recognize women's disproportional household responsibilities.

53. The LSCs will be accessible to both sedentary and transhumant livestock keepers (with a focus on smallholders). Beyond promoting commercialization and private investment, these centers are expected to mitigate conflict through multi-stakeholder inclusive participation, discussions, and planning. The project will pilot LSCs in seven states in areas where livestock are concentrated, with scope to expand the model if it proves successful. The pilot states are key corridors for livestock movement within Nigeria and the region.

54. The establishment of LSCs will be through both input-based financing and results-based financing upon achievement of PBCs. In particular, the establishment of two LSCs in Kano and Bauchi states will be based on PBCs while the rest (five LSCs) will be implemented through input-based financing. Kano and Bauchi LSCs were selected for results-based financing because implementation readiness of these LSCs is more advanced than the rest. The project will initially focus on these two LSCs that are PBCs-based to ensure that proper attention is paid to the core aspects of establishing LSCs, including feasibility studies and design features to ensure effective service delivery to herders, management structure, installation of infrastructure and facilities to crowd-in private sector agribusinesses, and sufficient attention to environmental concerns. The proper establishment of these LSCs reflects the commitment of Kano and Bauchi states to address farmer-herder conflicts by designating spaces where herders can receive a host of livestock services and inputs while reducing open grazing. The experiences and lessons learned in Kano and Bauchi will be transferred to the implementation of the five LSCs that will be delivered through inputs-based financing. Through this demonstration effect, the PBCs will make an enormous contribution to the project's development objectives to increase productivity and resilience.

**Component 3: Crisis Prevention and Conflict Mitigation (US$100.0 million equivalent)**

55. While improved provision of animal husbandry, animal health, and animal identification and traceability services under Component 1 will indirectly help to mitigate herder-farmer conflict (mainly through improved productivity, reduced resource-use intensity, and livestock security) thereby contributing to improved resilience of communities affected by conflict, Component 3 will address the most proximate causes of herder-farmer conflict: the declining quantity and quality of resources (water and rangeland), constrained access to resources, and declining social cohesion. In line with the NLTP, support will be channeled through two subcomponents, presented below.

[29] See Kechichian, E., and M.H. Jeong (2016), Mainstreaming *Eco-Industrial Parks*. World Bank, Washington, DC. *https://openknowledge.worldbank.org/handle/10986/24921*.

***Subcomponent 3.1: Support to Natural Resources Management and Pasture Improvement (US$70.0 million).***

56. Subcomponent 3.1 will finance investments to improve the quantity and quality of water and rangeland—resources that are critical for productive pastoral systems with increased climate resilience and carbon sequestration. It provides support to assess the status of water and feed (including forage and fodder) using remote sensing technologies and tools such as the FAO feed balance methodology. The resulting information will be disseminated to guide decisions on improved feed and water management, utilization, and access. Subcomponent 3.1 will also finance the establishment and implementation of an inclusive, community-driven process for climate-smart, sustainable rangeland/landscape management. All key users of grazing reserves and water will be involved in this process, which will establish clear conditions for accessing these natural resources and develop sound governance mechanisms to manage them. Support will also be available for constructing and rehabilitating stock routes and water points, with the goal of improving this network and including areas that offer new rangeland/pasture. Committees will be established and supported to manage these investments sustainably. Subcomponent 3.1 will also finance the development of cultivated pasture, including facilities for irrigation in water-scarce environments.

57. Investments under this subcomponent will rely on community-driven development approaches. These investments will be coordinated with related/complementary activities under the proposed WBG-financed Agro-Climatic Resilience in Semi-Arid Landscapes Project (ACRESAL-P175237) where implementation areas overlap, particularly in rangeland improvement (as part of broader watershed management) and the provision of fodder from restored landscapes. All activities will be implemented through inputs-based financing. Besides increasing the amount and quality of grazing resources, which is a climate change adaptation measure, support for improved rangeland/pasture management will contribute to climate change mitigation through increased carbon sequestration above and below ground, as well as through reduced methane emissions from enteric fermentation, largely owing to improved pasture quality.

***Subcomponent 3.2: Support to Conflict Mitigation (US$30.0 million).***

58. This subcomponent provides support to increase capacity for conflict prevention and resolution, focusing initially on herder-farmer conflicts. Through activities at the local, national, and transnational level, this subcomponent seeks to: (i) mitigate the resource-based drivers of conflict; (ii) increase local capacity for conflict resolution; and (iii) facilitate policy dialogue to address the underlying drivers of conflict.

59. **Local level.** Subcomponent 3.2 will finance the establishment and support of local committees for conflict prevention and resolution and facilitate investments to alleviate pressure points. Local committees will build on existing formal and informal institutions and mechanisms of conflict resolution and receive training in conflict dialogue and resolution. Facilitators will support committees in mapping stakeholders, identifying sources of conflict, and drawing on local ideas and knowledge to address them. In partnership with community committees, the LPRES Project will support community dialogue and activities to promote social cohesion between herders and farmers, anticipate and resolve potential conflicts, and strengthen peacebuilding. Herders and farmers will jointly identify potential pressure points to help prioritize investments and data needs. Small-scale investments prioritized through this dialogue will be financed under this subcomponent in consultation with communities, local authorities, and

representatives of both farmer and pastoral communities. Examples of investments include the construction and rehabilitation of critical infrastructure to secure mobility and access to pastoral areas/grazing reserves along transhumance corridors and stock routes (for instance, the marking of corridors, development of rest areas, provision of shelters and feed storage facilities) and mechanisms to enforce regulations, which are all essential to support productive and resilient pastoral systems.

60. **National level.** With the support of Nigerian Meteorological Agency (NIMET), the project will support the creation of early warning systems using remote sensing and spatial analysis to forecast forage conditions and water availability, enabling pastoralists and the government to take preemptive action to prevent conflicts. This information will be disseminated through local committees to allow timely community responses. Under this subcomponent, the project will also support dialogue on gazetted grazing reserves[30] and transhumance corridors to strengthen their management and statutory protections against encroachment. Financing will be provided to prepare feasibility studies on livestock insurance mechanisms to indemnify producers against livestock losses (through theft, for example), which are known to trigger conflict.

61. **Transnational level.** The project will finance the organization of a high-level dialogue on transboundary agreements on animal movement. The objective is to ensure a coherent spatial approach and agreement between Nigerian states and between Nigeria and neighboring countries, including high-level dialogue with ECOWAS to establish consistent and coherent rules on transhumance. All activities will be implemented through inputs-based financing.

**Component 4: Project Coordination and Management (US$30.0 million equivalent)**

62. This component aims to ensure that programmed project activities are implemented in a timely and appropriate manner, with adequate support to overall project management, M&E, and communication. It will finance the creation and operation of a National Coordination Office (NCO) in FMARD with the following main objectives: (i) ensuring effective strategic and operational planning, implementation, and M&E of the project, beginning with a baseline assessment to measure the project's progress and impacts; (ii) ensuring that all project funds are used efficiently, and coordinating project interventions implemented by participating stakeholders and partners; (iii) evaluating the project's mid-term and final results, outcomes, and impacts on beneficiaries; (iv) supporting states to meet criteria for participating in the project; (v) supporting social risk mitigation, especially gender, labor-influx, mapping of GBV services and development of referral pathways and security risks; (vi) supporting and ensuring efficient knowledge management; and (vii) preparation and implementation of a communication strategy to support effective communication to various public and private entities on project activities, outcomes, best practices, and lessons learned. Financing under this component will also be used to create State Coordination Offices (SCOs) to lead project implementation at the state level. All activities will be implemented through inputs-based financing.

**Component 5: Contingency Emergency Response Component (US$0.0 million)**

63. Given Nigeria's vulnerability to shocks, the proposed project includes a Contingency Emergency Response Component (CERC) with a zero-dollar allocation. The CERC provides a mechanism within the project to finance a response to a natural disaster, disease, or other eligible emergency, should one occur. This CERC is particularly critical in light of the unpredictable trajectory of the COVID-19 pandemic, the

[30] The Government of Nigeria has approximately 415 grazing reserves, but only one-third are used, and intrusion by local farmers is common.

continuing threat of a desert locust invasion in West Africa, and the potential for drought or floods. If a crisis develops, FGN may request WBG to reallocate project funds to cover some of the costs of emergency response and recovery. All expenditures under this CERC will be in accordance with paragraphs 11, 12, and 13 of Investment Financing Policy. Expenditures will be appraised and reviewed to determine if they are acceptable to the World Bank before disbursement is made. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, recovery, and reconstruction.

### Project Cost and Financing

64. The indicative cost of the proposed LPRES Project, inclusive of price and physical contingencies (but exclusive of duties and taxes- expected to be borne by the borrower), is US$500 million[31]. The project is processed under the Investment Project Financing (IPF) instrument with selected PBCs. Table 2 summarizes estimated project costs and financing.

**Table 2: Estimated costs and financing, Nigeria Livestock Productivity and Resilience Support Project**

| Project component | Project costs (US$ million) | IDA financing (US$ million) | % IDA financing |
|---|---|---|---|
| 1. Institutional and Innovation System Strengthening | 95.00 | 95.00 | 19.00 |
| 2. Livestock Value Chain Enhancement | 275.00 | 275.00 | 55.00 |
| 3. Crisis Prevention and Conflict Mitigation | 100.00 | 100.00 | 20.00 |
| 4. Project Coordination and Management[32] | 30.00 | 30.00 | 6.00 |
| 5. Contingency Emergency Response Component | 0.00 | 0.00 | 0.00 |
| **Total cost** | **500.00** | **500.00** | **100.00** |

## C. Project Beneficiaries

65. **Direct beneficiaries.** The project is expected to directly benefit 1.43 million individuals[33] (of which at least 30 percent will be women), including livestock producers benefiting from animal husbandry, advisory support, and animal health services; pastoral and sedentary farm households benefiting from improved rangeland resources and reduced conflict; and smallholder producers and other value chain actors (off-takers, processors, transporters, and input suppliers, among others) benefiting from the strengthened livestock value chains. Technical and managerial staff of government agencies that implement project activities—FMARD, the National Animal Production Research Institute (NAPRI), and state ministries, among others—will benefit from training and capacity building provided under the project.

66. **Target production systems and value chains.** The project will preferentially target the value chain for ruminants, albeit with flexibility to consider other value chains based on market demand and private-sector interest. Large and small ruminants take precedence for several reasons. This subsector accounts for the largest share (58 percent) of TLUs, provides more than 70 percent of the meat consumed in

[31] This does not include any costs of resettlement which are anticipated to be defrayed by individual states where required.
[32] Includes refinancing of a Project Preparation Advance of US$2.75 million.
[33] A total of 285,700 benefiting households, each with an average of 5 individuals.

Nigeria,[34] and sustains the economically important leather industry.[35] Poverty is higher, and livelihoods are more vulnerable in this subsector. Climate change is compounding this vulnerability and implicating the subsector in conflict and violence. The characteristically low productivity of the subsector offers considerable scope for productivity improvements and for reducing the wide supply-demand gaps for milk and meat products, with benefits for the balance of trade. At the same time, the subsector can contribute significantly to climate change mitigation through efforts to reduce GHG emissions from enteric fermentation; improve the management of manure, pasture, and rangeland; and support better ruminant nutrition and health.

67. **State participation and investment staging.** Given the livestock sector's development needs across all of Nigeria, and the objectives and scope of the proposed project - strengthening sector institutions, disease control and prevention, enhancing livestock value chains, and mitigating climate change mediated conflict—FGN regards LPRES Project as a national program, to which all 36 states are technically eligible[36]. To encourage efficient implementation and attain the desired outcomes, however, the project will prioritize and onboard states that have demonstrated commitment to project outcomes throughout and beyond the life of the project and are ready to effectively implement the project. Once onboarded, states will qualify for an initial allocation of financing for their work plans. Subsequent financing will be contingent on timely and satisfactory[37] delivery on the prior work plan activities and milestones, continued demonstration of commitment to the project, and meeting a set of activity-specific conditions. Details on state participation and investment staging are provided in Annex 2.

[34] Haruna, U., and N. Murtala (2005), "Commodity Chain Analysis of Cattle Marketing in Nigeria: A Case Study of K.R.I.P Area of Kano State." Report submitted to Adeni Project/NAERLS, Zaria. 38p.

[35] The leather industry represents 26 percent of total non-oil exports and is the second largest non-oil foreign exchange earner after cocoa. It generates between US$600–800 million annually and is projected to grow to US$1 billion by 2025.

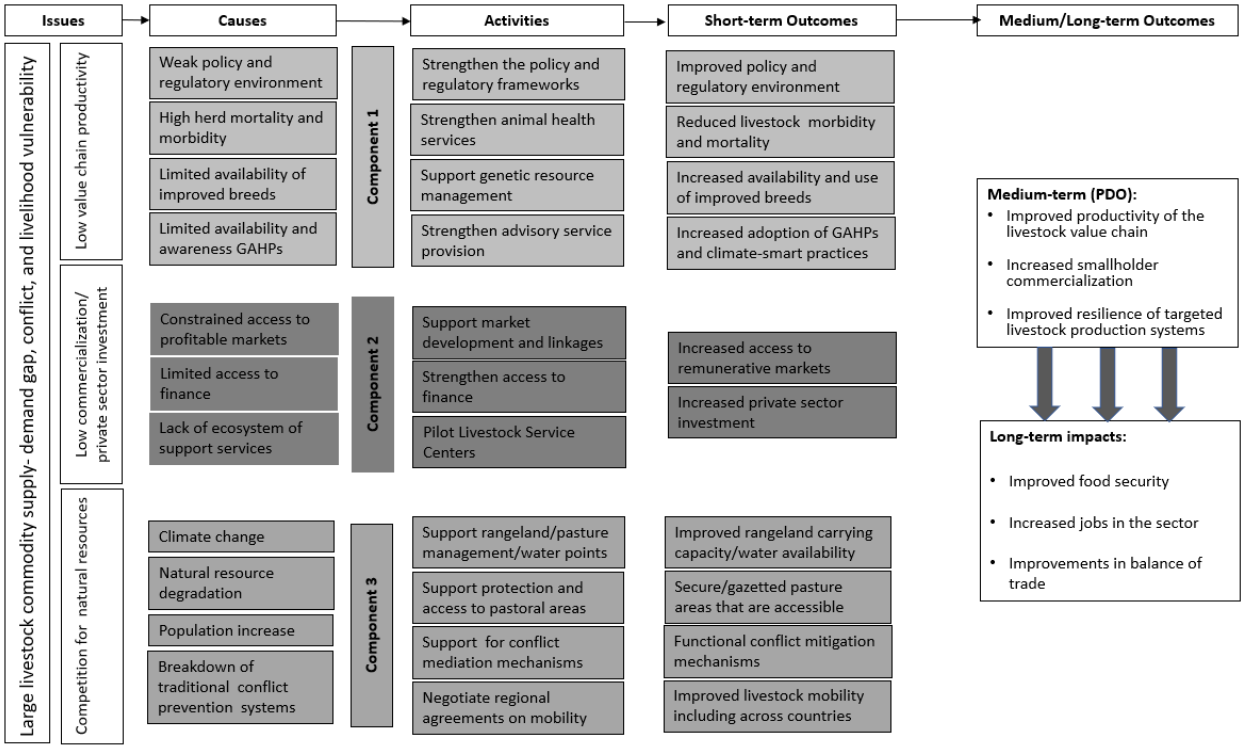
[36] Project support for conflict mitigation is restricted to states where there is herder-farmer conflicts.

[37] Including fiduciary and safeguards compliance.

## D. Results Chain

68. Figure 2 depicts the project's Theory of Change (ToC).

**Figure 2: Theory of Change for the proposed Nigeria Livestock Productivity and Resilience Support Project**




69. **Some assumptions underlying the ToC could be influenced by external factors that the project has anticipated and will take steps to moderate.** For example, the ToC assumes that livestock producers are interested in adopting improved livestock production technologies and practices (including improved breeds), despite strong evidence that most small-scale producers are risk averse and reluctant to change their technologies and practices. The project incorporates training and demonstration activities for producers and capacity building for service providers to increase the likelihood of adoption. The ToC also assumes that smallholders will want to commercialize their increased livestock production, although empirical evidence[38] suggests that where financial markets are rudimentary or absent, as in Nigeria, farmers may be reluctant to do so, because livestock play an important role as a store of wealth that is easily converted to cash to meet sporadic needs. Project support to increased productivity is partly designed to overcome this anticipated challenge. Another fundamental assumption is that despite the entrenched political economy and the actions of actors benefitting from the status quo, government authorities and other project stakeholders will support and implement measures to mitigate herder-farmer conflict, especially measures to protect and secure access to critical pastoral areas, and that FGN will elicit agreement, cooperation, and action to manage livestock mobility within and across national borders. Finally, it is important to note that the project's ability to achieve its development objectives may

[38] Naziri, D., K.M. Rich, and B. Bennett (2015), "Would a Commodity-based Trade Approach Improve Market Access for Africa? A Case Study of the Potential of Beef Exports from Communal Areas of Namibia." *Development Policy Review* 33(2):195–219.

also be affected by unanticipated or unpredictable factors, such as insecurity, the COVID-19 pandemic, extreme climate conditions, or natural disasters.

## E. Rationale for World Bank Involvement and Role of Partners

70. **The World Bank will add value under the proposed LPRES Project in three main areas:** (i) promoting and facilitating knowledge and experience sharing between participating states; (ii) facilitating the multi-stakeholder engagement required to pursue sustainable development of the sector; and (iii) optimizing the use of funds. In addition, the WBG has unrivalled, cutting-edge experience in supporting livestock sector improvement programs around the world, accelerating the adoption of improved technology, and incentivizing private participation and investment in the livestock sector. This knowledge has already been brought to bear on the project design and will be expanded during implementation support missions. The World Bank's commitment to the regular measurement of progress in relation to a well-defined results framework reinforces the results orientation of this investment. This commitment is backed by regular reviews during each implementation support mission of results achieved and factors that may speed or undermine achievement of the expected results. Lastly, the renewed and increased commitment of FGN to the livestock sector coincides with the COVID-19 pandemic, which has significantly increased FGN spending needs while leading to an overall decline in government revenues. In this case, World Bank financing is needed to bridge the financing gap in the FGN plan to transform the livestock sector as well as reduce herder-farmer conflict.

71. **Nigeria has recently witnessed an upsurge in the number of actors with interests in the livestock sector, partly because of its causal nexus with conflict.** Many of these actors were consulted during project preparation with a view to building the partnerships required to implement the project effectively and attain its outcomes while avoiding overlapping or proliferating interventions across states. Although there is significant scope, interest, and opportunity for collaboration with many actors, no formal partnerships had been concluded by appraisal. It is expected that consultations will continue during implementation, especially within the ambit of the Agricultural Donor Working Group, to establish functional relationships between the LPRES Project and activities supported by other development partners, especially in the same geographical areas. Examples include efforts by the United Nations Development Programme to strengthen peace-building mechanisms, invest in initiatives fostering economic interdependence between herders and farmers, and foster conflict-sensitive social protection measures, as well as the Department for International Development's Nigeria Stability and Reconciliation Program. The key role of these partners will mainly be to contribute expertise/technical assistance to project implementation.

72. **The WBG has a growing portfolio of investments addressing key challenges faced by the livestock sector in the West Africa region.** The Regional Sahel Pastoralism Support Projects (PRAPS-1 and PRAPS-2) address the drivers of vulnerability among pastoralists and agro-pastoralists to increase their resilience under the pressures of climate change. Other investments in the region focus on increasing livestock productivity and commercialization in non-pastoral systems, such as PADEL-B (P159474) in Burkina Faso, PADEL-M (P160641) in Mali, and PIMELAN (P164509) in Niger.[39] This range of investments offers important opportunities for cross-fertilization among projects.

[39] PADEL: Projet d'Appui au Développement du Secteur de l'Elevage (Livestock Sector Development Support Project); PIMELAN: Projet Intégré de Modernisation de l'Elevage et de l'Agriculture (Agriculture and Livestock Transformation Project).

73. **Partnering with the International Finance Corporation (IFC).** IFC recently signaled interest in supporting Nigeria's livestock sector through upstream investments in the beef, milk, and leather value chains. This work is in its incipient stages, but it is envisaged that some of the more commercially viable LPRES Project beneficiaries, especially under Component 2, could partner with IFC to expand and improve their business or develop mutually beneficial commercial partnerships, such as out-grower arrangements. Out-grower schemes would involve anchor investors identified by IFC (competent commercial producers with strong aggregation and commercialization capacity) and smallholders supported by the project. The project will also generally strengthen the profitability and sustainability of livestock-supported businesses, some of which may become attractive candidates for envisaged IFC investment programs in the dairy, beef and leather subsectors. In line with its Strategy 3.0, which has a focus on "creating new markets," IFC will closely support activities under Component 2 of the LPRES Project, especially those geared toward developing and operationalizing new models for abattoir management. IFC is also pursuing studies to learn how policy and/or government action in the meat, dairy, and leather value chains can be improved; the results will guide implementation of the proposed project.

74. **Partnering with the Global Center on Adaptation (GCA).** To foster accelerated adaptation to climate change in the livestock value chain, the Project has partnered with GCA, an international organization supporting adaptation. Specifically, GCA will provide support for more granular climate risk assessment across targeted value chains to allow for more efficient targeting of climate risk mitigation interventions; digital and data enabled technologies; and policy support to plan for adaptation.

## F. Lessons Learned and Reflected in the Project Design

75. The design of the project reflects lessons gleaned from WBG-financed projects in Nigeria and farther afield, including Nigeria's First (1974–83) and Second (1987–95) Livestock Development Projects, the West African regional PRAPS-1(P147674) and PRAPS-2(P173197) pastoralism projects and REDISSE disease surveillance program, and the Regional Pastoral Livelihood Resilience Project in East Africa, among others. The design also incorporates lessons drawn from the WBG's expanding global efforts in settings of fragility, conflict, and violence (FCV), encapsulated in its Fragility, Conflict, and Violence Strategy.[40] The six key lessons that shaped the project design are summarized below.

76. **Complementary support is essential to guarantee the adoption and sustained use of improved livestock breeds, which are the key to improved productivity.** The record is replete with ineffective attempts to improve Nigeria's large and small ruminant herd. As reported in the literature, the adoption of improved breeds hinges not only on their availability but on an ecosystem of support services to overcome the key constraint to adoption: producers' risk aversion. Aside from providing support to improve the availability of breeding services, the project will address the reasons why producers are reluctant to adopt improved breeds through complementary support for improvements in animal health services, advisory services, feed quality and availability, and upstream activities in specific commodity value chains to ensure adequate markets for increased output.

77. **Commercialization of vaccines and other biologicals is the key to a healthy national ruminant herd.** Vaccines are the most effective intervention to control livestock disease. They are doubly important in Nigeria, where vaccination is the major disease control tool and also because the largest numbers of ruminants are raised in remote, sparsely populated areas where animal health personnel and

[40] World Bank Group (2020), "World Bank Group Strategy for Fragility, Conflict, and Violence 2020–2025. Washington, DC.

infrastructure are lacking. Evidence indicates, however, that the commercialization of animal health services in similar settings in Uganda, Kenya, and South Sudan encourages the private sector to invest in delivering these services and increases their reach, leading to better animal health. This knowledge underlies project support under Component 1 for commercializing vaccines and other biologicals and for strengthening private sector provision of veterinary services.

78. **Incentives to increase production ultimately derive from a market orientation and improved marketing opportunities**. Broad experience from WBG-financed projects in agriculture shows that if farmers are to sustain production increases well after project support ends, they must have favorable markets for their products. Higher output prices enable producers to continue investing in the new technology and inputs that have increased their production. In the specific case of the Nigerian livestock sector, the failure to improve livestock productivity as envisioned under the WBG-financed First and Second Livestock Development Projects stems from the failure to anticipate the need to improve meat and milk marketing chains. This major lesson justifies the support for improved marketing under Component 2.

79. **To succeed, investments in LSCs demand adequate attention to potential environmental, social, economic, and technical risks.** Experience in Vietnam[41] with livestock production zones—a concept almost identical to the LSCs in the proposed project—shows that successful, sustainable outcomes hinge on clearly understanding and attending to the typically context-specific environmental, social, economic, and technical risks that accompany their development. This lesson informs the decision for the project to finance pilot LSCs in selected states where these risks can be adequately assessed and continuously monitored before taking any decision to scale up the approach.

80. **An exclusive focus on easing-supply-side constraints does not necessarily increase access to credit.** Many attempts at increasing access to credit in Nigeria's livestock sector have focused on easing supply-side constraints—by subsidizing interest rates, for example. The sustainability and scalability of these efforts have been dismal. In addition to supporting supply-side interventions to improve access to credit, the proposed project will strengthen the demand for credit by enhancing the managerial capacity of small-scale producers and related SMEs, reducing information asymmetry, and expanding access to extension services, inputs, and markets.

81. **To address the drivers of conflict and fragility effectively, couple technical solutions with community ownership.** *Pathways for Peace,* a United Nations–World Bank study,[42] highlights the importance of community involvement in sustainable peacebuilding. The study identifies four key "arenas of contestation" where conflict can emerge (natural resources are one). It concludes that institutional and policy reforms in these arenas must be coupled with strong community involvement in development efforts, including a reorientation of service delivery systems to make people partners in the design and delivery of public services. The WBG FCV Strategy echoes this conclusion, noting that engaging citizens to oversee service delivery and creating mechanisms to reinforce their participation are critical steps toward improving services and social cohesion, fostering resilience in polarized situations, and removing perceptions of injustice. The project builds on these insights by including robust provisions for community engagement and leadership, particularly in resolving the proximate causes of farmer-herder conflicts.

[41] Under the WBG-financed Vietnam Livestock Competitiveness and Food Safety Project (P090723).
[42] United Nations and World Bank (2018), *Pathways for Peace: Inclusive Approaches to Preventing Violent Conflict*. Washington, DC: World Bank. *https://openknowledge.worldbank.org/handle/10986/28337*.

## III. IMPLEMENTATION ARRANGEMENTS

### A. Institutional and Implementation Arrangements

82. **Project implementation will be the joint responsibility of FMARD and the State Ministries of Agriculture and Rural Development (SMARD) or State Ministries of Livestock in each of the participating states,** with a division of labor that is consistent with the provisos of the federal governance system regarding the jurisdictions and mandates of these ministries. Beyond its responsibility for overall oversight and coordination of the LPRES Project, FMARD will lead the execution of project activities with national import, such as strengthening the national livestock policy, regulatory, and incentive frameworks; preparing a livestock census and Livestock Master Plan; establishing livestock data and market information systems; and regulating, designing, and monitoring disease surveillance and control programs. FMARD will also take the lead on activities for which coordination and collaboration between states is a precondition for success—for example, establishing infrastructure to assure livestock mobility across states. Participating states will be responsible for implementing state-specific activities such as those related to extension, vaccination, breeding, and so forth. DBN – through the implementation unit of the Development Finance Project - will be independently responsible for the implementation of subcomponent 2.2 (Support to Increased Access to Finance). DBN will sign a memorandum of understanding with FMARD that outlines key implementation modalities of this subcomponent. This will be complemented by subsidiary loan agreement – acceptable to IDA - that identifies terms and conditions for the financing that is extended under this subcomponent. The division of responsibilities between FMARD, SMARD and DBN for implementing project activities is detailed in Table A4.1, Annex 4. At both the federal and state levels, day-to-day responsibility for implementing project activities will lie with the relevant technical departments in the ministries.

83. **To ensure timely and effective execution of activities and monitor progress toward the PDO, FMARD will establish a dedicated National Coordination Office (NCO) under the Department of Animal Husbandry Services (DAHS) at the federal level.** The NCO will ensure day-to-day coordination of the project and will be headed by a National Project Coordinator (NPC). The NCO will also be staffed with a Procurement Specialist, Financial Management Specialist, Environmental Safeguards Specialist, Social Safeguards Specialist, GBV Specialist, Monitoring and Evaluation Specialist, Gender Specialist, Communication Specialist, as well as other technical experts in line with the technical breadth of the project. The NCO will be responsible for: (i) developing and coordinating with the states the approach for targeting project beneficiaries; (ii) developing the consolidated national Annual Work Plan and Budget (AWPB) and Procurement Plan; (iii) managing project funds, including disbursements, and accounting, and preparing Interim Financial Reports (IFRs) and financial statements for auditing; and (iv) managing the M&E system). The Project Coordination Unit of FMARD will ensure intra-ministerial coordination of the project as is the case with other donor financed projects in FMARD.

84. **Project coordination and implementation at the state level will be the responsibility of SCOs,** which will be headed by State Project Coordinators and staffed with specialists in animal health, animal husbandry, range and natural resource management, value chain development, M&E, procurement, environmental and social safeguards, and financial management. Each SCO will: (i) develop the state AWPB and Procurement Plan; (ii) manage project funds, including disbursements and accounting, and preparing IFRs and Financial Statements for Auditing; (iii) manage the state M&E system; and (iv) manage human resources, particularly contracted staff.

85. **A National Steering Committee (NSC) at the federal level will offer strategic policy guidance to the project and be responsible for approving the project AWPB.** The NSC will be chaired by the Minister FMARD. At the state level, a State Steering Committee (SSC) chaired by the Commissioner of Agriculture will offer oversight, policy, and strategic orientation to the project, assess implementation progress, and review and approve AWPBs. There will also be a State Technical Committee (STC) to provide technical backstopping to the SCO, endorse AWPBs prior to submission to the SSC, and ensure that project implementation is carried out in a way that is consistent with the AWPB. The STC will be chaired by the Permanent Secretary of SMARD and will meet once every month and/or at any other time determined by the Chair to assess implementation progress. For additional detail on the roles and responsibilities of these national and state institutions, see Annex 4.

### B. Results Monitoring and Evaluation Arrangements

86. **The project will establish an M&E system to capture data on physical and financial progress, the performance of participating states and service providers, and the achievement of outcomes and impacts in relation to the PDO**. This system will also be an important tool for continuous reflection and learning by all project stakeholders. The NCO will have primary responsibility for monitoring progress and outcomes based on indicators defined in the project results framework. Each participating state will have its own results chain that will be nested under the LPRES results chain. Given the importance of ensuring that project benefits flow to female producers, key indicators will be disaggregated by sex. Outcome monitoring will start with a baseline assessment, which will later be linked with, and followed by, a mid-term evaluation survey and end-of-project evaluation survey. These surveys will be backed by more frequent and routine data collection on project performance and changes in indicators to facilitate reporting on progress. The LPRES M&E system is expected to develop into an M&E system for the livestock sector and thus establish basic M&E capacity at FMARD.

87. Working with the World Bank Africa Gender Innovation Lab, the project will explore the potential to include a rigorous impact evaluation to assess whether project activities enabled women to realize their economic potential and to become change agents in their communities. This impact evaluation will be subject to funding, the identification of specific research questions relevant to policy, and the feasibility of a suitably rigorous research design.

### C. Sustainability

88. **The limited sustainability of past interventions and investments in Nigeria's livestock sector is a key reason for its persistent low productivity and the escalating conflict between herders and sedentary farmers.** Several features of the project embody lessons and best practices to support producers and others in the sector to sustain their achievements and maintain resilience beyond the life of the project. For example, the project will develop systematic capacity within FMARD for policy formulation and regulation, planning, and implementation. It will rely on existing government systems for implementation, and through bottom-up approaches, the project will leverage and support existing community structures for conflict mitigation. Investments for producers to improve livestock productivity and climate resilience will be coupled with supporting investments downstream in livestock value chains to guarantee marketing prospects and better farm-gate prices. States will be required to provide formal expressions of interest and sign memorandums of understanding to demonstrate their commitment to the project objectives and anchor their participation. The project will promote private sector participation in the delivery of animal health services and pursue arrangements with the private sector to operate and manage markets and

market development infrastructure developed by the project, as well as most services in LSCs. It will also rely on market-based approaches to facilitate and sustain access to credit in the livestock sector.

## IV. PROJECT APPRAISAL SUMMARY

### A. Technical, Economic and Financial Analysis

89. **Technical.** The technical design of the LPRES Project is underpinned by the NLTP, which was developed based on sector assessments by local experts as well as multi-stakeholder consultations. As discussed, the design considers experience and lessons from projects focused on livestock development as well as value chains, access to finance in agriculture and the rural sector, and conflict mitigation. The conceptual framework rests on two pillars: (i) efforts to improve livestock productivity and resilience to climate change through support to improved animal health, genetic resource management, GAHPs, and enhanced value chain performance; and (ii) reducing farmer-herder conflict based on improved productivity and support for conflict prevention and mitigation. The approach incorporates strategies to enhance environmental sustainability and foster resilience to climate change (adaptation and mitigation). To surmount the longstanding challenge of limited access to finance, the project will strengthen financial services supply and demand by providing a line of credit to relatively developed value chain actors and by enabling value chain actors (such as producers, producer organizations, and small aggregators) to access business development services. The project will also support improvements in the livestock value chain by financing public goods to promote smallholder commercialization, compliance with food quality and safety standards, reduction in GHG footprint, and private investment in the value chain, among other actions. Efforts to reduce farmer-herder conflict focus on the drivers of conflict by supporting improved availability of pasture and water resources through better natural resource management, pursuing subregional agreements on livestock mobility, and building and reinforcing bottom-up mechanisms for conflict resolution.

90. **Economic and financial analysis.** An economic and financial analysis was undertaken to estimate returns on project investments, identify the project's expected development impact, examine the rationale for public funding, and identify the World Bank's value added in the project.

91. *Development impact.* Project investments are expected to generate direct and indirect benefits. Direct benefits are anticipated to include increased livestock production, improved productivity, improved livestock off-take prices associated with improved marketing arrangements, and reduced farmer-herder conflict/violence. This combination of benefits will contribute to increased rural incomes, economic resilience of livestock-based livelihoods, and improved food and nutrition security. The project is expected to generate indirect benefits stemming from a range of institutional activities, including: (i) a strengthened livestock sector policy and regulatory framework and its enforcement; (ii) improved links between the animal health, human health, and environmental health sectors, leading to a One-Health approach to zoonotic disease management; and (iii) mainstreaming climate change adaptation and mitigation objectives across relevant policies. These indirect benefits are not captured in the analysis.

92. *Results of the economic and financial analysis.* Economic and financial returns are assessed in 2021 constant prices, at a discount rate of 6 percent. Climate co-benefits are examined at both high and low shadow prices of carbon, as recommended in the World Bank guidance note of September 2017. Project returns are estimated for a period of 20 years, which includes a six-year project implementation period.

93. When climate co-benefits are excluded from the analysis, the Economic Internal Rate of Return (EIRR) to project investments is estimated at 16.8 percent, with an economic net present value (ENPV) of US$682.83 million and benefit-cost ratio (BCR) of 1.9. When climate co-benefits at a low shadow price of carbon are added, the EIRR increases to 24.2 percent, the ENPV to US$1,043.22 million, and the BCR is 2.38. When the climate benefits at a high shadow price for carbon are considered, the EIRR is 34 percent, ENPV US$1,402.51, and BCR 2.85.

94. *Sensitivity analysis.* These estimated returns were tested under scenarios with various reduction in benefits, increases in costs, and longer lags in the realization of benefits. Project returns (exclusive of climate-co-benefits) were used as the baseline scenario for the sensitivity analysis. A two-year delay in generating benefits reduces the EIRR to 11 percent; similarly, a 30 percent reduction in benefits relative to the baseline scenario reduces the EIRR to 10.7 percent. Cost overruns have very moderate impact; for example, the EIRR falls to 12.2 percent when costs increase by 30 percent. All scenarios show robust results under all hypothetical scenarios.

95. **Rationale for public sector financing.** The project will employ public financing to support five broad sets of activities: (i) strengthening national institutions for improved service delivery; (ii) promoting uptake of productivity-enhancing, climate-smart GAHPs for increased livestock production; (iii) improving livestock marketing; (iv) strengthening natural resource management and pasture improvement; and (v) preventing and mitigating climate change driven resource-based herder-farmer conflict. These activities are expected to generate multiple public goods. For example, animal disease prevention and control by veterinary services throughout the world are considered a global public good, with major benefits for livestock production, food security and safety, public health, animal welfare, access to markets, and alleviation of rural poverty. The reorientation of livestock production, processing, and marketing in participating states toward climate-smart production, processing, and marketing practices is expected to yield both climate adaptation and mitigation co-benefits, which are also global public goods. The project will correct market failures related to temporary barriers to entry, such as high transaction costs that prevent the aggregation of livestock products, especially milk; information asymmetry in markets; or demanding quality standards in more remunerative markets. Public funding is also needed to encourage the broader adoption of improved rangeland management, as rangelands typically are communal property, and public sector support is necessary to facilitate cooperative action for joint management.

96. **World Bank value added.** The value added by the WBG lies in three areas. First, World Bank involvement will be instrumental in shaping the partnerships needed to promote improved livestock production and livestock product marketing. The private sector is most efficient and effective in bringing about market-driven innovation, applying new technologies, and accessing new markets (national and international). Yet government retains important roles in: (i) providing a conducive business environment, for which project investments in improving the regulatory and incentive framework for livestock value chains will be crucial; and (ii) providing the necessary public infrastructure. The WBG has undertaken a significant amount of analytical work on the role of private businesses in marketing partnerships and would contribute this knowledge during implementation. Second, the WBG will help in optimizing the use of funds by creating an understanding of what to finance, and at what levels; and ensuring that all funds are used for the intended purposes. The WBG provides expertise and implementation support for both of these undertakings, which is not typical of other development assistance. Finally, WBG involvement will help promote long-term sustainability by ensuring that: (i) investments in LSCs are based on sound technical and financial feasibility; (ii) access to finance under Component 2 is based on sound, market-

oriented business planning by beneficiaries; (iii) there are viable PPP models to manage marketing infrastructure after the project ends; and (iv) conflict prevention and mitigation mechanisms are institutionalized. The project design gives due consideration to all of these aspects of sustainability, and the WBG is expected to have sufficient leverage to address them, which normally would not be the case for projects funded by a bilateral donor or non-governmental organization.

97. **Maximizing Finance for Development.** The project will maximize financing for development by crowding-in private sector investment as follows:

(i) Subcomponent 1.2 will facilitate the emergence of robust and sustainable commercialized technical services to promote Good Animal Husbandry Practices (GAHPs) such as: i) Artificial Insemination (A.I) Services for Breed Improvement; ii) Private-Sector led Extension Services; iii) Commercial Fodder Production and Value Chain Addition.

(ii) Subcomponent 1.3 will support the eventual establishment of a sanitary mandate, which will enable private veterinary professionals to invest private capital in the prevention and control of diseases of economic and public health importance. It will also facilitate the commercialization of vaccines, which should help attract private investment in the vaccine subsector.

(iii) Subcomponent 2.1 will facilitate the transfer of livestock markets and abattoirs to the private sector thus encouraging the flow of private investment in livestock marketing infrastructure. This subcomponent will also develop LSCs in selected states which are expected to create an environment favorable to private sector investment in several services e.g., animal health care, feed resources, advisory, etc. Additionally, this subcomponent will finance a line of credit, risk sharing facility, and TA to enhance the flow of credit to the livestock sector through private financial institutions.

98. **Greenhouse gas accounting.** It is WBG policy to quantify the GHG mitigation potential of its projects as an important step in managing and ultimately reducing emissions. The Ex-Ante Carbon-balance Tool (EX-ACT) was used to estimate GHGs emitted or sequestered as a result of the proposed project compared to a scenario without the project. Over 20 years (6 years of project implementation and 14 years for capitalization of its effects), the project constitutes a net carbon sink of -12,556,101 $tCO_2$-eq, or an annual sink of -627,804 tCO2-eq per year (Annex 4). The annual net GHG emission value would be US$26.4 million at the low shadow price of carbon and US$52.7 million at the high shadow price.

99. **Climate adaptation and mitigation co-benefits.** The project will contribute significantly to building climate resilience, with climate risk mitigation measures embedded throughout the project in the form of climate-smart livestock technologies and practices. Project activities will also contribute to climate change mitigation by promoting less carbon-intensive practices (including rangeland management systems), improved livestock management (reducing emissions per unit of product), and investment in low-carbon facilities. The project will address climate risks and vulnerabilities more generally through institutional capacity building, enhanced access to resilience-enhancing technologies, and the provision of extension services and training in climate-smart livestock practices. The climate co-benefits for the project, computed as a share of the project cost devoted to climate adaptation and mitigation investments, were assessed to be 49.29 percent.

## B. Fiduciary

100. **Financial management (FM).** Responsibility for establishing and maintaining acceptable FM arrangements at FMARD will lie with the Federal Project Financial Management Department (FPFMD) in the Office of the Accountant General for the Federation (OAGF). FPFMD was established through Federal Treasury Circular of March 2010 to carry out fiduciary responsibilities for funds provided to ministries, departments, and agencies by donor partners. At the state level, Project Financial Management Units (PFMUs) in the Office of Accountants General will handle the FM responsibilities for funds provided by IDA. Established through joint efforts by the WBG and FGN, the FPFMD and PFMUs are multi-donor and multi-project FM platforms with robust systems and controls. The PFMUs in participating states and FPFMD are presently involved in the implementation of several WBG-financed projects. The Bank's recent review showed that these units have been performing satisfactorily.

101. Responsibility for managing and disbursing the line of credit to PFIs for on-lending under Component 2.2 of the proposed project will lie with DBN. A recent review of the ongoing Development Finance Project, funded by WBG and managed by DBN, noted the strong governance structure and operational capacity of DBN and assessed the FM arrangements for the project to be satisfactory.[43]

102. From their pool of professional accountants, FPFMD and the PFMUs will designate a Project Accountant, Project Internal Auditor, and other support accounting technicians, who will ensure appropriate segregation of duties. DBN will designate a Project Accountant, Project Internal Auditor, and other support accounting technicians from its workforce. The PFMUs and FPFMD will support the project to prepare and submit annual audited financial statements and calendar semester unaudited IFRs in the formats and according to the timelines agreed with WBG. The project will use a computerized accounting system, configured to support the reporting formats of the IFRs and annual financial statements. The DBN will similarly prepare and submit financial reports in accordance with agreed timelines using a computerized accounting system. A project bank account at the federal level will be opened with CBN. At the state level, project accounts will be opened with reputable commercial banks acceptable to IDA. Annex 4 describes specific actions that will be undertaken to strengthen FM systems for the proposed project. The initial FM risk for the project is assessed as **Substantial**.

103. **Procurement.** Project procurement will be carried out in accordance with the procedures specified in the "World Bank Procurement Regulations for IPF Borrowers" (July 2016, revised in November 2017, August 2018, and November 2020); the World Bank "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by International Bank for Reconstruction and Development (IBRD) Loans and IDA Credits and Grants" (October 2006, revised in January 2011 and July 2016); and provisions stipulated in the Financing Agreement. National procurement procedures will apply for the project. Procurement arrangements for the proposed project were assessed, and the procurement risk is rated **Substantial**. Measures to mitigate the identified risks and weaknesses have been discussed and agreed upon with the implementing agencies. An initial project Procurement Plan has been developed and agreed with the implementing agencies. The plan will be updated as necessary in agreement with the WBG, to reflect the project's actual implementation needs and improvements in institutional capacity. For additional details, see Annex 4.

[43] Internal controls were adequate, with policies and procedures in place; operations were carried out with proper approval, authorization, and segregation of duties; staffing was adequate; internal audit reports were received on time; advances were retired in a timely manner, with adequate documentation; funds flow to the project and disbursement from the project were adequate; and financial reporting was satisfactory.

## C. Safeguards

### Environmental Safeguards

104. **The project is not expected to have a major adverse environmental impact and is assigned environment assessment category "B" per World Bank safeguard policy requirements.** The project triggers four safeguard polices: Environmental Assessment (OP/BP4.01), Pest Management (OP/BP4.09), Physical Cultural Resources (OP/BP 4.11), and Involuntary Resettlement (OP/BP4.12). Environmental and occupational health and safety issues are expected mainly to be associated with: (i) increased use of livestock drugs, vaccines, and other chemicals which may be toxic to non-targeted organisms, hazardous to humans and the environment, and increase AMR through poor management of livestock drugs and inappropriate disposal of animal waste; (ii) potential pollution and community health and safety issues related to civil works from construction and rehabilitation of critical and essential infrastructure (including the generation of dust, noise, and construction waste); and (iii) limited facilities for the disposal of veterinary wastes. To satisfy the requirements of OP/BP 4.09, an Integrated Pest Management Plan (IPMP)/Waste Management Plan (WMP) has been prepared, consulted upon, and disclosed in-country on February 22, 2002 and through the WBG operational portal on February 23, 2022. Because specific project locations are not yet determined, to satisfy the requirement of OP/BP 4.01, an Environmental and Social Management Framework (ESMF) to guide implementors in assessing and avoiding or mitigating potential negative project impacts and risks has been prepared, consulted upon, and disclosed in-country on February 22, 2022 and through the WBG operational portal. The ESMF will be used to develop detailed site-specific Environmental and Social Impact Assessments (ESIA) and/or Environmental and Social Management Plans (ESMPs) or Occupational Health and Safety/Community Health and Safety (OHS/CHS) Management Plans that will be consulted upon and disclosed prior to execution of specific project activities.

### Social Safeguards

105. **Expected Social Impact.** The project seeks to improve the productivity and resilience of the livestock value chain in selected states and would largely lead to positive impact by improving the livelihoods of farmers and herder as well as reduce the incidence of resource-based farmer-herder conflicts.

106. **Involuntary Resettlement.** OP 4.12 on involuntary resettlement has been triggered because project interventions may result in land acquisition, temporary loss of livelihoods and/or limited physical resettlement. The location of specific interventions is not known and therefore, a Resettlement Policy Framework (RPF) has been prepared and disclosed in-country[44] and WB operations portal to inform the preparation and implementation of Resettlement Action Plans (RAPs). Specific attention will be given to the development of a grievance redress mechanism (GRM) at the community level that will be accessible to all stakeholders as well as arrangements for monitoring the implementation of the RAP. Resettlement financing will the responsibility of participating states as indicated in Annex 2 on state participation.

107. **Gender.** Gender gaps identified in the context of the proposed project include women's limited ownership and control over more valuable livestock, lower position in livestock value chains, limited access to productive resources (extension services, collateral, and credit), and constrained agency and decision making with respect to livestock products (manure, milk, draft power) and money (if livestock

[44] *https://ead.gov.ng/livestock-productivity-resilience-support-project-l-pres/*

are sold). The project will address these gaps by providing dedicated support for women to acquire larger and more valuable livestock (cattle), access productive services (breed improvement, animal health, extension services), and receive training to improve their agency and positions in livestock value chains. The project will make provisions to ensure women's participation, including weekend hours and "female sections" in service locations such as markets and LSCs to accommodate women's time constraints, household responsibilities, and safety concerns. The project will target an increase in women's use of extension services from 8 to 20 percent and an increase in their use of veterinary services from 10 to 30 percent. The project will address the gender gap in access to finance within the livestock value chain by developing financial products that build on alternative credit scoring tailored to women using psychometric tests to overcome collateral constraints facing women. The project also plans to undertake a sex-disaggregated impact evaluation of innovative interventions to empower women in livestock value chains. The evaluation will focus on finding out what works to improve women's capacity to acquire more valuable livestock, change gender norms around livestock ownership, and increase the profits, credit access, and agency of women in livestock value chains.

108. **Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH).** The SEA/SH risk is assessed substantial**.** Moderate amounts of labor influx and project activities in rural and hard-to-supervise areas may also contribute to increased risk. In order to mitigate the risks, a SEA/SH Action Plan will be prepared within 6 months of project effectiveness, detailing the: (i) SEA/SH comprehensive risk assessment within the ESIA(s); (ii) SEA/SH requirements in bidding documents; (iii) GBV risks and mitigation measures in contractors' ESMP(s); (iv) mapping of GBV/SEA service providers; (v) sensitization of communities and workers on SEA/SH; (vi) signing and training on Codes of Conduct for all project staff and workers; (vii) referral pathway to GBV service providers; and (viii) hiring of GBV expertise, support and monitoring.

109. **Stakeholder engagement.** A Stakeholder Engagement Plan (SEP) will be prepared prior to project effectiveness. This will provide stakeholders the opportunity to be aware of project activities and their potential impacts and become conversant with the environmental and social risk mitigation requirements, principles, and the rationale for participatory approaches. The SEP and this process will be updated where necessary and sustained throughout project implementation to ensure that the stakeholder engagement approaches are responsive to project needs.

110. **Grievance redress mechanism.** The project will prepare a GRM to ensure that concerns of project beneficiaries and stakeholders are taken care of and complaints and suggestions duly addressed**.** A layered GRM (with coverage at the national, state, and local levels) will be developed by the NCO. The GRM will include reporting channels that are ethical, confidential, and safe for women and girls to report SEA/SH issues. A procedural manual for grievance redress officers at all levels will be developed detailing the procedures, roles, and responsibilities to resolve beneficiaries' complaints. Additionally, grievance redress structures at project levels will be constituted (with women representatives) to ensure that project-related complaints are promptly reviewed, addressed, and properly documented.

111. **Citizen engagement (CE).** The FGN and states participating in the LPRES Project are committed to ensuring citizen engagement throughout the project implementation. CE interventions will facilitate inclusive decision making, the design and implementation of appropriate and responsive interventions, enhancing inclusion and reducing conflicts, better-quality outcomes, transparency, and demand for accountability. CE interventions will be strengthened through local-level capacity building and access to information, promoting informed responsible and responsive feedback. The project design therefore integrates several mechanisms to ensure citizen engagement: (i) consultations including around the

project's Social Assessment, with respect to the establishment of a government-stakeholder dialogue platform to identify issues, set priorities and coordinate actions along targeted value chains, and as part of mechanisms to support conflict resolution between herders and sedentary farmers; (ii) participatory planning through LSCs which engage multiple stakeholder groups, including the poor and vulnerable communities, in developing plans; and (iii) beneficiary satisfaction surveys which provide a quantitative assessment of services provided by the project to guide course correction measures. The project also includes a gender-disaggregated beneficiary feedback indicator measuring percentage of beneficiaries satisfied with services provided.

112. **Labor Management Procedure (LMP).** A LMP will be prepared within 6 months of project effectiveness to facilitate the planning and implementation of the main labor management requirements of the project. The LMP will include aspects related to working conditions, employment, occupational health and safety, and a worker-specific GRM.

113. **Environmental and Social Risk Management under Subcomponent 2.2.** The safeguards instruments (ESMF, RPF, IPMP and WMP) prepared under the project will apply to all activities under subcomponent 2.2.

114. **Conflict and broader social risks.** As detailed earlier, resource-based conflicts between farmers and herders have broad implications for livelihoods, food security, human capital development, and national security. As part of project preparation, the FGN has prepared a Social Impact Assessment. The purpose of the assessment was to identify potential social risks (herder-farmer conflict and broader risks), benefits, and impacts of proposed project activities on beneficiaries. Results of the assessment will help to: (i) deepen the understanding of social diversity in project areas; (ii) examine opportunities and conditions for participation by stakeholders; (iii) identify potential project-related risks, such as vulnerability and other risks; and (iv) provide better insight into broader social issues that may arise during implementation, such as access to social services or issues related to safety and gender.

115. **Security Management Plan (SMP).** The NCO will prepare a SMP within nine months of project effectiveness. The SMP will describe how security will be managed and delivered and what resources will be required under the project. The SMP will be constantly updated to respond to changes in the security situation in the respective states as may be required throughout project implementation.

**World Bank Grievance Redress Service**

116. Communities and individuals who believe that they are adversely affected by a World Bank-supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the World Bank independent Inspection Panel which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service.
For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

## V. KEY RISKS

117. **Overall risk** for the proposed LPRES Project is rated **High.** For details, see the project risk profile in the Systematic Operations Risk-Rating Tool (SORT).

118. **Political and governance risk.** The residual risk to the attainment of project objectives presented by the political and governance situation in Nigeria is rated **Substantial.** The project will entail a significant outlay of resources to manifold contracts spread across multiple implementing states, in a context of continuing challenges to public sector governance. Governance challenges raise the specter of elite capture, especially of marketing infrastructure, which is to be outsourced to private players based on different PPP models. These challenges will be mitigated through the project's FM and procurement arrangements as well as the GRM which is partly designed to report malfeasance. Although the project has elicited the strong government support and commitment required for successful implementation, there is a risk that conflict in some implementing areas may spiral out of control and negatively affect attainment of the PDO.

119. **Macroeconomic risk.** This risk is rated **Substantial,** mainly due to the economic slowdown brought on by the COVID-19 pandemic. The potential impact of the slowdown on Nigeria's fiscal position could undermine the government's capacity to defray project costs that it is currently programed to finance (especially those related to land acquisition). Limited access to foreign exchange for livestock value chain inputs and capital expenditures on imports (which is linked to balance of payment constraints faced by the country) would also undermine attainment of the PDO.

120. **Technical design.** The risk related to the technical design of the project is rated **Moderate,** mainly on account of the multi-sectoral nature of the interventions, some of which—such as access to finance, or aspects of conflict prevention and mitigation, among others—fall outside the technical remit and province of the key implementing entities. The coordination of activities across disparate domains in which an implementing agency lacks technical expertise is a daunting challenge, as experience has shown. This risk will be mitigated by creating "intersectoral" steering and technical committees, which will be responsible for ensuring that adequate technical support and implementation capacity are available across the array of activities supported under the project. A WBG implementation support team representing expertise across multiple Global Practices will also be put into place to provide the necessary technical ballast for implementation. Aside from increasing the geographical dispersion of project activities, implementation across several states, each with its own idiosyncrasies, may also exacerbate coordination challenges.

121. **Institutional capacity for implementation and sustainability.** The risk related to institutional capacity is also rated **Substantial.** Human resource capacity is limited in the federal and state implementing agencies, and the sustainability of some project investments, especially infrastructure investments, hinges on adequate management arrangements and continued government commitment to pursue viable PPP models after the project ends. Capacity weaknesses at the federal and state levels will be remedied through the proposed capacity-strengthening activities as well as technical assistance to support implementation (for example, through third-party service providers).

122. **Sector strategies and policies.** These risks are rated **Moderate,** given the favorable momentum generated for the livestock sector by recent FGN commitments under the Agriculture Promotion Policy and NLTP, and by the allocation of financing to the project by some states, even prior to appraisal.

123. **Fiduciary risk.** This risk is rated **Substantial.** Procurement systems in the federal and state implementing agencies still present weakness that may undermine accountability and value for money. This risk will be mitigated by hiring fiduciary specialists (FM and Procurement Specialists) in the NCO and SCOs and by capacity building provided through the World Bank team. Additional detail on fiduciary risks and mitigation measures is presented in the procurement and FM sections of this PAD.

124. **Environmental and social risk.** Environmental and social risk is rated **Substantial** because some project activities (especially the rehabilitation and construction of infrastructure and LSCs, and the protection of grazing reserves and livestock routes) could entail involuntary displacement of people and involuntary land acquisition. This risk will be managed as per guidance in the RPF prepared for the project.

125. **Stakeholder risk.** This risk is rated **Substantial,** given that the project will support the prevention and mitigation of conflict between herders and farmers, which is an increasingly high-profile area that is commanding interest and action from multiple stakeholders. The project could face challenges in effectively engaging with and managing the expectations of this diverse range of stakeholders in pursuit of a common goal, with potential negative impacts on attainment of the PDO. This risk will be mitigated by adopting a consultative approach to conflict prevention and giving voice to relevant stakeholders. The inevitable exclusion of some equally deserving states from project support as dictated by available resources also heightens stakeholder risk, as states that are not selected and other key constituencies could question the rationale for not qualifying for project support. This risk will be mitigated by adapting a transparent approach for selecting states based on clear eligibility criteria that will be communicated to states through the relevant authorities.

126. **Security risk.** This risk is rated **High** because of the escalating conflict and violence across many of the participating states. Although the project is expected to elicit strong support and commitment from federal and state governments to ensure security, any escalation in violence would preclude the implementation of activities in the affected areas, which would undermine attainment of the PDO.

## VI. RESULTS FRAMEWORK AND MONITORING

**Results Framework**
**COUNTRY: Nigeria**
**Livestock Productivity and Resilience Support Project**

### Project Development Objectives(s)

To improve productivity, commercialization, and resilience of targeted livestock production systems in Nigeria.

### Project Development Objective Indicators

| Indicator Name | PBC | Baseline | Intermediate Targets | | | | | End Target |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | |
| **To improve the productivity of targeted livestock production systems** | | | | | | | | |
| Farmers adopting improved agricultural technology (CRI, Number) | | 0.00 | 5,000.00 | 25,000.00 | 80,000.00 | 140,000.00 | 185,000.00 | 200,000.00 |
| Farmers adopting improved agricultural technology - Female (CRI, Number) | | 0.00 | 2,500.00 | 12,500.00 | 40,000.00 | 70,000.00 | 92,500.00 | 100,000.00 |
| Farmers adopting improved agricultural technology - male (CRI, Number) | | 0.00 | 2,500.00 | 12,500.00 | 20,000.00 | 40,000.00 | 70,000.00 | 100,000.00 |
| Percentage increase in productivity of livestock species in targeted production systems | | 0.00 | | | | | | 0.00 |

| Indicator Name | PBC | Baseline | Intermediate Targets | | | | | End Target |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | |
| (Percentage) | | | | | | | | |
| Liters of milk produced per cow per year (Percentage) | | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 | 50.00 |
| Cattle carcass weight in kilograms (Percentage) | | 0.00 | 10.00 | 10.00 | 10.00 | 20.00 | 20.00 | 20.00 |
| Goat carcass weight in kilograms (Percentage) | | 0.00 | 10.00 | 10.00 | 10.00 | 20.00 | 20.00 | 20.00 |
| Sheep carcass weight in kilograms (Percentage) | | 0.00 | 10.00 | 10.00 | 10.00 | 20.00 | 20.00 | 20.00 |
| Direct project beneficiaries disaggregated by sex (Number) | | 0.00 | | | | | | 1,430,000.00 |
| Direct project beneficiaries (Male) (Number) | | 0.00 | | | | | | 715,000.00 |
| Direct project beneficiaries (Female) (Number) | | 0.00 | | | | | | 715,000.00 |
| **To improve the resilience of targeted livestock production systems** | | | | | | | | |
| Reduced incidence of resource-based farmer-herder conflicts (Percentage) | | 10.00 | 10.00 | 9.00 | 9.00 | 8.00 | | 7.00 |
| Share of target beneficiaries with rating “Satisfied” or above on process and impact of | | 0.00 | 10.00 | 30.00 | 45.00 | 60.00 | 70.00 | 70.00 |

| Indicator Name | PBC | Baseline | Intermediate Targets | | | | | End Target |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | |
| project interventions disaggregated by sex (Percentage) | | | | | | | | |
| Share of target beneficiaries with rating "Satisfied" or above on process and impact of project interventions(Male) (Percentage) | | 0.00 | | | | | | 70.00 |
| Share of target beneficiaries with rating "Satisfied" or above on process and impact of project interventions(Female) (Percentage) | | 0.00 | | | | | | 70.00 |
| Farmers adopting climate-smart technologies (Number) | | 0.00 | | | | | | 150,000.00 |
| **To improve commercialization of targeted livestock production systems** | | | | | | | | |
| Share of beneficiary livestock producers' stock that is marketed (Percentage) | | 10.00 | | | | | | 20.00 |

## Intermediate Results Indicators by Components

| Indicator Name | PBC | Baseline | End Target |
|---|---|---|---|
| **Institutional and Innovation System Strengthening** | | | |
| Farmers reached with agricultural assets or services (CRI, Number) | | 0.00 | 285,700.00 |
| Farmers reached with agricultural assets or services - Female (CRI, Number) | | 0.00 | 140,000.00 |
| Number of federal and state level staff provided with training (Number) | | 0.00 | 1,000.00 |
| Number of federal and state level staff provided with training - Female (Number) | | 0.00 | 500.00 |
| Number of animals vaccinated against key diseases (Number) | | 0.00 | 45,000,000.00 |
| Cattle (Number) | | 0.00 | 10,000,000.00 |
| Goat and sheep (Number) | | 0.00 | 20,000,000.00 |
| Poultry (Number) | | 0.00 | 15,000,000.00 |
| Share of targeted producers with access to artificial insemination services (Percentage) | | 0.00 | 10.00 |
| Number of sub-national level One-Health platforms established (Number) | | 0.00 | 20.00 |
| Share of women-livestock owners supported by the project that have gained access to livestock extension services (Percentage) | | 8.00 | 20.00 |
| Share of women-livestock owners supported by the project that have accessed veterinary services (Percentage) | | 10.00 | 30.00 |
| Preparation of a Comprehensive Livestock Master Plan (LMP) (Text) | PBC 1 | No Livestock Master Plan (LMP) | Final LMP is duly approved by the Minister of FMARD |
| Development of 4 Livestock Sub-sector Policies (Text) | PBC 2 | No Sub-Sector Policies | The final policies (National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy, and National Animal Health Policy) are duly approved by the Minister of FMARD |

| Indicator Name | PBC | Baseline | End Target |
|---|---|---|---|
| Implementation of Private Veterinary Practice Programme (Text) | PBC 3 | No Private Veterinary Practice Programme | Private Veterinary Practice Programme implemented as per the respective PBC |
| **Livestock Value Chain Enhancement** | | | |
| Slaughter facilities renovated and made climate-smart (Number) | | 0.00 | 22.00 |
| Livestock infrastructure rehabilitated with climate and disaster-resilient standards (Number) | | 0.00 | 60.00 |
| Number of fully functional Livestock Service Centers (Number) | | 0.00 | 7.00 |
| Number and volume of lending to livestock borrowers disaggregated by sex (Number) | | 0.00 | 500.00 |
| Number and volume of lending to livestock borrowers (Male) (Number) | | 0.00 | 400.00 |
| Number and volume of lending to livestock borrowers (Female) (Number) | | 0.00 | 100.00 |
| Livestock loan portfolio quality as measured by the non-performing loan ratio (Percentage) | | 25.00 | 5.00 |
| Establishment of 2 Livestock Service Centers (LSCs) in Kano and Bauchi States (Text) | PBC 4 | No Livestock Service Centers | 2 Livestock Service Centers established as per the relevant PBC |
| **Crisis Prevention and Conflict Mitigation** | | | |
| Number of conflict mediation platforms established and operational (Number) | | 0.00 | 22.00 |
| Share of targeted states having developed and adopted agreements to facilitate mobility (Percentage) | | 0.00 | 60.00 |
| Number of water points constructed or rehabilitated in grazing areas or stock routes (Number) | | 0.00 | 500.00 |
| Grazing area under sustainable land management practices (Hectare(Ha)) | | 0.00 | 150,000.00 |
| Length of stock routes protected from encroachment (Kilometers) | | 0.00 | 2,000.00 |

| Indicator Name | PBC | Baseline | End Target |
|---|---|---|---|
| Share of local conflict mitigation committees established or supported with permanent female members (Percentage) | | 0.00 | 70.00 |

**Monitoring & Evaluation Plan: PDO Indicators**

| Indicator Name | Definition/Description | Frequency | Datasource | Methodology for Data Collection | Responsibility for Data Collection |
|---|---|---|---|---|---|
| Farmers adopting improved agricultural technology | This indicator measures the number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank.<br><br>NB: "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber and non-timber forest products.<br>Adoption refers to a change of practice or change in use of a technology that was | Annual | Farmers Records | Annual Administrative update | National Coordinating Office/State Coordinating Offices |

| | | | | | |
|---|---|---|---|---|---|
| | introduced or promoted by the project.<br>Technology includes a change in practices compared to currently used practices or technologies (seed preparation, planting time, feeding schedule, feeding ingredients, postharvest storage/ processing, etc.). If the project introduces or promotes a technology package in which the benefit depends on the application of the entire package (e.g., a combination of inputs such as a new variety and advice on agronomic practices such as soil preparation, changes in seeding time, fertilizer schedule, plant protection, etc.), this counts as one technology.<br>Farmers are people engaged in farming of agricultural products or members of an agriculture related business (disaggregated by men and women) targeted by the project. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Farmers adopting improved agricultural technology - Female | | Annual | Farmers Administrative Records | Annual Update | National Coordinating Office/State Coordination Offices |
| Farmers adopting improved agricultural technology - male | | Annual | Administrative Records | Annual Update | State Coordinating Offices |
| Percentage increase in productivity of livestock species in targeted production systems | | | | | |
| Liters of milk produced per cow per year | This indicator assumes that at the project onset an average cow produces 274.5 liters of milk per year. Yield improvements are computed against this base line. The end target of 50 percent translates into 411.75 liters per year. | | | | |
| Cattle carcass weight in kilograms | This indicator assumes that at the project onset average cattle carcass weight is 135kg. Yield improvements are computed against this baseline. The end target of 20 percent translates into 162kg carcass weight. | | | | |
| Goat carcass weight in kilograms | This indicator assumes that at the project onset average goat carcass weight is 14.22 kg. Yield improvements are computed against this | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | baseline. The end target of 20 percent translates into 17.1 kg carcass weight. | | | | |
| Sheep carcass weight in kilograms | This indicator assumes that at the project onset average sheep carcass weight is 14.22 kg. Yield improvements are computed against this baseline. The end target of 20 percent translates into 17.1 kg carcass weight. | | | | |
| Direct project beneficiaries disaggregated by sex | | | | | |
| Direct project beneficiaries (Male) | | | | | |
| Direct project beneficiaries (Female) | | | | | |
| Reduced incidence of resource-based farmer-herder conflicts | This indicator measures the incidence of farmer-herder conflict across predetermined local administrative units. | Annual | Surveys and monitoring reports | | |
| Share of target beneficiaries with rating “Satisfied” or above on process and impact of project interventions disaggregated by sex | | | | | |
| Share of target beneficiaries with rating "Satisfied" or above on process and impact of project interventions(Male) | | | | | |
| Share of target beneficiaries with | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| rating "Satisfied" or above on process and impact of project interventions(Female) | | | | | |
| Farmers adopting climate-smart technologies | | | | | |
| Share of beneficiary livestock producers' stock that is marketed | | | | | |

**Monitoring & Evaluation Plan: Intermediate Results Indicators**

| Indicator Name | Definition/Description | Frequency | Datasource | Methodology for Data Collection | Responsibility for Data Collection |
|---|---|---|---|---|---|
| Farmers reached with agricultural assets or services | This indicator measures the number of farmers who were provided with agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and genetic | | | This indicator captures a household as a single farmer | |

| | | | | | |
|---|---|---|---|---|---|
| | material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research, extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an agriculture-related business (disaggregated by men and women) targeted by the project. | | | | |
| Farmers reached with agricultural assets or services - Female | | | | | |
| Number of federal and state level staff provided with training | | Annual | Progress and Annual Report of NCO | Technical Report | NCO and SCOs |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| Number of federal and state level staff provided with training - Female | | | | | |
| Number of animals vaccinated against key diseases | | | | | |
| Cattle | | | | This indicator measure cattle vaccinated against CBPP and FMD. To avoid double counting the indicator only captures the number of animals vaccinated against CBPP | |
| Goat and sheep | | | | | |
| Poultry | | | | | |
| Share of targeted producers with access to artificial insemination services | | | | | |
| Number of sub-national level One-Health platforms established | | | | | |
| Share of women-livestock owners supported by the project that have gained access to livestock extension services | | | | | |
| Share of women-livestock owners supported by the project that have accessed veterinary services | | | | | |
| Preparation of a Comprehensive Livestock Master Plan (LMP) | A LMP Preparation Plan is developed and adopted by the Minister of FMARD. The | Bi-annual | FMARD | | FMARD |

| | | | | | |
|---|---|---|---|---|---|
| | plan will outline: (i) the main stakeholders to be consulted at federal and state levels, state level commissioners responsible for agriculture, private sector organizations representing actors along different stages of livestock value chains (breeders, herders, service providers such as veterinarians, fattening lots, abattoirs/slaughterhouses, etc.); (ii) schedule of consultative meetings across states; (iii) ToRs for the lead consulting firm cleared by the Bank; (iv) peer review process, including the names of specific peer reviewers (national and international) with strong experience with LMPs and representing various interest groups; (v) LMPs schedule of validation meetings across the states; (vi) approval process for the LMP. A lead consulting firm with extensive experience in preparing LMPs is | | | | |

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|---|---|---|---|---|---|
| | competitively engaged by FMARD and provided with adequate resources (as per the ToRs) to carry out the tasks. The LMP is prepared through a consultative process that is satisfactory to the Association and consistent with the Preparation Plan. The LMP is reviewed, finalized, and endorsed by Minister of FMARD | | | | |
| Development of 4 Livestock Sub-sector Policies | A Sub-sector Policy Preparation Plan is developed and adopted by the Minister of FMARD. The plan will outline: (i) the main stakeholders to be consulted at federal and state levels, state level commissioners responsible for agriculture, private sector organizations representing actors along different stages of livestock value chains (breeders, herders, service providers such as veterinarians, fattening lots, abattoirs/slaughterhouses, etc.); (ii) schedule of | Bi-annual | FMARD | | FMARD |

| | | | | | |
|---|---|---|---|---|---|
| | consultative meetings across the states to draft/finalize the policies; (iii) arrangements for involvement of development partners; (iv) consultative process to review drafts of the policies; (v) schedule of validation meetings across the states; (vi) approval process for the policies. The 4 sub-sector policies (National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy) are prepared through a consultative process that is satisfactory to the Association and consistent with the Preparation Plan. The 4 sub-sector policies are reviewed, finalized, and endorsed by Minister of FMARD | | | | |
| Implementation of Private Veterinary Practice Programme | A Private Veterinary Practice Programme Implementation Plan is developed and adopted by the Minister of FMARD. The Plan will outline: (i) the main | Bi-annual | State Ministries responsible for livestock development | | State Ministries responsible for livestock development |

| | | | | | |
|---|---|---|---|---|---|
| | stakeholders to be consulted at federal and state levels, including the Honorable Minister of Agriculture and Rural Development, Chief Veterinary Officer of Nigeria/Director of Federal Department of Veterinary and Pest Control Services, State Commissioners responsible for Agriculture/Livestock, State Directors of Veterinary Services, private sector organizations representing actors along different stages of livestock value chains (breeders, herders, service providers such as veterinarians, etc.); and (ii) schedule of consultative meetings across the states. The Private Veterinary Practice Programme is implemented across participating states to enable the involvement of private veterinary professionals in the prevention and control of economically important | | | | |

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|---|---|---|---|---|---|
| | diseases that affect livestock and humans. Livestock farmers access services from the engaged private veterinarians | | | | |
| Slaughter facilities renovated and made climate-smart | This is a required indicator that capture both mitigation and adaptation results | Annual | Project information and records | Regular report and update | SCO and NCO |
| Livestock infrastructure rehabilitated with climate and disaster-resilient standards | | Annual | Project information and records | Regular report update | SCO and NCO |
| Number of fully functional Livestock Service Centers | | | | | |
| Number and volume of lending to livestock borrowers disaggregated by sex | | | | | |
| Number and volume of lending to livestock borrowers (Male) | | | | | |
| Number and volume of lending to livestock borrowers (Female) | | | | | |
| Livestock loan portfolio quality as measured by the non-performing loan ratio | | | | | |
| Establishment of 2 Livestock Service Centers (LSCs) in Kano and Bauchi States | At least 100 ha of land to establish LSC is gazzeted by the state Governor and the land is subjected to safeguards compliance screening to verify that there are no competing claims of ownership of the | Bi-annual | State Ministries responsible for livestock development | | State Ministries responsible for livestock development |

| | | | | | |
|---|---|---|---|---|---|
| | land, any users are willing to vacate the land upon being compensated adequately, Kano and Bauchi State Governors establish their committees to review and approve the LSC design (with membership including state level commissioners responsible for agriculture, state Investment Promotion Agency, private sector organizations representing actors along different stages of livestock value chains, including breeders, herders, service providers such as veterinarians, fattening lots, abattoirs/slaughterhouses, etc.).The 4 Key staff for the LSC management team are hired, including General Manager, Investment Coordinator, Chief Financial Officer, and Facility maintenance Officer. The LSC design and action plan for the first 3 years is prepared and approved by the review committee and state project steering committee respectively. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Infrastructure and facilities installed as per LSC design, including basic infrastructure, livestock husbandry and health facilities, value addition facilities, and marketing facilities. Private investors establish livestock-affiliated businesses within the LSC and registered livestock farmers/herders are accessing services within the LSC. | | | | |
| Number of conflict mediation platforms established and operational | This indicator measures the number of mediation platforms established and operational in the project areas. | Annual | Progress and Annual Report | Technical Report | NCO and SCOs |
| Share of targeted states having developed and adopted agreements to facilitate mobility | | | | | |
| Number of water points constructed or rehabilitated in grazing areas or stock routes | | | | | |
| Grazing area under sustainable land management practices | | | | | |
| Length of stock routes protected from encroachment | | | | | |
| Share of local conflict mitigation committees established or supported with permanent female members | | | | | |

| Performance-Based Conditions Matrix | | | | |
|---|---|---|---|---|
| **PBC 1** | Preparation of a Comprehensive Livestock Master Plan (LMP) | | | |
| **Type of PBC** | **Scalability** | **Unit of Measure** | **Total Allocated Amount (USD)** | **As % of Total Financing Amount** |
| Output | Yes | Text | 1,500,000.00 | 0.30 |
| **Period** | **Value** | | **Allocated Amount (USD)** | **Formula** |
| Baseline | No Livestock Master Plan (LMP) | | | |
| Year 1 | No later than the end of Project Year 1], (a) FMARD has competitively selected lead consulting firm with extensive experience in preparing LMPs and (b) an LMP Preparation Plan (as defined in the Verification Protocol) is developed through a robust consultative process that is satisfactory to the Association and the Plan is adopted by the Minister of FMARD. | | 640,000.00 | Cost-basis |
| Year 2 | No later than the end of Project Year 2, a Livestock Sector Strategy is prepared to present a 15-year strategy for livestock modernization in Nigeria. (2) Draft LMP endorsed by peer review group comprising of global livestock development experts through a robust review process that is satisfactory to the Association. | | 715,000.00 | Cost-basis |
| Year 3 | No later than the end of Project Year 3,] Final LMP is duly approved by the Minister of FMARD. | | 145,000.00 | Cost-basis |

| | | | | |
|---|---|---|---|---|
| Year 4 | None | | 0.00 | Cost-basis |
| **PBC 2** | Development of 4 Livestock Sub-sector Policies: National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy | | | |
| **Type of PBC** | **Scalability** | **Unit of Measure** | **Total Allocated Amount (USD)** | **As % of Total Financing Amount** |
| Output | Yes | Text | 55,115.00 | 0.01 |
| **Period** | **Value** | | **Allocated Amount (USD)** | **Formula** |
| Baseline | No Sub-Sector Policies | | | |
| Year 1 | No later than the end of Project Year 1, a Sub-sector Policy Preparation Plan (as defined in the Verification Protocol) has been prepared and adopted by FMARD Minister. | | 20,000.00 | Cost-basis |
| Year 2 | No later than the end of Project Year 2, (a) FMARD convenes consultative workshops as per the Plan and drafts proceedings for each workshop, and (b) A Review Committee (as defined in the Verification Protocol) endorses drafts of National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy, and National Animal Health Policy. | | 33,000.00 | Cost-basis |
| Year 3 | No later than the end of Project Year 3, the final policies (National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy, and National Animal Health Policy) are duly approved by the Minister of FMARD. | | 2,115.00 | Cost-basis |

| | | | | |
|---|---|---|---|---|
| Year 4 | None | | 0.00 | Cost-basis |
| **PBC 3** | Implementation of Private Veterinary Practice Programme | | | |
| **Type of PBC** | **Scalability** | **Unit of Measure** | **Total Allocated Amount (USD)** | **As % of Total Financing Amount** |
| Intermediate Outcome | Yes | Text | 6,178,293.00 | 1.24 |
| **Period** | **Value** | | **Allocated Amount (USD)** | **Formula** |
| Baseline | No Private Veterinary Practice Programme | | | |
| Year 1 | A Private Veterinary Practice Programme Implementation Plan has been prepared through a robust consultative process that is satisfactory to the Association and adopted by Minister of FMARD. | | 195,122.00 | Cost-basis |
| Year 2 | (1) Number of private veterinarians engaged in the support programme at state level (maximum 10 and minimum 5 for each participating state) for 21 states. (2) Number of livestock farmers benefiting from the support programme per state (maximum 2000 and minimum 1000 for each participating state) for 21 states. | | 3,395,854.00 | Cost-basis |
| Year 3 | (1) Additional number of private veterinarians engaged in the support programme per state (maximum 10 and minimum 5 for each participating state) for 16 states. (2) Additional number livestock farmers benefiting from the support programme per state (maximum 2000 and minimum 1000 for each participating state) | | 2,587,317.00 | Cost-basis |

| | | | |
|---|---|---|---|
| | for 16 states. | | |
| Year 4 | None | 0.00 | Cost-basis |

| PBC 4 | Establishment of 2 Livestock Service Centers (LSCs) in Kano and Bauchi States | | | |
|---|---|---|---|---|
| **Type of PBC** | **Scalability** | **Unit of Measure** | **Total Allocated Amount (USD)** | **As % of Total Financing Amount** |
| Intermediate Outcome | Yes | Text | 19,500,000.00 | 3.90 |
| **Period** | **Value** | | **Allocated Amount (USD)** | **Formula** |
| Baseline | No Livestock Service Centers | | | |
| Year 1 | No later than the end of Project Year 1, (a) the Executive Governor of each Participating State has gazetted at least 100 ha of land for establishment of LSC and establishes a committee (as defined in the verification protocol) to review and approve LSC design; (b) LSC management is operational as per the Project design and criteria set in the Verification Protocol; (c) LSC design prepared and approved by the designated review committee; and (d) a LSC action plan for first 3 years is prepared and approved by the State Project Steering Committee | | 1,800,000.00 | Cost-basis |
| Year 2 | No later than the end of Project Year 2, basic infrastructure (as defined in the Verification Protocol) has been installed according to the LSC design. | | 4,500,000.00 | Cost-basis |

| | | | |
|---|---|---|---|
| Year 3 | No later than the end of Project Year 3, (a) livestock husbandry and health facilities (as defined in the Verification Protocol) have been installed according to the LSC design; (b) value addition facilities (as defined in the Verification Protocol) have been installed according to the LSC design; and (c) marketing facilities (as defined in the Verification Protocol) have veen installed according to the LSC design. | 12,450,000.00 | Cost-basis |
| Year 4 | No later than the end of Project Year 4, (a) at least 3 private investors commence livestock-affiliated businesses within the LSC; and (b) at least 50 registered livestock farmers/herders access services within the LSC. | 750,000.00 | Cost-basis |

| Verification Protocol Table: Performance-Based Conditions | |
|---|---|
| **PBC 1** | Preparation of a Comprehensive Livestock Master Plan (LMP) |
| **Description** | A LMP Preparation Plan is developed and adopted by the Minister of FMARD. The plan will outline: (i) the main stakeholders to be consulted at federal and state levels, state level commissioners responsible for agriculture, private sector organizations representing actors along different stages of livestock value chains (breeders, herders, service providers such as veterinarians, fattening lots, abattoirs/slaughterhouses, etc.); (ii) schedule of consultative meetings across states; (iii) ToRs for the lead consulting firm cleared by the Bank; (iv) peer review process, including the names of specific peer reviewers (national and international) with strong experience with LMPs and representing various interest groups; (v) LMPs schedule of validation meetings across the states; (vi) approval process for the LMP. A lead consulting firm with extensive experience in preparing LMPs is competitively engaged by FMARD and provided with adequate resources (as per the ToRs) to carry out the tasks. The LMP is prepared through a consultative process that is satisfactory to the Association and |

| | |
|---|---|
| | consistent with the Preparation Plan. The LMP is reviewed, finalized, and endorsed by Minister of FMARD |
| **Data source/ Agency** | FMARD |
| **Verification Entity** | Independent Verification Agent (IVA) |
| **Procedure** | **Year 1**:<br>• IVA reviews the LMP Preparation Plan to verify that it consists of the elements described above and has been adopted by the Minister of FMARD<br>• IVA reviews supporting documentation for the competitive selection of lead consulting firm<br>**Year 2**:<br>• IVA reviews records of the process for preparing the LMP, including adherence to the consultative process outlined in the LMP Preparation Plan, records of the workshops (attendance lists with names, emails and phone numbers, and written proceedings), documentation of the peer review process (peer reviewer comments and responses to the comments by the lead consulting firm and FMARD)<br>• IVA randomly calls at least 10 percent of participants to the consultative workshops to authenticate the records<br>**Year 3**:<br>• IVA reviews documentation of approval of LMP by the Minister of FMARD |
| **PBC 2** | Development of 4 Livestock Sub-sector Policies: National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy |
| **Description** | A Sub-sector Policy Preparation Plan is developed and adopted by the Minister of FMARD. The plan will outline: (i) the main stakeholders to be consulted at federal and state levels, state level commissioners responsible for agriculture, private sector organizations representing actors along different stages of livestock value chains (breeders, herders, service providers such as veterinarians, fattening lots, abattoirs/slaughterhouses, etc.); (ii) schedule of consultative meetings across the states to draft/finalize the policies; (iii) arrangements for involvement of development partners; (iv) consultative process to review drafts of the policies; (v) schedule of validation meetings across the states; (vi) approval process for the policies. The 4 sub-sector policies (National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy) are prepared through a consultative process that is satisfactory to the Association and consistent with the Preparation Plan. The 4 sub-sector policies are reviewed, finalized, and endorsed by Minister of FMARD |

| | |
|---|---|
| **Data source/ Agency** | FMARD |
| **Verification Entity** | IVA |
| **Procedure** | **Year 1**:<br>• IVA reviews the Sub-sector Policy Preparation Plan to verify that it consists of the elements described above and has been adopted by the Minister of FMARD<br>**Year 2**:<br>• IVA reviews records of the process for preparing the sub-sector policies, including adherence to the consultative process outlined in the Preparation Plan, records of the workshops (attendance lists with names, emails and phone numbers, and written proceedings), and documentation of the review process<br>• IVA randomly calls at least 10 percent of participants to the consultative workshops to authenticate the records<br>• IVA reviews hard copies of the 4 draft sector policies<br>**Year 3**:<br>IVA reviews documentation of approval of the 4 sector policies (National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy) by the Minister of FMARD. |
| **PBC 3** | Implementation of Private Veterinary Practice Programme |
| **Description** | A Private Veterinary Practice Programme Implementation Plan is developed and adopted by the Minister of FMARD. The Plan will outline: (i) the main stakeholders to be consulted at federal and state levels, including the Honorable Minister of Agriculture and Rural Development, Chief Veterinary Officer of Nigeria/Director of Federal Department of Veterinary and Pest Control Services, State Commissioners responsible for Agriculture/Livestock, State Directors of Veterinary Services, private sector organizations representing actors along different stages of livestock value chains (breeders, herders, service providers such as veterinarians, etc.); and (ii) schedule of consultative meetings across the states. The Private Veterinary Practice Programme is implemented across participating states to enable the involvement of private veterinary professionals in the prevention and control of economically important diseases that affect livestock and humans. Livestock farmers access services from the engaged private veterinarians |
| **Data source/ Agency** | State Ministries responsible for livestock development |
| **Verification Entity** | IVA |

| | |
|---|---|
| **Procedure** | **Year 1**:<br>• IVA reviews the Private Veterinary Practice Programme Implementation Plan to verify that it consists of the elements described above and has been adopted by the Minister of FMARD<br>**Year 2**:<br>• IVA reviews records of the number of private veterinarians engaged in the programme at state level, including names of veterinarians, certificate/license to practice, physical addresses, phone numbers, emails, number of livestock visited, names of farmers visited, contacts for farmers (physical address, phone numbers, email)<br>• IVA conducts random field visits to at least fifty percent of the private veterinarians to authenticate the records<br>• IVA conducts random field visits to at least fifty percent of the farmers visited to authenticate the records<br>**Year 3**:<br>• IVA reviews records of the number of private veterinarians engaged in the support programme at state level, including names of veterinarian, certificate/license to practice, physical addresses, phone numbers, emails, number of livestock visited, names of farmers visited, contacts for farmers (physical address, phone numbers)<br>• IVA conducts random field visits to at least fifty percent of the private veterinarians to authenticate the records<br>• IVA conducts random field visits to at least fifty percent of the farmers visited to authenticate the records. |
| **PBC 4** | Establishment of 2 Livestock Service Centers (LSCs) in Kano and Bauchi States |
| **Description** | At least 100 ha of land to establish LSC is gazzeted by the state Governor and the land is subjected to safeguards compliance screening to verify that there are no competing claims of ownership of the land, any users are willing to vacate the land upon being compensated adequately, Kano and Bauchi State Governors establish their committees to review and approve the LSC design (with membership including state level commissioners responsible for agriculture, state Investment Promotion Agency, private sector organizations representing actors along different stages of livestock value chains, including breeders, herders, service providers such as veterinarians, fattening lots, abattoirs/slaughterhouses, etc.).The 4 Key staff for the LSC management team are hired, including General Manager, Investment Coordinator, Chief Financial Officer, and Facility maintenance Officer. The LSC design and action plan for the first 3 years is prepared and approved by the review committee and state project steering committee respectively. Infrastructure and facilities installed as per LSC design, including basic infrastructure, livestock husbandry and health facilities, value addition facilities, and marketing facilities. Private investors establish livestock-affiliated businesses within the LSC and registered livestock farmers/herders are accessing services within the LSC. |

| | |
|---|---|
| **Data source/ Agency** | State Ministries responsible for livestock development |
| **Verification Entity** | IVA |
| **Procedure** | **Year 1**:<br>• IVA reviews supporting documentation for the gazettement of land to establish LSC, size of land, and safeguards screening checklist, compensations of land users, and the establishment and composition of committee to review LSC design<br>• IVA reviews employment contracts to verify the recruitment of key staff and meets with the staff to authenticate the records<br>• IVA reviews the LSC design and documentation of its approval and the 3-year action plan and documentation of its approval<br>**Year 2**:<br>• IVA visit the LSC to verify that the following basic infrastructure is in place: Perimeter Fencing and or Trenches, Road Network, Power Supply, Water Supply, Waste Management Facilities, Security Facilities etc).<br>**Year 3**:<br>• IVA visit the LSC to verify that the following Livestock husbandry and health facilities are installed: Animal Husbandry Advisory Services Centre, Breed Improvement Centre, Feedlot Facilities, Fodder and Fodders Value Addition Facilities, Veterinary Clinic, Quarantine Facilities and Incinerator<br>• IVA visit the LSC to verify that the following value addition facilities are installed: Meat Processing and Storage Facilities, Milk Collection Centre, Hide and Skins Collection and Handling Centres<br>• IVA visit the LSC to verify that the following marketing facilities are installed: Livestock Market Barns, Lairage and Chutes, Loading Bay, Cloak and Stores<br>**Year 4:**<br>• IVA reviews documentation and visits the LSC to verify number of livestock-affiliated businesses established within the LSC<br>• IVA reviews documentation and visits the LSC to verify number of registered livestock farmers/herders accessing services within the LSC |

## ANNEX 1: Performance Based Conditions Scaling Table and Expenditure Composition

### Table A1.1. Performance Based Conditions Expenditure Composition

| Sub-component/Activity | Description of PBC-based and pure input-based expenditures | | Amount of expenditures | | PBC expenditure -sharing |
|---|---|---|---|---|---|
| | | | Procurable inputs | Non-procurable inputs | |
| Component 1: Institutional and Innovation System Strengthening:<br><br>Subcomponent 1.1: **US$15m**<br>Support to Policy Formulation, Planning and Capacity Strengthening: | PBC-based | Preparation of a Comprehensive Livestock Master Plan (LMP): **US$1.5m** | Consulting contracts: US$1.5m<br>Goods: US$0<br>Works: US$0<br>Trainings: US$ | Salaries: US$<br>Operating expense US$ | |
| | | Development of livestock sub-sector policies on National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy: **US$55,115** | Consulting contracts: 55,115<br>Goods: 0<br>Works: 0<br>Trainings: 0 | Salaries: 0<br>Operating expenses: 0 | |
| | Pure input-based | Establishment of a livestock data and market information system (LMIS), animal identification and traceability, capacity strengthening of the FMARD and relevant institutions: **US$252,000** | Consulting contracts: US$252,000<br>Goods: US$0<br>Works: US$0<br>Trainings: US$0 | Salaries: US$<br>Operating expenses: US$ | |
| Subcomponent 1.2: Support to Animal Husbandry and Advisory Support Services **US$40m** | PBC-based | N/A | N/A | N/A | N/A |
| | Pure input-based | Development of a genetic resource management strategy, establishment of AI and breed multiplication centers, development of livestock extension protocol and digital materials, training and capacity building of state-level extension agents, establishment of climate-smart Livestock Farmer Field School, training of state level extension agents: **US$27,972** | Consulting contracts: $27,972<br>Goods: $0<br>Works: $0<br>Trainings: $0 | Salaries: $0<br>Operating expenses: $0 | |
| Subcomponent 1.3: Support to Animal Health Services Strengthening: **US$40m** | PBC-based | Support to Private Veterinary Practice Programme: **US$6,504,390** | Consulting contracts: US$195,122<br>Goods: US$1,967,317<br>Works: US$0<br>Trainings: US$767,074 | Salaries: US$3,248,780<br>Operating expenses: US$326,097 | |
| | Pure input-based | Disease surveillance, diagnostics, and control programs, control of veterinary medicinal products, establishment of One-Health platforms at sub-national level, building national capacity for vaccine production and promotion: **US$33,495,610** | Consulting contracts: US$24,390<br>Goods: US$25,535,288<br>Works: US$4,548,781<br>Trainings: U$$1,548,171 | Salaries: US$0<br>Operating expenses: US$1,838,980 | |
| Subcomponent 2.1: Support to Market | PBC-based | N/A | N/A | N/A | N/A |
| | Pure input- | Organizing livestock producers into viable producer | Consulting | Salaries: $0 | |

| | | | | | |
|---|---|---|---|---|---|
| Linkages and Market Development: **US$160m** | based | organizations, training and advisory services, provision of common assets for value addition development of online market information system, upgrading/establishment of livestock markets, upgrading of abattoirs, provision of BDS to value chain actors: **US$160m** | contracts: US$1,675,519.45<br>Goods: US$9,712,843.55<br>Works: US$30,618,408.03<br>Trainings: US$23,474,695.86 | Operating expenses: $0 | |
| Subcomponent 2.2: Support to Increased Access to Finance: **US$70m** | PBC-based | N/A | N/A | N/A | N/A |
| | Pure input-based | Credit line for viable and bankable sub-projects, risk-sharing facility for loans extended to commercially viable sub-projects, technical assistance to implementing partners and PFIs: **US$70m** | Consulting contracts: $0<br>Goods: $0<br>Works: $0<br>Trainings: $0 | Salaries: US$0<br>Operating expenses: US$0<br>Lumpsum: US$69,796,701 | |
| Subcomponent 2.3: Support to Selected Livestock Service Centers: **US$45m** | PBC-based | Establishment of 2 Livestock Service Centers (LSCs): **US$12.8m** | Consulting contracts: US$800,000<br>Goods: US$1m<br>Works: US$10.8m<br>Trainings: US$200,000 | Salaries: $$<br>Operating expenses: $$ | |
| | Pure input-based | Establishment of 5 Livestock Service Centers (LSCs): **US$27m** | Consulting contracts: $$<br>Goods: $$<br>Works: $$<br>Trainings: $$ | Salaries: $$<br>Operating expenses: $$ | |
| Subcomponent 3.1: Support to Natural Resources Management and Pasture Improvement: **US$70m** | PBC-based | N/A | N/A | N/A | N/A |
| | Pure input-based | Assessment of the state of natural resources, establishment and implementation of sustainable rangeland/landscape management, construction and rehabilitation of stock routes and water points, cultivated pasture development: **US$70m** | Consulting contracts: US$<br>Goods: US$<br>Works: US$<br>Trainings: US$ | Salaries: $0<br>Operating expenses: $0 | |
| Subcomponent 3.2: Support to Conflict Mitigation: **US$30m** | PBC-based | N/A | N/A | N/A | N/A |
| | Pure input-based | Establishment of national and local conflict mitigation committees, trainings, organization of community-level dialogues between herders, farmers, and trans-boundary stakeholders, construction, and rehabilitation of critical infrastructure along the transhumance corridors/stock routes, early warning systems, crisis prevention and response measure, feasibility studies on livestock insurance mechanisms: **US$30m** | Consulting contracts: US$164,105.83<br>Goods: US$77,117.97<br>Works: US$21,633,452.55<br>Trainings: US$5,718,452.55 | Salaries: $0<br>Operating expenses: $0 | |

## ANNEX 2: State Participation and Performance-based Investment Staging

### A. State Eligibility and Access to Funds

1. **Eligibility and Performance-based funds allocation.** Conceived as a national program, LPRES is open to all the states that would formally respond to FMARD's request for expression of interest. To encourage efficient implementation and attain the desired outcomes, however, the project will prioritize states that have demonstrated commitment to project outcomes throughout and beyond the life of the project and are ready to effectively implement the project. In this context, LPRES adopts a dynamic approach to the allocation of funds to states, based on performance against initial commitment and readiness criteria, and subsequent readiness and progress on milestones. The resulting staging of investments and expenditures is expected to optimize the allocation of project funds while incentivizing and rewarding state performance.

2. **Entering the project - Initial demonstrated commitment and readiness criteria for onboarding**. In order to join the project, interested states must submit documentation and data towards informing assessments of their commitment to livestock sector development and their readiness for project implementation. By appraisal, several states had already submitted this data to the NCO. The NCO and the World Bank will use this data to jointly assess states against the criteria listed in Table A2.1 below, to inform transparent decisions on state onboarding. Fiduciary capacity data will be based on World Bank assessments. The PIM will provide details on the screening process. The project will not fund any technical assistance to help interested states comply with the criteria. Such compliance would have to be achieved no later than 12 months after project effectiveness.

**Table A2.1. Initial demonstrated commitment and readiness criteria**

| Demonstrated Commitment | Readiness |
|---|---|
| Overall livestock sector strategy/plan which is aligned with project objectives | Institutional/technical capacity |
| Overall livestock sector financing/budget execution for last three fiscal years | Fiduciary capacity (including procurement and financial management) |
| Legal framework for PPPs to facilitate management of markets abattoirs, LSCs | Environmental and social safeguards capacity |
| Availability of financing for resettlement | |
| Commitment to project security | |
| Availability of land (>100ha) for LSCs | |

3. **Accessing project funding - Performance-based investment staging and allocation of funds.** After having met the above initial criteria, states will access project funds in stages. Funding will be available upfront to engage preparatory activities and studies (rapid assessments, planning, mobilization) such as needed to be ready for any of the investment funding stages. For each subcomponent, investment funds will be accessed in three stages, with minimum readiness criteria, or pre-conditions applicable to each stage. Onboarded states will thus need to satisfy the pre-conditions to access funds for Stage 1 activities, if needed using project funds for preparatory tasks to that effect. States may subsequently access funds for Stage 2 and Stage 3 activities by subcomponent, also conditioned on required progress milestones. Achievement of milestones and compliance with pre-conditions to accessing further financing will be transparently documented by the NCO based on input from an independent verification agency to inform

NSC decisions on state transition through the three stages. Table A2.2 below summarizes the proposed stages, and the pre-conditions for access to each stage of funding. The maximum amount of financing accessible per state at each stage is based on the assumption that up to 20 states will be onboarded onto the project.

**Table A2.2. Investment staging by subcomponent, with maximum allocations and pre-conditions**

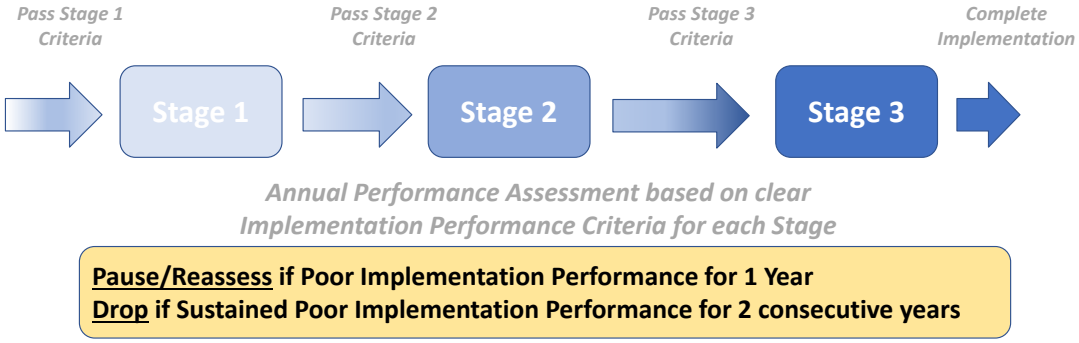
| *Sub-Component (SC)* | Stage 1 | Stage 2 | Stage 3 |
|---|---|---|---|
| ***SC 1.2-Animal Husbandry and Advisory Support Services (up to 20 states)*** | **Activity/expenditure:**<br>• Strengthening technical capacity of Artificial Insemination (AI) service providers<br>• Development of user-friendly, extension training materials<br>• Capacity strengthening of state-level extension agents | **Activity/expenditure:**<br>• Building/rehabilitation/equipping of AI centers<br>• Conduct extension on GAHPs<br>• Promotion of improved feed production/feeding techniques | **Activity/expenditure:**<br>• Building/rehabilitation/equipping of AI centers<br>• Conduct extension on GAHPs<br>• Promotion of improved feed production/feeding techniques |
| | **Maximum amount:**<br>• US$0.20m/state<br>• US$0.5m Federal | **Maximum amount:**<br>• US$0.75m/state<br>• US$0.75m Federal | **Maximum amount:**<br>• US$0.95m/state<br>• US$0.75m Federal |
| | **Pre-conditions:**<br>• Identification of localities to be targeted<br>• Plans for AI (including service providers) | **Pre-conditions:**<br>• Plans for artificial insemination (including breed improvement centers to be built/rehabilitated<br>• Strategy/plan for extension service provision | **Pre-conditions:**<br>• Strategy/plan for extension service provision<br>• Plans for AI (including service providers)<br>• Adoption of breeding policy<br>• Adoption of feed policy |
| ***SC 1.3-Animal Health Services Strengthening (all 36 states)*** | **Activity/expenditure:**<br>• Establishment of One-Health platforms<br>• Training, communication/awareness of national programs on disease surveillance and eradication | **Activity/expenditure:**<br>• Support infrastructure, equipment, clinical and laboratory diagnostics, for disease control and eradication,<br>• Veterinary medicines quality control | **Activity/expenditure:**<br>• Support infrastructure, equipment, clinical and laboratory diagnostics, for disease control and eradication,<br>• Veterinary medicines quality control |
| | **Maximum amount:**<br>• US$0.05m/state<br>• US$8m Federal | **Maximum amount:**<br>• US$0.075m/state<br>• US$10m Federal | **Maximum amount:**<br>• US$0.09m/state<br>• US$12m Federal |
| | **Pre-conditions:** | **Pre-conditions:** | **Pre-conditions:** |

| | | | |
|---|---|---|---|
| | • Vaccination and disease surveillance plans (including support service providers) | • Vaccination and disease surveillance plans (including service providers)<br>• Approved designs of identified surveillance infrastructure<br>• PAP resettlement (where required) finalized | • Vaccination and disease surveillance plans (including service providers)<br>• Approved designs of identified surveillance infrastructure<br>• One-Health platforms established and functional |
| ***SC 2.1-Market Linkages and Market Development <u>(up to 20 states)</u>*** | **Activity/expenditure:**<br>• Creation and strengthening of producer groups<br>• Designs of marketing infrastructure<br>• Business Development Services | **Activity/expenditure:**<br>• Common assets for value addition/linkage to off-takers/PFIs<br>• Establishment of market infrastructure/abattoirs<br>• Business Development Services | **Activity/expenditure:**<br>• Common assets for value addition/linkage to off-takers/PFI<br>• Establishment of market infrastructure/abattoirs |
| | **Maximum amount:**<br>• US$1.5m/state<br>• US$0.0m Federal | **Maximum amount:**<br>• US$2.5m/state<br>• US$0.0m Federal | **Maximum amount:**<br>• US$4.0m/state<br>• US$0.0m Federal |
| | **Pre-conditions:**<br>• Identification and prioritization of producer groups and infrastructure to be financed<br>• Identification of markets and abattoirs to be rehabilitated<br>• PPP law | **Pre-conditions:**<br>• Approved designs for prioritized infrastructure<br>• Business plans for identified groups finalized<br>• PAP resettlement (where required) finalized | **Pre-conditions:**<br>• Approved designs for prioritized infrastructure<br>• Post-construction plans for infrastructure management approved<br>• Slaughterhouse inspection plan |
| ***SC 2.3 -Livestock Service Centers <u>(5 non-PBC)</u>*** | **Activity/expenditure:**<br>• Design of LSC sites<br>• Resettlement processing | **Activity/expenditure:**<br>• Installation of LSC basic infrastructure | **Activity/expenditure:**<br>• Installation of LSC basic infrastructure<br>• Crowding in private investment<br>• Recruitment of LSC management team |
| | **Maximum amount:**<br>• US$0.4m/state<br>• US$0.0m Federal | **Maximum amount:**<br>• US$4.0m/state<br>• US$0.0m Federal | **Maximum amount:**<br>• US$2.0m/state<br>• US$0.0m Federal |

| | | | |
|---|---|---|---|
| | **Pre-conditions:**<br>• Identification of LSC sites<br>• PPP law | **Pre-conditions:**<br>• Approved LSC designs<br>• PAP resettlement (where required) finalized | **Pre-conditions:**<br>• Post-construction plans for LSC management approved |
| ***SC 3.1-Natural Resources Management and Pasture Improvement (up to 20 states)*** | **Activity/expenditure:**<br>• Organization of producers<br>• Design of packages of investments | **Activity/expenditure:**<br>• Financing of identified investments | **Activity/expenditure:**<br>• Financing of identified investments |
| | **Maximum amount:**<br>• US$0.5m/state<br>• US$0.0m Federal | **Maximum amount:**<br>• US$1m/state<br>• US$0.0m Federal | **Maximum amount:**<br>• US$2m/state<br>• US$0.0m Federal |
| | **Criteria/pre-conditions:**<br>• Identification and prioritization of implementation localities and investments | **Criteria/pre-conditions:**<br>• Initial investments agreed and approved<br>• Governance mechanisms for natural resource/pasture management in place | **Criteria/pre-conditions:**<br>• Other investments agreed and approved<br>• Governance mechanisms for natural resource/pasture management in place |
| ***SC 3.2 - Conflict Mitigation (up to 20 states)*** | **Activity/expenditure:**<br>• Establishment of conflict committees<br>• Mapping of resources<br>• Design of infrastructure | **Activity/expenditure:**<br>• Financing of prioritized investments and infrastructure | **Activity/expenditure:**<br>• Financing of prioritized investments and infrastructure |
| | **Maximum amount:**<br>• US$0.1m/state<br>• US$0.5m Federal | **Maximum amount:**<br>• US$0.5m/state<br>• US$1.0m Federal | **Maximum amount:**<br>• US$0.8m/state<br>• US$0.5m Federal |
| | **Criteria/pre-conditions:**<br>• Identification of implementation partners<br>• Identification of sources of conflict<br>• Stakeholders identified and mapped | **Criteria/pre-conditions:**<br>• Conflict committees established<br>• Stock route committees established<br>• Investments to alleviate pressure points prioritized and agreed | **Criteria/pre-conditions:**<br>• Conflict committees established<br>• Stock route committees established<br>• Investments to alleviate pressure points prioritized and agreed |

4. **The basis for financing will be annual work plans detailing tasks and milestones through various stages towards full implementation of the planned project activities.** There will be regular reviews of state performance every 6 months or based on the recommendation of the NSC and concurrence of the World Bank. In addition, state performance will be assessed annually to determine if the state should continue at that stage, move to the next stage or be dropped as indicated below.

**Figure A2.1. Progression of Stage Levels by Component**




## B. Responsibilities

5. **Monitoring.** Data on state performance, including achievement of Stage pre-conditions, will be collected, and monitored by an Independent Verification Agency, with the support of the NCO and SCOs. Performance and pre-conditions information will be updated by the NCO twice a year on a public website along with other key M&E indicators. Monitored implementation performance criteria will also include:

(i) NCO performance (related to overall project activity facilitation, technical, fiduciary, and safeguards)
(ii) State investment implementation performance

6. **Stage access decisions.** The NSC, with concurrence of the World Bank will:

(i) Finalize and adjust criteria and pre-conditions and potentially allowable activities for the states at various stages
(ii) Semi-annually review assessment of each state's performance to determine/adjust overall the state's stage
(iii) Annually review state and federal workplans, ensuring justification and consistency towards achieving current and subsequent stage tasks
(iv) Annually review state implementation performance to determine consequences of (pause/reassess, drop).

## ANNEX 3: Detailed Project Components Description

**Component 1: Institutional and Innovation System Strengthening (US$95.0 million equivalent)**

1. The objective of this component is to strengthen the policy and institutional foundations for improving the performance and governance of the livestock sector in Nigeria, with due regard to climate change adaptation and mitigation. Project support will focus on: (i) strengthening the livestock policy and regulatory framework, planning, and monitoring at the federal and state levels; and (ii) improving the capacity and capability of key institutions in the livestock innovation system to deliver public goods and services essential for improving sector productivity, increasing the resilience of livelihoods anchored in the sector (including livelihoods in pastoral systems), reducing competition for natural resources, and reducing the sector's negative externalities. Project support will be provided through three synergistic subcomponents.

***Subcomponent 1.1: Support to Policy Formulation, Planning, and Capacity Strengthening (US$15.0 million).***

2. This subcomponent aims to strengthen the policy environment, knowledge base, and human resource capacity of the livestock sector as a springboard for enhancing livestock productivity, resilience to climate change, and value chain performance. It will finance five activities, beginning with preparation of a comprehensive Livestock Master Plan[45] and follow-up analyses to guide the development of a sustainable, efficient livestock sector in the short to medium term. The Livestock Master Plan will address the spectrum of livestock production systems and their trade-offs in terms of economic, social, environmental, and public health risks and opportunities, and also focus on strengthening the capacity of the sector for climate change adaptation (e.g. through adoption of hardier/resilient breeds, feeding practices that reduce reliance on seasonal availability of pasture) and mitigation (e.g., through introduction of higher productivity breeds, improved manure management, etc.) Second, Subcomponent 1.1 will finance feasibility studies of cost-efficient tools and systems (such as digital technologies) to improve the collection, analysis, and dissemination of data adapted to public and private stakeholders' needs, including data on herd population characteristics and dynamics, productivity trends, animal movements (linked to transhumance and trade), market prices, as well as data (e.g., feed efficiency across production systems, biomass use, GHG emissions to inform GHG inventory reporting) which is necessary to support climate change adaptation and mitigation in the sector in line with Nigeria's NDC objectives. Based on those studies, the third activity under this subcomponent is to develop and pilot promising prototypes of data tools and systems in selected states for relevant purposes including climate-informed decision making and programming. The fourth activity is to develop sub-sector policies related to feeding, breeding, dairy and animal health and roll out a competitive scholarship program for postgraduate studies (targeting at least 50 percent women beneficiaries), as well as continuing education and capacity-building programs for key stakeholders at the federal and state levels to improve livestock policy and regulation formulation, enforcement, monitoring and evaluation (M&E), and technical knowledge related to the different production systems. To support climate change mitigation and adaptation, (i) the feeding policy will among others, focus on expanding the use of low fiber diets as well as additives, which have been variously demonstrated to reduce GHG emissions(especially methane); (ii) the breeding policy will focus on improving productivity, functional traits that can reduce GHG emissions, as well as those that increase

[45] Livestock Master Plans are developed through a systematic process using global reference tools available in the Livestock Sector Investment and Policy Toolkit (LSIPT). See *https://www.fao.org/3/ca7635en/CA7635EN.pdf* and *https://www.ilri.org/livestock-master-plans*.

resilience of livestock to weather extremes; (iii) the diary policy will encompass intensification as a mechanism of reducing GHG intensity; (iv) the animal health policy will incorporate measures to reduce impacts of climate change on animal health and the spread of pathogens; and (v) competitive scholarship program and continuing education and capacity-building programs will prioritize strengthening skills (e.g., rangeland management) relevant to fostering climate change adaptation and mitigation in the sector. Lastly, this subcomponent will provide financing to explicitly mainstream climate change adaptation and mitigation objectives across all relevant policies (including the Livestock Master Plan and NLTP) and regulations to strengthen the foundation for addressing climate change challenges in the sector.

3. The sub-component will disburse through inputs-based financing and results-based financing based on achievement of PBCs. The PBCs under this sub-component are: (i) preparation of a comprehensive Livestock Master Plan, and (ii) development of national livestock sub-sector policies on feeding, breeding, dairy, and animal health to enhance climate mitigation and resilience of the sector. Progress towards achieving the PBCs under the project will be measured using indicators that combine actions and outputs, and project funds will be disbursed up to capped amounts conditional on achievement of the agreed targets for the indicators. More detailed information on the definition of all PBCs, the indicators and targets, and detailed verification procedures are reported in Annex 1

***Subcomponent 1.2: Support to Animal Husbandry and Advisory Support Services (US$40.0 million).***

4. Subcomponent 1.2 will build producers' resilience to climate change and reduce the sector's GHG emissions and other negative environmental externalities by improving the availability and adoption of superior livestock breeds, Good Animal Husbandry Practices (GAHPs), and feed resources adapted to the diversity of ruminant production systems. It will finance four sets of activities that contribute directly to climate change adaptation and mitigation by reducing methane emissions per unit of meat or milk produced (based on improved feeding and manure management) and by increasing carbon sequestration (based on improved pasture and rangeland management).

5. The first set of activities will support the development and implementation of a genetic resource management strategy, with ruminants as a priority. Aside from traits preferred by producers (increased productivity, early maturity, diseases) and markets, breed improvement and selection will emphasize traits that confer resilience to climate-induced stresses (e.g., water stress, increased disease pressure) in specific livestock production areas as well as those that reduce the GHG emission intensity of livestock. This strategy will be supported through ancillary investments necessary to guarantee producer access to improved and climate-resilient breeds. These investments include building (or rehabilitating) and equipping artificial insemination (AI) and breed improvement centers and strengthening the technical capacity of AI service providers to guide breed selection and improvement. Second, Subcomponent 1.2 will finance the development of user-friendly, comprehensive extension training materials (including digital guides) on GAHPs. These materials will cover the range of ruminant production systems and incorporate approaches for climate change adaptation (e.g., production and use of silage to tide over climate-induced reduction in forage availability, fodder production etc.) and mitigation (e.g., improved feeding practices to reduce methane emissions, and manure management through biogas production). Farmer Field Schools will also be supported to facilitate applied research and learning for groups of herders. Among others, the Field Schools will focus on creating producer awareness of climate change and the demonstration and transfer of skills/technologies (e.g., water conservation, adoption of improved breeds, forage conservation, grazing land management) necessary to adapt to, and foster climate change mitigation. Technical support for breed improvement and the introduction of GAHPs will give preference

to female producers and be adapted to their needs, to overcome the challenges and risk that often limit women's experimentation with new technology.

6. The third set of activities under this subcomponent is the demonstration, training, and promotion (including incentivization) of farmer uptake and use of improved feed production techniques (the use of agricultural by-products, composition of balanced feed, feed storage technologies); improved feeding practices adapted to animal needs, with potential to reduce enteric methane production; and improved grazing and rangeland management practices (individual or community based) that increase soil carbon stocks (i.e., GHG emission reduction) and reduce erosion. Fourth, this subcomponent will finance training of state-level extension agents to use the new materials, guides, and approaches to improve service delivery. Extension agent training, extension protocols, and extension and advisory services for livestock producers will prioritize the impartation of climate change adaptation and mitigation skills (e.g., those related to reducing emission intensity, improved rangeland management for improved pasture quality, feedlot management, climate disaster risk management and response, etc.) and will incorporate content and approaches to close gender gaps in livestock ownership and value-chain position, such as training in socio-emotional skills to support women's successful entrepreneurship, or adjustments in training content, delivery modalities, and timing to accommodate gender differences in digital literacy, digital access, and household responsibilities. All these activities will directly contribute to climate change adaptation and mitigation, by reducing methane emissions per unit of meat or milk produced from livestock through improved feeding and manure management and increasing carbon sequestration through improved pasture and rangeland management. This sub-component will disburse through input-based financing.

***Subcomponent 1.3: Support to Animal Health Services Strengthening (US$40.0 million).***

7. Subcomponent 1.3 will strengthen the delivery of livestock health services and improve the coordination between animal, human, and wildlife health services, as embodied in the One-Health concept. Improvements in the delivery of animal health services will increase productivity by reducing livestock morbidity and mortality, in turn improving the resilience of livestock and livestock-based livelihoods[46] to climate shocks, including emerging diseases induced by climate change. By contributing to greater efficiency (increased milk yield, daily weight gain, reproductive performance, feed conversion ratio), improvements in animal health will also reduce the intensity of GHG emissions from the livestock sector and help to mitigate climate change. Expanding the capacity of animal health services and improving their coordination with human health services is also the key to preventing and responding to public health threats such as AMR and zoonotic diseases, including those with pandemic potential.

8. In this context, Subcomponent 1.3 will strengthen national animal health services, building on the recommendations of the 2019 OIE PVS report through several activities. First, it will improve the organization and procedures of the national Veterinary Services by establishing a program to support the development of private veterinary services delivery, opening the way for future delegation of selected official tasks to private veterinary professionals for the prevention and control of regulated diseases of economic and public health importance. Second, it will finance infrastructure and equipment (including solar-powered cold chains, which contribute to climate change mitigation), inputs, training, communication/awareness, and operating costs of selected programs nationwide for disease surveillance, clinical and laboratory diagnostics, and disease control and eradication, with Peste des Petits Ruminants

[46] Over 25 percent of smallholder stock is lost to preventable and treatable diseases.

(PPR) as a priority. The third activity under this subcomponent is to improve quality control for veterinary medicines (including antimicrobial agents) and ensure their prudent use to reduce risks to public health. Fourth, Subcomponent 1.3 will finance the establishment of One-Health platforms at the subnational level to increase collaboration and encourage the development of joint programs with other sectors and disciplines (human health, environmental health). This activity will complement and be implemented in coordination with the WBG-financed Regional Disease System Support Enhancement (REDISSE - P154807) Project in Nigeria. The fifth activity focuses on working with the private sector to expand the national capacity to produce and commercialize vaccines and other biologicals. The sub-component will disburse through inputs-based financing and results-based financing based on the achievement of one PBC – the establishment of sanitary mandate program.

**Component 2: Livestock Value Chain Enhancement (US$275.0 million equivalent)**

9. Component 2 builds on herd-level improvements in productivity arising from investments under Component 1 (improved breeds, animal health, and GAHPs) to expand overall production of meat and milk and reduce imports of those commodities. To that end, it will enhance and modernize the value chain for livestock products, promote a stronger commercial/market orientation among small and medium producers, and encourage increased private investment in priority segments of the value chain, while mainstreaming climate change adaptation and mitigation measures. In addition to augmenting national production, these activities will build more resilient livelihoods, create jobs, promote rural economic growth, and improve food safety. An enhanced value chain will help to ensure the sustainability of project investments and foster intensification, which will reduce the environmental (and carbon) footprint of the livestock sector. Project support will be provided under four subcomponents.

***Subcomponent 2.1: Support to Market Linkages and Market Development (US$160.0 million).***

10. Subcomponent 2.1 will foster a market orientation among small and medium producers by ensuring: (i) market access/availability; (ii) that producers capture a fair share of product/commodity value; (iii) transparency in market prices; and (iv) the highest level of appropriate value addition at the farm level through primary processing (bulking, cooling, sorting, packing, and so on) to increase profits and reduce food loss and waste. The demand-supply balance for meat (beef) and milk in Nigeria, as well as consultations held during project preparation, indicate that prospective off-takers and markets for these commodities abound in the country, including small and medium agribusinesses working or seeking to work in partnership with organized livestock producers.

11. In this context, Subcomponent 2.1 will support and strengthen collective action by small-scale producers to “create volume,” add value, reduce transaction costs, and increase their bargaining power in identified commodity markets. Concurrently it will raise producers’ awareness of modern, climate-smart production technologies to increase efficiency (for example, in using land and feed, reducing feed loss along the value chain, and managing manure and waste) while reducing emissions and mitigating the negative ecosystem effects of livestock production. To achieve those objectives, this subcomponent will finance: (i) the organization of livestock producers/herders into viable groups (cooperatives, associations, organizations, and the like) or the strengthening of existing groups; (ii) training and advisory services; and (iii) common assets for value addition (milking equipment, cooling centers, transport, services, and so on), all with a focus on increased resilience and climate change mitigation. In collaboration with the Global Center on Adaptation (see section E on the role of partners), the project will also finance granular climate risk assessments of targeted livestock value chains with the view of identifying location-specific risks to

enable more efficient identification and targeting of the most suitable interventions to mitigate the risks across specific segments of the value chain. The project will create awareness of these climate risks, train value chain actors on ways adapting or mitigating the risks and also finance public goods (common assets e.g., cold chains, water points, common grazing areas) necessary to address such risks. To facilitate women's progression within value chains where they already participate—such as dairy—or their entry into traditionally male-dominated livestock value chains, activities under this subcomponent will take care to avoid reinforcing gender segregation in the value chains. The project will consider men's engagement programming designed to ease restrictive social norms and promote women's entry into higher-value livestock value chains.[47] Support for value addition will be coordinated with related activities implemented under the WBG-financed Agro-Processing, Productivity Enhancement and Livelihood Improvement Support Project (P148616) to ensure synergies and avoid duplication. Women borrowers seeking to enter value chains for large ruminants will be connected with livestock extension services and receive soft-skills training to facilitate success.

12. This subcomponent will also finance complementary activities to support market linkages and development, including an online market information system capable of reaching widely dispersed producer populations with information on buyer preferences, commodity prices, livestock supply and demand at the national and regional level, and other market variables. Improved availability of timely market information is expected to strengthen producer's capacity to adapt to weather extremes (e.g., climate-induced drought) when livestock sale is often the only viable adaptation option. In tandem, it will support climate-smart upgrading/establishment of livestock markets with perimeter fencing, simple administrative buildings, water sources, weighbridges (to sell animals by actual weight rather than the more common visual estimates of size and weight), paddocks, loading ramps, and veterinary clinics, all with the aim of improving animal welfare, marketing efficiency and climate resilience. Administrative buildings, perimeter fencing, and veterinary clinics will be built following climate-smart designs (e.g., having rainwater harvesting provisions to reduce vulnerability to climate change in the form of drought and flooding; provision of more shading for animals to reduce heat stress, and increasing structural design to deal with increased wind loading which has been observed in many places in Nigeria; and use of on-site solar power sources as opposed to the more common use of diesel generators). The establishment of markets closer to production areas is a mechanism to prevent conflict, as herders will not have to move stock over such long distances. Since large quantities of manure and urine - significant sources of methane and nitrous oxide when broken down under anaerobic conditions – are expected to be generated in livestock markets, the markets will be equipped with provisions to facilitate manure stockpile aeration and composting and/or biogas generation systems/biodigesters to reduce GHG emissions. Data recording systems at livestock markets will contribute to emerging traceability and disease surveillance activities of the Federal Ministry of Agriculture and Rural Development (FMARD) which will in turn also feed into creating an understanding of patterns of climate-induced diseases, which is key to their management.

13. Most public abattoirs operating in Nigeria lack cooling facilities, sufficient water, and waste/effluent management systems, in violation of public health regulations. Also, because of poor manure and waste management in the abattoirs, they are sources of GHG emissions (especially methane). Additionally, the lack of appropriate cooling facilities at many of the abattoirs leads to significant product wastage and loss - another contributor to GHGs. Where power is used in operations, most abattoirs have tended to rely on

[47] A recent impact evaluation documented the potential of light touch interventions: a couples training and planning intervention targeting the rubber value chain yielded significant agricultural productivity increases.

diesel generators. Abattoirs also consume high amounts of fresh water and release large amounts of wastewater with high concentrations of organic matter, which if not adequately managed, can produce GHG emissions, e.g., methane. Working with local governments, Subcomponent 2.1 will provide support to rehabilitate/upgrade a network of strategically located abattoirs that will be operated under improved food safety, environmental, and public health regulations, and with biodigesters and wastewater management systems to reduce GHG emissions from manure, cooling facilities to reduce waste and loss, and on-site solar power sources, all of which will contribute to climate change mitigation. Based on assessments to be conducted during implementation, new models for operationalizing these abattoirs—for example, concessions,[48] public-private partnerships (PPPs), or fully private operators—will be explored and adapted to specific contexts. Special care will be taken to ensure that abattoir rehabilitation/upgrading adapts climate-smart designs (e.g., selecting sites that can take advantage of passive solar radiation, having rain water harvesting provisions to reduce vulnerability to climate change in the form of drought and flooding; provision of more shading as a response to increased solar radiation, increasing structural design to deal with increased wind loading; and wastewater treatment and recovery mechanisms to reduce freshwater consumption in abattoirs). The project will provide capacity building on slaughter processes, including aspects of health and hygiene, sanitary and phytosanitary regulations, reduction of waste and loss (contributing to GHG emission reduction), and adherence to food safety standards. State Veterinary Departments will ensure compliance with animal and public health regulations through regular pre- and post-mortem inspections. The abattoirs will also be used for traceability and disease surveillance (including monitoring climate-exacerbated/induced disease pressures) to promote improved animal and human health.

14. Finally, Subcomponent 2.1 will support the provision of business development services to enable value chain actors (producers, producer organizations, small aggregators, and others) to develop their entrepreneurial capacity, develop business plans that build climate adaptation and mitigation into their operations, and improve their access to finance and markets. Viable businesses will be introduced to the financial institutions in subcomponent 2.2 as well as other lenders and investors to crowd in private capital. This sub-component will disburse through input-based financing.

***Subcomponent 2.2: Support to Increased Access to Finance (US$70.0 million).***

15. This subcomponent builds on activities under Component 1 and Subcomponent 2.1 to further de-risk the livestock value chain, expand commercial lending in the livestock sector, and promote climate adaptation and mitigation in the livestock value chain. It will address critical challenges in providing credit to livestock value chains, particularly loan duration and realistic risk-adjusted pricing. Accordingly, Subcomponent 2.2 will finance three main activities: a credit line, risk-sharing facility, and technical assistance – all implemented through input-based financing. 49

16. **Credit line (US$50.0 million).** The credit line will enable viable and bankable firms across the livestock value chain to boost the value chain's productivity, enhance its climate resilience, reduce its emissions footprint, and upgrade its performance through access to long-term debt. This type of financing will facilitate long-term investments, particularly in fixed assets, advanced technology, or equipment that

[48] Following the example of the NGN 66 billion publicly financed silo complexes, grain aggregation centers, and Blumberg warehouses, which have been privatized through concessionary arrangements.
[49] IMF 2021 Draft Article IV report.

can also serve as security for the financing.[50] The Development Bank of Nigeria (DBN), a public wholesale bank for small and medium enterprises (SMEs), will be the implementing partner for managing and disbursing the line of credit to participating financial institutions (PFIs) for on-lending to end-borrowers. DBN is equipped with a strong governance structure and operational capacity, as proven under past and current WBG-funded projects (for details on DBN's principles and performance, see Annex 7).

17. DBN will select PFIs pursuant to criteria agreed upon with WBG, which will be defined and reflected in the Project Implementation Manual (PIM) and ensure compliance with OP10. The criteria will ensure that only those investments that generate climate change adaptation and/or mitigation benefits would be eligible for financing, in line with DBN's increased attention to climate change. Among others, the following climate mitigation and adaptation measures could be considered in selecting investments for financing: (i) switching to lower GHG emission species, e.g., a focus on poultry as opposed to cattle; (ii) intensification of production to reduce emission intensity; (iii) use of breeds that emit lower methane and are better adapted to climate change; (iv) waste and loss reduction; (v) improved feed management/practices; and (vi) manure management, etc. PFIs are expected to offer term loans for capital investments as well as working capital loans for business expansion. Loan appraisals will follow each PFI's normal credit policies and appraisal procedures. PFIs will be encouraged to set loan durations in accordance with the cashflow projections of the end-borrowers' subprojects. In addition, technical assistance for financial institutions (discussed below) will promote asset-lending products and structures that circumvent excessive collateral requirements. Funds offered by DBN will reflect DBN's cost of funds and a spread to cover DBN's cost of operations plus a risk premium. The interest rates offered by PFIs to end-borrowers will not be subsidized or capped; rates will be market based and will include, at a minimum, the cost of the project funds provided from DBN to PFIs, plus an on-lending margin reflecting PFIs' administrative costs, and a credit risk margin. Since the PFIs will use their normal credit policies to conduct loan appraisals, they will assume the end-borrowers' credit risk.

18. **To be eligible for financing, the PFI must:** (i) be duly licensed and at least three years in operation; (ii) have "fit and proper" owners and board of directors; (iii) have qualified and experienced management, adequate organization and institutional capacity for its specific risk profile; (iv) be in "good standing" with its supervisory authority (i.e. it should meet all prudential and other applicable laws and regulations) and remain in compliance at all times; (v) have well defined policies and written procedures for management of all types of financial risks (liquidity, credit, currency, interest rate and market risk, as well as risks associated with balance sheet and income statement structures); (vi) maintain capital adequacy as prescribed by prudential regulations (vii) have adequate liquidity; (viii) have positive profitability and an acceptable risk profile; (ix) have adequate portfolio quality; (x) have adequate internal audits and controls for its specific risk profile; (xi) have adequate management information systems; and, xii) demonstrate commitment to serving the MSME sector and have in place satisfactory MSME loan approval processes and risk management procedures. These minimum PFI eligibility criteria will be confirmed in an annual due diligence process conducted by DBN.

[50] Empirical evidence from cross-country and within-country studies suggests that long-term finance has a positive effect on firm investment and performance. See Chapter 2 of World Bank (2019), *Global Financial Development Report 2019/2020: Bank Regulation and Supervision a Decade after the Global Financial Crisis.* Washington, DC (*https://www.worldbank.org/en/publication/gfdr/gfdr-2016/report/chapter-2); see also https://documents1.worldbank.org/curated/en/576961468197998372/pdf/101769-REVISED-ENGLISH-Principles-CGS-for-SMEs.pdf;* and *https://thedocs.worldbank.org/en/doc/304771507314954144-0340022017/original/productnotefinancialmobilizationtomeet developmentneeds.pdf*.

19. Eligible end-borrowers will be micro, small and medium-sized agribusiness companies and producers, primarily in the beef, dairy, sheep, goats, pigs and poultry value chains—in other words, value chain actors such as off-takers, processors, transporters, and input suppliers. These borrowers will present financially viable expansion plans involving linkages to smaller businesses and producers in their value chains that meet the eligibility criteria for MSMEs defined by the Development Finance Project (P146319). For the purposes of the LPRES Project, micro, small and medium-sized companies will be defined as firms satisfying the following eligibility criteria including a maximum loan size:

| | # Employees | Annual Turnover US$ (000) | Total Assets US$ (000) | Max. Loan Size US$ (000) |
|---|---|---|---|---|
| Micro | < 10 | < 50 | < 50 | < 50 |
| Small | 10 - 49 | 50 - 500 | 50 - 500 | < 200 |
| Medium | 50 - 249 | 501 - 15000 | 501 - 15000 | < 2000 |

20. The Bank team conducted discussions with banks, agro-processors and fintech companies currently involved or entering into the livestock value chains. These discussions suggest that the size of the credit line (US$50 million), less than 1.5 percent of the private agriculture credit, is small compared with the potential viable demand in the livestock value chains. Several commercial banks have been actively lending to the livestock sector, especially poultry value chains. The credit line and other project interventions intend to expand lending to smaller livestock value chain players and new value chains such as beef. The focused ground discussion confirmed strong interest from the major lenders in the sector.

21. In order to strengthen the pipeline, the project will introduce viable value chain actors from Subcomponent 2.1 to PFIs, capitalizing on the technical assistance linking small-scale livestock producers and other value chain actors. Such linkages will extend the benefits of greater access to finance to smaller players in the value chains, while supporting the expansion of climate-smart livestock production and markets in the country. The credit line can also support medium-sized companies in the livestock sector primarily off-taking from project beneficiaries.

22. **Risk-sharing facility (US$15.0 million).** To moderate perceptions that lending to the livestock sector is highly risky (including its vulnerability to climate change), this activity will finance a sustainable risk-sharing facility that provides first-loss coverage to PFIs that extend loans to commercially viable firms across the livestock value chain. The IMPACT credit guarantee fund, a subsidiary of DBN, will administer and issue partial credit guarantees to banks and financial intermediaries that will support the livestock value chain. The implementation arrangements for this activity will be identical to those under the Development Finance Project (P146319). The eligibility criteria will be the same as for the credit line and will ensure that guarantees are provided only for those investments that generate climate change adaptation and/or mitigation benefits (e.g., switching to lower GHG emission species; intensification of production to reduce emission intensity; use of breeds that are better adapted to climate change; waste and loss reduction; improved feed management/practices; and manure management). The level of loan loss coverage and pricing of the guarantees will be defined in consultation with the market players through technical assistance, discussed next.

23. **Technical assistance for commercial banks and other non-bank financial institutions and lenders (US$5.0 million).** Both the credit line and risk-sharing facility will be complemented by technical assistance for implementing partners and PFIs to: (i) dimension the underlying credit risks of financing this value chain; (ii) structure and price the financial products; and (iii) develop the capacity to implement the credit

line and risk-sharing facility effectively; and (iv) acquire an understanding of climate risks, resilience planning, and climate-smart livestock production systems to inform financing decisions. While some commercial banks have relatively high exposure to livestock borrowers, their lending appears to favor poultry businesses, which have a well-known risk profile. The growing livestock market in Nigeria will most likely allow banks to continue accumulating knowledge and expertise focused on this narrow subsegment, but they may fail to capture business opportunities in other livestock subsegments. Technical assistance provided under this subcomponent will enable PFIs and other lenders to assess the risks of lending to subprojects and companies in the beef and dairy value chains, with the aim of expanding PFIs' outreach and widening access to finance across the livestock sector. Training will provide a general overview of livestock businesses, review case studies of lending products from other countries, and introduce the credit line and risk-sharing facility and their beneficiaries, including value chain actors. As noted, technical assistance will also support the development and introduction of new asset-based lending products for capital investments that can circumvent excessive collateral requirements. DBN will manage this technical assistance, maximizing synergy with the Development Finance Project.

24. The technical assistance provided to PFIs will address gender gaps in access to finance in the livestock value chain. It will support the development of financial products that use alternative credit scoring methods based on psychometric testing to lift the collateral constraints facing women. A psychometric testing platform will be developed and linked with the risk-sharing facility described earlier to cover potential losses from loans issued in the learning phase, while the psychometric testing instrument is being refined to successfully identify predictors of loan performance.[51]

***Subcomponent 2.3: Support to Selected Livestock Service Centers (LSCs) (US$45.0 million).***

25. Support under this subcomponent will complement activities carried-out under subcomponents 2.1 and 2.2 and seeks to accelerate and provide impetus to smallholder commercialization and private sector investment in the livestock value chain and enable the scaling up of climate-smart livestock production systems. In line with the NLTP, this subcomponent will provide support to create Livestock Service Centers (LSCs) in selected areas to promote commercialization, reduce open grazing, and attract private investment in the livestock sector. Conceived as pilots and modelled along the lines of agri-parks, the LSCs will be a community of businesses with a common interest in livestock and livestock products, situated in gazetted grazing reserves or other such land with unencumbered titles provided by the relevant states. The LSCs will complement the technical activities of federal and state entities and promote better integration of their services at the local level, supporting the broader territorial development needs of local livestock communities.

26. In line with the findings of detailed technical and financial feasibility studies[52] conducted during implementation, as well as the outcomes of demand-driven planning processes involving local communities, potential private sector investors, and other stakeholders, Subcomponent 2.3 will finance: (i) the detailed design and supervision of works, including verification that they are climate-smart; (ii) the development of the sites and construction of the essential infrastructure, based on the masterplan of the LSCs and ensuring that they are climate-smart by selecting sites that can take advantage of passive solar

[51] Preliminary results from an impact evaluation in Ethiopia suggest that psychometric testing reliably predicts whether an entrepreneur will repay a loan. Customers who scored at a high threshold on the test were seven times more likely than other customers to repay their loans.

[52] These studies will include: (i) market assessment; (ii) preliminary design, including programming of climate-proof and energy-efficient construction; (iii) the study of options for optimal financing and management models—PPPs, build-operate-transfer (BOT) arrangements, or other concessionary agreements; and (iv) related Environmental and Social Impact Assessments (ESIAs).

radiation, having rain water harvesting provisions to reduce vulnerability to climate change in the form of drought and flooding; provision of more shading as a response to increased solar radiation, and climate-proofing structural design to deal with increased wind loading; (iii) the provision of selected climate-smart goods and services to catalyze intensification and increase the livestock production, handling, processing, and marketing (knowledge and training centers that would also build producer capacity for climate change adaptation and mitigation, veterinary facilities to deal with diseases – including those induced by climate change, livestock breeding services – including the provision breeds that are better adapted to climate change and emit less methane, livestock markets, market information systems, milk collection and cooling facilities to help reduce waste and mitigate climate change, water points, input outlets, rotational grazing areas and pastures with improved management practices that sequester carbon, and others); and (iv) tailor-made technical assistance to bring the LSCs to full operational capacity. The design and construction of the LSCs will incorporate Eco-Industrial Park Guidelines[53] and also focus on mitigating climate change through resource-efficient technologies (for example, photovoltaic energy) and buildings that reduce GHG emissions. The gender gap in access to services will be reduced by ensuring that LSC facilities are designed to accommodate women's requirements (for example, with street lighting throughout the planned infrastructure, and separate women's and men's restrooms). The LSCs will also prioritize accessibility to women by establishing service hours, such as weekend hours, that recognize women's disproportional household responsibilities.

27. The LSCs will be accessible to both sedentary and transhumant livestock keepers (with a focus on smallholders). Beyond promoting commercialization, private investment, and climate resilience, these centers are expected to mitigate conflict through multi-stakeholder inclusive participation, discussions, and planning. The project will pilot LSCs in seven states in areas where livestock are concentrated, with scope to expand the model if it proves successful. The pilot states are key corridors for livestock movement within Nigeria and the region and are highly vulnerable to climate change-induced drought and diseases.

28. The establishment of LSCs will be through both input-based financing and results-based financing upon achievement of PBCs. In particular, the establishment of 2 LSCs in Kano and Bauchi states will be based on PBCs while the rest (5 LSCs) will be implemented through input-based financing. Kano and Bauchi LSCs were selected for results-based financing because implementation readiness of these LSCs is more advanced than the rest. The project will initially focus on these 2 LSCs that are PBCs based to ensure that proper attention is paid to the core aspects of establishing PBCs, including feasibility studies and design, management structure, and installation of infrastructure and facilities to crowd-in private sector agribusinesses. The experiences and lessons learned will be transferred to the implementation of the 5 LSCs that will be delivered through inputs-based financing.

**Component 3: Crisis Prevention and Conflict Mitigation (US$100.0 million)**

29. Climate change and human-induced environmental degradation have depleted pastures, dried up many natural water sources across Nigeria's far-northern Sahelian belt and forced large numbers of herders to migrate south[54] - in search of grassland and water for their herds. According to some descriptive

[53] See Kechichian, E., and M.H. Jeong (2016), Mainstreaming *Eco-Industrial Parks*. World Bank, Washington, DC. *https://openknowledge.worldbank.org/handle/10986/24921*.
[54] Migrating to agricultural lands before the harvest.

accounts (see McGuirk and Nunn, 2021[55]), climate change has also led to changes in transhumance routes - over time, tending to extend deeper into agricultural lands and for livestock movement to occur earlier in the season, thus migrating into agricultural lands before harvest. This migration in turn has triggered disputes with sedentary crop farmers, especially in the North Central zone, but also across the three zones in the south. Since 2015, violent flare-ups in these parts of the country, particularly armed attacks on communities, have killed thousands of people, disrupted rural economies, and threatened the country's stability.

30. While improved provision of animal husbandry, animal health, and animal identification and traceability services under Component 1 will indirectly help to mitigate climate migration[56] and herder-farmer conflict (mainly through improved productivity, reduced resource-use intensity, and livestock security) thereby contributing to improved resilience of communities affected by conflict, Component 3 will address the most proximate causes of herder-farmer conflict: the declining quantity and quality of resources (water and rangeland) as a result of climate change, constrained mobility access to resources, and declining social cohesion. In line with the NLTP, support will be channeled through two subcomponents, presented below.

***Subcomponent 3.1: Support to Natural Resources Management and Pasture Improvement (US$70.0 million).***

31. Subcomponent 3.1 will finance investments to improve the quantity and quality of water and rangeland—resources that are critical for productive pastoral systems with increased climate resilience and carbon sequestration. It provides support to assess the current status of water and feed (including forage and fodder) using remote sensing technologies and tools such as the FAO feed balance methodology. The resulting information will be disseminated to guide decisions on improved feed and water management, utilization, and access. Subcomponent 3.1 will also finance the establishment and implementation of an inclusive, community-driven process by building capacity for climate-smart, sustainable rangeland/landscape management. All key users of grazing reserves and water will be involved in this process, which will establish clear conditions for accessing these natural resources and develop sound governance mechanisms to manage them. Effective land and resource governance systems will be instituted to promote careful management, encourage stewardship and restoration more broadly, and mitigate climate change impacts. Support will also be available for constructing and rehabilitating stock routes and water points, with the goal of improving this network and including areas that offer new rangeland/pasture. Committees will be established and supported to manage these investments sustainably. Subcomponent 3.1 will also finance the development of cultivated pasture, including facilities for irrigation in water-scarce environments.

32. Investments under this subcomponent will rely on community-driven development approaches and focus on rangeland restoration and improved water management to reduce climate migration and associated conflict. These investments will be coordinated with related/complementary activities under the proposed WBG-financed Agro-Climatic Resilience in Semi-Arid Landscapes Project (ACRESAL-P175237) where implementation areas overlap, particularly in rangeland improvement (as part of broader watershed management) and the provision of fodder from restored landscapes. All activities will be

[55] McGuirk, E.F., and Nunn, N., 2021. Transhumant pastoralism, climate change and conflict in Africa. National Bureau of Economic Research, 2021 - Climatic changes.
56 https://openknowledge.worldbank.org/handle/10986/36404

implemented through inputs-based financing. Besides increasing the amount and quality of grazing resources, which is a climate change adaptation measure, support for improved rangeland/pasture management will contribute to climate change mitigation through increased carbon sequestration above and below ground, as well as through reduced methane emissions from enteric fermentation, largely owing to improved pasture quality.

***Subcomponent 3.2: Support to Conflict Mitigation (US$30.0 million).***

33. This subcomponent provides support to increase capacity for conflict prevention and resolution, focusing on herder-farmer conflicts that are mainly driven by climate change-induced reduction in water and grazing resources, as well as impediments to livestock mobility, a key mechanism relied upon by herders to adapt to climate change by seasonally moving to areas with better pasture and water resources. Through activities at the local, national, and transnational level, this subcomponent seeks to: (i) mitigate the resource-based drivers of conflict and climate migration patterns; (ii) increase local capacity for conflict resolution; and (iii) facilitate policy dialogue to address the underlying drivers of conflict.

34. **Local level.** Subcomponent 3.2 will finance the establishment and support of local committees for conflict resolution and prevention and facilitate investments to alleviate pressure points. Local committees will build on existing formal and informal institutions and mechanisms of conflict resolution and receive training in conflict dialogue and resolution. Facilitators will support committees in mapping stakeholders, identifying sources of conflict (whether access to water or grazing land), and drawing on local ideas and knowledge to address them. In partnership with community committees, the LPRES Project will support community dialogue and activities to promote social cohesion between herders and farmers, anticipate and resolve potential conflicts, and strengthen peacebuilding. Herders and farmers will jointly identify potential pressure points to help prioritize investments and data needs. Small-scale investments prioritized through this dialogue will be financed under this subcomponent in consultation with communities, local authorities, and representatives of both farmer and pastoral communities. Examples of investments include the climate-smart construction and rehabilitation of critical infrastructure to secure livestock mobility and access to pastoral areas/grazing reserves along transhumance corridors and stock routes (for instance, the marking of corridors, development of rest areas, provision of shelters and feed storage facilities) and mechanisms to enforce regulations, which are all essential to support productive and resilient pastoral systems. To facilitate involvement of women in conflict committees, the project will provide training/advocacy against discriminatory attitudes towards women as well as support to reduce women's work burdens within households which are the key obstacles to their participation.

35. **National level.** The project will support the creation of early warning systems using remote sensing and spatial analysis to forecast forage conditions and water availability, enabling pastoralists and the government to take preemptive action to prevent conflicts that could be triggered because of diminishing water and forage resources due to changes in climate. This information will be disseminated through local committees to allow timely community responses. Under this subcomponent, the project will also support dialogue on gazetted grazing reserves and transhumance corridors to strengthen their management and statutory protections against encroachment as a way of ensuring continued livestock mobility in response to changes in climate. Financing will be provided to prepare feasibility studies on livestock insurance mechanisms to indemnify producers against livestock losses (through theft, for example), which are known to trigger conflict.

36. **Transnational level.** The project will finance the organization of a high-level dialogue on transboundary agreements on animal movement, which is a key climate change adaptation strategy in pastoral systems in response to climate change-induced seasonal availability of forage and water resources and a cause of conflict The objective is to ensure a coherent spatial approach and agreement between Nigerian states and between Nigeria and neighboring countries, including high-level dialogue with ECOWAS to establish consistent and coherent rules on movement of animals across borders. All activities will be implemented through inputs-based financing.

**Component 4: Project Coordination and Management (US$30.0 million)**

37. This component aims to ensure that programmed project activities are implemented in a timely and appropriate manner, with adequate support to overall project management, M&E, and communication. It will finance the creation and operation of a National Coordination Office in FMARD with the following main objectives: (i) ensuring effective strategic and operational planning, implementation, and M&E of the project, beginning with a baseline assessment to measure the project's progress and impacts; (ii) ensuring that all project funds are used efficiently, and coordinating project interventions implemented by participating stakeholders and partners; (iii) evaluating the project's mid-term and final results, outcomes, and impacts on beneficiaries; (iv) supporting states to meet the eligibility criteria for joining the project; (v) supporting and ensuring efficient knowledge management; and (vi) preparation and implementation of a communication strategy - to be detailed in the PIM - to support effective communication to various public and private entities on project activities, outcomes, best practices, and lessons learned. Staff training will include sessions on national climate change policies. Financing under this component will also be used to create State Coordination Offices (SCOs) to lead project implementation at the state level. All activities will be implemented through inputs-based financing.

**Component 5: Contingency Emergency Response Component (US$0.00 million)**

38. Given Nigeria's vulnerability to shocks, the proposed project includes a Contingency Emergency Response Component (CERC) with a zero-dollar allocation. The CERC provides a mechanism within the project to finance a response to a natural disaster, disease, or other eligible emergency, should one occur. This CERC is particularly critical in light of the unpredictable trajectory of the COVID-19 pandemic, the continuing threat of a desert locust invasion in West Africa, and the potential for drought or floods. If a crisis develops, FGN may request WBG to reallocate project funds to cover some of the costs of emergency response and recovery. All expenditures under this CERC will be in accordance with paragraphs 11, 12, and 13 of WBG OP10.00. Expenditures will be appraised and reviewed to determine if they are acceptable to the World Bank before disbursement is made. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, recovery, and reconstruction.

## ANNEX 4: Implementation Arrangements and Support Plan

### A. Project Implementation Arrangements

1. Project implementation will be the joint responsibility of FMARD and the State Ministries of Agriculture and Rural Development (SMARD) in participating states, with a division of labor that is consistent with the provisos of the country's federal governance system regarding the jurisdictions and mandates of these ministries. Beyond its responsibility for overall oversight and coordination of the LPRES Project, FMARD will lead the execution of project activities with national import, as well as activities for which coordination and collaboration between states is a precondition for success. Participating states will be responsible for implementing state-specific activities. At both FMARD and SMARD levels, implementation of project activities will be mainstreamed into relevant departments. The FMARD departments that will be fully involved in implementation include DAHS, Department of Veterinary Services (DVS), Projects Coordinating Unit (PCU), Agri-Business and Market Development Department (ABMD), Agriculture Land and Climate Change Department, Farm Input Support Department, Extension Services Department, and Planning and Policy Coordination Department (P&PC).

2. The roles and responsibilities of FMARD include: (i) fulfilling LPRES effectiveness conditions; (ii) approval of terms and conditions for employment of NCO and SCO staff; (iii) transfer on a quarterly basis and in advance the FGN contribution to the NCO as determined from the approved consolidated AWPBs; (iv) authorization of applications for replenishment of the Designated Account (DA), direct payment, and reimbursement; and (v) endorsement of annual audit reports.

3. To provide strategic guidance for the project and to promote the sharing of experiences across participating states, a National Steering Committee (NSC) will be established in Abuja. The NSC will comprise the Minister FMARD as Chairperson, representation from the Federal Ministry of Finance, Ministry of Industry, Trade and Investment, Ministry of Water Resources, Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), Ministry of Women Affairs and Social Development, National Agency for Food and Drug Administration and Control (NAFDAC), Nigerian Institute of Animal Science (NIAS), Veterinary Council of Nigeria (VCN), National Animal Production Research Institute (NAPRI), National Veterinary Research Institute (NVRI), State Ministries of Agriculture, private-sector representatives and the head of the implementation unit of the Development Finance Project as discussed here under.

4. The NSC will: (i) set the overall policy guidelines and directions of the project; (ii) ensure support for the project from all stakeholders and relevant constituencies; (iii) approve the project's annual work plans, including operations and budgets; (iv) review and approve proposed major changes in project activities/components and budgets; (v) monitor the project's progress, including procurement and FM performance and achievement of overall objectives; (vi) review and approve quarterly, mid-year, and annual progress reports, as well as the final results and conclusions after project completion; and (vii) facilitate and promote coordination among the various agencies involved in project implementation inside and outside government; and (viii) approve amendments to the PIM, in consultation with the WBG. The NSC will meet every six months, and the NCO will act as its secretariat. The NSC will have as a subcommittee a National Technical Committee (NTC), which will be responsible for providing technical guidance to implementation. Membership of the NTC will comprise senior staff from FMARD technical

departments including DAHS, DVS, PCU, P&PC, FDA, Agricultural Land and Climate Change, ABMD, Extension Services, Farm Input Support, and Reform Coordination.

5. An NCO will be established in the FMARD DAHS, Abuja to ensure project coordination and liaison with stakeholders at the federal and state levels. The NCO will be headed by an NPC to be designated by the Minister, FMARD from amongst government staff. The NCO will be staffed with a competitively recruited Procurement Specialist (responsible for the efficiency and timeliness of project procurement); FM Specialist (responsible for tracking project accounts and associated reporting); Environment and Social Safeguards Specialist (responsible for oversight of safeguards compliance); and an M&E Specialist (responsible for overall project monitoring and quarterly and annual technical progress reporting). Other key NCO staff will include technical specialists in animal health, animal husbandry, gender, extension, smallholder commercialization, value chain improvement, conflict management, and communication. Most of these technical staff will be seconded to the NCO from within FMARD, although on an exceptional basis, some of these positions could be filled by competitively selected consultants where there is no in-house expertise.

6. The NCO will be responsible for supervising project implementation; ensuring technical quality of project activities; ensuring project compliance with environmental and social safeguard requirements; ensuring reporting and M&E of project performance; providing technical support and backstopping to the SCOs; preparing and seeking approval of the consolidated AWPB and Procurement Plan (including facilitating states to prepare their portions); assisting lagging states interested in participating in the project to meet the eligibility criteria; overseeing all procurement activities under the project and ensuring that all procurement and contracting arrangements are executed according to WBG guidelines; managing project funds, including disbursing, accounting, and preparing IFRs and financial statements; preparing Terms of Reference (ToRs)/specifications of activities outsourced to external service providers; and handling and supporting all World Bank missions. The Project Coordination Unit of FMARD will ensure intra-ministerial coordination of the project as is the case with other donor financed projects in FMARD.

7. At the state level, SCOs will be established under the state-level Departments of Animal Production and Husbandry Services. They will be headed by a State Project Coordinator (SPC), and will also have, as key staff, an Animal Health Specialist, Animal Husbandry Specialist, Range and Natural Resource Management Specialist, Value Chain and Economic Partnership Development Specialist, M&E Specialist, Procurement Specialist, Environmental Safeguards Specialist, Social Safeguards Specialist, GBV Specialist, and FM Specialist. The SCO will be responsible for supervising the timely formulation and implementation of the state project activities with all due diligence and efficiency; reviewing all project activities to ensure that they are technically, socially, environmentally, and economically sound; monitoring project results and impacts on the various stakeholders and coordinating evaluation functions at the state level; assessing training needs and coordinating capacity building/training for relevant staff; developing and coordinating the approach for targeting project beneficiaries at the state level; developing state-level AWPBs and Procurement Plans; managing project funds, including disbursing, accounting, and preparing IFRs and financial statements for auditing; managing the state M&E system; and preparing ToRs/specifications for activities outsourced to public or private service providers.

8. At the state level, there will be a State Steering Committee (SSC) chaired by the Commissioner of Agriculture with the following roles: (i) providing strategic orientation, policy guidance, and direction for the project at the state level; (ii) ensuring that all project activities meet minimum requirements in terms of consistency with sector policies, standards, and general priorities to ensure speedy delivery of the

interventions funded by the project; (iii) mobilizing the state government and local administrations in support of the project; (iv) ensuring coordination between the project and other development programs and stakeholders working in the same areas, and facilitating implementation when blockages in implementation occur; (v) reviewing and approving the state annual work plans for the project, including proposed operations and estimated budgets; (vi) reviewing and approving state annual Procurement Plans; and (vii) reviewing and approving state technical and financial reports. The SSC will convene every quarter or at any other earlier time as dictated by circumstances.

9. There will also be a State Technical Committee (STC) to provide technical backstopping to the SCO, endorse AWPBs prior to submission to the SSC, and ensure that project implementation is carried out in a way that is consistent with the AWPB. The STC will be chaired by the Permanent Secretary of SMARD and will meet once every month and/or at any other time determined by the Chair to assess implementation progress. Membership of the STC will include the Permanent Secretaries responsible for Water, Trade and Investment, Environment, Interior, heads of relevant departments in SMARD, herders' and farmers' representatives/unions, and the private sector.

10. Development Bank of Nigeria (DBN) will be responsible for the implementation of subcomponent 2.2 (Support to Increased Access to Finance). DBN will sign a memorandum of understanding with FMARD that outlines key implementation modalities of this subcomponent. This will be complemented by a subsidiary loan agreement that identifies terms and conditions for the financing that is extended under this subcomponent. The DBN is experienced in managing donor funded projects including with the World Bank through the active Development Finance Project 'DPF' (P146319). The DPF's project implementation unit has adequate capacity to manage this subcomponent and will leverage DBN's capacity including the technical staff for investment and risk management as well as other expertise in areas of procurement, financial management, environment and social safeguards, and M&E. The head of DPF's implementation unit will be part of the NSC to ensure smooth implementation.

11. Figure A4.1 depicts the institutional arrangements and relationships for the project. The division of implementation responsibilities between FMARD and SMARD is presented by project activity and component in Table A4.1.

**Figure A4.1: Institutional arrangements for the LPRES Project**

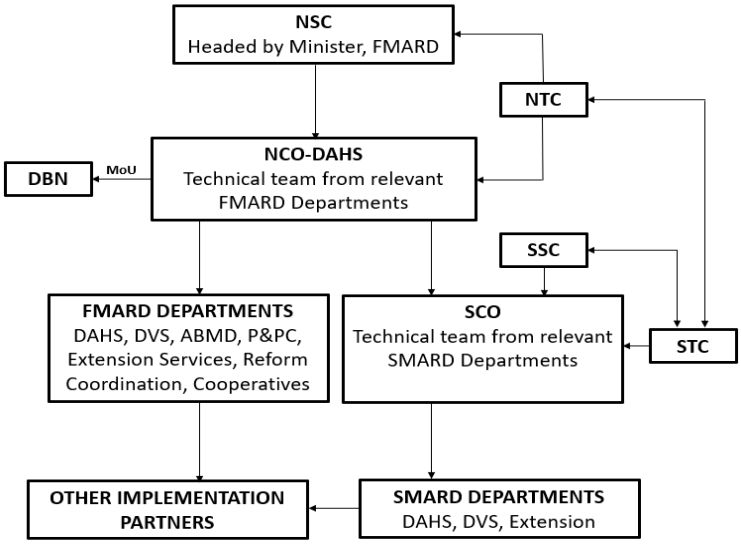


**Table A4.1: Division of implementation responsibilities between FMARD, SMARD and DBN by key activity and component, LPRES Project**

| Component | Subcomponent | Activities | Primary Responsibility of | | |
|---|---|---|---|---|---|
| | | | FMARD | SMARD | DBN |
| Institutional and Innovation System Strengthening | Support to Policy Formulation, Planning and Capacity Strengthening | Preparation of Livestock Master Plan | X | - | - |
| | | Strengthening policy and regulation formulation, harmonization, and enforcement in the sector | X | - | - |
| | | Establishment of a livestock data and market information system | X | - | - |
| | | Undertake preparatory activities for a national livestock census | X | - | - |
| | | Mainstreaming climate change adaptation and mitigation objectives across relevant policies | X | - | - |
| | | Undertaking studies to improve selected value chains' regulatory and incentive framework | X | - | - |
| | | Capacity strengthening of FMARD and relevant institutions | X | - | - |
| | | Strengthening of national livestock inputs and products quality control facilities | X | - | - |
| | Support to Animal Husbandry and Advisory Support Services | Development of a genetic resource management strategy | X | - | - |
| | | Establishment of artificial insemination and breed improvement centers | - | X | - |
| | | Development of livestock extension protocol | X | - | - |
| | | Training and capacity building of state-level extension agents | - | X | - |
| | | Establishment of Farmer Field Schools | - | X | - |
| | | Development of tools and mechanisms to facilitate digital extension services | X | - | - |
| | Support to Animal Health Services Strengthening | Improving the organization and procedures of national veterinary services | X | - | - |
| | | Development of Disease surveillance, and control/eradication programs | X | - | - |
| | | Control of veterinary drugs and medicinal products quality | X | - | - |
| | | Implementation of disease surveillance, and control/eradication programs | | X | - |
| | | Establishment of One-Health platforms at sub-national level | - | X | - |
| | | Creation of enabling environment for private veterinarians/sanitary mandate | X | - | - |
| Livestock Value Chain Enhancement | Support to Markets and Market Linkage Development | Organization and capacity strengthening of producers for improved market access | - | X | - |
| | | Development of an online market information system | X | - | - |
| | | Upgrading/establishment of livestock markets | - | X | - |
| | | Upgrading a network of strategic abattoirs | - | X | - |
| | Support to Increased Access to Finance | Support to BDS | - | X | - |
| | | Line of credit | - | - | X |
| | | Risk sharing facility | - | - | X |
| | | TA for commercial banks and other non-bank financial institutions and lenders | - | - | X |
| | Support to | Conducting detailed LSC engineering and | - | X | - |

| | | | | | |
|---|---|---|---|---|---|
| | Selected Livestock Service Centers | financial feasibility studies | | | |
| | | Design and supervision of works | - | X | - |
| | | Provision of selected catalytic goods and services | - | X | - |
| **Crisis Prevention and Conflict Mitigation** | Support to Natural Resource Management and Pasture Improvement | Assessment of state of natural resources (feed and water) in the country | X | - | - |
| | | Implementation of local community-driven sustainable rangeland management | - | X | - |
| | | Construction and rehabilitation of water points | - | X | - |
| | | Cultivated pasture development | - | X | - |
| | Support to Conflict Mitigation | Development of governance mechanisms for accessing grazing areas | X | - | - |
| | | Establishment of national and local level committees for conflict mitigation | X | - | - |
| | | Capacity building for livestock and farmer community leaders in conflict resolution | - | X | - |
| | | Organization of dialogue on trans-boundary agreements on animal movement | X | - | - |
| | | Construction and rehabilitation of critical infrastructure along stock routes | - | X | - |
| | | Development of early warning systems for crisis prevention | X | - | - |
| | | Feasibility studies on livestock insurance mechanisms | X | - | - |
| **Project Coordination and M&E** | Communication | | X | X | - |

## B. Fiduciary

### Financial Management

12. The FM arrangements of the implementing entities for the proposed project were assessed in September 2021 in line with the Financial Management Manual (March 1, 2010) and AFTFM Financial Management Assessment and Risk Rating Principles (October 2010). The assessment sought to determine whether the implementing entities have acceptable arrangements in place to satisfy FM requirements under the World Bank Policy and Directives for IPF and ensure: (i) that all transactions and balances relating to the project are correctly and completely recorded; (ii) the preparation of regular, timely, and reliable financial statements; (iii) safeguarding of the project assets; and (iv) the existence of auditing arrangements acceptable to the World Bank.

13. Table A4.2 summarizes the results of the assessment. The initial overall FM risk for the project is assessed as **Substantial**.

**Table A4.2: Financial management risks and mitigation measures identified for the proposed LPRES Project**

| Risks | Mitigation Measures | Initial risk | Residual Risk |
|---|---|---|---|
| **A. INHERENT RISKS** | | | |
| **Country level**<br>Funds may not be used in efficient, accountable, and transparent way. | In 2017 FGN launched the National Economic Recovery and Growth Plan (ERGP) 2017–20 to restore macroeconomic stability in the short term. Governance is among the main pillars of the ERGP, which commits to transparency and | High | Substantial |

| | | | |
|---|---|---|---|
| | anti-corruption, public service reform, and inter government coordination and delivery.<br>Reforms in public financial management (PFM) have been supported by the World Bank under SEEFOR (P121455), SLOGOR (P133045), and PSRGDP. Continuing support for PFM reforms is provided under the SFTAS (P162009) program involving all 36 states.<br>Robust FM arrangements (FPFMD and PFMUs) designed to mitigate country level risk have been established at the federal and state levels. | | |
| **Entity level**<br>Weak institutional capacity to implement the project components, effectively monitor progress, and embrace full accountability for results exposes the project to significant risks related to funds flow risks and follow-up on implementation. | The project will be implemented in the states by the SCOs and by the NCO at the federal level. A steering committee (NSC) will be established at the federal level to ensure overall project supervision and offer strategic policy guidance to the project. In each participating state, a technical committee (STC) will be established to offer oversight, policy, and strategic orientation to the project. | Substantial | Moderate |
| **Project level**<br>Project implementation hampered due to conflict/security concerns in participating states. | Project Component 3 supports conflict mitigation. | Substantial | Moderate |
| **OVERALL INHERENT RISK** | | **Substantial** | **Moderate** |
| **B. CONTROL RISKS** | | | |
| **Budgeting**<br>Failure to properly prepare comprehensive budget and effectively monitor performance of same | Project budgeting is to be synchronized with the timeline for the FGN budget process, taking into account all entities participating in the project.<br>Budget execution will be monitored through calendar semester unaudited IFRs.<br>Computerized accounting system will include a budget module. | Substantial | Moderate |
| **Accounting**<br>Failure to adequately account for project funds and provide full supporting documentation. | Accounting and internal control procedures established and documented in project Financial Procedures Manual (FPM).<br>Robust FM arrangements at NCO and SCOs. | Substantial | Moderate |
| **Internal controls**<br>Inadequate documentation of transactions and failure that funds are used for the intended purposes with economy and efficiency. | Internal control is strengthened by using the PFMU/FPFMD arrangement – the arrangement features strong controls.<br>Robust FPM, and staff familiar with the FPM.<br>Independent and effective internal audit and risk management.<br>Implementation of enhanced project accountability framework. | High | Substantial |
| **Funds flow**<br>Delay in funds flow to PFIs and failure of government to provide | Qualified and experienced DBN staff dedicated to handle funds flow to PFI.<br>Commitment of Govt to make the counterpart | Substantial | Moderate |

| | | | |
|---|---|---|---|
| counterpart funds. | funds available | | |
| **Financial reporting**<br>Delayed submission of financial reports of acceptable quality. | Project financial reporting guidelines included in the FPM.<br>Use of computerized accounting system to generate financial reports | Moderate | Moderate |
| **Auditing**<br>Delay in submission of audit report and unacceptable audit report. | Private sector audit firm selected from the list of acceptable firms will be hired to carry out an independent external audit of project financial statements based on ToRs acceptable to IDA. | Moderate | Low |
| **OVERALL CONTROL RISK** | | **Substantial** | **Moderate** |
| **OVERALL PROJECT FM RISK** | | **Substantial** | **Moderate** |

14. The PFMUs and FPFMD are established in all states and federal level respectively through the joint efforts of the World Bank and government. These units are presently supporting the implementation of a number of Bank-financed projects. The financial accountability framework in the PFMUs and FPFMD feature among other things the following: (i) all the key elements of FM, including: budgeting, funds flow, accounting, internal control, reporting and audit; (ii) computerized accounting system and robust FM procedures manual; (iii) qualified staff that are well-trained in relevant Bank procedures and requirements, including procurement; (iv) robust segregation of functions/duties; (v) a strong control environment, which is required to mitigate fiduciary risks; (vi) highly independent and well-trained internal auditors; and (vii) full alignment with the government's own FM system, with some important enhancements and controls.

15. Recent WBG reviews of the PFMUs and FPFMD find their performance to be largely satisfactory. The key issues noted in these reviews were unretired advances and inadequate documentation of eligible expenditures incurred. To mitigate the risks of unretired travel advances, the provision of inappropriate documentation to acquit travel advances, and unjustifiable claims for travel not undertaken, the project will implement an accountability framework enhanced with additional oversight measures to forestall such occurrences. The details of the enhanced accountability framework will be set out in the Financial Procedures Manual (FPM).

16. **Planning and budgeting.** On an annual basis, the Project Accountant working under the supervision of the Head FPFMD and Head PFMU at NCO and the SCOs, respectively, will consult with key members of the implementing office to prepare the budget for the fiscal year, based on the approved work plan. A Budget Committee will be established to coordinate budget preparation and tracking of financial performance. The budget will be submitted to the WBG at least two months before the beginning of the project fiscal year. DBN will implement similar procedures for planning and budgeting. The FPM will provide details on the institutional roles, timeline, and procedures for planning and budgeting.

17. **Funds flow.** Project funding comprises an IDA Credit and government counterpart funding. IDA will disburse the Credit through DAs opened with CBN at the federal level (in line with FGN TSA directives) and reputable commercial banks acceptable to IDA at the state level. A hybrid form of funds flow and disbursement arrangement (Figure A4.2) which includes PBCs will apply to the project based on respective components. Subcomponent 1.1: Support to Policy Formulation, Planning and Capacity Strengthening – PBC based: i) preparation of a comprehensive Livestock Master Plan; and ii) development of national livestock sub-sector policies on feeding, breeding, dairy, and animal health; Subcomponent 1.3: Support

to animal health services strengthening – PBC based: i) Establishment of sanitary mandate program; and Sub-component 2.3: Support to Selected Livestock Service Centers – PBC based.

**Table A4.3. Performance Based Conditions Expenditure Composition**

| Sub-component/Activity | Description of PBC-based expenditures | Verification Protocol |
|---|---|---|
| **Sub-component 1.1:** Support to Policy Formulation, Planning and Capacity Strengthening: **US$15m** | Preparation of a Comprehensive Livestock Master Plan (LMP): **US$1.5m** | **Year 1**:<br>IVA reviews the LMP Preparation Plan to verify that it consists of the elements described and has been adopted by the Minister of FMARD<br>IVA reviews supporting documentation for the competitive selection of lead consulting firm<br>**Year 2**:<br>IVA reviews records of the process for preparing the LMP, including adherence to the consultative process outlined in the LMP Preparation Plan, records of the workshops (attendance lists with names, emails and phone numbers, and written proceedings), documentation of the peer review process (peer reviewer comments and responses to the comments by the lead consulting firm and FMARD)<br>IVA randomly calls at least 10 percent of participants to the consultative workshops to authenticate the records<br>**Year 3**:<br>IVA reviews documentation of approval of LMP by the Minister of FMARD |
| | Development of livestock sub-sector policies on National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy: **US$55,115** | Year 1:<br>IVA reviews the Sub-sector Policy Preparation Plan to verify that it consists of the elements described and has been adopted by the Minister of FMARD<br>**Year 2:**<br>IVA reviews records of the process for preparing the sub-sector policies, including adherence to the consultative process outlined in the Preparation Plan, records of the workshops (attendance lists with names, emails and phone numbers, and written proceedings), and documentation of the review process<br>IVA randomly calls at least 10 percent of participants to the consultative workshops to authenticate the records<br>IVA reviews hard copies of the 4 draft sector policies (National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy)<br>**Year 3:**<br>IVA reviews documentation of approval of the 4 sector policies (National Animal Feed Policy, National Dairy Policy, National Animal Breeding Policy and National Animal Health Policy) by the Minister of FMARD |
| **Sub-component 1.3:** Support to Animal Health Services Strengthening: **US$40m** | Support to Private Veterinary Practice Programme: **US$6,504,390** | **Year 1**:<br>IVA reviews the Private Veterinary Practice Programme Implementation Plan to verify that it consists of the elements described and has been adopted by the Minister of FMARD<br>**Year 2**:<br>IVA reviews records of the number of private veterinarians engaged in the programme at state level, including names of veterinarians, certificate/license to practice, physical addresses, phone numbers, emails, number of livestock visited, names of farmers visited, contacts for farmers (physical address, phone numbers, email)<br>IVA conducts random field visits to at least fifty percent of the private |

| | | |
|---|---|---|
| | | veterinarians to authenticate the records<br>IVA conducts random field visits to at least fifty percent of the farmers visited to authenticate the records<br>**Year 3**:<br>IVA reviews records of the number of private veterinarians engaged in the support programme at state level, including names of veterinarian, certificate/license to practice, physical addresses, phone numbers, emails, number of livestock visited, names of farmers visited, contacts for farmers (physical address, phone numbers, email)<br>IVA conducts random field visits to at least fifty percent of the private veterinarians to authenticate the records<br>IVA conducts random field visits to at least fifty percent of the farmers visited to authenticate the records |
| **Sub-component 2.3:** Support to Selected Livestock Service Centers: **US$45m** | Establishment of 2 Livestock Service Centers (LSCs): **US$18,000,000** | **Year 1**:<br>IVA reviews supporting documentation for the gazettement of land to establish LSC, size of land, and safeguards screening checklist, compensations of land users, and the establishment and composition of committee to review LSC design<br>IVA reviews employment contracts to verify the recruitment of key staff and meets with the staff to authenticate the records<br>IVA reviews the LSC design and documentation of its approval and the 3-year action plan and documentation of its approval<br>**Year 2**:<br>IVA visit the LSC to verify that the following basic infrastructure is in place: Perimeter Fencing and or Trenches, Road Network, Power Supply, Water Supply, Waste Management Facilities, Security Facilities, and Drainage System.<br>**Year 3**:<br>IVA visit the LSC to verify that the following Livestock husbandry and health facilities are installed: Animal Husbandry Advisory Services Centre, Breed Improvement Centre, Feedlot Facilities, Fodder and Fodders Value Addition Facilities, Veterinary Clinic, Quarantine Facilities and Incinerator<br>IVA visit the LSC to verify that the following value addition facilities are installed: Meat Processing and Storage Facilities, Milk Collection Centre, Hide and Skins Collection and Handling Centers<br>IVA visit the LSC to verify that the following marketing facilities are installed: Livestock Market Barns, Lairage and Chutes, Loading Bay, Cloak and Stores<br>**Year 4:**<br>IVA reviews documentation and visits the LSC to verify number of livestock-affiliated businesses established within the LSC<br>IVA reviews documentation and visits the LSC to verify number of registered livestock farmers/herders accessing services within the LSC |

18. The specific banking arrangements are as follows:

**NCO:**

- A segregated DA denominated in US dollars in which initial deposit and replenishments from IDA funds will be credited in respect of activities implemented by NCO.
- A segregated DA denominated in US dollars in which the initial deposit and advances from IDA will be credited in respect of activities implemented by DBN. This DA is a pass-through account

not subject to approval by the FMARD authorizing environment and the funds would be transferred within 14 days of receipt in the account to DBN's naira current account.

- One segregated current (draw-down) account denominated in Nigerian naira to which draw-downs from the two DAs will be credited in respect of incurred eligible expenditures for NCO and for transfer to the DBN current account. Thereafter the DBN will submit records evidencing eligible expenditures for documentation.
- One current (project) account denominated in Nigerian naira into which government counterpart funds will be deposited.

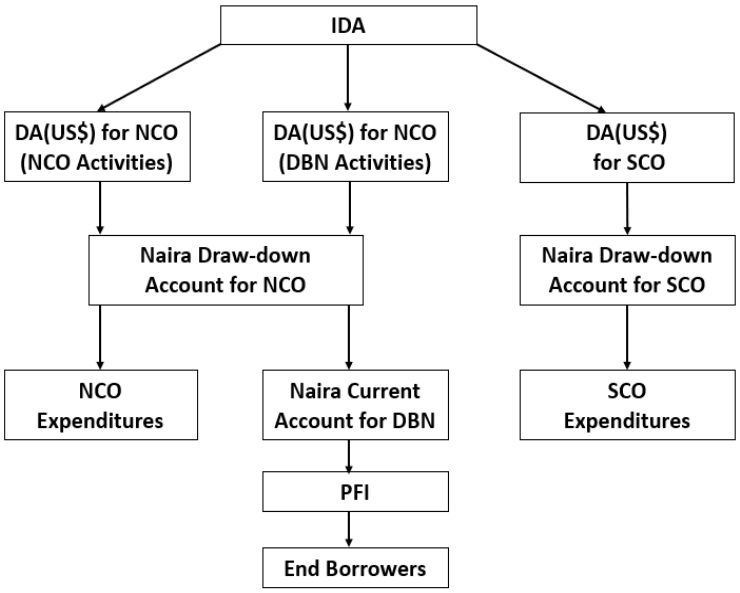
**SCO:**

- A segregated DA denominated in US dollars in which initial deposit and replenishments from IDA funds will be lodged.
- One segregated current (draw-down) account denominated in Nigerian naira to which draw-downs from the DA will be credited in respect of incurred eligible expenditures, maintaining balances on this account as close to zero as possible after payments.
- One current (project) account denominated in naira to which Government counterpart fund will be deposited.

**DBN:**

- One current account denominated in Nigerian naira to which draw-downs from the DA managed by NCO for DBN activities will be credited in respect of incurred eligible expenditures.

**Figure A4.2: Funds Flow Arrangements for the LPRES Project**




19. All bank account ledgers will be reconciled with bank statements every month, and any differences that are identified will be investigated expeditiously. The bank reconciliation procedures will be documented in the FPM. The NCO, and SCOs, will be responsible for preparing and submitting Withdrawal Applications to the World Bank. Withdrawal Applications will be supported by bank statements and a reconciliation of the DA and any other supporting documents as required.

20. **Accounting.** To account for IDA funds, the project will use accrual-basis accounting following International Public Sector Accounting Standards (IPSAS), which Nigeria adopted in 2016. Annual financial statements will also be prepared in accordance with accrual-basis IPSAS. The project will employ a computerized accounting system that incorporates a Chart of Accounts for recording and reporting expenditures by category, component, subcomponent, and activity. All accounting and control procedures will be documented in the FPM, a living document that will be updated regularly as appropriate by the project and shared with the World Bank for review and clearance.

21. **Financial reporting.** Within the DBN, NCO, and SCOs, the project coordinators will ensure that project accountants prepare the required financial reports on a timely basis. In compliance with government requirements, monthly returns will be made to the Accountant General of the State and Federation respectively for incorporation into the government accounts. Unaudited IFRs will be prepared by NCO, and SCOs on a calendar semester basis and submitted to the World Bank within 45 days of the end of the relevant semester. The NCO will prepare consolidated IFR covering the two DAs – DA for NCO activities and DA for DBN activities.

22. **Internal control.** Internal controls in place at the PFMUs, FPFMD, and DBN are adequate but will be strengthened. The control features at PFMUs and FPFMD include a framework manual of FM procedures adapted for each WBG-financed project; qualified personnel who are well trained in the relevant WBG procedures and requirements, including procurement; segregation of functions/duties; and highly independent and well-trained internal auditors. The FM staff are nominated by each State Accountant-General and the Accountant General for the Federation and subject to clearance by the World Bank. The FM staff for Subcomponent 2.2, to be implemented by DBN, will be designated by DBN.

23. **Internal audit.** DBN, NCO, and SCOs have independent and effective Internal Audit Units. The work programs of the assigned internal auditors will include periodic reviews of the project's activities. The project will provide training in the risk-based internal audit (RBIA) methodology that the internal auditors will utilize to carry out the traditional compliance audit and the non-financial or operational internal audit without adopting the pre-payment audit system. Under the State's Fiscal Transparency, Accountability and Sustainability Program (P162009), capacity building in RBIA is being provided to internal auditors in some pilot states.

24. Each SCO and the NCO will prepare annual project financial statements and appoint their own auditors. Consolidated annual accounts (comprising the two DAs managed by NCO) will be prepared for the NCO. The SCOs will prepare separate annual accounts. The annual financial statements will be audited by an independent external auditor appointed by the SCOs and NCO on the basis of ToRs acceptable to IDA. The auditor will express an opinion on the annual financial statements in compliance with the International Standards on Auditing. In addition to the audit report, the external auditors will prepare a Management Letter. Copies of the audited financial statements along with the Management Letter will be submitted to IDA not later than six months after the end of each financial year.

25. In addition to the annual financial audits, technical audits will also be conducted. Technical audits will be conducted on the Works contracts and performed by subject matter experts. The technical audits will focus on the Works contracts with a view to ascertaining technical quality, economy, and efficiency in use of project resources.

26. **Disbursements.** The project will use the transaction -based disbursement method and not report-based disbursement at effectiveness. Use of the transaction-based disbursement method will be

augmented with enhanced controls which will include acceptable justification for additional advances and regular submission of documentation for incurred eligible expenditures. When project implementation begins, the World Bank will review and monitor the performance of the fiduciary arrangements in place. The Bank team may recommend conversion to report-based disbursement based on assessment of performance and demonstrated capacity for adhering to the principles of report-based disbursement. Details on the disbursement arrangement will be in the Disbursement Letter.

27. **Disbursement categories.** Table A4.4 presents the expenditure to be financed out of the Credit proceeds for each component of the project.

**Table A4.4: Allocation of Credit proceeds to eligible LPRES Project expenditures by component**

| Component | Amount of credit allocated (US$) | Percent of expenditures to be financed (inclusive of taxes) |
|---|---|---|
| Institutional and Innovation System Strengthening | 95,000,000 | 100 |
| Livestock Value Chain Enhancement | 275,000,000 | 100 |
| Crisis Prevention and Conflict Mitigation | 100,000,000 | 100 |
| Project Coordination and Management | 30,000,000 | 100 |
| Contingency Emergency Response | 0 | |
| **TOTAL** | 500,000,000 | |

### Financial Management Action Plan

28. Table A4.5 summarizes actions to be taken to strengthen the project's FM system.

**Table A4.5: Financial Management Action Plan, LPRES Project**

| Action | Due date | Responsible entity |
|---|---|---|
| Agreement on format of IFRs and External Auditors ToRs | Before effectiveness | FPFMD/NCO, SCO/PFMU, and DBN |
| Train designated PFMU and FPFMD staff in World Bank FM procedures and Disbursement Guidelines | Before effectiveness | IDA |
| Appoint external auditor | Within 90 days after effectiveness | FPFMD/NCO, SCO/PFMU, and DBN |
| Designate Project Accountant, Project Internal Auditor, and support accounting technicians | Signing of Financing Agreement | FPFMD/NCO, SCO/PFMU, and DBN |
| Agreement on Memorandum of financial services and service standards | Before effectiveness | FPFMD/NCO, SCO/PFMU, and DBN |
| Chart of Accounts of existing computerized accounting system updated to include project components and subcomponents | Within 90 days after effectiveness | FPFMD/NCO, SCO/PFMU, and DBN |
| Prepare Financial Procedures Manual (FPM) | Effectiveness Condition | FPFMD/FPMU and NCO/SCO |

**Financial Management Implementation Support Plan**

29. Supervision of FM will follow a risk-based approach and will involve collaboration with the World Bank project team, WFCAS, and procurement. Given that FM risk is assessed to be Substantial and that mitigation measures must be implemented in a timely, sustained manner to achieve a residual risk rating of Moderate, on-site supervision will be carried out at least twice a year. On-site review will cover all aspects of FM, including internal control systems, the overall fiduciary control environment, transaction tracing from bidding to disbursement, and reviews of Statements of Expenditure. Additional supervision activities will include desk review of IFRs, quarterly internal audit reports, audited annual financial statements and Management Letters, timely follow-up on issues that arise, and updates of Implementation Status Reports and the FM system. The World Bank project team will monitor the timely implementation of the Action Plan. Risk will be continually reassessed during implementation as performance is reviewed, and the supervision plan will be adjusted to reflect any changes in the level of assessed risk.

**Procurement**

21. Procurement activities for the project will be carried out in accordance with procedures specified in the "World Bank Procurement Regulations for IPF Borrowers" (July 2016, revised in November 2017, August 2018, and November 2020); the World Bank "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants" (October 2006, revised in January 2011 and July 2016); and provisions stipulated in the Financing Agreement. The national procurement procedures will apply to the project.

22. Each implementing agency at the federal and state level, including DBN will be responsible for conducting its own procurements based on approved consolidated Procurement Plans and budget cash flow. The Procurement Regulations do not apply to the procurement of Goods, Works, Non-consulting Services, and Consulting Services financed by the Bank through loans made by eligible financial intermediaries to private borrowers. Accordingly, Sub-component 2.2: Support to Increased Access to Finance (US$70 million) to be implemented through input-based financing will be undertaken by the respective beneficiaries in accordance with well-established private sector procurement methods or commercial practices that shall be acceptable to the Bank. The acceptability of the Procurement Policies and practices of the beneficiary SMEs will be determined when the SMEs are identified

23. The procurement activities of the project at the federal and state levels will be implemented within the existing structure of the procurement function of each implementing agency. Considering the capacity limitations of the implementing agencies, the National and State Coordination Offices to be established at the federal and states levels and housed by the core implementing agencies (FMARD Livestock Agencies/Bureaus) will include procurement professionals who will provide hands-on assistance on procurement; build the capacity of procurement staff before credit effectiveness; and prepare a Procurement Manual (to form part of the PIM) that provides step-by-step procedures for the execution of procurement activities under the project. FMARD in addition to its own procurement shall aggregate and procure strategic and specialized procurements, such as vaccines, vehicles, and other specialized laboratory and field equipment on behalf of other implementing agencies. The Procurement Officers who will be posted by the Bureau of Public Procurement (BPP) to the NCO and those to be posted to the SCOs by their respective State Procurement Agencies, will have to be cleared by the WBG, which will ensure that the officers possess the requisite academic and professional procurement experience.

24. Procurement Officers cleared by the WBG will not be posted out of the project by their Procurement Agencies, to ensure continuity of the Procurement Officers benefiting from capacity building being provided by the WBG. The NCO will hire an experienced Procurement Consultant through a competitive process. The consultant will assist in building the capacity of the Procurement Officers and members of the NCO. The consultant will also provide procurement support to participating states when necessary.

25. Procurement (of Works, Goods, and Non-Consulting Services) and Consultant Selection methods, prequalification, estimated costs, prior review requirements, and timeframes will be agreed upon and reflected in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect actual project implementation. The World Bank's Standard Procurement Documents (SPD) or National Standard Bidding Documents satisfactory to the Bank will be used. To the extent practicable, the WBG Standard Procurement Documents for Works, Goods and Non-Consulting Services and Standard Request for Proposals, as well as all standard evaluation forms, will be used throughout project implementation.

26. The main procurement risks and weaknesses identified include a lack of: (i) sustainable procurement capacity in each of the agencies; (ii) experience with the new Procurement Framework; and (iii) understanding of the preparation of the Project Procurement Strategy for Development (PPSD). Although significant procurement training has been provided under other World Bank-financed projects, it did not cover the new procurement guidelines and procedures. Procurement decisions and payments were delayed due to increased approval thresholds. Not all of the implementing agencies are familiar with the World Bank Procurement Framework that will be used for the proposed project.

27. The Project will strengthen procurement capacity in the implementing agencies with additional personnel, who will remain in place during the technical assistance and project implementation. The Procurement Officers will provide training for the project staff and maintain a well-functioning procurement records management system. The WBG will provide hands-on support and procurement capacity building during implementation support missions, and it will also provide training on the use of Systematic Tracking of Exchanges in Procurement (STEP). The Task Team will also conduct enhanced fiduciary and integrity training on a regular basis for staff of all implementing agencies at the federal and state level and institute third-party monitoring and supervision of construction contracts and of investment subprojects selected for funding. The project team will include in the PIM a requirement for a legally binding Code of Conduct to be signed by all project staff and members of the evaluation committees. Additionally, the project will expand ToRs for the external and internal audits to include review of a wide spectrum of contracts, using a risk-based approach, and an action plan to remedy any irregularities. The Task Team will also develop specific measures to enhance contract management practices, including a list of procurement and contract execution "red flags" and information about what the WBG considers to be sanctionable practices. This approach will enable the Task Team to monitor specific weaknesses and make the NCO and SCOs more accountable for providing accurate and timely information about how potential integrity risks are being managed.

28. Based on the considerations summarized here, procurement risk for the proposed project is rated **Substantial**. After implementation of the mitigation measures, the procurement risk is expected to be reduced to Moderate. Table A4.6 presents the agreed action plan for mitigating procurement risk.

**Table A4.6: Procurement risk mitigation measures for the LPRES Project**

| Risks | Mitigation measure | Responsible entity | Due date |
|---|---|---|---|
| Weak procurement capacity in each of the implementing agencies | Assign experienced Procurement Officers to complement the procurement capacity in the project implementation entities at the federal and participating state level | BPP | Immediately after project effectiveness |
| Inadequate experience with the new Procurement Framework | Train the procurement staff of federal and state project implementation entities in the World Bank Procurement Framework through face-to-face sessions and online | All project implementation entities | Immediately after project effectiveness |
| Lack of experience in the use of STEP for managing procurement transactions and related documentation | Train staff of project implementation entities in the use of STEP, which is mandatory for managing procurement transactions and related documentation under WBG-financed IPF projects | World Bank | Immediately after project effectiveness |
| Lack of understanding of the preparation of the Project Procurement Strategy for Development (PPSD) | Train procurement and other key staff of the project implementation entities on the contents of the PPSD | World Bank | After effectiveness |
| Lack of Procurement Manual | Develop and adopt Procurement Manual to be used for the project | NCO | Prior to technical assistance effectiveness |
| Weak contract management skills | Develop contract management strategy for each procurement activity to ensure that each contract is efficiently and effectively managed | All project implementation entities | Continuously |
| General inadequate experience of procurement staff | Provide capacity building for procurement staff | BPP | Continuously |

29. The Project Procurement Strategy for Development (PPSD) has been prepared by the NCO and reviewed by the World Bank. An initial procurement Plan for the first 18 months of the Project has also been developed.

## C. Project Implementation Support Plan

### Strategy and Approach for Implementation Support

30. The strategy and approach for supporting implementation are informed by: (i) lessons accruing from past and ongoing WBG projects in Nigeria; and (ii) the project risk profile presented in SORT. Given that the project design incorporates a number of ex-ante risk mitigation and control measures (see Section V on key risks), the approach is to provide timely, flexible, and efficient technical guidance to FGN through frequent missions and post reviews, with the objective of supporting implementation and mitigating residual risks, especially those rated as Substantial in SORT. The approach encompasses the standard areas of support, including safeguards, governance, and fiduciary matters. This strategy will be reviewed periodically and revised as deemed appropriate.

**Implementation Support Plan**

31. Two comprehensive implementation support missions will take place each year. These missions will focus on: (i) assessing implementation progress for each project component, including the links between project activities, outputs, and envisaged outcomes; (ii) providing solutions for any project implementation bottlenecks; (iii) reviewing, together with the implementing agencies and their partners, the six-month work plans and budgets; (iv) reviewing fiduciary aspects of the project, including disbursement and procurement; (v) ascertaining and confirming that project activities are carried out in compliance with the agreed environmental and social safeguard procedures; and (vi) reviewing technical aspects of the project, especially those related to the development of LSCs, access to finance, and conflict mitigation.

32. A mid-term review (MTR) will be conducted approximately mid-way through implementation to take stock of implementation progress and assess project performance against the agreed indicators and milestones. The MTR will also provide an opportunity to reassess major design features if necessary, to enable the project to attain its objectives. Throughout implementation, WBG and FGN will consider the need for additional third-party review and monitoring, especially in areas where conflict constrains access by WBG missions. At the end of the project, an independent assessment will provide results and lessons to inform future or similar operations. In addition, both the client and WBG will conduct reviews to provide a complete, systematic account of project performance and highlight lessons for implementing future investments. Specific aspects of technical, safeguards, and fiduciary support are briefly outlined below.

33. **Technical support.** The WBG will assemble and mobilize a team with the appropriate mix of technical skills to support implementation of the project. This team will include experts from the Food and Agriculture Organization (FAO), OIE, and International Livestock Research Institute[57] where necessary to bring new knowledge to bear on technical aspects of the project.

34. **Safeguards support.** WBG specialists in environmental and social safeguards will support counterpart staff in applying the agreed safeguard instruments. They will also review compliance and provide capacity building where necessary. It is envisaged that social safeguard supervision will focus on resettlement, GBV, participation, inclusion, and equity issues, while environmental supervision will focus on the implementation of the IPMP, EMPs, and WMP.

35. **Financial management support.** The FM Specialist based in the World Bank country office will review FM systems and capacity for the project and their continued adequacy; evaluate the quality of the budgets and the adherence of implementing agencies to those budgets; review the process for recording transactions from the beginning to the issuance of the final report; evaluate the internal control environment, including the internal audit function; review IFRs and/or annual financial statements; follow up on replenishment of the advance to the DA; follow up on both internal and external audit reports; and periodically assess the project's compliance with the FM disbursement guidelines and financial covenants.

36. **Procurement support.** The WBG will support procurement through a combination of pre- and post-reviews, the provision of procurement training to project staff and relevant implementing agencies, and periodic assessments of the project's compliance with WBG Procurement Regulations. Implementation support missions will be geared toward: (i) reviewing procurement documents; (ii) providing detailed

[57] One of the research centers in the Consultative Group on International Agricultural Research (CGIAR).

guidance on the Procurement Regulations; and (iii) monitoring procurement progress against the approved Procurement Plans.

37. Table A4.6 presents the main areas of support that will be emphasized as the project proceeds through implementation. Table A4.7 summarizes the expertise and time that will be committed to project supervision. In the event that COVID-19 travel limitations continue for some time during implementation, support will be provided through virtual meetings and discussions, electronic document exchange, and third-party verification of results, among other approaches.

**Table A4.6: Main focus of support to implementation, LPRES Project**

| Time | Focus | Skills needed |
|---|---|---|
| First 12 months | • Project start-up<br>• Support to implementation activities (sensitization, council/community consultations and planning, capacity building, strengthening implementation capacity, including M&E)<br>• Guidance on applying safeguard instruments<br>• Development of impact evaluation methodology and oversight of baseline survey<br>• Procurement, FM, M&E, and safeguards training of staff at all levels | • Agriculture Economist, TTL<br>• Livestock Specialist<br>• Access to Finance Specialist<br>• Institutional Specialist<br>• Financial Management Specialist<br>• Procurement Specialist<br>• Environment Safeguards Specialist<br>• Social Safeguards Specialist |
| 12–72 months | • Implementation of planned activities and AWPB preparation<br>• Detailed LSC design<br>• Results monitoring against set targets<br>• Fiduciary and safeguards compliance<br>• MTR<br>• Project completion and ICR preparation | • Agriculture Economist, TTL<br>• Livestock Specialist<br>• Access to Finance Specialist<br>• Natural Resource Management Specialist<br>• Financial Management Specialist<br>• Procurement Specialist<br>• Environmental Safeguards Specialist<br>• Social Safeguards Specialist<br>• Conflict and Fragility Specialist |

**Table A4.7: Skill mix required for LPRES Project supervision (per annum)**

| Skills needed | Number of staff weeks | Number of trips | Comments |
|---|---|---|---|
| Team Leader | 15 | 2 | CO based |
| Livestock Specialist (Co-TTL) | 12 | 2 | DC based |
| Financial Sector Specialist | 8 | 2 | DC based |
| Natural Resource Management Specialist | 6 | 2 | Consultant |
| Procurement Specialist | 8 | - | CO based |
| Financial Management Specialist | 8 | - | CO based |
| Environmental Safeguard Specialist | 8 | - | CO based |
| Social Safeguard Specialist | 8 | - | CO based |
| M&E Specialist | 8 | 2 | Consultant |
| Gender Specialist | 2 | 1 | DC based |
| Conflict and Fragility Specialist | 2 | 1 | DC based |

## ANNEX 5: Greenhouse Gas Accounting

1. **Corporate mandate**. The World Bank has adopted, in its 2012 Environment Strategy, a corporate mandate to conduct greenhouse gas (GHG) emissions accounting for investment lending in relevant sectors. The quantification of GHG emissions is an important step in managing and ultimately reducing emissions as it provides an understanding of the project's GHG mitigation potential and can support sectoral strategies toward low-carbon development.

2. **GHG accounting methodology.** The World Bank has adopted EX-ACT, developed by the FAO in 2010[58] to estimate the impact of agricultural investment lending on the GHG emission and carbon sequestration in the project area. EX-ACT allows the assessment of a project's net carbon balance. The carbon balance is defined as the net balance across all GHGs expressed in carbon dioxide equivalents (CO2e) that will be emitted or sequestered due to project implementation (with project - WP), as compared to a business-as-usual scenario (without project - WOP). EX-ACT is a land-based accounting system, estimating CO2 stock changes (i.e., emissions or sinks of CO2) expressed in equivalent tons of CO2 per hectare and year. The tool was designed using mostly data from the Intergovernmental Panel on Climate Change (IPPCC) Guidelines for National Greenhouse Gas Inventories (NGGI-IPCC, 2006), which furnishes EX-ACT with recognized default values for emission factors and carbon values in soils and biomass.

3. **Assumptions.** The project proposes several activities that were captured with EX-ACT. The assumptions for this analysis are aligned to the assumptions of the Economic and Financial Analysis (EFA) presented and the results framework. The climate and moisture regime for Nigeria is assumed to be tropical dry. The dominant soil type is Low Activity Clay Soils (LAC). The project implementation duration is six years, and the capitalization period is assumed to be 14 years. Dynamics of implementation are assumed to be linear over the project period. Default Tier 1 coefficients are used. It is expected that about 1.43 million direct beneficiaries will be reached, who are mainly pastoralist and agro-pastoralist in the targeted area. The benefits would come from increase in productivity of livestock species in targeted production systems; adopting improved agricultural technologies.; and reducing incidence of resource-based farmer-herder conflicts. The GHG calculation is based on the following elements, which are derived from the EFA: (i) livestock population targeted by the project; (ii) grassland systems management; (iii) other land use changes; (iv) increased use of energy consumption for project coordination. The assumptions for the GHG calculation are summarized in Table A5.1 below.

**Table A5.1: Data inputs to EX-ACT in the Without Project (WOP) and With Project (WP) Scenario**

| Activities | Without Project (WOP) Scenario | With Project (WP) Scenario |
|---|---|---|
| Livestock management | Livestock population<br>• Dairy cattle 250,000<br>• Cattle 11,000,000<br>• Sheep 5,250,000<br>• Goats 15,750,000 | Livestock population<br>• Dairy cattle 250,000<br>• Cattle 11,000,000<br>• Sheep 5,250,000<br>• Goats 15,750,000<br>The livestock will be benefited by better feeding practices and some improved breed will be introduce |
| Grassland systems management | 150,000 ha: Severely degraded grassland system | 150,000 ha: Improved grassland with inputs management |

[58] http://www.fao.org/tc/exact/ex-act-home/en/.

| | | |
|---|---|---|
| Other land use changes | 10,000 ha of degraded land | 10,000 ha converted into perennial/tree crops(shrubland) |
| Consumption of energy for all the project coordination | No project vehicles or offices | Fuel consumption for a vehicle is 15litre/100km. Assumption for annual consumption per vehicle is 60 km * 12 days (regular use) + 200 km * 12 days (missions) = 3,120 km/month. Annually 37,440 km/vehicle.<br>Assumption of 50 vehicles funded by the project 15litres*(37,440/100) = 5,616 liter/year/vehicle.<br>Total annual consumption of fuel for the 50 vehicles is equal to 280,800 liters / 1000 = 280.8 m3 |

4. **Results**. The net carbon balance quantifies GHGs emitted or sequestered because of the project compared to the without-project scenario. Results show that the project constitutes a sizeable net carbon sink of -12,556,101 tCO2 eq over 20 years (i.e., −627,805 tCO2 eq annually), as summarized in Table A5.2.

**Table A5.2: GHG balance, in tCO2 eq.**

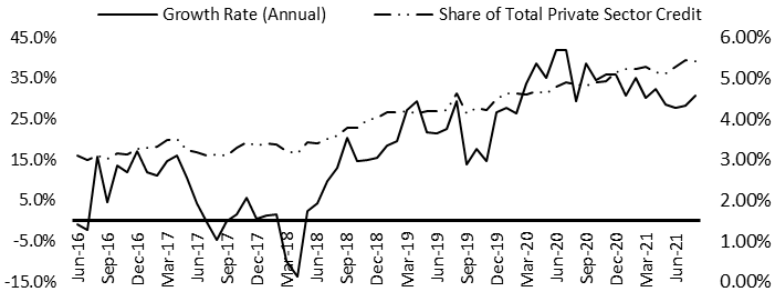
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Name** | *Livestock Productivity and Resilienc* | | **Climate** | *Tropical (Dry)* | | | | **Duration of the Project (Years)** | | *20* | |
| **Continent** | *Africa* | | **Dominant Regional Soil Type** | *LAC Soils* | | | | **Total area (ha)** | | *160000* | |
| **Components of the project** | **Gross fluxes** | | | **Share per GHG of the Balance** | | | | **Result per year** | | | |
| | **Without** | **With** | **Balance** | **All GHG in tCO2eq** | | | | **Without** | **With** | **Balance** | |
| | **All GHG in tCO2eq** | | | $CO_2$ | | | $N_2O$ | $CH_4$ | | | |
| | **Positive = source / negative = sink** | | | **Biomass** | **Soil** | **Other** | | | | | |
| **Land use changes** | | | | CO2-Biomass | CO2-Soil | CO2-Other | N2O | $CH_4$ | | | |
| Deforestation | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Afforestation | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Other LUC | 0 | -807,547 | -807,547 | -65,780 | -741,767 | | 0 | 0 | 0 | -40,377 | -40,377 |
| **Agriculture** | | | | | | | | | | | |
| Annual | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Perennial | 0 | -1,746,470 | -1,746,470 | -1,690,370 | -56,100 | | 0 | 0 | 0 | -87,324 | -87,324 |
| Rice | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| **Grassland & Livestocks** | | | | | | | | | | | |
| Grassland | 0 | -9,614,605 | -9,614,605 | 0 | -9,614,605 | | 0 | 0 | 0 | -480,730 | -480,730 |
| Livestocks | 469,176,036 | 468,774,630 | -401,407 | | | | 0 | -401,407 | 23,458,802 | 23,438,731 | -20,070 |
| **Degradation & Management** | | | | | | | | | | | |
| Forest degradation | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Peat extraction | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 |
| Drainage organic soil | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 |
| Rewetting organic soil | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 |
| Fire organic soil | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 |
| **Coastal wetlands** | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| **Inputs & Investments** | 0 | 13,927 | 13,927 | | | 13,927 | 0 | 0 | 0 | 696 | 696 |
| **Fishery & Aquaculture** | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | 469,176,036 | 456,619,935 | -12,556,101 | -1,756,150 | -10,412,472 | 13,927 | 0 | -401,407 | 23,458,802 | 22,830,997 | -627,805 |
| **Per hectare** | 2932.4 | 2853.9 | -78.5 | -10.9 | -65.1 | 0.1 | 0.0 | -2.5 | | | |
| **Per hectare per year** | 146.6 | 142.7 | -3.9 | -0.5 | -3.3 | 0.0 | 0.0 | -0.1 | 146.6 | 142.7 | -3.9 |

5. The monetary value of the GHG balance has been estimated and taken into account as a project economic benefit in the Economic and Financial Analysis.

## ANNEX 6: Background Note on Access to Finance Challenges

1. Several studies provide evidence that access to finance by households and SMEs in Nigeria is a constraint to economic growth and diversification.[59] FGN policies such as the Agricultural Transformation Agenda and Agricultural Promotion Policy recognize that smallholders and smaller firms within agricultural value chains face supply side constraints in accessing financial services.[60] These categories of borrowers and activities tend to be perceived, often wrongly, as riskier than others. This perception is heightened and exacerbated by high levels of informality, lack of collateral, and limited skills to bring forward bankable projects,[61] among other factors. Many financial service providers end up lending either to a few high-quality—bankable—corporates in particular value chains and sectors (primarily oil and gas) [62] or to the government via Treasury bills and bonds (which are usually issued at attractive rates).

**Figure A6.1: A snapshot of agricultural credit, 2016–21**




2. Agricultural credit made up 3.4–5.5 percent of the total credit issued to the private sector in Nigeria over 2016–21 (Figure A6.1). This share remains significantly low, considering the share of agriculture in Nigeria's GDP (around 24 percent) and the fact that agriculture was the most resilient sector in the economy, recording positive growth of 2.3 percent in 2020.[63] The level of credit extended to the livestock sector is even lower than the level provided to the crop sector.

3. CBN has launched several initiatives to support the agriculture sector, which were scaled up in the aftermath of the COVID-19 outbreak. CBN has reportedly announced[64] that the Anchor Borrowers Programme cumulatively released by end June 2021 the sum of NGN 798.09 billion to 3.9 million smallholder farmers and NGN 134.57 billion to 38,140 beneficiaries under the Agribusiness/Small and Medium Enterprise Investment Scheme. Consultations with banks and financial intermediaries suggest that livestock is riskier and thus underserved, but granular data about the share of livestock in total agriculture credit is unavailable.

4. A recent study by International Food Policy Research Institute (IFPRI), using data from the 2018/19 Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) for Nigeria, found that out of all credit-constrained households in the survey sample, about half faced constraints from the

[59] IFC (2020), "Creating Markets in Nigeria" (*https://www.ifc.org/wps/wcm/connect/673c0e3f-3e77-4ddc-923b-903c5db6af15/CPSD-Nigeria.pdf?MOD=AJPERES&CVID=nkzEpgy*). See also *https://documents.worldbank.org/en/publication/documents-reports/documentdetail/142411608260520935/nigeria-covid-19-action-recovery-and-economic-stimulus-program-project.*

[60] FMARD (2016), "The Agriculture Promotion Policy," *https://nssp.ifpri.info/files/2017/12/2016-Nigeria-Agric-Sector-Policy-Roadmap_June-15-2016_Final.pdf*.

[61] Reported by several financial institutions engaging in the agriculture sector during project design consultations.

[62] Credit flows to the private sector have tightened as a result of COVID-19. Through June 2020, banks shed some exposure to government risk as yields had collapsed while exhibiting strong preference for highly liquid assets. The annual real growth in private sector credit originated by deposit money banks slowed in recent months, turning negative in October 2020.

[63] CBN Online Database, accessed September 2021, and World Bank (2021), "Nigeria Development Update," *https://documents1.worldbank.org/curated/en/389281623682704986/pdf/Resilience-through-Reforms.pdf*, statistical annex (p. 74).

[64] See *https://www.cbn.gov.ng/Out/2021/CCD/Communique%20No%2018%20of%20the%20Monetary%20Policy%20Committee.pdf.*

demand side, while the other half face supply-side constraints.[65] The supply-side constraints are due to risk-perceptions, high transaction costs, a lack of entrepreneurial skill or business aspirations, or a combination these factors. Focus group consultations with several financial service providers, including commercial banks, microfinance banks; aggregators, and FinTechs indicated that several constraints impede access to finance for both producers and participants in agricultural value chains, especially for livestock. They include:

- *Lack of collateral.* Often producers do not have land titles or other types of real estate collateral that financial institutions demand. Moveable assets, including livestock, could be an alternative. The value of collateral needed to obtain financing in the livestock value chain in Nigeria can reach up to 228 percent of the value of the loan (compared to up to 215 percent for Sub Saharan Africa as a whole).[66] This value is high partly because the CBN requires that loans must be fully secured, but it also indicates the level of risk that financial institutions attach to these categories of clients. The absence of a functioning personal identification system and the high costs of verifying and obtaining official documentation present further challenges for financial institutions to lend to livestock producers and SMEs.
- *Types of financial products offered.* Financial institutions normally offer short-term loans, mostly up to one year, with the longest tenors being three to five years. Very little medium- or long-term credit is available, and the grace period is short. Financial institutions have not developed appropriate alternative lending methodologies that can substitute for collateral, like cash flow lending. The staff of these institutions also have limited understanding of livestock value chains, which prevents them from accurately determining the risks involved and has led to a prohibitively high level of risk-aversion in lending to livestock producers and other value chain participants.
- *Insurance.* The lack of appropriate insurance products and overall coverage for producers negatively affects access to credit for small-scale producers and SMEs. The IFPRI study found that a household with any type of insurance coverage was 6.1 percent less likely to be credit constrained.
- *Lack of information and knowledge.* Access to information and advice through extension services reduces demand-side constraints on access to finance by 4.3 percent.[67] Households with access to extension services are 2.7 percent less likely to experience demand-side credit constraints.
- *Policy interventions.* Easing only supply-side constraints on credit may not necessarily boost livestock production or access to credit for livestock value chain participants in Nigeria; demand-side factors should also be addressed. Policies should focus on mechanisms to enhance the capacity of small-scale producers and SMEs to possess bankable collateral, such as leased equipment, or the recognition of movable assets, including livestock. Policies should also seek to reduce information asymmetry and encourage the provision of appropriate insurance coverage and extension services.

[65] Balana, B., and M. Oyeyemi (2020), "Credit Constraints and Agricultural Technology Adoption: Evidence from Nigeria," NSSP Working Paper 64, International Food Policy Research Institute (IFPRI), Washington, DC. *https://doi.org/10.2499/p15738coll2.133937*.
[66] European Investment Bank, 2018—adopted from various World Bank Enterprise Surveys.
[67] IFPRI, Credit Constraints and Agricultural Technology Adoption. Evidence from Nigeria, August 2020.

## ANNEX 7: Appraisal Stage IPF Policy Financial Intermediary Guidance Compliance Review

**Introduction**

1. Under Component 2 (Livestock Value Chain Enhancement), Subcomponent 2.2 (Support to Increased Access to Finance) provides support for a credit line, risk-sharing facility, and technical assistance for commercial banks and non-bank financial institutions and lenders. Because a credit line is included in the project design, this OP 10 Compliance Review is required.

**Macro and Sectoral Conditions**

2. Several factors constrain Nigeria's economic recovery, including a reduced appetite for risk among financial intermediaries, systemic gaps in the credit environment, and pervasive macroeconomic uncertainty (including the impacts of COVID-19 and recent policy measures). Banks will play an important role in expediting the post-COVID recovery and financing micro, small, and medium enterprises (MSMEs), yet financial services, as measured by access to finance and financial inclusion, play a lesser role in Nigeria than in peer countries. Findex survey data (2017) indicate that only 40 percent of Nigerians aged 15 years and above have a bank account, compared with 85 percent in Malaysia, 70 percent in Brazil, 57 percent in Ghana, 85 percent in Kenya, and 69 percent in South Africa. Although the agricultural sector represented 24 percent of GDP in 2020, credit to the agricultural sector was only 4.6 percent of total banking sector credit.[68]

3. There are banks that actively lend to agricultural projects and SMEs, but their effort to increase agricultural financing are undermined by interventionist policies and schemes (for example, CBN schemes that offer liquidity with highly subsidized interest rates). The Nigerian financial market for agriculture is also characterized by a weak credit environment in which subsidized loans are being taken up by high-risk marginal borrowers. Other weakness have also increased the reluctance of banks to support the sector, including: (i) risks specific to agriculture and especially the livestock sector, such as limited collateral, weak value chain linkages and businesses, and exposure to climatic risks and disease; (ii) deficiencies in sharing credit information, particularly on the quality and timeliness of information shared with credit bureaus, and the absence of coordinated information (a database shared among credit bureaus); (iii) uncertain and unreliable loan foreclosure processes, which can result in creditors being subject to court challenge and lengthy delays; and (iv) other institutional weaknesses such as the ongoing but incomplete effort to establish a registry for movable collateral and the implementation of unique borrower identification.

4. Against this background, Subcomponent 2.2 of the proposed LPRES Project is designed to include: (i) medium- and long-term funding for on-lending by commercial banks; (ii) technical assistance to enable banks to assess the risks of livestock projects and companies more effectively, especially risks related to the beef and dairy value chains, and to develop new asset-based lending products; and (iii) a partial credit guarantee facility to mitigate credit risks for banks.

**Background and Eligibility of the Implementing Agency for Subcomponent 2.2**

5. The Development Bank of Nigeria (DBN) will be the implementing agency for Subcomponent 2.2. Conceived by FGN and development partners to address the major financing challenges facing MSMEs in Nigeria, DBN was incorporated in 2014 under the Companies and Allied Matters Act as a Public Limited

[68] According to CBN, in quarter 3 of 2020 banking credit was distributed across sector as follows: agriculture (4.6 percent); mining and quarrying (0.06 percent); manufacturing (15.3 percent); downstream oil and gas (19 percent); power and energy (2 percent); and services (59 percent).

Liability Company. It was granted an operating license by CBN to carry out operations as a Wholesale Development Finance Institution in March 2017. DBN is meant to contribute to alleviating specific financing constraints, especially among SMEs, that hamper the growth of domestic production and commerce by providing targeted wholesale funding and partial credit guarantees to eligible PFIs—that is, to banks and micro-finance institutions (MFIs)— on a market-conforming and fully financially sustainable basis. The partial credit guarantees are provided through IMPACT, a subsidiary of DBN. DBN also provides capacity building to enhance the capacity of banks and MFIs to lend to the SME segment.

6. DBN has a healthy funding structure, with total funding of NGN 489.6 billion, including 36 percent equity (NGN 176.9 billion) and 64 percent debt (NGN 312.7 billion). DBN's shareholders are the Ministry of Finance (60 percent), the Nigeria Sovereign Investment Authority (15 percent), African Development Bank (AfDB) (18 percent), and European Investment Bank (EIB) (7 percent). Its debt providers are made up of credible international development institutions such as IBRD (44 percent), the French Development Agency (AFD) (14 percent), KfW (17 percent), AfDB (21 percent), and ADF (4 percent). The WBG and other development institutions were heavily involved in the initial design of DBN, including ensuring that the institution was subject to strong corporate governance standards. As a result, DBN is run on a commercial basis and is managed by a team of qualified professional staff and a competent board with a majority of members being independent and recruited through a merit-based and transparent process. The board has a strong credit and risk committee and has instituted a regular review of governance and operations to ensure alignment with best international practices. DBN carries out monitoring and evaluation exercises to measure the effectiveness of the activities that it funds and the impact on MSMEs and the economy at large.

**Financial Performance of DBN**

7. The key prudential indicators for DBN are shown in Figure A6.1. DBN is a sound, profitable operation with stable performance. The loan portfolio grew by 89 percent from NGN 101.5 billion in 2019 to NGN 191.7 billion in 2020, and over the same period the outstanding loan balance rose from NGN 101.9 billion to NGN 214.4 billion. The capital adequacy ratio stands at 75 percent, well above the level required by CBN, and the bank has maintained zero non-performing loans since its inception. As of March 2021, the bank posted a return on assets of 1.8 percent and on equity of 5 percent. DBN follows a policy of full cost recovery for loan pricing.

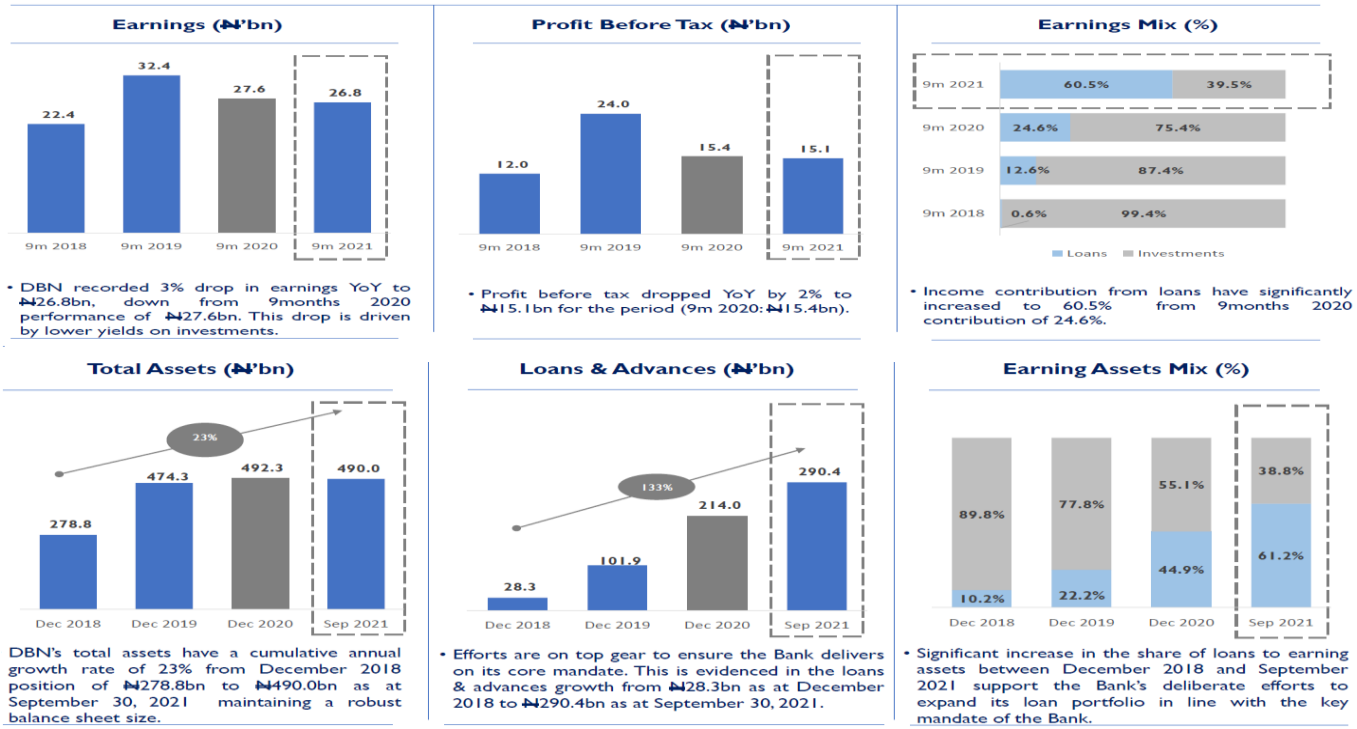
8. DBN has a national scale issuer rating of AAA(NG)/A1+(NG) and long-term international scale rating of B, with a stable outlook. The rating takes into account the support of the bank's shareholders[69] and the support of international development finance institutions (AFD, KfW, the World Bank) that provide funding and technical support in addition to strengthening governance. Furthermore, DBN's good asset quality, strong capitalization, good liquidity, and experienced management team have also played a role in the positive rating factors.

9. As detailed elsewhere in this PAD, the project will establish an M&E framework to capture and monitor the progress of financed activities, the performance of DBN and other participating institutions, and achievement of the PDO. DBN currently has an M&E framework that monitors, among other variables: (i) the contribution of DBN funds to the MSME portfolios of PFIs; (ii) performance of loans against

[69] Both AfDB and EIB are rated as AAA by S&P, Moody's and Fitch.

development Key Performance Indicators (KPIs);[70] (iii) DBN's impact on PFIs; and (iv) capacity building and service satisfaction. The M&E framework also makes it possible to actively identify issues and suggest recommendations for assessing DBN's impact by tracking short, medium and long-term outcomes.

**Figure A7.1: Key performance indicators for DBN, Q3 2021**




10. One other aspect of monitoring related to the implementation of Subcomponent 2.2 is that some of the subprojects supported by the credit line may present environmental and social safeguard issues. The project will ensure that both DBN and participating banks have the capacity to assess the compliance of subprojects with the existing environmental and social sustainability and performance standards. Following a recent reviewed of its environmental and social management system, DBN has moved beyond Nigeria's Sustainable Banking principle to cover broader environmental and social risks inherent in DBN processes and operations. The revised processes and operations have further increased attention to climate change, respect for human rights, promotion of gender equality, regular reporting on the environmental and social compliance of PFIs, disclosure of environmental and social issues, and strict adherence to environmental and social issues at the sub-borrower level, among other requirements. The environmental and social aspects of the LPRES Project will be continuously monitored and supervised throughout implementation.

[70] DBN's development KPIs including women empowerment, youth empowerment, financial inclusion empowering startup MSMEs, increasing number of MSMEs with first time access to finance, and distribution to economically disadvantaged areas.

**Coordination with IFC**

11. The team liaised with IFC and it was concluded that IFC is still looking into areas of focus of their upstream activities in the livestock value chain (meat, dairy, and leather) and are seeking to understand how policy and or government actions in these value chains can be improved. The project will reconnect with IFC to find out the interventions that IFC might be planning that could be relevant and may need to be coordinated with the project activities

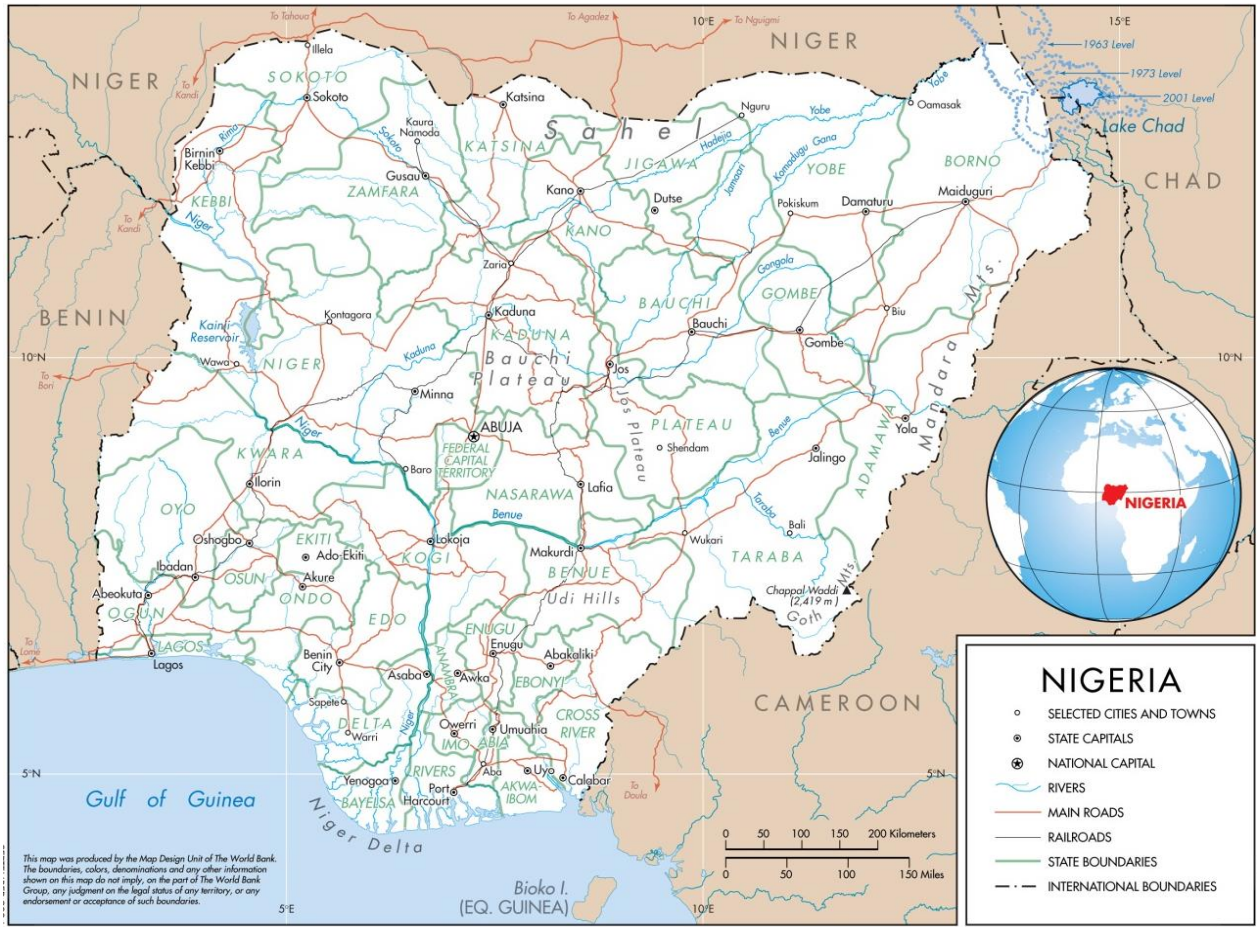
**Flow of funds and lending rates**

12. Funds will be provided to DBN directly through a DA managed by NCO. The NCO will disburse Naira equivalent to DBN account established in a financial institution acceptable to IDA. From these accounts, the credit line will then be disbursed by DBN to PFIs. Full details on this process will be provided at appraisal. The FM assessment indicates that the overall FM arrangements of DBN are satisfactory to the WBG and also meet the minimum requirements of OP 10. Additionally, OP 10 requires that "Bank funds are priced to be competitive with what the participating entities and their sub-borrowers would pay for similar money, taking into account, as relevant, maturities, risks, and scarcity of capital." In this context, as reflected in other sections of this PAD, DBN rates will reflect the cost of its funds and a spread to cover its cost of operations plus a risk premium. The interest rates offered by PFIs to the end-borrowers will be risk adjusted to reflect the relevant credit and market risks of borrowers and will not be subsidized or capped. The government will assume the foreign exchange risk.

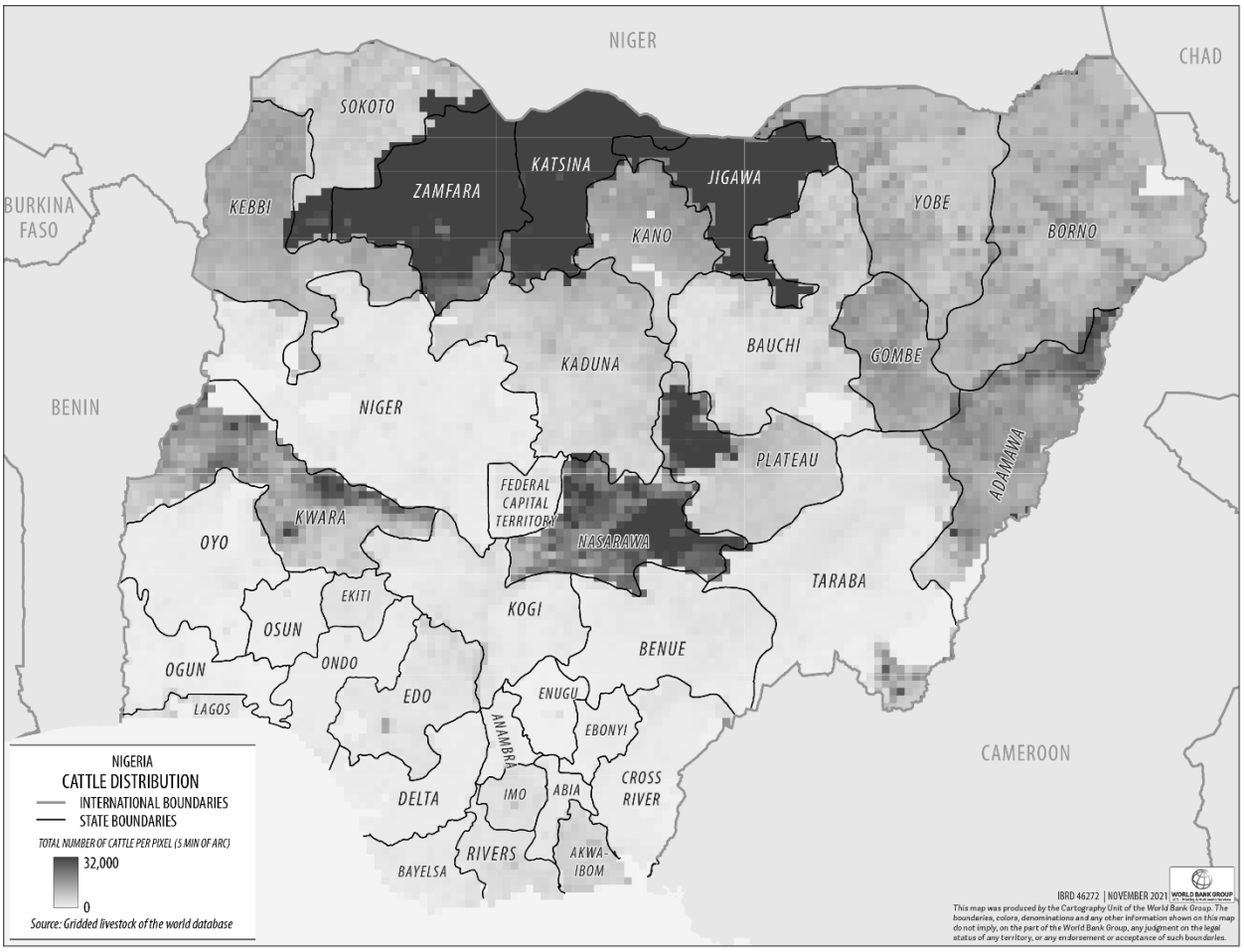
**Monitoring and evaluation**

13. The M&E system established for the project will capture data on physical and financial progress, the performance of participating states and service providers, and the achievements of outcomes and impact vis-à-vis the PDO. This information will be important for facilitating critical reflection on experience and learning by all stakeholders. The results framework for the project (Section VI) includes indicators at the PDO and intermediate outcome levels, such as numbers of farmers adopting improved agricultural technologies, increase in productivity of livestock species in targeted production systems, reduction in resource-based farmer-herder conflicts, share of target beneficiaries with satisfied with project interventions, and project beneficiaries disaggregated by gender. Indicators relating to access to finance, such as the number and volume of finance lent to PFIs will also be tracked. Further, the portfolio at risk at both DBN and PFIs will also be consistently monitored. This information is essential, as portfolio quality must compare well with acceptable international good practice for support under Subcomponent 2.2 to become sustainable. During appraisal, agreements will be reached with DBN on the contents of the monitoring reports. These reports could cover continuing compliance by subprojects with environmental and social safeguards; indicators of intended impact of the subprojects; portfolio at risk; implications of the aftereffects of COVID-19 for the financial sector; the macro fiscal situation in Nigeria; and the potential impact on the performance of subprojects and DBN's financial performance, among other topics.

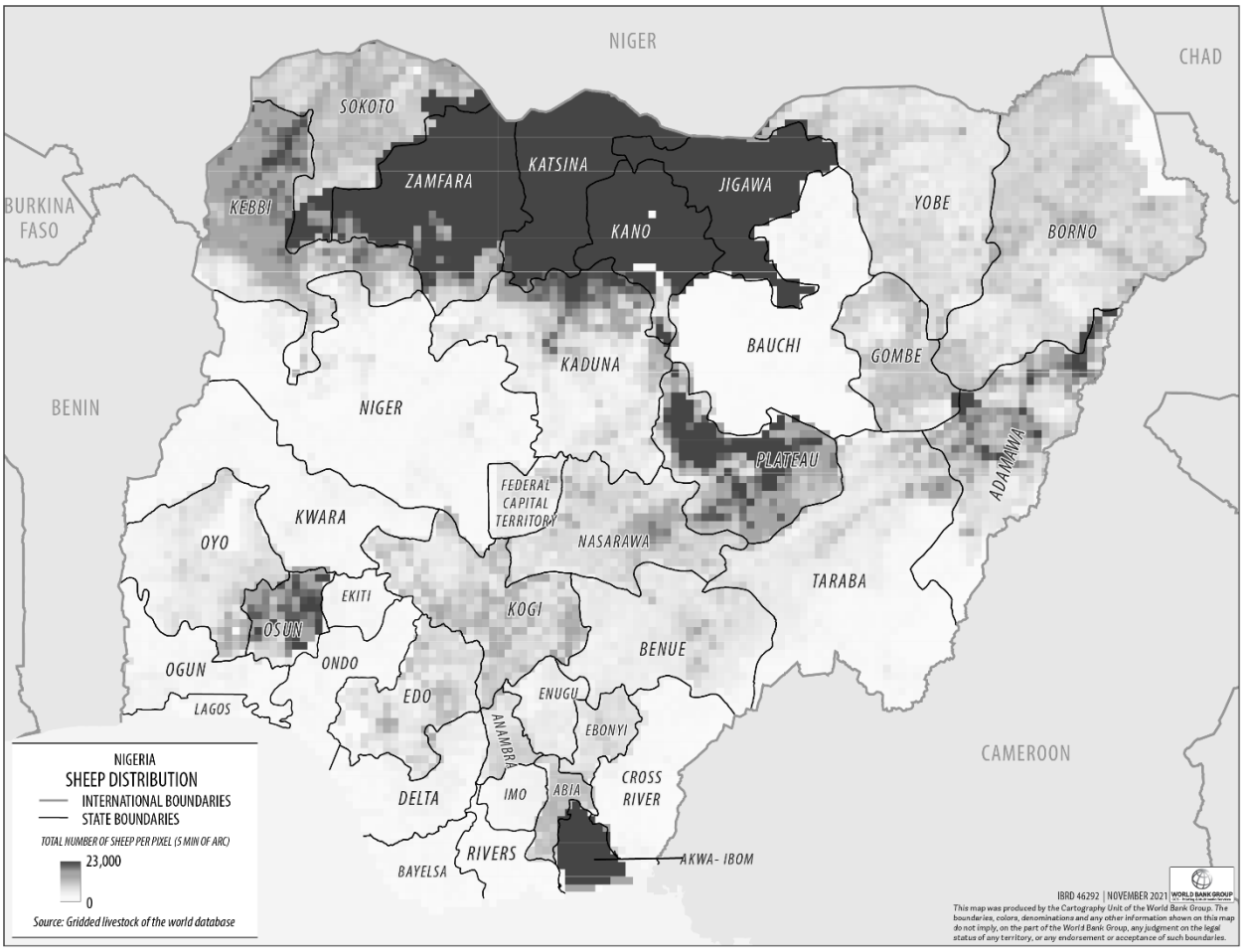
## ANNEX 8: Maps


NIGERIA
SELECTED CITIES AND TOWNS
STATE CAPITALS
NATIONAL CAPITAL
RIVERS
MAIN ROADS
RAILROADS
STATE BOUNDARIES
INTERNATIONAL BOUNDARIES
Gulf of Guinea
Lake Chad
CAMEROON
CHAD
BENIN
NIGER
ABUJA
Lagos
Kano
Kaduna
Jos
Maiduguri
Port Harcourt
Benin City
Ibadan
Sahel
Udi Hills
Niger Delta
Bioko I.
(EQ. GUINEA)
1963 Level
1973 Level
2001 Level
0 50 100 150 200 Kilometers
0 50 100 150 Miles
This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

**Cattle Distribution in Nigeria**



**Sheep Distribution in Nigeria**



**Goat Distribution in Nigeria**