



NIGERIA LIVESTOCK ROADMAP FOR PRODUCTIVITY IMPROVEMENT AND RESILIENCE

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NIGERIA LIVESTOCK ROADMAP FOR PRODUCTIVITY IMPROVEMENT AND RESILIENCE



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ABBREVIATIONS

AI	Avian Influenza
AnGR	Animal Genetic Resources
APP	Agriculture Promotion Policy
ARCN	Agricultural Research Council of Nigeria
ASF	Africa Swine Fever
BoA	Bank of Agriculture
BOI	Bank of Industry
BP	Business Plan
BT	Bovine Tuberculosis
CBPP	Contagious Bovine Pleuropneumonia
E.E.G.	Export Expansion Grant
EI	Equine Influenza
E.M.P	Environmental Management Plans
E.P.A	Environmental Protection Agency
ERGP	Economic Recovery and Growth Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EU	European Union
FAO	Food and Agricultural Organization
FCR	Feed Conversion Ratio
FMARD	Federal Ministry of Agriculture and Rural Development
FMD	Foot and Mouth Disease
FMENV	Federal Ministry of Environment
GDP	Gross Domestic Product
GHG	Greenhouse Gas
HDP	Hen Day Production
H.S.E	Health, Safety and Environmental
ILRI	International Livestock Research Institute
IPF	Investment Project Financing
IPM	Integrated Pest Management
IPMP	Integrated Pest Management Plan
IDA	International Development Agency
LGA	Local Government Area
L-PRES	Livestock Productivity and Resilience Support
M&E	Monitoring and Evaluation
MIS	Management Information System
MT	Metric Tonnes
NACGRAB	National Centre for Genetic Resources
NAFDAC	National Agency for Food and Drug Administration and Control
NATIP	National Agricultural Technology and Innovation Plan
NBS	National Bureau of Statistics
NC	Nigerian Conservation
NCD	Newcastle Disease
N.C.F	Nigerian Conservation Foundation
NCO	National Coordinating Office
NE	North East

NGO	Non-Governmental Organization
NIRSAL	Nigeria Incentive-Based Risk Sharing System for Agricultural Lending
NLTP	National Livestock Transformation Plan
NIAS	Nigerian Institute of Animal Science
NVRI	National Veterinary Research Institute
NW	North West
PAP	Project-Affected People
PPR	Peste des Petits Ruminants
RAP	Resettlement Action Plan
R.P.F.	Resettlement Policy Framework
RUGA	Rural Grazing Area
SAPZ	Special Agro-Industrial processing Zones
SCO	State Coordinating Office
SE	South East
S.I.A.	Social Impact Assessment
S.M.E	Small and Medium Enterprises
SON	Standard Organization of Nigeria
SS	South South
SW	South West
UNDP	United Nations Development Programme
USAID	US Agency for International Development
V.C	Value Chain
VCN	Veterinary Council of Nigeria
W.B	World Bank
W.M.P.	Waste Management Plan

FOREWORD

As Nigeria's population grows at a variable rate with the food production capacity, the likelihood of a looming food crisis remains unavoidable except agricultural productivity is enhanced to match population growth. The projected exponential growth of human population to 402 million people by the year 2050, rapid urbanisation and increased per-capita income with the associated boost in the consumption of high-protein animal products such as milk, meat and eggs provide opportunities for the sector's growth and development of the sector's diverse value chains.

Heightened and frequent farmer-pastoralists conflicts threaten our national security; similarly, banditry and cattle rustling with the resultant depletion of our national herd creates fear and loss of sources of livelihood for Nigerians who depend on agriculture for their sustenance. There can be no better time than now for this Road-map to come on board.

While National and State governments were emphasising the development of Grazing Reserves and Ranching as a panacea for tackling the above scourges, the COVID-19 pandemic that broke out sometime in December 2019 has worsened some of the scenario described above wiping out the country's inroads on poverty reduction and other socio-economic indices.

The consequences and impacts of COVID-19 were particularly drastic, considering the copious contributions of the Livestock sector to the socio-economic well-being of the Nigerian State and people. The sector and allied value chains are invaluable pillars of support for the Nigerian economy and sociocultural systems. The sector is a significant source of household wealth and food security. It presently accounts for one-third of Nigeria Agricultural GDP, providing income, employment, food, farm energy, manure, fuel, transport and government revenue (CBN, 2014).

The potential promises of the sector have come under more significant threat in recent times with the pervasive conflicts in the North-Eastern, Middle Belt and many other parts of the country. The waves of destruction and demographic dislocation are so vast and unprecedented that the Livestock husbandry setups are significantly disrupted with the animal population been wiped out in many instances. Indeed, Cattle rustling and allied crimes are parts of many of the crises.

Several government policies have deliberately provided a comprehensive guide towards an improved agricultural practice in Nigeria to address the urgent need to improve agricultural productivity, and to guarantee food security and economic prosperity for a population projected to hit about 402 million people by the year 2050, The consolidation of the gains of these policies and to mitigate the effects of insurgency and conflicts retarding the growth of the livestock sector's commercialisation and resilience; additional

support from all fronts is required. Therefore, the Federal Ministry of Agriculture and Rural Development (FMARD) is grateful to the World Bank for financing the Livestock Productivity and Resilience Support Project (L-PRES).

The L-PRES is a 6-year project aimed to improve productivity, resilience and commercialisation of selected livestock value chains and to strengthen Institutional capacities in service delivery to; tweak Value Chain Development (VCD) and Productive Alliance efforts; Facilitate exceptional communication and knowledge sharing among stakeholders and actors of the various value chains as well as enhance Livestock Resources Management and Resilience.

This Road-map, therefore, is a pathway set to address most of the inherent and potential challenges facing the livestock sub-sector along the value chains of the selected livestock as well as to ensure recovery and growth after the COVID-19 drawback, as enshrined in National Agricultural Technology and Innovation Plan (NATIP), which is a 4-year strategy, focusing on achieving knowledge and technology driven agriculture for ensuring sustainable national food security and nutrition; diversification, jobs creation and resilience. It is, therefore, my honour to present this directional document to provide a common point of reference for project stakeholders to contribute to and benefit from a shared storehouse of operational knowledge of the LPRES Project.

Alhaji Sabo Nanono

Honourable Minister of Agriculture and Rural Development

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**NIGERIA LIVESTOCK ROADMAP FOR PRODUCTIVITY IMPROVEMENT AND RESILIENCE
CONSULTANCY REPORT SUBMITTED
TO
FEDERAL MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT
LIVESTOCK PRODUCTIVITY AND RESILIENCE SUPPORT PROJECT, NIGERIA**

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The roadmap document is produced from results of baseline activities conducted and a series in –house validation and reviews of relevant information critical to the sector

LPRES PROJECT BASELINE DOCUMENTS

- I. Livestock Productivity and Resilience Support Project (L-Pres) Baseline Study on Livestock Value Chain In Nigeria- GOLDAGRIC NIG. LTD
- II. Livestock Production and Productivity Gap Analysis -DR. ADELAJA ADESINA (*Ph.D.*)
- III. Review of Livelihood Activities and Livestock Systems Innovations in Pastoral & Agro-Pastoral Communities - Professor J. D. Amin
- IV. Resettlement Policy Framework (RPF) For the Livestock Productivity and Resilience Support Project (LPRES)
- V. Integrated Pest Management Plan (IPMP) For the Livestock Productivity and Resilience Support Project (LPRES)
- VI. Project Implementation Manual for Livestock Productivity and Resilience Support Project (*PROJECT ID: P160865*)
- VII. Waste Management Plan for Livestock Productivity and Resilience Support Project (LPRES)
- VIII. Environmental and Social Management Framework (ESMF) For Livestock Productivity And Resilience Support Project (L-PRES)
- IX. Livestock Productivity and Resilience Support Project (L-PRES) Economic and Financial Analysis Of L-PRES
- X. LPRES Cost Tables
- XI. Report of Social Impact Assessment for Livestock Productivity and Resilience Support Project: Edwin Ikhuoria, Philip Oluwayemi , Uchechukwu Ohuonu
- XII. Assessment of Climate-Related Challenges to the Livestock Systems in Nigeria (Livestock Productivity and Resilience Support Project) : PROF. EMMANUEL OLADIPO
- XIII. Remodelling of the Financial and Economic Costs of Animal Disease Burden, Morbidity and Mortality from Priority Livestock Diseases in Nigeria
- XIV. Baseline Study on Animal Diseases and National Vaccination Coverage: DR Lawan Mohammed Kabiru.

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1.0 NIGERIA LIVESTOCK ROAD MAP AND LIVESTOCK SECTOR ANALYSIS

The Nigeria livestock Road Map is an intervention pathway that will facilitate and trigger productivity improvement and resilience in the livestock sub-sector. LPRES is a 6-year project (2020-2026) whose development objective is to improve Livestock productivity, resilience, and commercialization of selected value chains and to strengthen Nigeria's capacity to respond to crises/emergencies in the livestock sector. This objective is achieving the National Agricultural promotion policy (APP) and the Livestock transformation plan (NLTP), and to ensure recovery and growth after the COVID-19 drawback, as enshrined in National Agricultural Technology and Innovation Plan (NATIP), a 4-year strategy, focusing on achieving knowledge and technology driven agriculture for ensuring sustainable national food security and nutrition; diversification, jobs creation and resilience. Thus, the LPRES project is driven and implemented by the office of the National Project Coordinator on behalf of the Federal Ministry of Agriculture and Rural Development.

The LPRES project is an Investment Project Financing (IPF) funded by an IDA credit and counterpart funds in the amounts of US\$200 million and US\$2 million, respectively, over six years (2020-2026). The project has four inter-related components: i) Strengthening National Institutions for Improved Service Delivery; ii) Strengthening the Performance of Selected Value Chains; iii) Enhancement of Livestock Community Resilience, and iv) Project Coordination, Monitoring & Evaluation, and Communication. The project will also address the challenges of sectoral environment and threats posed by climate change, including (a) gradual depletion of water sources and water points; (b) infestation of animals by the vectors of diseases; (c) degradation of fodder resources; and (d) natural disasters such as floods and droughts in various parts of the country.

To achieve its objectives and implementation mechanism; and the vision and strategy of developing and tracking targets and accomplishments, LPRES put in place an implementation roadmap for the development of the sector. These underscore the importance of realistic action plans built on a baseline, objectively verified targets, and priority interventions. This road map document provides a practical pathway for LPRES to launch and carry out its work within the context of promoting productivity and resilience in the Nigerian livestock sector.

The LPRES roadmap is also a master plan engaging all sector stakeholders, policymakers, International and national development agencies (FAO, ILRI, UNDP, USAID, EU, Bill & Melinda Gates, ARCN etc.) as well as investors involved in livestock development on the current status of the sector and the potential of

future priority investment and engagement options for local economic growth and poverty reduction among livestock keepers households.

The Government Preparation team diligently followed the World Bank preparation process to approve any project intervention as the entry point of the LPRES project. Studies that have implications for project appraisal, negotiation, and, most notably, meeting stakeholders' expectations and their findings, suggestions, and recommendations are harmonised into this actionable roadmap. A total of sixteen (16) studies and five (5) designs provided a clear and evidence-based roadmap with critical pathways and intervention apposite to unlock the Livestock sector substantial opportunities for food security and sustainable development as six-year development plans or roadmaps for the key livestock V.C.s and production systems within each sub-sector, chosen based on national livestock priority development objectives. Each roadmap includes objectives/outcomes and targets, challenges and strategies, and combined investments in technology and policy interventions, with expected outputs, outcomes, and impacts. The roadmap also provides sequenced activity plans, timelines, and funding models.

HIGHLIGHTS OF THE COMPONENTS

Component 1: Strengthening National Institutions for Improved Service Delivery. This Component will support improvement in the performance and service delivery of institutions involved in livestock sub-sector and will contribute to improving the enabling environment. It is designed to build sustainable human, institutional and policy capacity for key public and private actors in livestock sector, in order to improve animal husbandry practices, access and delivery of quality extension services (animal health, feed and breeding). The component will have a national reach benefiting millions of producers and value chain actors; public and private agents. It will provide support for investment in component 2 and 3 and provide the foundations for sustainability of such investment well after project life.

Component 2: Strengthening selected value chains for improved productivity and commercialization.

The aim of this component is to enhance the performance of selected priority value chains (beef, dairy, poultry, sheep & goats and honey) including selective crop sub-sector activities and peri-urban small producers, provided they are part of the livestock value chains and create the condition for enhanced participation of small producers and private sector in the priority value chains. The major beneficiaries of this component include producers, processors of targeted VC; indirect buyers and consumers from selected VC products. The component will benefit from the positive outcome of component 1 and help component 3 access a better market.

Component 3: Strengthening resilience and diversification for pastoral communities and vulnerable households.

The L-PRES offers an innovative, comprehensive, and flexible response to pastoralists' vulnerability by delivering key public goods to enhance their livelihood. This component aims to increase pastoralists' access to competitive, including markets and to increase trade in pastoral products (especially live animal). It will support the enhancement of the livelihoods and resilience of pastoral/mobile communities as well as the diversification of livelihood opportunities for vulnerable households (incl. youth and women). The project will adopt the use of information and communication technology (ICT) to transform the lives of pastoral communities by facilitating information sharing on markets, prices, climatic condition, water availability, and conflict-affected areas. Geographic information systems (GIS) and mapping will also be deployed to guide public investments and monitor results. The project will promote a wider uptake of improved technologies, especially in the component related to market access and trade, and pastoral risk management. The main beneficiaries of the component will be pastoral communities; vulnerable households.

Component 4: Project Coordination, Institutional Support, Communication and Monitoring.

This aim of this component is to ensure project activities are implemented timely; coordination among the different stakeholders is instituted, and support activities relating to overall management, monitoring & evaluation, communication. The main objectives of the component are to: (a) ensure effective strategic and operational planning, implementation and monitoring of the project and efficient use of various sources of funding, as well as coordination of implementation and monitoring of the Project interventions implemented by participating stakeholders and partners; (b) evaluate the Project's final results, outcomes and impacts on beneficiary smallholders/PGs; and (c) support development and communication of livestock policies, regulations, guidelines and strategies (best practices, priority directions, experience sharing, studies, and consultation) and ensure efficient knowledge management and effective communication to various public and private entities on project activities, outcomes, best practices and lessons learnt.

LPRES INTERVENTION LOCATION

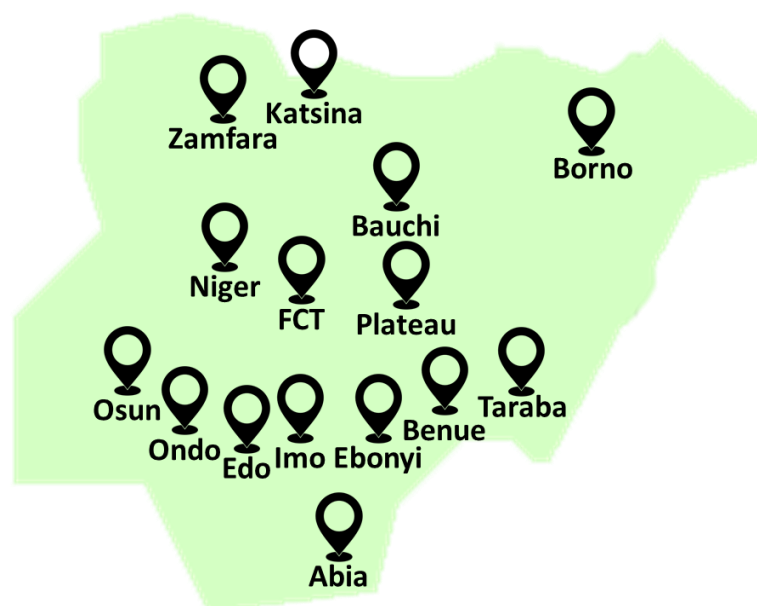


Figure 1: Map of Nigeria showing study areas.

Table 1: L-PRES PROJECT INTERVENTION LOCATIONS

STATE	SENATORIAL ZONE	LGA
Akwa Ibom	North East	Itu , Nsit Atai
North West	Ini, Obot Akara	
South	Okobo, Onna	
Anambra	North	Njikoka , Dunukofia
South	Aguata, Ihiala	
Central	Oyi , Ogbaru	
Bauchi	Central	Ganjuwa, Misau
North	Gamawa, Shira, Katagum	
South	Bauchi, Toro	
Benue	North East	Makurdi, Gboko
North West	Kwande, Ushongo	
South	Otukpo, Ogbadibo	
Borno	Central	Dikwe, Jere
North	Abadam, Gubio	
South	Askira, Bayo	
Ebonyi	North	Ebonyi, Izzi
Central	Ikwo, Ishielu	
South	Ohaozara, Onicha	
Edo	Central	Esan North-East, Esan Central

North	Akoko Edo, Etsako East	
South	Oredo, Orhionmwon	
Katsina	South	Musawa, Matazu, Malumfashi, Funtua
North	Saura, Bindawa, Ingawa, Sandamu, Kankia	
Central	Katsina, Jibia, Rimi, Batagarawa	
Niger	North	Gbako, Agaie
East	Tafa, Paikoro	
South	Mariga, Magama	
Ondo	North	Akoko South-West, Owo
Central	Okitipupa, Irele	
South	Ondo West, Ondo East	
Osun	West	Ede, Iwo
Central	Oshogbo, Ikirun	
East	Ilesa, Ife	
Plateau	North	Jos South, Bassa, Barkin Ladi
Central	Bokkos, Kanke	
South	Lantang, Mikang, Quan Pan	
Taraba	Central	Sardauna, Bali
North	Jalingo, Zing	
South	Takum, Wukari	
Zamfara	Central	Gusau, Maru, Tsafe, Bungudu
North	Shinkafi, Kaura Namoda, Zurmi, Birnin Magaji	
West	Anka, Bakura, Maradun, Talata Mafara, Gummi, Bukuyum	
Federal Capital Territory	Federal Capital Territory	Kuje, Kwali, Gwagwalada, Abaji, Abuja Municipal Area Council

1.1 LIVESTOCK PRODUCTION AND PRODUCTIVITY GAP ANALYSIS

The livestock sub-sector has remained an essential and integral component of Nigeria's agriculture and is a significant source of household income, food security, and overall agricultural sector GDP contribution on account of the different livestock species production, productivity, and Value Chain diversity across the country's landscape. The World Bank is assisting the Government of Nigeria to implement the Livestock Productivity and Resilience Support (L-PRES) to improve productivity, resilience, and commercialization capacities of producers and processors in selected livestock value chains; and strengthens institutional capacity in service delivery. Therefore, L-PRES targets improved resilience of livestock value chain chosen of smallholder producers in intervention areas and also to enhance the country's response capacity to an eligible crisis or emergency. To achieve project objectives, a gap analysis studies were carried out on livestock production and productivity in the selected states to identify gaps in production and productivity of selected livestock enterprises: Cattle, Sheep and Goats, Pigs and poultry as well as micro live stocks such as Snail, Grass-cutter and Bees across the project areas. The gap analyses identified both current and desired future levels of the quantity and quality of livestock production and productivity data. Actual uses of livestock by households, herd dynamics between and within seasons; feed and water use and availability; home consumption, animal diseases; interactions between crops, livestock, and other productive activities within the LPRES intervention States. Other critical indices include access to inputs, markets, capital, and adoption of technologies. These were benchmarked as the current status to measure LPRES intervention impact and contributions to overall sector gains over the 6-year project life.

The gap evaluation was undertaken using primary data sources obtained through the development and administration of three types of questionnaires to get information from livestock producers, inputs dealers, and off-takers of livestock products in the 14 intervention states and the FCT. Field data collected in all the study areas were fed into a developed data analysis model using a Spreadsheet, the responses were coded on a nominal scale and analysed with descriptive statistical tools. Secondary information used for gap evaluations were obtained by using secondary data sources from statutory agencies (FMARD, NBS, NIAS)

1.2 GAP HIGHLIGHTS

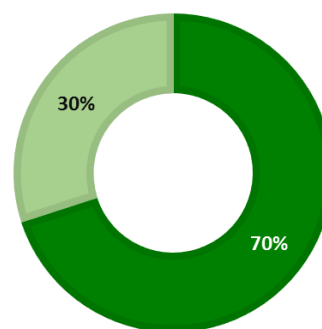
Three critical stakeholders in the industry are the producers, the input suppliers, and the off-takers. Mixed smallholder farmers, pastoralists and periurban livestock producers are the primary suppliers to the Nigerian Livestock Value Chain. The current levels of operation and the expected impact the L-PRES project will infuse into the livestock subsector was estimated by interrogating current status, gap, and specific interventions required from LPRES and other stakeholders for the different livestock value chains under intervention.

Livestock distribution showed that poultry production has a national spread. Its production, product consumption, and utilisation cuts across social divides such as beliefs, income, age, and location; While cattle, sheep, and goat production are more prevalent in the North; pigs, rabbits, snails, grasscutter, and beekeeping are more concentrated in the south.

The current average stockholding and live weights of animals (cattle, sheep, goats, and pigs) by individual farmers are below the regional average for Africa and the world average. Productivity indices records like birth weights, growth rates, milk production, were not usually measured by the farmers. Thus, national information recorded for these indicators are mainly from the research institutes and not farmers based. The gap observed for National livestock productivity indicator records is an intervention point for the L-PRES project. These will require building capacity for records keeping among the stakeholders of the livestock value chain, especially the producers, and institutionalisation of Livestock-MIS as the repository of such information obtained from stakeholders to develop nationally acceptable reference productivity indices. In promoting productivity, the L-PRES project shall support institutions and facilities that will enhance improvements in average birth weights, growth rates, and adult weights of animals to boost livestock productivity in Nigeria. These are central to LPRES project

LPRES PROJECT SUCCESS

- livestock producers in the intervention areas do not keep records of their operations
- Does keep records of their operations



success as an overwhelming 77% of livestock producers in the intervention areas do not keep records of their operations. This figure is representative of the more extensive livestock statistics. A clear demonstration was that most small scale dairy farmers could not account for the volume of milk produced by their animals. This observed gap, as it is with other livestock species, requires mainstreaming farmers' education on production record's keeping and productivity improvement intervention such as increased milk yield, medication schedule, lactation records, weight gain, feed intake, calving, etc. for the dairy value chain

The promotion of animal healthcare delivery as a significant component of the LPRES project is apt, given the considerable gap in disease surveillance, prevention, and treatment. These account for the reported high flock losses across livestock species; other associated factors include inconsistency and absence of a responsive governance system that will address security challenges and eliminate quackery in the animal health care delivery. LPRES strategic intervention will reverse these negative trends by the end of the project since health care services will be improved. Other complementary and statutory intervention and inter-ministerial coordination by National, state, and IDAs within the livestock sector will aid in this process of flattening the diseases burden of the industry.

Aggregated demography of the population of livestock producers showed that over 83% are within the active age between 20 – 60 years. There is a similar age distribution pattern for input suppliers and off-takers. However, there was a clear gender imbalance among the stakeholder as 79% of them are male. The bulk of the population involved in the livestock business has had formal education beyond the primary school, which is a positive attribute that the L-PRES project will reinforce and use for sustained capacity development of the various stakeholder for efficiency in their productivity. The gender parity gap will be narrowed by L-PRES deliberately

83%

Aggregated demography of the population of livestock producers showed that over 83% are within the active age between 20 – 60 years

79%

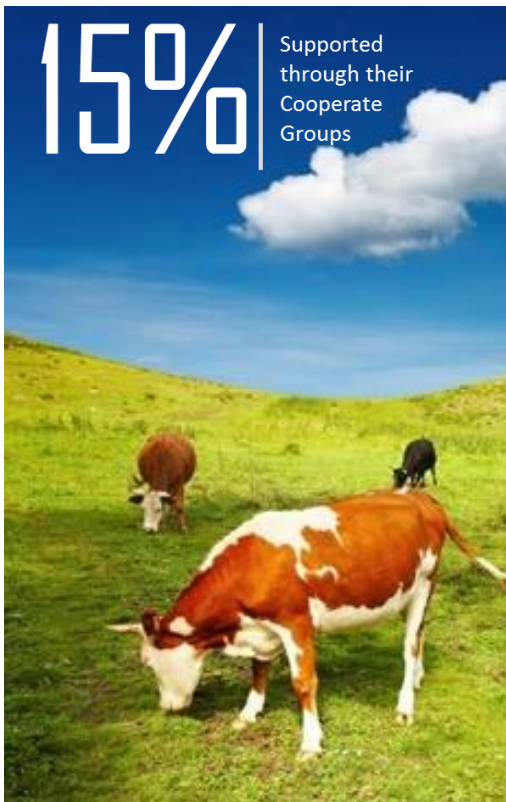
There was a clear gender imbalance among the stakeholder as 79% of them are male

institutionalizing the affirmative action ratio as the Baseline for engagement with stakeholders in all project implementation; this will lead to incremental gap closing within the six years. The current status records 21% are females. Therefore, Women and youth will be specifically targeted by the project through Productive Alliance (PA) with at least 30% of the grant earmarks for supporting women and youth led enterprises.

Only 31% of livestock producers belong to cooperatives or organised group. In comparison, 69% of them do not belong to any group, this indicative of the absence of specialised livestock extension that addresses the peculiarities of sector's actors. This identified gap poses some challenges to extending services that can enhance better productivity to the stakeholders through organised platforms. These include business development and funding support. 49% of the respondents listed inadequate funding, 13% listed security and 12 % security of life and property as the main challenges they face in their livestock enterprise. 64% of the respondents stated funding support as their primary requirement; others want security - 8.3%, subsidy - 6.1% and market development - 4%.

21%

The current status records 21% are females



These are all areas of interest for improvement to boost livestock productivity in Nigeria. About 38% of the respondents do not receive any form of business support services, 30% get business support service from government agencies in their locality, while 15% get support through their cooperative groups. These indices are the areas of improvement to focus on making a difference in the livestock industry by strengthening the types of machinery to extend business support services to livestock producers, input suppliers and off-takers through government agencies and cooperatives.

This study confirms the limited knowledge of

Nigeria's livestock assets by size and location because it identified and measured the current state of production and productivity of the livestock sector of Nigeria's agriculture; and has projected into the future by determining and forecasting the likely impact of the L-PRES intervention. Because of the relative literacy rates of livestock farmers; opportunities to promote the engagement Nigeria's youth population in the livestock business and also organise them into groups and cooperatives are high. However, there is obvious gender imbalance among the active players in the livestock value chains with fewer women, particularly among the producers and off-takers.

Table 2: L-PRES GAP RESPONSE FRAMEWORK

S/N	GAPS	L-PRES RESPONSE FRAMEWORK
I.	<p>A. General Livestock</p> <p>An inadequate network between off-takers/distributors</p>	<p>Opportunities, therefore, exist for L-PRES project to deepen further and develop an off-takers system that will play active roles in creating markets for livestock products.</p>
II.	<p>A large chunk of Livestock producers is aged.</p>	<p>To meet the increasing demand of Nigerians for animal protein, L-PRES will focus on bringing the population within the 20 – 40 years into livestock ventures.</p>
III.	<p>Gender in balance with male input suppliers, producers and off-takers carrying a more significant percentage of the population.</p>	<p>Gap associated with gender addressed through L-PRES.</p>
IV.	<p>Only a few livestock farmers belong to cooperate organisation.</p>	<p>The L-PRES project can impact on increasing the average stock holdings of individual farmers to up to 50% or more increase livestock population</p>
V.	<p>The live weights of the different categories of animals recorded in this study are lower than the world average weights for these.</p>	<p>In promoting productivity, the L-PRES project should support institutions and facilities that will enhance improvements in average birth weights, growth rates and adult weights of animals as ways of boosting livestock productivity in Nigeria.</p>
VI.	<p>Lack of adequate record keeping of all the livestock operations, especially by the livestock producers/owners.</p>	<p>There is a gap in producers' record-keeping to be addressed by L-PRES project by ensuring that at the end of the project, stakeholders capacity and ability to keep adequate records of their operations is achieved.</p>

VII.	Diseases, theft, inadequate funding and security of lives and properties are challenges of the industry	The enhancement of adequate access to quality health services is a significant component of the L-PRES project that could bridge the gap accounting for the reported high flock losses through disease surveillance and control.
VIII.	Lack of such as security, subsidy, and market development.	These are all areas that the L-PRES project can address and improve to boost livestock productivity in Nigeria.
IX.	Lack of business support services.	L-PRES will strengthen the processes of extending business support services to livestock producers, input suppliers and off-takers through government agencies and cooperatives.
X.	<p>B. Milk Industry</p> <p>Inadequate records of milk production from cow, sheep and goats limit the contribution to national Milk production records</p>	L-PRES project should redress this through farmers' education and mainstreaming of milk production data
XI.	<p>CHides and skins value chain</p> <p>The following challenges constrain the leather industry in Nigeria:</p> <ol style="list-style-type: none"> I. Effects of ectoparasites, lacerations, flaying damages, and inadequate salting were resulting in a large number of rejects. II. Low-level investment in the trading and transportation sector which slows the growth of the sector III. Lack of locally manufactured 	The L-PRES project can address all these gaps to boost the hides and skins value chain

	<p>tanning materials, thereby leading to the importation of a considerable amount of chemicals (frequently substandard) into the country causing environmental degradation and pollution.</p> <p>IV. Underdeveloped effluent management system leading to pollution of the streams, waterways, air and farmlands has adverse effects on the environment</p> <p>V. Poor administration and excessive documentation required to access the Export Expansion Grant (E.E.G.), preventing the Small and Medium Enterprises (S.M.E.s) to access the incentive meant to grow export</p> <p>VI. The low price of hides for industrial use as compared to Ponmo, which leads to the importation of hides for use by the local Finished Leather Goods producers. And</p> <p>VII. The slow growth of the Finished Leather Goods sub-sector due to lack of incentives from the Government</p>	
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Source: L-PRES Gap Response Framework Report (2020).

2.0 STRATEGIC APPROACH AND POLICY FRAMEWORK

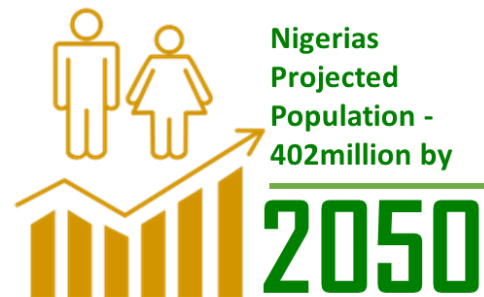
The livestock sub-sector is an essential and integral component of Nigeria's agriculture. It is vital to both the socio-economic and food security of Nigeria; it contributes 9 % of GDP 21% from the agricultural sector. The projected exponential growth of human population to 402 million people by the year 2050, rapid

urbanisation and increased per-capita income with the associated boost in the consumption of high-protein animal products such as milk, meat and eggs provide opportunities for the sector's growth and development of the sector's diverse value chains. Policies and implementation strategies are therefore offered by Government in response to the existing, emerging and projected challenges and opportunities for the livestock.



The strategy for the Nigeria Livestock productivity improvement and resilience project LPRES is to target transformation of the sector through increased investments over the six years to address and resolve critical issues that affect the industry. This strategic approach envisaged the achievement of the transformation of the current subsistence

livestock production systems into dynamic market-oriented systems by addressing the structural and functional challenges affecting the sector. These also targets increased investments by both the private and public sectors, to levels that will catalyse annual sectoral growth to 5-6% to align with the national economic development plan of improving home consumption and increased exports of agricultural products for improved GDP and poverty reduction.



The transformation of the sector will stimulate improvement of breeds, production capacities, productivity, availability and use of production resource (quality land, feed and water); and support one health initiative through animal health management systems, and disease control measures; input supply and service delivery; value addition and market information and infrastructure; and competitiveness of products of the

Nigeria Livestock sector.

The LPRES project implementation strategies are aligned with existing National Agricultural policies, programmes, interventions and agreements which have the following underlying principles and objectives:

- i. The Economic Recovery and Growth Plan (ERGP, 2017–2020); medium-term development strategy aim at increasing national productivity and achieving sustainable diversification of production, to significantly grow the economy and achieve maximum welfare for the citizens, beginning with food and energy security.
- ii. The Agriculture Promotion Policy (APP, 2016–2020) or Green Alternative building on the evidence that there are two significant gaps in Nigeria agriculture today: the inability to meet domestic food demand and the failure to export quality agricultural products. It aims thus at improving the productivity of many livestock commodities to meet both internal demand and tap into export market opportunities.
- iii. The National Livestock Transformation Plan (NLTP, 2019–2028); aims at transforming the livestock sector into a catalyst for building national prosperity. These will be through strategic interventions that will support improved performance and sustainability of livestock production, value addition and mitigating the escalating crisis between settled-farmers and pastoralists that is undermining the entire development of the livestock sector by the establishment of ranches.
- iv. Special Agro-Industrial processing Zones (SAPZs); these programme target the achievement of the Nigerian industrialisation Agenda.
- v. National Agricultural Technology and Innovation Plan (NATIP, 2021-2024); uniquely designed to turn COVID-19 into growth opportunity through a well-coordinated policy direction that attracts massive public and private sector investments in research and development, especially in high quality inputs; training and extension; and deployment of appropriate technologies and innovative technics in agricultural production and processing.

This Roadmap for Productivity Improvement and Resilience encapsulates the aims of the existing policies and guided in drawing implementation plans by taking into account existing livestock scenarios to project for the growth of the industry in line with aims and philosophies of national policies for Livestock development. The LPRES intervention locations are to create the necessary spark for achieving productivity improvement and

resilience; activities and interventions from National, States, other Development partners/agencies and the private sector initiatives are assumed to be contributors and gaps bridges in other locations.

3.0 LPRES PROJECT IMPLEMENTATION ENVIRONMENT

LPRES recognises the critical challenges and nexus between livestock's production and its impact on the environment and the people; thus, LPRES Project activities will align and Link with National environmental protection policy and the World Bank Operational Policy 4.12. As part of the implementation activities, the LPRES project has integrated the following plans to respond to the challenges of waste, climate change and resettlement can pose to the environment, climate change, public health and the food chain. The policy framework is as thus:

3.1 CLIMATE CHANGE AND LIVESTOCK DEVELOPMENT

Climate change is one of the most severe challenges to livestock production. The arid and semi-arid areas of Nigeria, in particular, are the front-line of the battle against climate change impacts on livestock development. Despite this common understanding, however, accurate assessment of the effects of climate change on livestock development in Nigeria is faced with many challenges. L-PRES intervention is developing an appropriate policy response and enhancing climate resilience in the livestock sector in view, expected severity in climate change impacts. The most significant direct effects of climate change on livestock production comes from the climate change-induced heat stress resulting in a substantial financial burden to livestock producers through the decrease in milk component and milk production, meat production, reproductive efficiency and animal health. The Indirect effects of climate change on livestock in Nigeria include (i) modification in the ecosystems to affect the production systems (grazing and non-grazing), (ii) changing the animal feed resources, (iii) influencing water demand, availability and quality, (iv) impacting on livestock/human health and (v) security

3.2 MANAGING CLIMATE RISKS FOR LIVESTOCK RESILIENCE IN NIGERIA

The L-PRES climate-resilient approach for sustainable livestock development in Nigeria include: (i) putting in place appropriate adaptation and mitigation strategies; (ii) adopting relevant climate-smart livestock practices for the development of the livestock systems; (iii) putting in place reasonable and suitable policy, legal and institutional environment; (iv) promoting climate finance to support livestock development in the

country; and (v) building partnerships at all levels to address the challenge from multi-dimensional perspectives.

3.2.1 Resettlement Policy Framework (RPF)

The LPRES Project will incorporate resettlement policy framework (R.P.F.) in implementing support for improvements in livestock health and productivity in line with the World Bank Safeguard Policies which include: Involuntary Resettlement (OP/BP4.12) and Physical Cultural Resources (OP/BP 4.11). The RPF will ensure that before the implementation of any subproject activities, Project-Affected People (PAP) are consulted, and appropriate mitigation measures are affected. If needed, site-specific Resettlement Action Plan (RAP) proportional to the scope of impact will be prepared to appraise and address issues which may arise from physical and economic displacement and or restriction of access to or use of communal natural resources. The R.P.F. assessment and response is as presented in the Indicative Entitlement Matrix (Table 3).

Table 3: Indicative Entitlement Matrix

Asset	Type of Impact	Affected Person/unit	Eligibility Criteria	Financial or In-Kind Compensation	Allowances/Assistance
Land (including fallow land used as part of the agricultural cycle)	Permanent acquisition of land	Landowner (individual, clan or community)	The person with the formal right to land or without a standard legal right to land but have a recognisable claim to land recognised under the prevailing local land tenure	Replacement with the land of equal size and quality in locations adjudged as same in value to the acquired one applies. If a land replacement is not possible or available, then cash compensation at full replacement value.	<u>Land Transfer allowance</u> 10 % of market value in cash covering all administrative fees related to the purchase or provision of replacement land.
		Tenant/User (will not receive compensation for land but for improvements to a land they have made such as crops, houses, sheds etc. (see below for details))		Community land – replacement land or if unavailable, compensation to the community with their full consultation and participation paid	
Cultural Heritage					

Land (including fallow land used as part of the agricultural cycle)	Permanent acquisition of land	Landowner (individual, clan or community)	A person with a formal right to land or without a standard legal right to land but have a recognisable claim to land recognised under the prevailing local land tenure	Replacement with the land of equal size and quality in locations adjudged as same in value to the acquired one applies. If a land replacement is not possible or available, then cash compensation at full replacement value.	<u>Land Transfer allowance</u> 10 % of market value in cash covering all administrative fees related to the purchase or provision of replacement land.
	Temporary acquisition of land	Tenant/User (will not receive compensation for land but for improvements to the land they have made such as crops, houses, sheds etc. (see below for details))		Community land – replacement land or if unavailable, compensation to the community with their full consultation and participation paid	
Cultural Heritage				Full restoration to pre-project conditions; Financial compensation for any crops or trees acquired or destroyed; payment for any rent received from the land; replacement land if lack of access will last for an agricultural cycle and prevent farmers from either planting or harvesting crops. Return of land to the land user after use	Moving allowance

Permanent /Temporary loss of cultural heritage, including sacred sites.	Community	Community Land not under dispute	Replacement in consultation with concerned parties including the ministry of environment concerning forest/trees Cash compensation of temporary loss of income	N.A.
Restriction /loss of grazing ground	Cattle herders and others	Verifiable established grazing pattern/history	Assistance to create grazing reserve elsewhere in consultation with P.A.P.s Cash compensation for a temporary loss of income.	N.A.

Asset	Type of Impact	Affected Person/unit	Eligibility Criteria	Entitlement Description	Allowance/ Assistance
Crops/ Trees	Destruction/damage/loss of crops	Landowner	A landowner with formal or informal right to own land on which crops/fruit/economic trees are grown	Cash compensation for crops at the full market value of crop yield per hectare	NA
	Loss of fruit trees	Tenants/Users of land and cultivators/owners of crops/fruit trees, including individuals of the same household who tend their piece of land and grow crops on it.		Cash compensation for fruit trees at the full market value of fruit yield per season	N.A.
	Destruction/Loss of wood trees		Recognised owner of affected fruit / economic trees	Cash compensation for a wood tree at current market value	Moving/Setup allowance
Structures	Destruction of permanent, immovable structures	Owner	Recognised owner of the affected system irrespective of land ownership status	Cash compensation at full replacement value, or replacement structure; Cost of moving Disturbance assistance (10%)	Cash or in-kind moving assistance
		Tenant/User	Recognised tenant		
	Temporary displacement of moveable structures	Owner	Recognised owner of affected structure irrespective of land ownership status	Cost of re-building and moving back to the initial location; Disturbance allowance (10%)	Cash or in-kind moving assistance
Tenant		Recognized tenant/user			
Businesses and	Businessperson distinct from owner	Those operating business on the			

	Commercial Enterprises (formal and informal)	of the structure	affected project land irrespective of their land ownership status		
Loss of access to rivers or lakes	Loss of access to fishing livelihood	Recognised fishermen/women who substantially rely on fishing for their livelihood	Verification that fishing is an essential livelihood for household or individual	Compensation and assistance to be discussed with P.A.P. such as cash compensation, livelihood restoration including micro-credit to start an alternative business or to get access to alternative fishing grounds/ forming cooperatives with others.	
Land (including fallow land used as part of the agricultural cycle)	Permanent acquisition of land	Landowner (individual, clan or community)	A person with the formal right to land or without a standard legal right to land but have a recognisable claim to land recognised under the prevailing local land tenure	Replacement with the land of equal size and quality in locations adjudged as same in value to the acquired one applies. If a land replacement is not possible or available, then cash compensation at full replacement value. Community land – replacement land or if unavailable, compensation to the community with their full consultation and participation paid	<u>Land Transfer allowance</u> 10 % of market value in cash covering all administrative fees related to the purchase or provision of replacement land.
	Temporary	Tenant/User (will not receive compensation for land but for improvements to the land they have made such as crops, houses,		Full restoration to pre-	Moving allowance

Cultural Heritage	acquisition of land	sheds etc. (see below for details)		project conditions; Financial compensation for any crops or trees acquired or destroyed; payment for any rent received from the land; replacement land if lack of access will last for an agricultural cycle and prevent farmers from either planting or harvesting crops. Return of land to a land user after use	
	Permanent /Temporary loss of cultural heritage, including sacred sites.	Community	Community Land not under dispute	Replacement in consultation with concerned parties including the ministry of environment concerning forest/trees Cash compensation of temporary loss of income	N.A.
	Restriction /loss of grazing ground	Cattle herders and others	Verifiable established grazing pattern/history	Assistance to create grazing reserve elsewhere in consultation with P.A.P.s Cash compensation for a temporary loss of income.	N.A.

Source: - Review of Livelihood Activities and Livestock Systems Innovations in Pastoral & Agro-Pastoral Communities (2020).

3.2.2 Environmental and Social Management Plan (Framework ESMP)

The Environmental and Social Management Plan (ESMP) is a detailed plan and schedule of measures necessary to minimise, mitigate or control any potential adverse environmental and social impacts identified under the Nigeria L-PRES project. This ESMP consists of a set of generic mitigation, monitoring and institutional measures to be taken during the implementation and operation of the proposed project to eliminate negative environmental and social impacts, offset them or reduce them to acceptable levels.

Table 4: Environmental and Social Management Plan for LPRES

Anticipated Activities	Impact Source	Potential Risk	Mitigation Responsibility
<i>Agricultural Activities – (before the implementation of sub-project)</i>			
Environmental Issues			
Cultural practices	Bush clearing & preparation for agricultural activities on farmlands. Bush Fire	<ul style="list-style-type: none"> • Air pollution from the release of carbon monoxide • Contributes to climate change from the release of GHG • Habitat disruptions Wildlife relocation 	<ul style="list-style-type: none"> • Prepare ESMP. Baseline elemental Studies (water, air, soil quality). • Routine (baseline-checks) biodiversity studies/Baseline ecological assess
Farming (crop, livestock, fish farming) & processing of agricultural products	Use of machinery Loss of Organic Matter from top soil	<ul style="list-style-type: none"> • Air quality problems from dust generated from the use of machines • Effluent discharge from processing plants • Oil/fuel contamination of soil Wastewater generated on-site 	<ul style="list-style-type: none"> • Workers trained on necessary safety procedures and environmental issues • Adoption of sustainable soil & water management
	Occupational Health and Safety	<ul style="list-style-type: none"> • Accidents from undertaking general agricultural practices & operation of machinery • Incidents from the use of farming tools Poor housekeeping 	<ul style="list-style-type: none"> • Prepare and develop a proper H.S.E. plan for the project rehabilitation works • H.S.E. plan must be reviewed continuously for adequacy.

		<p>around worksite/farm sites that can promote accidents/incidents</p> <ul style="list-style-type: none"> • Health risks from use of pesticides & fertilizers 	
<i>Activities during operations phase of sub-project</i>			
Agricultural Farming & Processing	Waste generation	<ul style="list-style-type: none"> • Improper disposal of waste generated • Poor management of waste 	<ul style="list-style-type: none"> • Ensure preparation of proper waste management plans • Monitor to ensure compliance with plans
Social Issues			
Crop, Livestock & Fish farming Activities	Socio-economic impacts	Limited understanding of W.B. safeguards	Conduct training on safeguards implementation and monitoring of ESMP

Source: Environmental and Social Management Framework (ESMF) For Livestock Productivity and Resilience Support Project (L-PRES) Report (2020).

3.2.3 Waste Management Plan (W.M.P.)

Waste Management Plan (W.M.P.) is designed to minimize potential harmful effects on human, animal health and on the environment that may arise particularly in the context of waste storage, collection, transportation, treatment and disposal. The Waste Management Plan (W.M.P.) addresses livestock farms waste that includes non-hazardous and hazardous (e.g. expired veterinary medicines, fallen stock etc.) waste, in line with Regulatory Framework of the Federal Ministry of Environment (FMENV), vested with the power of regulation of all environmental matters, World Bank Policies and International environmental agreements and treaties ratified by the Federal Republic of Nigeria

The W.M.P. will guide the project implementation unit and other stakeholders in the proper implementation that will achieve project environmental sustainability objective. The Waste Management Policy covers all activities associated with the LPRES, throughout the implementation cycle of the project, mostly, at the production and processing phases of the ruminants, the poultry and other animals.

Table 5: Summary of Potential Impacts Associated with Livestock waste

POTENTIAL ADVERSE IMPACTS	
SOCIAL IMPACTS	ENVIRONMENTAL IMPACTS
<ul style="list-style-type: none"> • Public discomfort and mood swings from odour; • Heightened risks of pathogens (disease- and non-disease-causing) passed from animals to humans; • The emergence of microbes resistant to antibiotics and antimicrobials, due in large part to the widespread use of antimicrobials for nontherapeutic purposes; food-borne disease; worker health concerns; and dispersed impacts on the adjacent community at large; • The attraction of rodents, insects and 	<ul style="list-style-type: none"> • Deterioration of ambient air quality due to the release of odour, fugitive specks of dust and gaseous pollutants; • Noise & vibration disturbances from the operation of waste treatment equipment (for large scale operations); • Increases in the destruction of natural habitat & displacement of fauna, particularly in wetland areas, • Soil contamination from manure; • Groundwater contamination from wastewater and manure leaching; • Surface water contamination as a result of sediment/pollutants runoff from exposed

<p>other pests, the release of animal pathogens, groundwater ;</p> <ul style="list-style-type: none"> • Risk of occupational accidents, injuries and diseases. 	<p>soils and accidental leakage/runoff of manure lagoon into the water;</p> <ul style="list-style-type: none"> • Increase in Greenhouse gas emissions affects climate change.
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Source: Waste Management Plan for Livestock Productivity and Resilience Support Project (LPRES) Report, (2020).

3.2.4 Integrated Pest Management Plan (IPMP)

The IPMP spells out how pests would be managed to an acceptable level under the L-PRES Project in Nigeria in line with the existing national and international legislation on the use of pesticides and pest management practices. The plan provides background on pest management concerns and control measures in Nigeria and subsequently outlines a responsive program for pest management in an environmentally sound and safe manner.

The IPMP identified several potential environmental and health risk that may be considered through the unsafe use of pesticides in the project area and adequate mitigation measures for addressing the impacts identified. In addition to providing details of the mitigation measures to be implemented for the consequences, the responsible institutions to implement them are provided in the Integrated Pest Management Plan.

It also designs a program for capacity building in Integrated Pest Management, provides a stakeholder consultative and information dissemination arrangement as well as institutional responsibilities for taking actions and responding to IPM needs (Table 6).

Table 6: Adverse Environmental & Health Impacts

Media	Potential issues	Mitigation Measures	Monitoring	Responsibility	Frequency	Cost estimate
Surface and groundwater	Pesticides may pollute surface water through runoff which transports pesticides to streams, rivers, and other surface-water bodies. Groundwater contamination may occur from pesticide residues in surface water, such as drainages, streams, and municipal wastewater.	Minimise use of chemical pesticides in line with the IPMP. Ban pesticides should not be applied	Compliance with LPRES IPMP Monitoring of water quality in project areas	State Ministry of Agriculture/ Department of Animal Husbandry State Ministry of Environment/ Environmental Protection Agency	Annually	\$66,000
Air Pollution	Vapour from sprayed pesticides will be deposited into the air, and if the chemical compound is very stable, vapour may travel beyond the application location.	Minimise use of chemical pesticides in line with the IPMP.	Monitoring of air quality parameters	State Ministry of Environment/ Environmental Protection Agency	Annually	\$44,500
		Adequate equipment should be used to minimise aerosols	Adequate training on pesticides application	State Ministry of Agriculture/ Department of Animal Husbandry	As required	\$34,200
Soil Contamination	Pesticides could also enter soil during spraying causing wash-off or run-off into	Minimise use of chemical pesticides in line with the IPMP.	Compliance with LPRES IPMP Monitoring of soil	State Ministry of Agriculture/ Department of Animal Husbandry	Annually	\$75,000

	ground. Long-term excessive use of pesticides will cause higher pesticide residues in the soil, which will further cause soil contamination within the area.	Ban pesticides should not be used	quality in project areas	State Ministry of Environment/E.P.A.		
Flora and Fauna	Harm to non-target species: sprayed insecticides reach a destination other than their target species because they are mainly aerosol. Runoff can carry pesticides into aquatic environments while wind can carry them to other fields, grazing areas, human settlements and undeveloped areas, potentially affecting other species.	Minimise use of chemical pesticides in line with the IPMP. Site specific E.M.P.s	Compliance with LPRES IPMP Monitoring of environmental parameters	State Ministry of Agriculture/ Department of Animal Husbandry State Ministry of Environment/E.P.A.	Annually	\$82,000
	Other problems emerge from insufficient production, transport and storage practices. Over time, the repeated application increases	Proper diagnosis of pests issues Minimise use of chemical pesticides in line with the IPMP.				

	pest resistance, while its effects on other species can facilitate the pest's resurgence.					
Human Health	Consumption of crops and plants grown under chemical pest control could cause health hazards to humans and animals within and around the project site.	Minimise use of chemical pesticides in line with the IPMP.	Health plans and programs	Federal/ State Ministry of Health	Periodically	\$40,000
	Certain kinds of chemicals intoxication, especially after drinking pesticide-contaminated water is a medium to high likelihood. These is a crucial potential impact considering that most of the locals get drinking water from surface and groundwater sources. Skin, eye, and nose irritation	Public awareness of health ampaigns Avoid the use of ban pesticides	Health plans and programs Emergency Preparedness Plan	State Ministry of Environment/E.P.A. Federal/ State Ministry of Health	Periodically	
	Possibility of cancers, neurologic, endocrine and reproductive					

	problems form direct and indirect exposure to pesticides					
Occupational Health and Safety	Long term inhalation of toxic pesticides sprayed, could eventually result in respiratory illnesses or disease conditions	Minimise use of chemical pesticides in line with the IPMP Ban pesticides should not be applied	Compliance with the LPRES IPMP Health risk assessment on project locations	State Ministry of Agriculture State Ministry of Health	Annually	\$82,000
TOTAL						\$423,700

Source: L-PRES Result Framework Report for Environmental and Health Impact (2020).

3.2.5 Social Impact Assessment (S.I.A.)

Social Impact Assessment (S.I.A.) is vital to the management of the L-PRES project as the project will affect people and institutions, beyond the environmental dimension. A comprehensive social change process with particular reference to poverty alleviation, gender balance and its' effects on governance and institutions; equity, rights, justice and ultimately, cultural and household relations, these complements the ESMF with a greater focus on the social change process.

The Social Impact Assessment reviews the potential consequences of the L-PRES to people, including changes that could affect the way the project stakeholders live, work, relate to one another, organise them and function as individuals and members of society. These include psychosocial changes, especially concerning existing gender norms, values, attitudes and perceptions of women and girls within the community and environment. The basic dimensions of social change form the basis of assessment and include (i) Demographic change; (ii) Economic change; and (iii) Institutional change.

4.0 PROJECT GOVERNANCE

4.1 Monitoring and Evaluation

The LPRES project is committed to accountable project implementation and impact evaluation. To ensure that the stakeholders in the livestock sector are committed to ownership of responsibilities and are committed to monitoring and reporting of project milestones through results-based management and decision making M&E framework which ensures a clear and logical basis for tying resources to expected results. The establishment of a Nation-wide M&E mechanism for reporting on progress and discussing solutions to challenges that arise in the implementation process is vital to the successful implementation and sustainability of the LPRES project. The M&E platform will also provide experience sharing avenue among participating states.

5.0 COMPONENT ANALYSIS & ROADMAP

5.1 Roadmap for Strengthening National Institutions for Improved Service Delivery

Current Status and Gaps

The challenges of the Nigerian Livestock sector are fundamentally linked to weak national institutions responsible for sector specific service delivery and has thus accounted for weak capacity for Research, Innovation and extension service delivery. There is also an ineffectual synergy which results to ineffective policy formulation and implementation structures at intra and inter-federal Ministries, Department and Agencies (MDAs) and weak synergy between federal and states MDAs. Like other agricultural related development programmes and interventions Livestock sector programmes are also not streamlined which is responsible for persistent inter and intra-disciplinary rivalry in the livestock sector and other departments and agricultural projects. The sector has limited access to quality inputs and service providers: This is because markets for livestock inputs and service providers are largely unregulated even with the presence of key regulators (NIAS, VCN, NAFDAC and SON) responsible for enforcing strict adherence to quality standards of products and services.

Challenges

With an average of 1:10,000 extensions to farmer ratio across the country, Livestock farmers receive limited guidance and training in technology adoption. This leads to limited skills in the application and adoption of productivity improvement and resilience by the farmers. This situation is worsen by the fact that even the limitation of available extension workers, very few are specialised for livestock extension. This has therefore limited the capacity of farmers to keep accurate records, access production Infrastructures; affordable credit; markets and research and innovations.

Objective

To support improvement in the performance and service delivery of institutions involved in livestock sub-sector and will contribute to improving the enabling environment.

The overall target

- I. Build sustainable human, institutional and policy capacity for key public and private actors in livestock sector;
- II. Improve access and delivery of quality extension services
- III. Improve access to breeding
- IV. Improve access to feed; and
- V. Improve access to animal health,

5. 2.0 ROAD MAP FOR LIVESTOCK EXTENSION AND BUSINESS SUPPORT SERVICES

In order to realize the objective of any livestock intervention, there is a need for extension service delivery that will enhance livestock productivity through adaption of good animal husbandry practices and animal health delivery services. Livestock extension and business development support services are cross-cutting interventions that are drivers for sustainability and resilience. L-PRES will strengthen institutions responsible for extension delivery services and the business support services to livestock producers, linking input suppliers and off-takers through government agencies and cooperatives under the Livestock service centres initiative, which will provide a one-stop platform for all livestock value chain actors.

OBJECTIVES:

- I. Increase extension service delivery with a strong background on livestock information dissemination
- II. Increase Access to financial services and trade such as the Export Expansion Grant (EEG), NIRSAL BOI BoA and Export promotion Council
- III. Link producers to market and products regulators
- IV. Increased clusters and trust groups formation and transformation into Small and Medium Enterprises (SMEs)
- V. access incentive to grow for both local and export markets
- VI. support private sector investment in the trading, processing and transportation sector which slows the growth of the sector

STRATEGY

- Utilization of Facilitators (SMS) in animal husbandry and in animal health to train the groups in the intervention areas and provide technical supports, off-takers, advisory services, linkage (31 LGAs)
- Develop result framework for extension service delivery

Table 7: RESULTS FRAMEWORK FOR PRODUCTIVITY IMPROVEMENT TARGETS THROUGH LIVESTOCK EXTENSION SERVICES

Indicator Name	Baseline	1	2	3	4	5	End Target
<i>Improved Livestock Productivity, Resilience Through Provision of Livestock Extension Services</i>							
1.6.Improve the capacity of Livestock extension agents in the L-PRES states 260 Livestock extension agents to be trained and retrained on extension service delivery, livestock management, dry season feeds and pasture development	0.00	75.00	105.00	135.00	215.00	252.00	260.00
1.7 160 Livestock / Vet Health Extension agents to be trained and retrained on extension service delivery, livestock Health management, and Vaccination	0.00	26.00	54.00	78.00	100.00	152.00	160.00
		30.00	60.00	60.00	60.00	60.00	60.00
1.8 Advocate the for private Livestock extension services.							

1.9 Resuscitate and strengthen Research Extensions, Farmers, Input Linkages (REFILS). (REFILS Meetings)		4	4	4	4	4	4
2.0 Use of Mass media (social and conventional) to provide awareness on Livestock Extension activities.		10	10	10	10	10	10
2.1 Strengthen ADPs as key agency for Livestock Extension Activities.		14	14	14	14	14	14
2.2 Livestock Record Keeping (Birth weight, weaning weight, Maturity weight, Feed consumption, Feed cost, Mortality, Sales) in Copies		100,000	200,000	300,000	400,000	500,000	1,000,000

Source: Result Framework Report for Livestock Extension Services (2020)

Table 8: RESULTS FRAMEWORK FOR PRODUCTIVITY IMPROVEMENT TARGETS THROUGH LIVESTOCK SERVICES CENTRES DEVELOPMENT

Indicator Name	Baseline	1	2	3	4	5	End Target
<i>Improved Livestock Productivity, Resilience Through Provision of Livestock Services and Business development centres</i>							
1.6. Communal Livestock Service Centres implemented (Number)	0.00	1.00	3.00	5.00	5.00	7.00	7.00
1.7. Beneficiary satisfaction rate with quality of services provided by the Project for the livestock sector (of which female and youth) (Percentage)							
a. % Female		35.00	35.00	35.00	35.00	35.00	35.00
b. % Youth		60.00	60.00	60.00	60.00	60.00	60.00
Strengthening the Performance of Selected Value Chains							

2.1 At least 60% of Direct Project Beneficiaries Receive Matching Grants (disaggregated by gender and youth)		10	35	45	60	60	60
% Female Beneficiaries of Project Matching Grants		35	35	35	35	35	35
% Male Beneficiaries of Project Matching Grants		65	65	65	65	65	65
% Youth Beneficiaries of Project Matching Grants (18-35yrs)		60	60	60	60	60	60
2.2 Beneficiaries of Project Matching Grants (Number)							
a. Small SP window		2,520.00	8,820.00	11,340.00	15,120.00	15,120.00	15,120.00
b. Medium SP window		2,100.00	7,350.00	9,450.00	12,600.00	12,600.00	12,600.00
c. Large SP		700.00	2,450.00	3,150.00	4,200.00	4,200.00	4,200.00

window							
2.3. Formally Established Productive Partnerships (Number)		156.00	547.00	703.00	937.00	937.00	937.00
2.4. Jobs created (disaggregated by gender and youth) (Number)		0	372,030	1,116,089	1,860,149	2,604,209	3,348,268
a. % Female		35	35	35	35	35	35
b. % Youth		60	60	60	60	60	60
2.5. Market management platforms benefiting from project support (Number)	0.00	0.00	5.00	15.00	30.00	30.00	30.00

Source: Results Framework for Livestock Services Centres Development (2020).

5.3.0 ROADMAP FOR ANIMAL GENETIC RESOURCES DEVELOPMENT

Current Status and Gaps



Livestock species such as cattle, sheep, goat, pig and poultry are preserved and managed in Breeding and Multiplication Centres in various geographical zones where they are best suited. Nigeria's most prominent initiative and intervention is Animal genetic resource Conservation of some livestock (sheep and goat) productivity, and the poultry industry has had some

response from research institutes, Universities and donor support initiatives. The funding and management of the animal genetic stocks are by the Federal Government of Nigeria, which in turn distributes the offspring and genetic resources to livestock farmers in states and local government areas.



Even though conventional selection and mating schemes have given a significant contribution to the genetic improvement of livestock in the developed world, their impact in developing countries has been on the lower side. The main aim of an animal breeder is Genetic improvement in productivity per animal within the

shortest possible time. The target of L-PRES intervention to address the factors causing genetic erosion: these include low genetic conservation resulting from exerted pressure from large-scale commercial production systems to maintain only high-output breeds; indiscriminate crossbreeding; Lack of/weak AnGR management policies, programmes or institutions

The intervention strategy will focus on building collaborations and strengthening of Institutions involved in improving the productivity of local livestock and poultry and Animal Genetic Resources Conservation to deliver on their core mandates viz:

- I. National Centre for Genetic Resources (NACGRAB): an Agency involved in the development of animal genetic resources (poultry, goat, sheep, etc.). It is responsible for servicing the activities of the National Committee on Naming, Registration and release of livestock breeds.
- II. Nigerian Conservation Foundation (N.C.F.): Mandate is the conservation of animal genetic resources of Nigeria to ensure the sustainable use of these rich biodiversities through research and development.
- III. Other areas of collaboration include collating data on indigenous animals, especially those of economic and conservation importance

The National breeding policy will be a reference point in the implementation for the road map in Animal genetic resource development. The target is to increase the productivity of indigenous livestock and poultry and the number of livestock breed officially registered and released during the project life through collaboration and to popularise the use of registered species. Similarly, L-PRES livestock centres will have modern breeding facilities and increased research and application of *In situ*, *In vivo*, *in vitro* conservation methods for the improvement of livestock productivity. Similarly, The L-PRES project considers some clusters of goat farmers who were beneficiaries of pure bred Boer goats as part of Federal Government of Nigeria (FGN) livestock improvement programme in the implementation states as sources for genetic improvement of local goats through distributing offspring and genetic resources to other farmers.

Challenges

- Animal genetic conservation is low or non-existence
- Emphasis is more on crop than livestock.
- High hybridization of the indigenous livestock species.
- Both infrastructural and personnel capacity for conservation is very low
- Amongst which is the inconsistency power supply to carry such storage and research facility.
- Weak linkage between research institute, universities and the ministry
- Breeding and multiplication centres are moribund.

Objective

To increase the productivity of the indigenous livestock and poultry breeds and commercialise its production

Overall target

- To increase the number of registered breeds of AnGR of Nigeria at the end of the project
- To build collaborations and popularise the use of registered indigenous breeds
- Increase research and the use of modern breeding facilities
- Improved conservation of AnGR of Nigeria

Strategy

- L-PRES will support functional centres for conservations of genetic resources along ecosystems with comparative advantages for the livestock type e.g (North West-Sokoto Gudali/Uda/Sahel; North East-Rahaji/Balami/Sahel; and South West-Muturu, Ndama, Keteku/WADG/WADS)
- Conservation and crossbreeding would be concurrent undertaken to address the food security of the country under the project
- Collaboration with research centers and foreign breeding companies to set up semen and embryo collection center to serve the needs of Nigeria and the surplus for export

5.4 ROADMAP FOR ANIMAL FEEDS SUPPLY

Livestock feeds accounts for over 70% of the production cost of large scale livestock enterprise; the high price and low availability of good quality animal feed (concentrate, forage and fodder) affects productivity of livestock, as nutritional interventions are required to realize the full genetic potential of all classes and species of livestock. Therefore, LPRES will leverage and support interventions in the area of increased support for ranching, Grazing reserves development, mixed farming systems and emerging toll millers and feedlots to supply the ruminant livestock sector (beef and dairy; sheep and Goats) needs. In contrast, smallholder mixed crop-livestock and extensive livestock production systems (pastoral or agro-pastoral) will provide for the majority of ruminant livestock population.



Objective

The objective for ruminant animals feeds are;

- Adopt the use of fodder bank as source of supplement for ruminant animals
- Grow high yielding and adaptable pasture plants using good agronomic practices and setting up irrigation facility for all year round pasture production
- Encourage commercial pasture & pasture seed production by supporting private investors to develop ranching and PPP arrangement in grazing reserves development

- Provide capacity building to crop farmers to value the potential residue both for their animal and for sales.
- Harnessing other alternative feeds resources like agro industrial by-products eg Cassava peels etc. based on the available resource in the sites of intervention

Strategy

- Support small-scale pasture production, processing and conservation into silage, haylage and hay
- Organize commercial ruminant feeds producers through capacity building and inputs support
- Community silage (in small plastic bags of between 10 to 50kg) and grass pellets production to be supported
- Encourage partnership with the private partners in commercial pasture processing, packaging and storage by providing appropriate technology, machineries and implement like forage harvester, mower, bailer, infrastructure such as hay band silage bunker etc
- Support crop residue processing, formulated rations using locally available resources and technologies on feeding strategies

LPRES projection for the feed supply sector is majorly for poultry sub-sector which constitutes the largest uptakers of concentrate feeds. The forecast takes into account total projected feeds needs; contributions and growth of feed millers and other suppliers within the project lifespan

Objective

The objective for Poultry feeds are;

- Promote the use of alternative feed resource as replacement or conventional feedstuff
- Encourage on-farm and toll milling at farm and as cooperative holding in livestock centres
- Encourage commercial concentrate feeds production for all classes of animals by supporting private investors to establish feed mills
- Encourage in- country production of feed additives and sourcing of organic alternatives

- Strengthen regulatory agencies for quality assurances
- Incentivize crop farmers to produce crops specially for the livestock feeds industry
- Harnessing other alternative feeds resources like agro industrial by-products eg Cassava peels etc. based on the available resource in the sites of intervention

Strategy

- Support small-scale livestock feeds producers to acquire standard feed processing equipment
- Link feed millers to inputs sources
- Support research of alternative feed resource utilization
- Support regulators to train small feed millers on feeds standards

Table 9: RESULT FRAMEWORK FOR ANIMAL FEEDS PRODUCTIVITY IMPROVEMENT & TARGET									
Indicator Name	DLI	National Data	Baseline	Intermediate Targets					End Target
				1	2	3	4	5	
<i>Improved livestock productivity, resilience and commercialization of Livestock feed value chains</i>									
1. % Addition to National Poultry Feed Production Basket/b		4.5mMT (70% of 6.5mMT)	4.5mMT	2.40	7.80	16.70	26.00	30.00	30.00
2. % access to quality poultry feed by beneficiaries		1.35mMT							
a. Small (60%)			0.00	15	20	45	60	75	80
b. Medium (25%)			0.00	10	25	35	50	65	70
c. Large (15%)			0.00	5	7	10	15	20	30
3. 30% Increase in feed milling capacity									
a. Commercial Feedmillers (25%)			0.00	5	10	15			30
			0.00	5	10	15			30

b. Toll Millers (65%)			0.00	5	10	15	20		30
c. On-farm Farmers (10%)							20	25	
							20	25	
								25	
4. % Increase in Number of Feedmillers Trained									
• Commercial Feedmillers			0.00	15	20	45	60	75	80
• Toll Millers			0.00	10	25	35	40	50	50
• On-farm Millers			0.00	15	25	40	45	50	60

Source: L-PRES Result Framework for Animal Feed Productivity (2020).

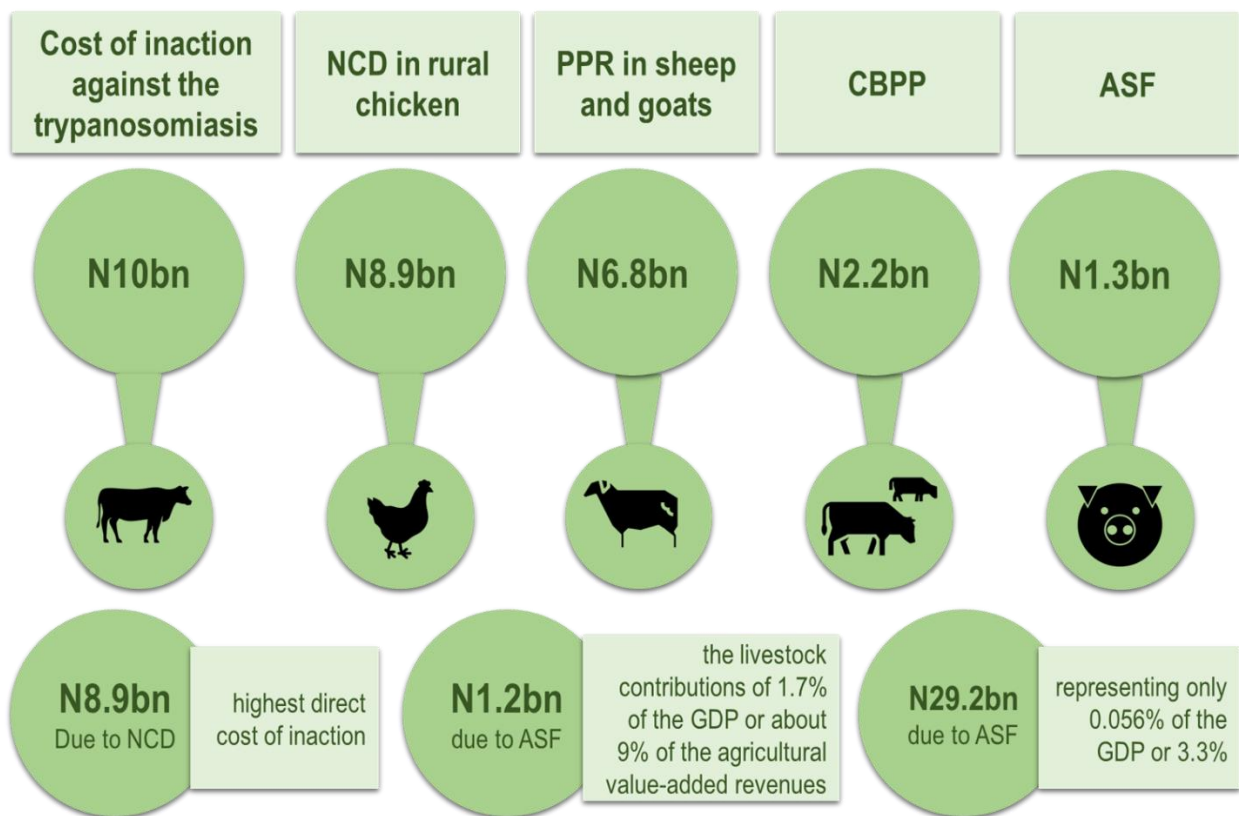
5.5.0 ROADMAP FOR ANIMAL HEALTH SERVICE

The main thrust for the roadmap for animal health should be recast as: The main thrust for the roadmap for animal health under the LPRES project is strengthening of integrated animal disease prevention and control system, which include strengthening vaccine production and regulatory activities of NVRI and NAFDAC.

Avian Influenza, Rabies, Peste des Petits Ruminants, Newcastle Disease, Infectious Bursa Disease, Bovine Tuberculosis and Contagious Bovine Pleuropneumonia are priority animal diseases that were common among the selected states and FCT. Others include; Blackquater, Hemorrhagic Septicemia, Anthrax, Foot & Mouth Disease (FMD), Brucellosis, African Swine Fever (ASF), Marek's Disease, Ecto and Endo Parasitic infection

An assessment by the world bank on the costs of disease burden, morbidity and mortality related to five specific diseases in Nigeria viz:- i) NCD in rural poultry flocks, ii) PPR in sheep and goats, iii) CBPP in cattle, iv) ASF in pigs and v) Trypanosomosis in ruminants and pigs is estimated to have the annual financial burden of PPR, CBPP, trypanosomosis, NCD and ASF to amount to 29.2 billion Nigerian (NGN).

This cost of inaction against these diseases is highest for trypanosomosis in cattle and pigs (NGN 10 billion), followed by NCD in rural chicken (NGN 8.9 billion), PPR in sheep and goats (NGN 6.8 billion), CBPP (NGN 2.2 billion) and ASF (NGN 1.3 billion). The highest direct cost of inaction amounting to NGN 8.9 billion is due to NCD, while the least is due to ASF (NGN 1.2 billion). These meant that twenty-nine billion Naira (N29.2 billion amounting to \$204.2 million); representing only 0.056% of the GDP or 3.3% of the agricultural value-added, as the cost of inaction against the priority diseases; when compared to the livestock contributions of 1.7% of the GDP or about 9% of the agricultural value-added revenues, there is a significant effect on the economy. This evaluation, however, does not include diseases like Brucellosis, tuberculosis, Foot and mouth disease that have an important implication on international trade.



The challenges of the animal healthcare delivery as reported by farmers include lack of routine vaccinations and provision of other inputs by the government. Also, the veterinary workforce was reported as inadequate in most of the states, especially in Benue, Ebonyi and Plateau states.

Therefore LPRES will improve the animal health care system for the growth and protection of investments in the livestock sector by reducing the costs of disease burden, morbidity and mortality related to priority diseases (Avian Influenza, Rabies, Peste des Petits Ruminants, Newcastle Disease, Infectious Bursa Disease, Bovine Tuberculosis and Contagious Bovine Pleuropneumonia) and other diseases.

The strategy is to embrace the one health initiative with more comprehensive collaboration of all stakeholders to guarantee disease prevention and control through intensive surveillance, vaccination, biosecurity practices at all levels of production at production level; making available drugs and medications; and building collaboration with private veterinary practitioners especially in states with inadequate veterinary personals. The main thrust of the roadmap for animal health under the LPRES project is strengthening of regulatory and vaccine production capacity of NVRI, NAFDAC, and also engaging the private sector for the production of vaccines and veterinary drugs, regular vaccination and animal health extension services.

OBJECTIVE

Strengthening of integrated animal disease prevention and control system, which include strengthening vaccine production and regulatory activities of NVRI and NAFDAC to achieve effective animal diseases prevention and control for improved livestock production and productivity.

Challenges

- Weak control strategies for important livestock and zoonotic diseases
- Weak legal framework on animal disease prevention and control
- Weak animal disease reporting
- Poor facilities for animal vaccine production and storage
- Poor laboratory capacities at Veterinary Teaching Hospitals (VTHs) and State Veterinary Clinics
- Inadequate fund for farmers' compensation affected by disease outbreaks

Strategies

- i. Vaccine and Vaccination programme
 - Increase in vaccine production capacity for all the diseases amenable to vaccination
 - Enhance storage and distribution of vaccines
 - Improve vaccination coverage through public – private partnership
- ii. Facilitate training and empowerment of young veterinarian and animal health practitioners
- iii. Support State Veterinary Clinics and Veterinary Teaching Hospitals through the provision of veterinary diagnostic equipment and reagents
- iv. Improve networking among private practitioners and other health care delivery
- v. Create a robust one health platform to facilitate inter-ministerial stakeholders' linkages
- vi. Improve meat inspection by revamping existing abattoirs & slaughter slabs
- vii. Improve collaborations with national, international and other donor funded projects such as Regional Disease Surveillance System Enhancement (REDISSE) project

TABLE 10: RESULTS FRAMEWORK FOR ANIMAL HEALTH CARE SERVICES

Indicator Name	Baseline	1	2	3	4	5	End Target
<i>Improved Livestock Productivity, Resilience Through Provision of Animal Health Services</i>							
1.5 % increase in vaccination coverage for animals (species) against priority diseases (disaggregated by Value Chain):	25.85	33.75	40	45	52.5	56.25	75
Ia. Vaccination coverage of cattle against CBPP (Percentage)	32.93	40	45	50	60	65	75
Vaccination coverage of cattle against FMD (Percentage)	0.04	40	45	55	60	65	75
C. Vaccination coverage of Sheep and Goats against PPR (Percentage)	32.87	45	50	55	60	65	75
Vaccination coverage of Birds (Poultry Value Chain) (Percentage) against NCD	37.67	40	45	50	60	60	75
II. % increase of Animal Health Staff (Federal, State, LGA & Private) trained in Disease control techniques	7	20	40	60	-	-	60
III. % increase of beneficiaries having	30	40	60	80	100	100	100

access to animal health Services (Sanitary Mandate)							
IV. Number of Veterinary Clinics Rehabilitated/Upgraded, equipped and functional	3	5	8	8	2	-	23
V. Number of Abattoirs upgraded, equipped and functional	3	3	5	10	5	-	23
VI. Number of Live Bird Markets upgraded, equipped and functional	2	2	2	2	-	-	6
VII. % increase of beneficiaries complying with on - farm biosecurity measures	20	30	40	60	-	-	60
VIII. Number of Ambulatory/ Animal Health and Disease Surveillance Agents Trained, equipped and deployed Young vets	106	115	230	115	-	-	460

Source: L-PRES Framework Result Framework for Animal Health (2020).

6.0 SELECTED VALUE CHAINS ANALYSIS & ROADMAP

5.1 ROADMAP FOR BEEF AND DAIRY DEVELOPMENT

Current status and Gaps

Nigeria is one of the leading countries in cattle production in sub-Saharan Africa, with over 18.2 – 22 million cattle consisting of 1.47 million milking cows and 13.26 million beef cattle. Less than 1% of these population are commercial while the remaining are under traditional pastoral systems. There is hardly any distinction between cattle managed under this system as all dairy and draft cattle end up as beef but not all beef cattle end up as dairy and draft cattle. Thus, no specific type of livestock produced for meat or dairy in Nigeria.

All the cattle produced attain maturity age of two and above years before they are slaughtered and considered good beef for the Nigerian consumer whose preference is low or near absent of consumption of veal or baby beef. The system is based on the use of indigenous and less technically dependent methods in all aspects of cattle production and value chain processes that include marketing and health management. Only an optimum and specialised animal production processes, especially for beef cattle, will be able to alleviate poverty, provide food and nutrition security and meet other needs of such a growing population and its economy.


The dairy cattle are owned by semi-sedentary and transhumance pastoralists who managed



18.3m
Population of
cattle in Nigeria



13.26m
Beef cattle



1.47m
Milking cows

1%

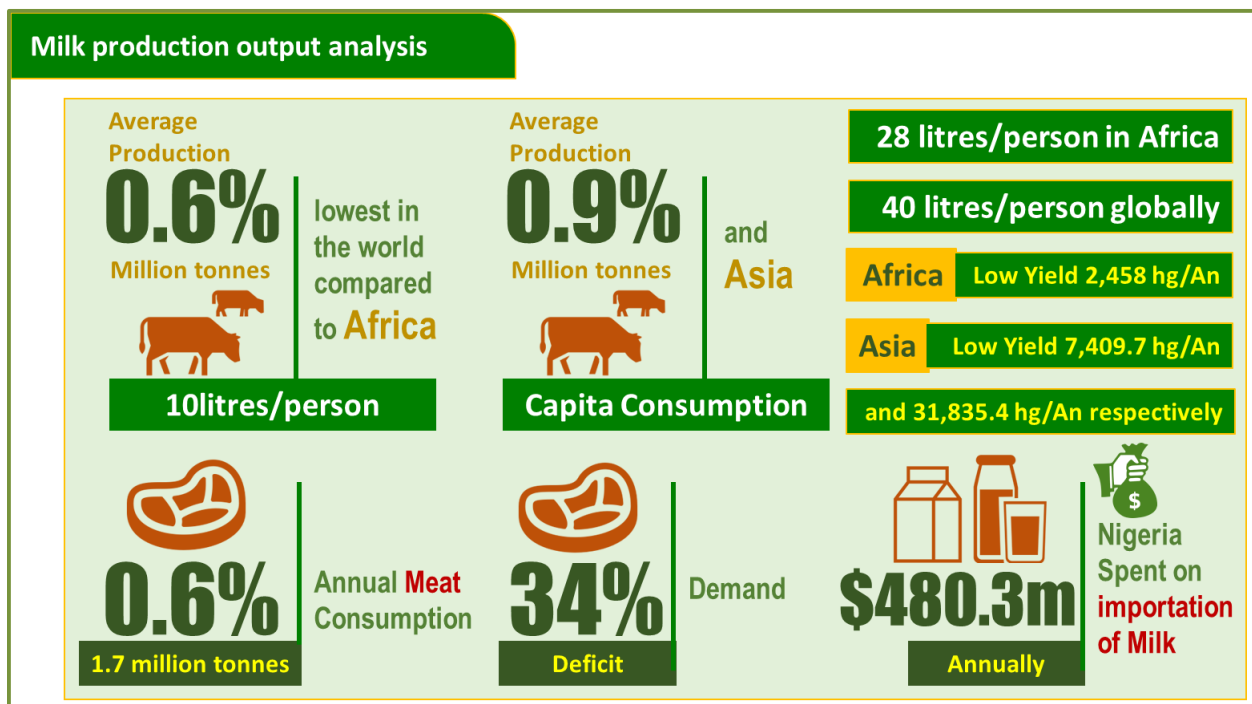


of this population
are commercial
while the
remaining are
under traditional
pastoral systems.



the animals in large herds. The indigenous breeds are dual-purpose and thus selected and promoted for dairy are White Fulani, Red Bororo, Sokoto Gudali, Adamawa Gudali, Wadara, Azawak, Muturu, Keteku, Ndama and Kuri. Large scale commercial dairy farms depend on imported exotic breeds and their crosses while commercially oriented urban farmers are emerging with the focus of productivity improvement of Nigeria indigenous dairy cattle breeds and crosses through enhanced nutritional and diseases management.

Nigeria's milk production output of 0.6 million tonnes is the lowest in the world compared to Africa and Asia's average of 0.9 million tonnes and 6.6 million tonnes respectively and per capita consumption of 10litres/person, relative to 28litres/person in Africa, and 40 litres/person globally. The country's low milk production is due to low yield at 2,458 hg/An relative to Africa and Asia's average of 7,409.7 hg/An and 31,835.4 hg/An respectively. With an estimated annual milk consumption of 1.7 million tonnes, production only meets about 34% of demand, while importation makes up for the deficit. As a result of the production deficit of over 1 million tonnes, in recent years, Nigeria has spent an average of US\$480.3 million on the importation of milk annually, suggests the need to increase the productivity of the dairy sector to cut down on importation and milk consumption demand supported by a growing population.



Remove % sign on infographics

Challenges

As Nigeria advances in animal production, many factors militate against beef and dairy animal production. And these include; subsistence and pastoral production practices and its attendant

conflicts and insecurity, breed improvement, inadequate finance, high cost of animal feeds, animal diseases, lack of infrastructure, value chain development and engagement in beef and dairy cattle value chain. Others include the capacity of existing relevant public and private institutions, Land Ownership, Productivity of the local cattle breed, Strategic infrastructure, and Gender Issues.

Objective

To increase the productivity of cattle through increased feed availability, health and breeds improvement

To improve in yield and quality of products for domestic and export markets through specialised beef and dairy cattle production

The overall target for Cattle

Increase productivity of dairy cattle in the intensive system to 5litres for White Fulani and 16litres for Cross (50-50 Holstein Friesian x White Fulani) as against 2.8litres and 4litres respectively.

Increase yield of beef cattle through the reduction in calving cycle from 42months to 12months

Increase productivity through a reduction in the fattening period from 110days to 60days by the end of the project.

Increase the value of sales of both beef and dairy products from 30% to 80% at the end of the project

Table 11: RESULTS FRAMEWORK FOR BEEF AND DAIRY PRODUCTIVITY IMPROVEMENT AND TARGETS

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Improved livestock productivity, resilience and commercialisation of Beef and Dairy value chains								
1. Increased yield of production of targeted animal production systems by primary beneficiaries in the selected value chains (cattle, small ruminants) (Percentage) a. Production system - Extensive i. Beef Cattle (White Fulani) Expressed as Calving cycle in months (%age reduction)		42.00 (0.00)	39.40 (6.19)	36.80 (12.38)	34.20 (18.57)	31.60 (24.76)	29.00 (30.95)	29.00 (30.95)
		0.8 (0.00)	1.50 (87.5)	2.00 (150.0)	2.00 (150.0)	2.00 (150.0)	2.00 (150.0)	3.00 (275.0)
ii. Dairy Cattle Expressed as Milk production in litres/day (%) - White Fulani - Cross (50-50 Holstein Friesian x White Fulani)		2.00 (0.00)	3.00 (50.0)	4.00 (100.0)	4.70 (130.0)	4.70 (130.0)	4.70 (130.0)	5.00 (150.0)
		42.00 (0.00)	37.7 (10.24)	33.4 (20.48)	29.00 (30.95)	23.33 (55.56)	17.66 (57.95)	12.00 (71.42)
- Semi-intensive (White Fulani) i. Beef Cattle Expressed as Calving cycle in months (%age reduction)								
Dairy Cattle Expressed as Milk Production in			2.00	2.00	4.00	4.00	4.70	5.00 (354.5)

Litres/day (%)								
i. White Fulani		1.10 (0.0)	(81.8) 5.00 (150.0)	(81.8) 5.00 (150)	(263.6) 8.00 (300.0)	(263.6) 8.00 (300.0)	(327.2) 8.00 (300.0)	10.00 (400.0)
ii. Cross (50-50 Holstein Friesian x White Fulani)		2.00 (0.0)						
Dairy Cattle Expressed as Milk Production in Litres/day (%)								
i. White Fulani		2.85 (0.0)	2.85 (0.0)	3.20 (12.3)	3.50 (22.8)	4.00 (40.35)	4.70 (64.91)	5.00 (75.44)
ii. Cross (50-50 Holstein Friesian x White Fulani)		2.85 (0.00)	11.36 (298.60)	12.00 (321.05)	12.00 (321.05)	12.00 (321.05)	12.00 (321.05)	16.00 (461.40)
Intensive (White Fulani)								
i. Beef Cattle		42.00 (0.00)	37.7 (10.24)	33.4 (20.48)	29.00 (30.95)	23.33 (55.56)	17.66 (57.95)	12.00 (71.42)
Expressed as Calving cycle in months (%age reduction)								
Dairy Cattle Expressed as Milk Production in Litres/day – 220 lactating days (%)								
i. White Fulani		2.85 (0.00)	3.20 (12.3)	3.50 (22.8)	4.70 (64.91)	4.70 (64.91)	4.70 (64.91)	5.00 (75.44)
i. Cross (50-50 Holstein Friesian x White Fulani) – 305 lactating days		4.00 (0.00)	8.00 (200.00)	10.00 (321.05)	12.00 (321.05)	12.05 (321.05)	12.00 (321.05)	16.00 (461.40)

Litres of milk/cow/year								
▲ Indigenous 220 lactating days (Percentage)		220 (0.00)	517 (135.00)	775.5 (525.50)	1,034.00 (370.00)	1,034 (370.00)	1,034 (370.00)	1,100.00 (400.00)
▲ Crossbred 50% Friesian 305 days (Percentage)		869.25 (0.00)	1,684.63 (93.73)	2,500.00 (187.6)	2,850.00 (227.87)	3,200.00 (268.13)	3,200.00 (268.13)	6,100.00 (601.75)
Fattening period (Reduction in fattening days)								
i. Beef (Indigenous) (Pls Indicate Average Weight Gain) (0.8kg/day Weight NAPRI)		110.00 (0.00)	100.00 (9.09)	95.00 (13.64)	90.00 (18.18)	90.00 (18.18)	90.00 (18.18)	60.00 (45.45)
ii. Crosses 50% Friesian(Pls Indicate Average Weight Gain)		110.00 (0.00)	100.00 (9.09)	90.00 (18.18)	90.00 (18.18)	90.00 (18.18)	90.00 (18.18)	60.00 (45.45)
2. Increased value of sales (on the domestic and export markets) of livestock products by primary beneficiaries in targeted value chains (Percentage)								
Increased value of sales (on the domestic and export markets) of livestock products by primary male beneficiaries in targeted value chains (Percentage)		00.00	35.00	45.00	72.50	85.00	90.00	95.00
Increased value of sales (on the domestic and export markets) of livestock products by primary female beneficiaries in targeted value chains (Percentage)		00.00	40.00	50.00	80.00	90.00	90.00	100.00
Increased value of sales Dairy Products (Percentage)		0.00	30.00	50.00	75.00	75.00	80.00	80.00

Increased value of sales on Beef Cattle (Percentage)		0.00	30.00	50.00	75.00	80.00	80.00	80.00
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Source: L-PRES Result Framework for Beef and Dairy Production (2020).

5.2 SHEEP AND GOAT DEVELOPMENT ROAD MAP

Current Status and Gaps

Sheep and goats (small ruminants) form an important economic and ecological niche in the Nigeria livestock systems. They are an integral and vital component of the pattern of animal production in most rural communities. There are three prominent breeds of sheep namely; Balami; Uda; Yankasa and West African Dwarf. breeds of goats. The Sahelian is not indigenous but is commonly found in Northern parts of the country.

Sheep and goats are reared for immediate cash source, meat, manure, and risk mitigation. They significantly



contribute to the socio-economic life of many rural, peri-urban and urban low households through provision of income, and intangible benefits (i.e., savings, insurance against emergencies, cultural and ceremonial purposes).

Sheep and Goats enjoy wider distribution and greater flock dynamism than other livestock species. Their population in Nigeria was estimated to be 38 million and 57.3 million (citation), respectively. The more significant proportion of these animals is, however, concentrated mainly in the northern region of the country than the southern part. They are ranked as the second most important suppliers of meat protein to the population after cattle, and they contribute about 35% of the total animal meat production in Nigeria. They are increasingly valued for their lean meat and skins production for the leather industry. The export potentials of sheep and goats value chain provide an opportunity for upscaling production practices with more resource and intensity of management allocated into the development of the sub-sector.

Challenges

Challenges facing the sheep and goat value chain in Nigeria include:

- i. Low genetic potential due to poor selection and lack of specialized breeding programme.
- ii. Scarcity of feed including fodder fodder.
- iii. Lack of training and knowledge on good animal husbandry practices
- iv. Poor healthcare delivery system
- v. Poor housing
- vi. Poor market information and linkage

OBJECTIVE

Increase the yield of meat, milk skins for leather industry and promote sheep and goat milk through upscaled production practices with more resources and best management practices to meet national demand

Overall Targets for Sheep and Goat

- Increase productivity of traditional sheep and goat systems through improved breeding, feeding, healthcare and management at the end of the project.
- Increase meat production through a reduction in the fattening period from 110days to 60days at the end of the project

- Sensitization and promotion of sheep and goat milk and milk products
- Support to establishment of dairy sheep and goat farms

Strategies

- a. Breed Improvement through:
 - i. Technology based such as Artificial Insemination and Embryonic Transfer recommended for large farms.
 - ii. Community based such as Open Nucleus Breeding System and Closed Nucleus Breeding System recommended for Small holder farmers
- b. Improved feeding
 - i. Fodder improvement
 - ii. Promotion of perennial shrubs as feed resources
 - iii. Increased utilization of crop residues and agro-industrial wastes and other alternative feed resources
- c. Improved healthcare delivery system
 - i. Promotion of annual mass vaccination
 - ii. Promotion of routine deworming
 - iii. Promotion of ethnoveterinary
- d. Improved Extension and Advisory Services
 - i. Sensitization programmes and Trainings
 - ii. Promotion of record keeping
- e. Value services
 - i. Improved inputs supply system
 - ii. Promotion of incentives
 - iii. Promotion of grants
 - iv. Farmer friendly loan and insurance system

Table: 12 RESULTS FRAMEWORK FOR SHEEP AND GOAT PRODUCTIVITY IMPROVEMENT AND TARGETS

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Improved livestock productivity, resilience and commercialisation of Shep and Goats value chains								
Extensive iii. Goat Expressed as Number of kids to 6 months raised by Doe/year (Average per Herd) iv. Sheep Expressed as Number of lambs to 6 months raised by Ewe/year (Average per Flock)		1.00 (0.00)	1.44 (44.0)	1.44 (44.0)	1.44 (44.0)	2.00 (100.0)	2.00 (100.0)	2.00 (100.0)
Semi-intensive iv. Goat Expressed as Number of kids to 6 months raised by Doe/year (Pls note twining to weaning age in 3rd year)		1.00 (0.0)	1.44 (44.0)	1.44 (44.0)	2.00 (50.0)	2.00 (50.0)	2.00 (50.0)	2.00 (50.0)
v. Sheep Expressed as Number of lambs to 6 months raised by Ewe/year		1.00 (0.0)	1.44 (44.0)	1.44 (44.0)	2.00 (50.0)	2.00 (50.0)	2.00 (50.0)	2.00 (50.0)

Intensive		1.00 (0.00)						
iii. Goat Expressed as Number of kids to 6 months raised by Doe/year (Average per Herd)		1.00 (0.00)	1.44 (44.0)	1.44 (44.0)	2.0 (50.00)	2.00 (50.00)	2.00 (50.00)	2.00 (50.00)
iv. Sheep Expressed as Number of lambs to 6 months raised by Ewe/year (Average per Flock)		1.00 (0.00)	1.44 (44.0)	1.44 (44.0)	1.44 (44.0)	1.44 (44.0)	2.00 (50.0)	2.00 (50.0)
		1.00 (0.00)	1.44 (44.0)	1.44 (44.0)	1.44 (44.0)	1.44 (44.0)	2.00 (50.0)	2.00 (50.0)
Fattening period (Reduction in fattening days)								
i. Sheep		110.00 (0.00)	100.00 (9.09)	95.00 (13.64)	90.00 (18.18)	90.00 (18.18)	90.00 (18.18)	60.00 (45.45)
ii. Goat		110.00 (0.00)	100.00 (9.09)	95.00 (13.64)	90.00 (18.18)	90.00 (18.18)	90.00 (18.18)	60.00 (45.45)
2. Increased value of sales (on the domestic and export markets) of livestock products by		00.00	35.00	45.00	72.50	85.00	90.00	95.00

primary beneficiaries in targeted value chains (Percentage)								
Increased value of sales (on the domestic and export markets) of livestock products by primary male beneficiaries in targeted value chains (Percentage)		00.00	30.00	40.00	65.00	80.00	90.00	90.00
		00.00	40.00	50.00	80.00	90.00	90.00	100.00
Increased value of sales (on the domestic and export markets) of livestock products by primary female beneficiaries in targeted value chains (Percentage)								
Increased value of sales Dairy Products (Percentage)		0.00	30.00	50.00	75.00	75.00	80.00	80.00

Source: L-PRES Result Framework for Sheep and Goat Production (2020).

6.0 ROADMAP FOR LEATHER VALUE CHAIN

The L-PRES project identifies the opportunities and constraints of the leather industry in Nigeria; and thus, will address the challenges using the multi-sectoral approach to solve issues surrounding the productivity of cattle, sheep and goat whose hides and skins are the raw material for the leather industry.

Challenges:

- I. Low productivity as a result of effects of poor nutrition and feeding, ectoparasites.
- II. Poor hides and skins processing from flaying damages and inadequate salting leading to large numbers of rejects.
- III. Low level investment in the trading and transportation sector which slows growth of the sector
- IV. Lack of locally manufactured tanning materials, thereby leading to importation of huge amount of chemicals (often times substandard) into the country causing environmental degradation and pollution.
- V. Underdeveloped effluent management system leading to pollution of the streams, waterways, air and farm lands.
- VI. Poor administration and excessive documentation required to access the Export Expansion Grant (EEG), preventing the Small and Medium Enterprises (SMEs) to access the incentive meant to grow export
- VII. Low price of hides for industrial use as compared to Ponmo which leads to the importation of hides for use by the local Finished Leather Goods producers.
- VIII. Slow growth of the Finished Leather Goods sub-sector due to lack of incentives.



OBJECTIVE

Encourage private sector investment in hides and skins primary production, trading, leather processing including reactivation of Nigerian tanneries for increased local Finished Leather Goods (FLGs) manufacturing.

Strategies

- i. Support to best practices in animal husbandry and health care at farm level.
- ii. Support to capacity building of butchers, skin flayers and skins collectors on improved skin processing.
- iii. Increased support for the sourcing of locally manufactured tanning materials to reduce importation of chemicals thereby conserving foreign exchange and reduction of environmental pollution associated with sub-standard chemicals.
- iv. Adhere to Waste Management Plan to control pollution of the streams, waterways, air and farmlands.
- v. LPRES will adhere to waste Management Plan to control pollution of the streams, waterways, air and farmlands.
- vi. Improvement in pricing mechanism of hides for industrial use as compared to Ponmo.
- vii. Discourage the importation of hides for use by the local Finished Leather Goods producers through promotion of advocacy programmes and imposition of high tariffs on imported finished leather goods.
- IX. Discourage the importation of hides for use by the local Finished Leather Goods producers through promotion and advocacy.



7.0 ROADMAP FOR POULTRY PRODUCTION AND VALUE CHAIN DEVELOPMENT

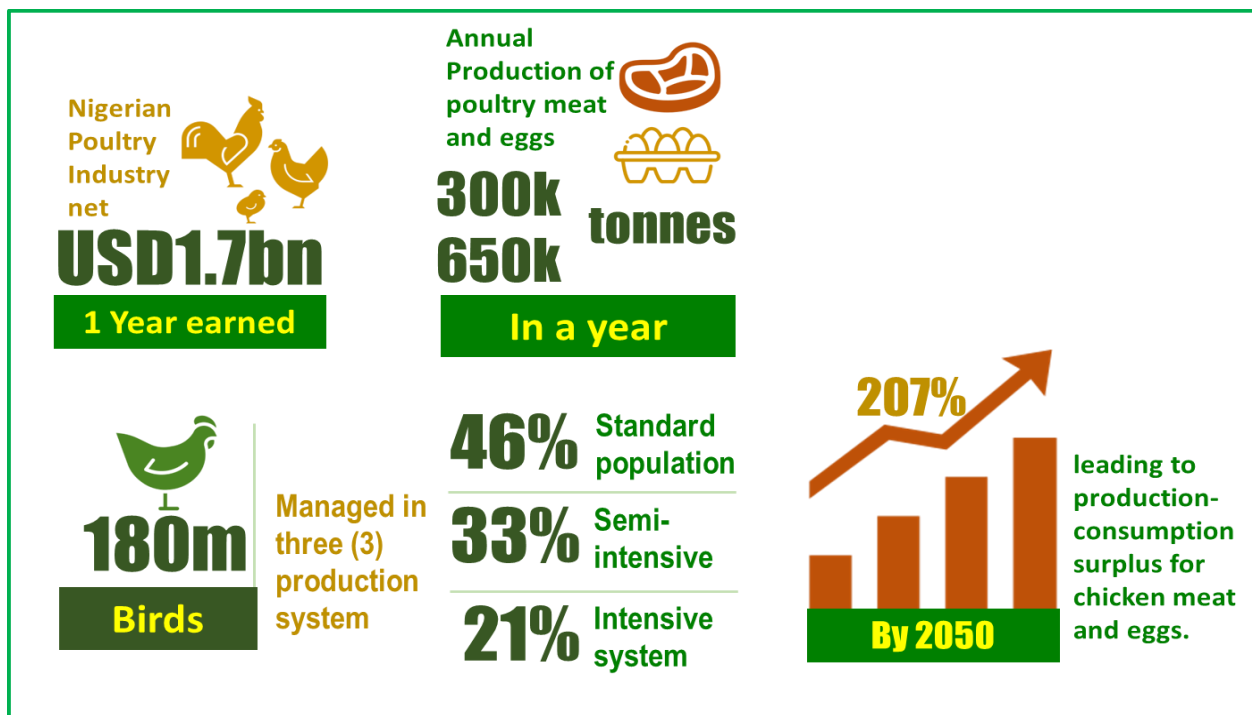
Current status and Gaps

The Nigerian poultry industry is the most commercialised of the agricultural sectors, with a net worth of USD 1.7 billion per year earned from different products and value chain activities (FAO-ASL2050, 2019). It has the highest rate of direct and indirect participation in livelihoods from the poultry industry, with a population of about 180 million birds managed in three production systems: the extensive or free-range system (46 per cent of the standing population), semi-intensive (33 per cent) and intensive systems (21 per cent). A number of indigenous breeds; Fulani, shika brown, FUNAAB Alpha and Noiler and others are existing in Nigeria; and total annual production of poultry meat and eggs is estimated at 300 and 650 thousand tonnes, respectively with projected annual increase chicken meat and egg production in Nigeria by over 207% by 2050 leading to production-consumption surplus for chicken meat and eggs.



The LPRES during the project life under the poultry interventions would drive the sub-sector to improved productivity with provision of quality DOCs, substantial movement from extensive producers moving up to semi

and intensive production are projected. The project incentives will include the supply of feeds, improved medication and biosecurity among others which will result in substantial increases in the scale of specialised layer and broiler operations by LPRES farmers.



Challenges

The sector has the challenge of feeds supply, the supply of day-old chicks, markets and over the year's outbreaks of Newcastle Disease, Infectious Bursal disease and, Highly Pathogenic Avian Influenza. These have posed a severe challenge due to the zoonotic nature of some of these diseases to man. The use of antibiotic by poultry farmers is also a concern due to residual implications on consumers, and it also limits export potentials of the industry.

Objective

To improve poultry productivity and commercialisation through the promotion of indigenous breeds, adequate veterinary services delivery to bridge the gap in diseases surveillance, prevention and treatment

The overall Target

The overall target for Poultry

To produce up to 18.9million laying birds at the end of the project

To produce 2kg dressed weight at 2.1 FCR as against the current 1.3kg

To popularise and increase the productivity of indigenous breeds of Poultry

To ensure an annual increase in the number of laying hens.

STRATEGIES

Supply of Doc

- i. Identify and encourage the Local Companies that have capacity for GPS production for all the breeds.
- ii. Provides incentives to increase production capacities for breeder famers.

Feeds

- iii. Identify and adopt existing indigenous poultry feed apps and popularize it to improve poultry nutrition
- iv. Facilitate the training of feed producers to deliver quality feeds
- v. Promote the utilization of proven alternative feed ingredient.

Management

- vi. Facilitate trainings for targeted poultry farmers for routine management practices
- vii. Institute monitoring mechanisms for compliance to minimum operating procedures in the poultry value chain.
- viii. Facilitate the distribution of quality chicks of the preferred indigenous breeds of birds at subsidized rates.

Table 13: RESULTS FRAMEWORK FOR POULTRY PRODUCTIVITY IMPROVEMENT AND TARGETS

Indicator Name	DLI	National Data	Baseline	Intermediate Targets					End Target
				1	2	3	4	5	
Improved livestock productivity, resilience and commercialisation of Poultry value chains									
Increased yield and production of the targeted production system by primary beneficiaries in the selected value chain									
1. Increase in Hen Day Production (HDP)		250	250	250	255	260	270	273	273
2. Increase in Income from the sales of Eggs (In Nbillions)/a			0.00	157.5	157.5	161	165.6	171	171
3. Increase in Broiler meat Production (MT)/b			0.00	20,600	20,919	21,236	21,869	22,186	22,186
4. % Increase in Dressed weight		65	65%	65%	66.70%	67%	69%	70%	70%
5. Reduction in Fattening period (days) to get 1.5kg Broiler			60	60	60	50	40	40	40
6. Increase in number of			4	4	4	4	5	5	5

production cycle per year (Broiler)									
7. Increased value of sales (on the domestic and export markets) of livestock products by primary beneficiaries in targeted value chains									
7a. Number of Birds (million)/c			0	1.5	4.9	10.5	16.4	18.9	18.9
7b. Income from the sales of Eggs (In Billion)			0	10	32.7	70.9	112.3	130.6	130.6
7c. Spent Layer (Nbillion)			0	0	1.27	4.16	8.92	13.94	13.94
7d. Meat Sales (Broiler) (N Billion)/d			0	20.6	20.92	21.24	21.89	22.19	22.19
8a. % Reduction in mortality rate by the intensive system. (Layer)	10	10	10	9	8	8	7	7	
8b. % Reduction in mortality rate by the intensive system. (Broiler)	7	7	7	6	6	5	5	5	
9. % Increase of Poultry Farmers adopting Good Animal Husbandry Practices			0	40.00	40.00	50.00	60.00	60.00	60.00

Source: L-PRES Framework for Poultry Production (2020).

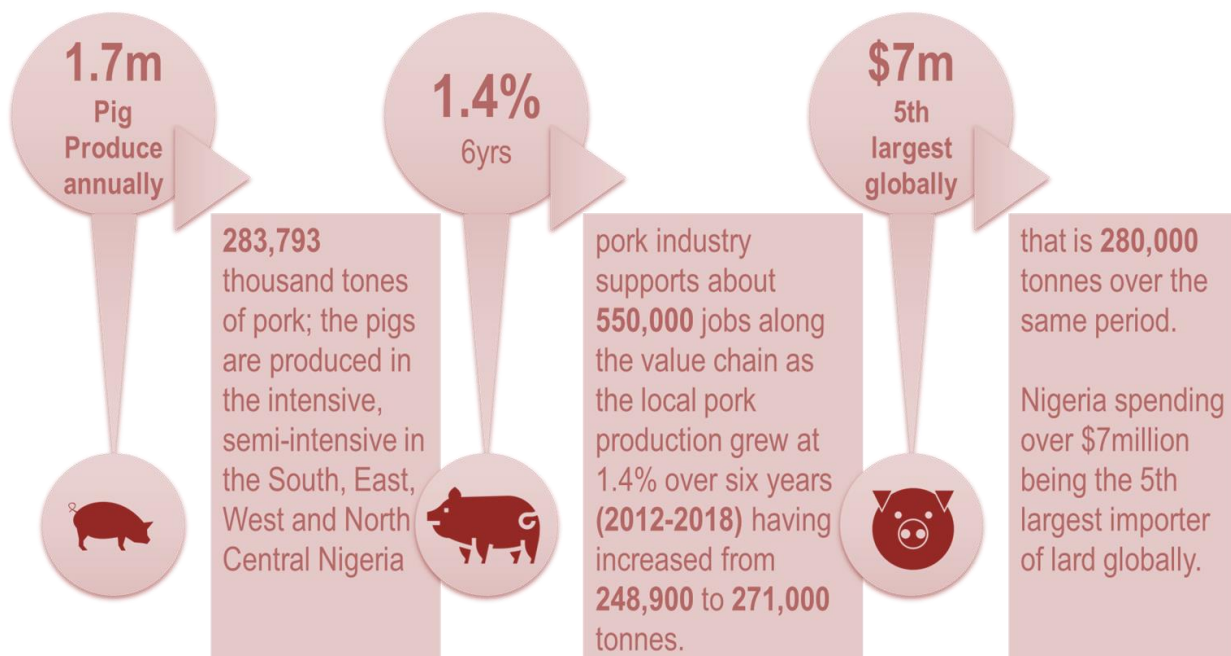
8.0 ROAD MAP FOR PIG PRODUCTION AND VALUE CHAIN DEVELOPMENT

Current Status and Gaps



Nigerian pig production estimated at 7.1 million heads of pigs and 283,793 thousand tons of pork; the pigs are produced in the intensive, semi-intensive in the South, East, West and North Central Nigeria. Cultural and religious factors influence the distribution of commercial breeds for most farmers; these are the Landrace and

their crosses with large white, Large white, Duroc, Hampshire, and Berkshire. Some farms mostly government farms, have Tamworth, Large Black, Pietrain and the indigenous strains which are characterised by slow growth, low production and high mortality.



Despite the associated low productivity, which is a major factor militating against its commercialisation in Nigeria; pork industry supports about 550,000 jobs along the value chain as the local pork production grew at 1.4% over six years (2012-2018) having increased from 248,900 to 271,000 tonnes. In contrast, consumption grew by 1.9%, that is 280,000 tonnes over the same period. The strategic aim for developing the sector is to reverse the trend of importation with Nigeria spending over \$7million being the 5th largest importer of lard globally and to meet surging local demand for pig products with an increase in population and urbanisation

Challenges

Pig production in Nigeria is affected by certain factors viz; Availability, cost and low-quality feed, Inadequate feed mill to cater for expanded pig farming, High price of pig breeds available especially purebreds. Others include high input costs; poor management skills and technical expertise; Poor veterinary services and high cost of drugs; high credit costs or unavailability of credit to farmers; Poor marketing, distribution and pricing of pork Inadequate processing system (abattoir) of international standard Pig wastes management High mortality rate Inadequate research information and extension services Irregular and inadequate livestock policies by Government Diseases, pests and parasites, and restricted acceptance due to religious and cultural influences.

Objective

To increase the annual production and survival of pigs through improvement on birth weight, growth rate and adult weight by adopting right management skills as well as reduction of the incidence of diseases, pest and parasites.

The overall target for Pig value chain

- Improvement on pig productivity by improving the management systems from 75% intensive and 25% semi-intensive to 80% intensive and 20% semi-intensive.
- Maintain a 40% increase in pork production at the end of the project as market weight also increases from 70kg to 100.1kg within 200 days by increasing litter size and reducing weaning age.
- Increase the number of female pig farmers at the end of the project.
- Increase the value of sales of the both domestic and export market.

STRATEGIES

1. Support identified pig breeder farms to deliver high performing breeds to farmers.
2. Extensive capacity building on modern pig husbandry practices to ensure that farmers adopt minimum operating procedures in pig value chains operations.
3. Support production, access to and availability of quality pig feed to farmers.
4. Identify and support semi-intensive farmers to move to intensive production.
5. Support market development and value addition along the value chain.
6. Deliberate and dedicated program for female farmers.

Table 14: RESULTS FRAMEWORK FOR PIG PRODUCTIVITY IMPROVEMENT TARGETS AND VALUE CHAIN DEVELOPMENT

Indicator Name	DLI	National Data	Baseline	Intermediate Targets					End Target
				1	2	3	4	5	
Improved livestock productivity, resilience and commercialisation of Pig value chains									
1. Increased yield of production of targeted animal production systems by primary beneficiaries in pig Production(Percentage) (Assumption: The National Pig Population is 8,597,970, disaggregated into 75% Intensive and 25% Semi-Intensive			8,597,970						

i.	Intensive Pig Prod. System(Percentage) (Assumption: 75% Nat. Pig Pop.)		6,878,376	10	15	20	30	35	40
ii.	Semi-Intensive Pig Prod.System(Percentage) (Assumption: 25% Nat. Pig Pop.)		1,719,594	1	2	3	4	5	5
iii.	Extensive Pig Prod. System(Percentage)	NA	NA	NA					
2.	Increased Pork Production (MT)		147,000	10	20	30	40	40	40
3.	Increased PigMarket weight (kg) in 200 days(Assumption: from Weaning @ 42 Days)		70	10	20	30	40	43	43
4.	Reduced Age at Weaning@6.5kg (Days)		42	5	10	15	21	27	33
5.	Increased Pig Litter Size (Number)		7	5.00	10.00	20.00	30.00	35.00	40.00

6. Increased yield of production of targeted animal production systems by primary male beneficiaries in Pig (Percentage) (65% of Pig Farmers)			95,550	5.00	10.00	20.00	30.00	35.00	40.00
7. Increased yield of production of targeted animal production systems by Female primary beneficiaries in Pig (Percentage) (35% of Pig Farmers)			51,450	5.00	10.00	20.00	30.00	35.00	40.00
8. Increased value of sales on the domestic market of livestock products by primary beneficiaries in targeted Pig value chains (Percentage) Assumption is N800/kg /dress wt.			117.6B	5.00	15.00	25.00	35.00	40.00	40.00

<p>9. Increased value of sales on the export markets of livestock products by primary beneficiaries in targeted Pig value chains (Percentage) (Assumption:Exports starts from year 3) 20% of 147,000=29,400MT @ N1,200/Kg.</p>			0.00	0.00	0.00	5.00	10.00	15.00	20.00
<p>10. Increased value of sales on domestic Market of livestock products by primary male beneficiaries in targeted value chains (Percentage) (65%)</p>			76,44B	5.00	10.00	20.00	30.00	35.00	40.00
<p>11. Increased value of sales on domestic Markets of Livestock products by primary female beneficiaries in targeted value chains (Percentage) (35%)</p>			41,16B	5.00	10.00	20.00	35.00	35.00	40.00

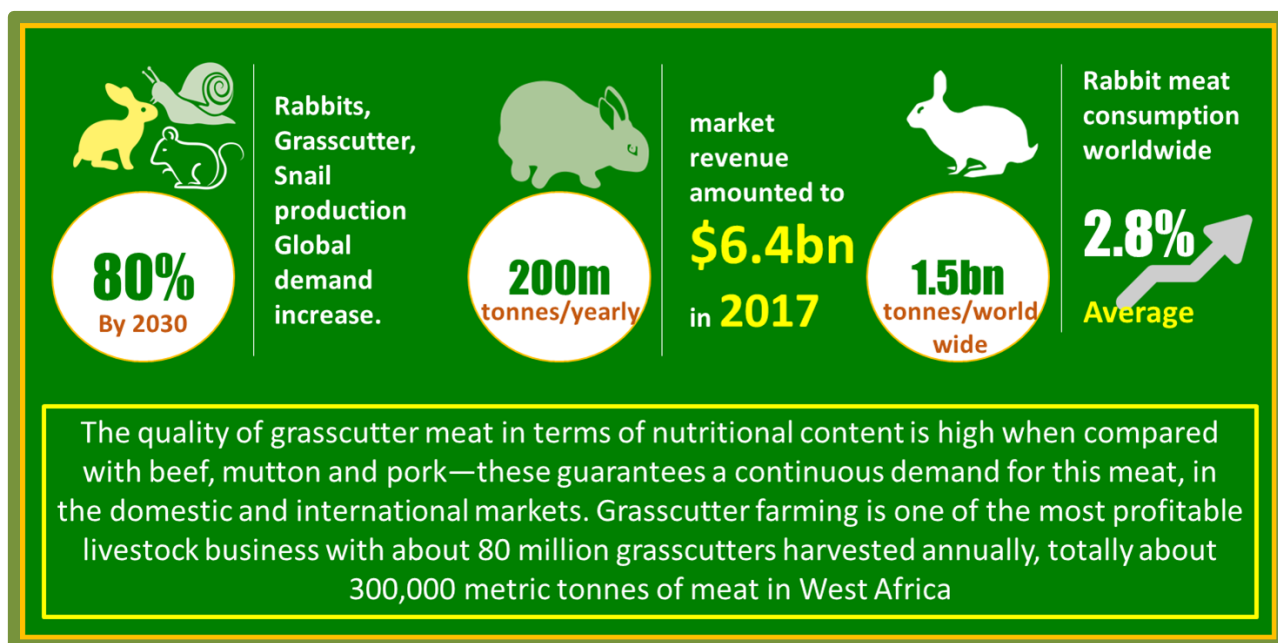
12. Increased value of sales on Export Market of livestock products by primary male beneficiaries in targeted value chains (Percentage) (65%).			0.00	0.00	0.00	5.00	10.00	15.00	20.00
13. Increased value of sales on Export Markets of Livestock products by primary female beneficiaries in targeted value chains (Percentage) (35%).			0.00	0.00	0.00	5.00	10.00	15.00	20.00
14. The reduced mortality rate of project targeted value chain by the intensive system. Pig (Percentage).			15.00	15.00	10.00	10.00	5.00	5.00	5.00
15. Time-lapse between early warning information and disbursement toward response (Weeks)			12.00	4.00	3.00	2.00	1.00	1.00	1.00

Source: L-PRES Framework for Pig Production (2020).

8.0 ROADMAP FOR MICRO-LIVESTOCK DEVELOPMENT (Rabbits, Grasscutter, Snail and Bee Keeping)

Current Status and Gaps

Rabbits, Grasscutter, Snail production, contribute to livelihood and global food security due to their prolificacy ease of management which encourages their production in rural communities by women and children. Global demand forecast for meat to increase 80% by 2030 and healthier lifestyle changes among urban dwellers provides the opportunity for a more significant contribution from the micro livestock. It is important to note that out of over 200 million tonnes of global rabbit production annually, and there is no specific information on the number of rabbits raised for either meat consumption or other purposes in Nigeria. The global rabbit meat market revenue amounted to \$6.4 billion in 2017, and the amount of rabbit meat consumed worldwide is 1.5 million tonnes with a 2.8% average consumption increase within the last ten years. These provide an opportunity for engagement in the global rabbit value chain.



Grasscutter is originally a game animal popularly known as bush meat in Nigeria that produces meat with no restrictions in its consumption. The demand of grasscutter meat led to successful domestication and large scale farming and production of meat for human use from grasscutter, which is reared in suitable cages under an intensive management system. The expected future demand and strategic vision for the local and export market make integration of grasscutter production into the LPRES intervention project a unique selling point.

Snail production in Nigeria is not yet widespread and commercialised as other livestock; The significant breeds of snails commonly found in Nigeria are *Achatina marginata*, *Achatina achatina* and *Achatina Fulica* among other unidentified species. Its consumption is mainly dependent on the harvest from the wild except for very few commercial farms who keep snail in intensive or semi-intensive systems of management. Snails are known as slow growers probably because of less attention are paid to improve on them through research and development. Snail production has the potentials to employ the multitude of Nigeria unemployed youth because of its prolific nature. Snails are environmentally friendly (no lousy odour and noiseless) which makes them suitable to be kept in cities without causing a nuisance to the environment

The profit margin on snail farming is high when appropriate techniques and management system are employed. The annual demand for snail in Nigeria is about 7.5 million kg, with a projected increase. These show that snail meat is in high demand in Nigeria and the world at large. In pursuit of this, LPRES intends to increase and sustain snail production in Nigeria since investment is relatively low and their export potentials are high due to shelf life ranging from 2 to 6 months when compared with other livestock.

Beekeeping is a lucrative livestock enterprise which needs harnessing because of its nutritional, health, export values and employment generation. The bee value chain development is capable of generating at least \$10 billion annually from local and international trade in honey and other hive products if fully harnessed. Honey production and beekeeping in Nigeria is still mainly traditional, and the market also underutilised due to lack of adoption of modern production methods that meet national and international standards of processed honey. Nigeria's current production is about 2million litres of honey annually and consumes about ten times its production thereby spending about \$2 billion on honey importation to supplement its production shortfall when it has the potentials of producing 20 million litres.

Honey is produced virtually in all the states of Nigeria. Still, four states are leading in honey production in Nigeria, and they are Adamawa, Kogi, Nasarawa, Kaduna and F.C.T. with the current production capacity of up to 20,000 metric tons. There is an indication that massive opportunity for economic development lies in developing honey value chain through the adoption of innovative techniques of honey production that would ensure superior and more marketable bee products.

Challenges

There is no proper awareness about micro livestock production, domestication production, management and economic values and inability to get good breeding stock Others to include

lack of capital, changes in consumer mindsets. Another major challenge in Nigeria rabbit production sector is low marketing channels. The popularity of the rabbit as a pet animal, rabbit producers are faced with the challenge of changing mindsets and overcoming constraints to make rabbit meat gain broad consumer acceptance.

Objective

To create awareness on micro-livestock domestication, commercialisation; and Increase yield through the adoption of modern technologies, improved management skills, for increased average birth weight/hatchability and growth rate.

To increase production through improved nutrition and increased intensification and as well make micro-livestock meat available and affordable

The overall target for Rabbit Value chain



To fully utilize the rabbit's multiplication potentials Increase the litter size of rabbit from an average of 3 rabbits per doe to about 8 eight rabbits per doe.

Increase the litter number of rabbits from 4 to 6 litters annually
Increase the market weight of rabbit from less than 2kg to 4kg live weight through improved nutrition.

Increase rabbit yield and meat production by 55% at the end of the project.

Reduce mortality through best management practices.

The overall target for Grasscutter value chain

Increase Grasscutter meat production by 15% at the end of the project and increase the average litter size to 6 from 2 currently
Improve productivity through increased birth weight, growth rate and market weight as well as the reduction in fattening period



to 270 days to achieve 2kg as against 360 days for 1kg Enhance skills of grasscutter farmers for increased production, reduced mortality and increased weight at maturity

Table 15: RESULTS FRAMEWORK FOR RABBIT PRODUCTIVITY IMPROVEMENT TARGETS AND VALUE CHAIN DEVELOPMENT

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Improved livestock productivity, resilience and commercialization of Rabbit value chains								
1. Increased yield of the rabbit by production systems		0%	0%	50%	50%	50%	55%	55%
2. Rabbit meat Production (T)		0%	0%	50%	50%	50%	55%	55%
3. Rabbit (litter/Yr)		12	12	15	18	21	21	21
4. Weaning percentage (%)	40	40	50	60	70	80	90	90
5. Increased rabbit market weight		1.5	1.5	1.8	2.1	2.4	2.7	2.7
6. Rabbit mortality (percentage)		75	70	50	25	10	5	5
7. Distribution of male beneficiaries (percentage)				20-25%	20-25%	20-25%	20-25%	23
8. Distribution of female beneficiaries (Percentage)				75-80%	75-80%	75-80%	75-80%	77
9. Reduction in Fattening Period (Months)		9	9	7	6	5	4	

10. Increased value of sales (on the domestic and export markets) of rabbit products by primary beneficiaries in rabbit value chains (Percentage)		30.00	30.00	40.00	50.00	60.00	70.00	70.00
11. Increased value of sales (on the domestic and export markets) of livestock products by primary male beneficiaries in snail value chains (Percentage) Rabbit meat		30	30	40	50	60	70	70
12. Increased value of sales (on the domestic and export markets) of livestock products by primary female beneficiaries in rabbit value chains (Percentage) Rabbit meat		30	30	40	50	60	70	70

Source: L-PRES Framework for Rabbit Production (2020).

TABLE 12: RESULTS FRAMEWORK FOR GRASSCUTTER PRODUCTIVITY IMPROVEMENT TARGETS AND VALUE CHAIN DEVELOPMENT

Indicator Name	DLI	National Data	Baseline	Intermediate Targets					End Target
				1	2	3	4	5	
Improved livestock productivity, resilience and commercialisation of Grasscutter value chains									
1. % Increase in Grasscutter Meat Production (Tonne) ^a		200	200	0	5.0	10.0	15.0	15.0	15.0
2. Increased Grasscutter Litter Size (Number)		2.0	2.0	2.0	3.0	4.0	5.0	6.0	6.0
3. Increased Grasscutter Market weight (kg) at (9) nine months		1.0	1.0	1.0	1.3	1.7	1.7	2.0	2.0
4. Increased yield of production of targeted animal production systems by primary male beneficiaries in the Grasscutter value chains (Tonne/Percentage) I. Meat Production II. Breeding Stock Production (Colony made up of 1 Male: 4 Female)		180.0	80.0	0.00	5.00	10.00	20.00	30.00	30.00

		9,000	9,000	0.0	450	900	1,800	2,700	2,700
5. Increased yield of production of targeted animal production systems by Female primary beneficiaries in the Grasscutter value chains (Tonne/Percentage)									
I. Meat Production									
II. Breeding Stock Production (Colony made up of 1 Male: 4Female)									
		20.0	20.0	0.00	5.00	10.00	20.00	30.00	30.00
		1,000	1,000	0.0	50.0	100.0	200.0	300.0	300.0

6. Reduction in Fattening Period (Days) to get 2.0kg grasscutter from baseline of 1.0kg		360	360	360	350	330	300	270	270
7. Increased Value of Sales on Domestic production of targeted animal production systems by primary male beneficiaries in the Grasscutter value chains (Number)									
III. Meat Production (N/kg)		1,500	1,500	1,600	1,800	2,000	2,000	2,000	2,000
IV. Breeding Stock Production (Colony made up of 1 Male: 4 Female) (N/Colony)		75,000	75,000	75,000	80,000	80,000	85,000	85,000	85,000
8. Increased Value of Sales on Domestic production of targeted animal production systems by Female primary beneficiaries in the Grasscutter value chains (Number)									

I. Meat Production (N/kg)									
II. Breeding Stock Production (Colony made up of 1Male:4Female) (N/Colony)		1,500	1,500	1,600	1,800	2,000	2,000	2,000	2,000
		75,000	75,000	75,000	80,000	80,000	85,000	85,000	85,000
9. Reduced mortality rate of Grasscutter disaggregated by production system (Intensive) (Percentage)		51.72	51.72	30.00	20.00	15.00	15.00	15.00	15.00

Source: L-PRES Framework for Grasscutter Production (2020)

The overall target for Snail value chain



Foster domestication of threatened snail breeds through an intensive production system

The commercialisation of snail farming through L-PRES intervention to increase snail meat, shell and slime produced annually

To broaden the farmer's knowledge of new techniques and technology involved in profitable snail production venture.

Increase in snail meat yield through improved management system of production, hatchability and market weight.

Improve productivity through increased weight gain and reduced maturity/fattening period and reduced mortality rate.

Increase the value of sales of snail meat, shell and slime for the both domestic and export market.

TABLE 16: RESULTS FRAMEWORK FOR SNAIL PRODUCTIVITY IMPROVEMENT TARGETS AND VALUE CHAIN DEVELOPMENT

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Improved livestock productivity, resilience and commercialisation of Snail value chains								
1. Increased yield of snail by production systems			0%	50%	50%	50%	55%	
Intensive system		0%	156	234	351	527	817	817
Pasture method		156	144	215	323	485	752	752
			12					
		144 (92%)		19	28	42	65	65
		12 (8%)						

2. Snail meat Production (T)	50000	6757	6757	7433	8176	8993	9893	10882
3. Snail (Egg laid/Yr)		8	8					
Achatina marginata		12	12					
Achatina achatina		300	300					
Achatina fulica								
4. Hatchability (%)	40	40	50	60	70	80	90	90
Achatina marginata	40	40	50	60	70	80	90	90
Achatina achatina	10	10	20	30	40	50	60	60
Achatina fulica								
5. Increased snail market weight		00	00	25%	25%	25%	25%	25%
Achatina marginata		180	180	225	281	352	439	549
Achatina achatina		150	150	188	235	306	398	398
Achatina fulica		25	25	31	39	49	61	61
6. Snail mortality		30	25	20	15	10	5	5
Achatina marginata		30	25	20	15	10	5	5
Achatina achatina		80	80	75	70	65	60	60
Achatina fulica								
7. Distribution of male beneficiaries (percentage)		95	95	20-25%	20-25%	20-25%	20-25%	236
8. Distribution of female beneficiaries (Percentage)		61	61	75-80%	75-80%	75-80%	75-80%	581
9. Reduction in Fattening								

Period (Months)								
to get 450g snail from baseline of 180g		24	24	22	20	18	16	16
to get 450g snail from baseline of 150g		30	30	29	28	27	26	26
10. Increased value of sales (on the domestic and export markets) of snail products by primary beneficiaries in snail value chains (Percentage)		40.00	40.00	50.00	60.00	65.00	70.00	70.00
11. Increased value of sales (on the domestic and export markets) of livestock products by primary male beneficiaries in snail value chains (Percentage)								
Snail meat		40.00	40.00	50.00	60.00	65.00	70.00	70.00
Snail shell		40	40	40	50	60	70	70
Snail slime		00	00	15	30	45	60	70
12. Increased value of sales (on the domestic and export markets) of livestock products by primary female beneficiaries in snail value chains (Percentage)								
Snail meat		40	40	50	60	65	70	70
		40	40	40	50	60	70	70
		00	00	15	30	45	60	70

Snail shell Snail slime								
13. The reduced mortality rate of snail by pasture method/semi-intensive (Percentage)		50	50	45	40	30	35	35
14. The reduced mortality rate of snail by intensive system (Percentage)		30	30	25	20	10	5	5
15. Time lapse between early warning information and disbursement toward response (Weeks)		12	4	3	2	1	1	1
16. Farmers adopting improved agricultural technology (percent)		0.00	00.00	10	20	45	60	60
17. Training of snail farmers:		0	221	103	167	278	48	817
Refresher training		0	156	0	0	0	0	156
Training of beginner snail farmers		0	65	103	167	278	48	661
18. Impact evaluation		0	0	221	324	491	769	817

Source: L-PRES Framework for Snail Production (2020).

The overall target for Honey Bee

Increase the number and success rate of colonised hives through best management practices

Increase the yield of honey and beeswax production through commercialisation and adoption of improved technologies

Reduce mortality by promoting adequate health care delivery

Improvement in processing to increase market value for both domestic and export



TABLE 17: RESULTS FRAMEWORK FOR BEEKEEPING PRODUCTIVITY IMPROVEMENT TARGETS AND VALUE CHAIN DEVELOPMENT

Indicator Name	DLI	National Data	Baseline	Intermediate Targets					End Target
				1	2	3	4	5	
Improved livestock productivity, resilience and commercialisation of Honey Bee value chains									
1. Increased Number of Colonised Hives (Good Management Practices) in percentage		10.00	10.00	10.00	15.00	20.00	30.00	40.00	40.00
2. Success Rate of the Colonized Hives^a									
I. Traditional		50	50	50	55	60	65	70	70
II. Modern		10	10	10	20	45	60	70	70
3. Increased yield of Production of Honey^b									
I. Traditional (MT)		10,500	15,000	15,000	20,000	25,000	30,000	35,000	35,000
II. Modern (MT)		4,500	10,000	12,000	15,000	20,000	30,000	40,000	40,000
4. Increased yield of Production of Beeswax (MT)^c									
I. Traditional (MT)		0.0	1,500	1,500	2,000	2,500	3,000	3,500	3,500
II. Modern (MT)		2,000	2,000	2,000	5,000	7,000	8,000	9,000	9,000
5. Increased yield of production of targeted honeybee production systems by Female primary beneficiaries in the selected value chains (bee products)			0.00	1.00	3.00	5.00	6.00	6.00	6.00



(Percentage)									
I. Traditional		0.00	3.00	5.00	10.00	20.00	30.00	35.00	35.00
II. Modern		3.0							
6. Increased in Yield for Beeswax (MT)									
I. Traditional		5.00	5.00	7.00	8.00	9.00	10.00	11.00	12.00
II. Modern		5.00	6.00	7.00	10.00	15.00	20.00	25.00	30.00
7. Increase in Value of Sales of Bee Product (Percentage)									
I. Traditional		0.00	0.00	5.00	7.00	8.00	10.00	15.00	15.00
II. Modern		10.00	30.00	40.00	50.00	60.00	70.00	70.00	70.00
8. Increase in Value of Sales on (Percentage) d									
I. Domestic		0.0	0.00	10.00	20.00	30.00	35.00	40.00	40.00
II. Export		0.00	0.00	10.00	25.00	35.00	50.00	70.00	70.00
9. Success Rate in Reduced Mortality of Honey Bee Colony (Percentage) (Good Management)									
I. Traditional		10.00	20.00	20.00	25.00	30.00	35.00	40.00	40.00
II. Modern		30.00	30.00	30.00	45.00	65.00	80.00	85.00	85.00

10. Time Lapse Between Early Warning information and Disbursement Toward Response (Weeks)		5.00	5.00	4.00	3.00	2.00	1.00	1.00	1.00
11. Honeybee farmers Adopting Improved Agricultural Technology (Number)		5,000	5,000	10,000	20,000	25,000	35,000	45,000	45,000
12. Exportation of Bee Products (Percentage)		0.00	0.00	5.00	7.00	10.00	15.00	25.00	25.00
Factors Limiting Exportation of Honey & Beewax:									
i. Urgent need for National Reference Laboratory									
ii. Third Country Listing for European Market									

Source: L-PRES Framework for Bee Keeping (2020).

12.0 CONFLICT MANAGEMENT

The Nigerian livestock sector is affected by heightened and frequent farmer-pastoralist conflicts, banditry and cattle rustling with the resultant depletion of our national herd, creating fear and loss of sources of livelihood for most Nigerians and threatens Nigerians national security. To create an enabling environment for the aims of the project to be achieved, LPRES has put in place framework for Crisis prevention and management, conflict mitigation and peace building, and project coordination. The vision is for the conflict management process to limit the negative aspects of conflict through proactive engagement with project stakeholders at all stages of implementation through a robust peace building framework.

TABLE 18: RESULTS FRAMEWORK FOR PRODUCTIVITY IMPROVEMENT THROUGH CONFLICT MITIGATION AND PEACE BUILDING, AND PROJECT COORDINATION TARGETS

Indicator Name	Baseline	1	2	3	4	5	End Target
<i>Improved Livestock Productivity, Resilience Through Provision of platform for conflict mitigation and peace building, and project coordination</i>							
Crisis prevention and management, conflict mitigation and peace building, and project coordination.							
1 Time taken to disburse funds requested by government for an eligible crisis when a crisis occurs. (Weeks)	40.00	20.00	20.00	16.00	16.00	8.00	8.00
2. Livestock producers reached by Information Education and Communication (IEC) on conflict prevention and management (Number (Thousand))	0.00	100.00	150.00	250.00	300.00	400.00	450.00
3 Number of mediation platforms established and operational (Number)	0.00	0.00	20.00	20.00	20.00	35.00	35.00
4. Percentage of annual workplan and budget implemented (Percentage)	0.00	60.00	70.00	75.00	80.00	85.00	85.00
5 Grievances registered addressed within the deadline set by the project GRM (Number)	0.00	70.00	100.00	100.00	100.00	100.00	100.00

Source: L-PRES Framework for Conflict Mitigation and Peace Building (2020).

13.0 MONITORING AND EVALUATIONS FRAMEWORK

The Monitoring and Evaluation (M&E) system sub-component will measure performance at different Project milestones. The system will benefit from a Management Information System (MIS) that collects project administration functions, results in monitoring and impact evaluations and beneficiary assessments, and a technical knowledge/database. This sub-component will finance the establishment of M&E mechanisms in the NCO and SCOs to monitor and evaluate the implementation of the Project.

The MIS will contain critical technical, financial and socio-economic information on subprojects, as well as costs and other physical indicators, and quantitative variables for impact monitoring. The MIS generated reports will include periodic Project progress reports such as monthly disbursement and semi-annual reports to track implementation.

The Project will also finance operating costs for **monitoring activities** such as (i) collecting and analyzing data on physical parameters of Business plans (BPs); (ii) gathering, aggregating and analyzing information on livestock production via surveys; (iii) complementary quantified tracking of biophysical results where possible to add rigour to the surveys; (iv) conducting thematic and market surveys and generating data for impact evaluation. The Project will also finance operating costs for **capacity development** for M&E implementation, paying attention not to duplicate efforts carried out under other Project Components. Lastly, the Project will fund the establishment of a technical Knowledge Base designed to (a) consolidate the currently fragmented knowledge on effective practices that beneficiaries could undertake, (b) identify and transfer the best way across settings in the country, (c) provide a common point of reference for project stakeholders to contribute to and benefit from a shared storehouse of operational knowledge. The Project will guide the beneficiaries in carrying out participatory monitoring and evaluation of their activities as well as financial expertise in information technology to maintain the MIS. The Project will finance specialized studies, including an impact assessment at midterm and the end of the Project.

Also, annual implementation/performance reviews of Project qualitative and quantitative achievements, including assessing the level of beneficiaries' satisfaction, will be conducted in advance of the approval of the following year's annual operating plan and the budget of the Project. The results of these evaluations will identify areas of improvements during Project implementation to increase the impact of L-PRES activities. The performance/impact evaluation surveys will assess the project impact on

- I. Productivity, resilience and commercialization
- II. Household welfare
- III. Social capital formation at the community level
- IV. Improved governance at the local government level
- V. Cost-effectiveness of demand-responsive infrastructure investments subprojects compared to the conventional public delivery mechanisms;
- VI. Cost-benefit of productive smallholder investment activities funded under the enhancement of value chain performance component, and
- VII. The effects were environmental performance on productive activities during the project implementation—also, an analysis of social capital and governance impacts on local government and community leaders.

Project M&E Objectives

Monitoring and Evaluation (M&E) activities will do the following:

- Generate Project timely specific information on progress, processes and performance.
- Analyze and aggregate data generated at various levels to track plan, progress, process, quality and Project sustainability.
- Document and disseminate feedback, and critical lessons learnt to relevant users and stakeholders regularly.

13.0 RISKS AND ASSUMPTIONS

13.1 Risks and flexibility

The response differentials among State Coordinating Offices could compromise the state's access to project resource for investment in the livestock sector: others include

- The severity of climate change, causing moisture distress and recurrent droughts in some participating are potential causes of crises that may affect the livestock sector and have negative impacts on the implementation of the strategy.
- The growing trend of banditry and natural resources degradation in some project areas leading to the restricted use of the locations for the development of the sector
- Poor market linkages and their current exploitative nature may negatively affect the livestock farmers' production and incomes vis a vis; the high prices for basic inputs.
- Regardless of the improvement of the production, productivity and quality, cultural production practices of the majority of livestock owners may negatively affect the attainment of goals
- The social and cultural influences were supporting trade in live animals and livestock products.
- Institutional and political factors may impact on LPRES implementation strategy adversely
- Livestock occupies a low position in the prioritisation of resources by most of the state government

13.2 Assumptions

The assumptions for the successful implementation and attainment of the LPRES strategies, Result frameworks for productivity improvement objectives for these selected Value Chains and the detailed Logical Framework for the plan will address risk. The main ones are:

- The performance of the National economy will continue to show steady growth;
- Participating States will increase their financial commitments and prioritise the livestock sector;
- LPRES be integrated into existing national livestock strategies and other existing States' Governments' initiatives and operating systems;

Table 19: Risk and Mitigation Matrix

Risk factor	Likelihood	Assessment of Likelihood	Impact	Assessment of Potential Impact	Risk response
Promotion of child labour	Very likely	With a large percentage of herders and livestock farmers below the age of 18 in the Northern states, there is a likelihood of project that supports child labour-violating section 59 (5) and (6) of the Labour Acts; section 28, 29 and 277 of the Child’s Right Act (45, 46) on minimum Age for Hazardous work	major	With key participants in cattle production being under 18, there is the possibility of project gain displacing them from their education	<p>Ensure that keen attention on the age of beneficiaries and that project interventions do not displace participants and their children from their education.</p> <p>Partner with other agencies of the government, NGOs, and development partners to provide additional forms of education alongside acceptable animal husbandry practices</p>
Marginalisation of other actors in the livestock value chain in favour of pastoralists	Very likely	Smallholders in the other value chains protested that the federal government focuses more on pastoralists (reference was made to the	Major	There may be rivalry among pastoralists group (or Miyetti Allah) and other livestock value chain	More stakeholders consultation needed to clarify grey areas. A roundtable discussion is required to clarify

		<p>proposed RUGA policy, which is now perceived to be NLTP/L-PRES). Also, the people protested against what they perceive as the insincere nature of the government in persecuting erring herders who destroy farm crops.</p>		<p>associations or individual smallholders.</p>	<p>the intentions of the Federal Government. Resolution of challenges between pastoralists and crop farmers be transparent and ensure the L-PRES project is not perceived as biased towards pastoralists</p>
<p>Skewed development towards pastoralists at the expense of crops farmers</p>	<p>Very likely</p>	<p>The perception that intervention favour livestock over farmers is likely to give room for discontent among crop producer mainly due to the popularity of challenges around cattle rearing.</p> <p>With increased support for livestock farmers, the demand for livestock feeds and forage will also increase.</p>	<p>Major</p>	<p>Open grazing could be on the increase and could cause tensions between crops farmers and pastoralists.</p> <p>Cost of livestock feed could also be high if there is demand or tension between the two groups. All these could lead to conflict and mistrust of the project managers.</p>	<p>Use of dedicated grazing reserves/ranches should be promoted for livestock while pastoralists should be encouraged to grow pasture for their livestock instead of open grazing.</p> <p>Crop farmers should also be empowered to meet up with the demand for livestock feeds and forage; they should be part of plans to improve the livestock value chain. Crop farmers to see the</p>

					complementary benefits of the L-PRES project. Alternative production of high-quality feeds produced
<p>Divergent views on support for open grazing establishment of ranches to curb farmers-herders' crisis</p> <p>The conflict between crop farmers and pastoralists</p>	Very likely	<p>Some stakeholders in SW, SS, and NE zones support the establishment of ranches while those in the NC, NW and SE do not. The stakeholders noted that some smallholders believe that ranching could lead to an outbreak of diseases and lead to rivalry as other livestock value chain, Stakeholders expect that ranches established by individuals and not with government funding.</p> <p>Herders in the North Central are vehemently opposed to ranching because the cost of ranching is high and they believe their breeds of cattle is not adaptable for ranching. Open</p>	Major	Without a consensus on the way forward to address the issue of ranching and open grazing, project components focused on resolving herders farmers clashes will not be achievable	<p>Consultation is required to reach a consensus on the most appropriate method to address the issue of ranching and open grazing in the geopolitical zones. The project should explore the most effective policy to be formulated to achieve a peaceful resolution of differences in opinion, including the establishment of grievance redress mechanisms.</p> <p>Communication strategies to educate stakeholders on the benefits of ranching should be instituted</p>

		grazing is still very rampant causing tensions between crop farmers and pastoralists			while dismantling the myths or perception of the outbreak of diseases.
Resistance to laboratory testing of livestock, inputs and products	Very likely	Results of laboratory tests that are unfavourable could be discouraging to the farmers after putting in their investments in the business.	Major	Farmers might resist sending their livestock inputs on products for testing in laboratories which will be against project outcomes of ensuring quality control of livestock inputs and products	Significant emphasis on the education of farmers on quality control measures before starting any intervention in testing must be carried out. Simple testing procedures that can be understood by the low literate population considered to avoid resistance because they don't understand. Local extension and veterinary services provided should be incorporated into delivery system for testing techniques and procedure
Resistance to improvement					
Divergent views	Very likely	Some stakeholders	Major	Without	Consultation is

<p>on support for open grazing and establishment of ranches to curb farmers-herders' crisis</p> <p>The conflict between crop farmers and pastoralist</p>		<p>in the SW, SS, and NE zones support the establishment of ranches while those in NC, NW, and SE do not. The stakeholders noted that some believe that ranching could lead to an outbreak of disease and lead to rivalry as other livestock value chains Stakeholders expect that ranches established by individuals and not with government funding.</p> <p>Herders in the North Central are vehemently opposed to ranching because the cost of ranching is too high and they believe their breed of cattle is not adaptable for ranching. Open grazing is still very rampant, causing tension between crop farmers and pastoralists.</p>		<p>consensus on the way forward to address the issue of ranching and open grazing, project components focused on resolving herders – farmers clashes will not be achievable</p>	<p>required to reach a consensus on the most appropriate method to address the issue of ranching and open grazing in the geopolitical zones. The project should explore the most effective policy to be formulated to achieve a peaceful resolution of difference in opinion, including the establishment of a grievance redress mechanism.</p> <p>Develop Communication strategies to educate stakeholders on the benefits of ranching, while dismantling the myths or perception of the outbreak of diseases.</p>
<p>Resistance to laboratory testing of livestock, inputs and products</p>	<p>Very likely</p>	<p>Results of laboratory tests that are unfavourable could be discouraging to</p>	<p>Major</p>	<p>Farmers might resist sending their livestock inputs on</p>	<p>Significant emphasis on the education of farmers on quality control</p>

		the farmers after putting in their investments in the business.		products for testing in laboratories which will be against project outcomes of ensuring quality control of livestock inputs and products	measures before starting any intervention in testing must be undertaken. Simple testing procedures that can be understood by the low literate population be considered to avoid resistance because they don't understand. Local extension and veterinary services provided and incorporated into a delivery system for testing techniques and procedure
Resistance to improvement in animal husbandry services *Northeast zone **Northcentral	Very likely	*while smallholders are used to their entrenched cultural methods of animal husbandry, the introduction of new practices such as slaughtering animals by stunning (e.g. electric stunning) may not be accepted. Also, the mode of feeding, method of processing and rearing may violate cultures of the target beneficiaries.	Major	the financial resources for innovation or technology transfer are wasted if the stakeholders reject new improvements	<p>There should be proper consultation between the project team, livestock association, and religious leaders to ensure initiatives to align with the culture and religion of the beneficiaries.</p> <p>Consultations should be done at the community level to ensure</p>

		<p>**Artificial Insemination may be resisted for religious reasons while some Muslims rear pigs for commercial purposes, rearing of pigs is a taboo for most Muslim Faithful. These may pose challenges to project implementation where these are not considered.</p>			<p>there is a harmonious relationship between various livestock value chains, other community members (particularly the Muslim Faithful). Also, livestock groups are consulted to reach a consensus on the distribution of resources.</p>
<p>Rural-urban drift due to inadequate security</p>	<p>Very likely</p>	<p>This is very likely as people always tend to flee areas of conflict, especially in areas where state mechanism for maintaining law and order is inadequate</p>	<p>Major</p>	<p>This will adversely impact on the project as a whole and reverse the gains of the intervention when livestock production is being hampered due to inadequate security.</p>	<p>Peace building initiatives should be sensitized in areas where there is a historical legacy of conflicts. Sources of conflict should be identified, and investment in early warning systems to prepare people and to avoid deterioration of disputes should be sensitized. State security apparatus should be deployed in areas of existing conflict before interventions</p>
<p>Misappropriation</p>	<p>Very likely</p>	<p>Stakeholders</p>	<p>Major</p>	<p>This has the</p>	<p>Appropriate</p>

<p>n of funds by beneficiaries</p>		<p>anticipate that funds allocated to finance activities of actors in the livestock value chain might be misappropriated or misused.</p>		<p>potential to derail the project and the objectives may not be met. This anticipation of misappropriation could fuel mistrust of institutions</p>	<p>governance systems that include stakeholders from the beneficiary communities should be set up to ensure transparent management of project resources. The project's technical officer should adequately monitor the implementation of projects with adequate fiduciary controls where funds will be allocated to individuals or groups.</p>
<p>Overgrazing and deforestation</p>	<p>Likely</p>	<p>Excessive grazing and felling of trees for grazing purposes will lead to soil erosion, land degradation and loss of valuable species</p>	<p>Major</p>	<p>The impact is minor in the short term but could become significant in the long run where animals continue to feed excessively from one area of land without letting the vegetation in that area fully</p>	<p>The project should consider mitigation steps including dedicated grazing reserves for beneficiaries with land restoration programmes built into the animal husbandry system</p> <p>Proper grazing management should be</p>

				recover	encouraged by the project to guide against overgrazing.
Disruption of family and group cohesion and dynamic	Likely	<p>Family interaction and decision making between men and women might be affected.</p> <p>Male members of household and groups may feel threatened if women are placed in top leadership positions because they think women will no longer respect them. The same applies to the household when women are financially independent.</p>	Major	<p>The impact is significant because this may lead to gender-based violence, thus affecting family cohesion and group development dynamics. This could override the gains of the project in terms of the objective of empowering women and strengthening groups.</p>	<p>The family unity should be treated as a whole with emphasis on collective household prosperity rather than individual prosperity.</p> <p>Religious leaders should also be coopted to sensitise the men and women on the importance of family cohesion</p> <p>Modules for Gender Action Learning System as promoted by IFAD could be deployed to build collective ownership of family prosperity.</p>

<p>Land grabbing ,labour exploitation, pollution and competition with local beneficiaries</p>	<p>Likely</p>	<p>This is likely if external actors invest in the communities without partnering with local smallholders. Large areas of land may be acquired which could affect the availability of water resources</p> <p>Local people may also be exploited when employed by investors</p>	<p>Major</p>	<p>Competition can affect the disposable income of smallholders due to low patronage of their livestock, inputs and products as a result of new external investors.</p> <p>This could result in conflict between investors and smallholders /community members thus threatening the gains of the project</p>	<p>Synergy is required between investors and livestock associations/community members. The two groups must be brought to work together to boost economic activities in the communities while ensuring the dignity of labour is preserved as well as mutual understanding is reached in the acquisition of land resources for collective prosperity.</p>
<p>Population change</p>	<p>likely</p>	<p>Investment opportunities will attract temporary or permanent job seekers in the communities.</p>	<p>Minor</p>	<p>The impact on the project is insignificant</p>	<p>Adequate community infrastructure could be facilitated through the project to accommodate any change in population size.</p>

Low demand for new high-quality livestock feed	Likely	This is likely if the price of the high-quality feed is too high for the farmers	Minor	When farmers test the feed and discover they can get more yields from their livestock, they will most likely adjust to the new price	The feeds could be 129ensitizat for the farmers to introduce improved inputs until the business case is established through use.
Displacement of local/untrained veterinary service providers	Likely	The services of local veterinary service providers may no longer be needed in the communities	Minor	The project aims to deploy quality veterinary services for the benefit of the livestock farmers	Local veterinary service providers are absorbed into the project by building their capacity through training on specific services
Fear of domination/change in culture (Northwest zone)	Likely	Due to the solitary nature of Fulanis, they may not accept new investors into their community to avoid domination. Also, as investors come in, there may be alteration in cultural practices	Minor	The impact on the project is not significant. The smallholders are generally receptive to new changes	New investors should be enlightened about cultural sensitivities. Proper consultation should be done with livestock associations and community leaders to understand the mission of new investors fully
Objection to technologies to reduce greenhouse	Not likely	This could be perceived to interfere with traditional means	Minor	The impact will be minor. This is because the	Farmers should be properly 129ensitizat on new technologies

gases (Northeast Zone)		of manure management		farmers are receptive to new technologies	that will be introduced in the communities
Climatic conditions may affect new breeds of livestock (Northwest and south-west zones)	Not likely	Adaptation of new breeds livestock could be affected.	Minor	This is going to have a minor impact on the project outcome as smallholders are generally knowledgeable and willing to accept new breeds of cattle	Research should be done before new breeds of animals are introduced to know their suitability and survival level in the new location. The acceptance of new breeds in the northeast and northwest central zones should be investigated.
Resistance to the use of vaccines for veterinary services (Southeast zone)	Not likely	Some smallholders do not believe in vaccines, hence, may object to its use. Also, it is believed that the use of vaccines will increase the cost of livestock production.	Minor	Vaccines are already in use in the zone. However, resistance to its use could affect more comprehensive coverage in deploying quality veterinary services for livestock treatment.	Proper sensitization be done on the benefits of the use of vaccines

Table 20: Livestock and Poultry Value Chain Partners

LIVESTOCK VALUE CHAIN	PARTNERS
AnGR	Breeding and Multiplication Centres
	Institutions such as NACGRAB, NCF, NBS, etc.
	Universities and research institutes
	Private sector
	Federal Government of Nigeria
	Farmers
Animal Feed Supply	Crop farmers
	Feed millers
	NIAS
	Universities and research institutes
	Institutions such as NASC
	Agro-industries
Animal Health Services	Agencies such as NAFDAC
	Institutes eg. NVRI
	Private sectors (into vaccine and veterinary drugs production)
	Extension workers
	Veterinary Teaching Hospital/State Veterinary Clinics
Beef and Dairy	Feed millers
	Crop Farmers
	Extension workers
	Industries eg. Milk processing, meat processing, Bone Processing, leather, etc.

	Universities and Research Institutes
Sheep and Goat	Universities and Research Institutes
	Crop Farmers
	Feed mills
	Veterinary Teaching Hospital/State Veterinary Clinics
	Industries eg. Milk processing, meat processing, Bone Processing, leather, etc.
Leather	Industries
	Livestock farmers
	Tanneries
Poultry	Feed millers and feed industries
	Universities and Research Institutes
	Veterinary Teaching Hospital/State Veterinary Clinics
	Hatcheries
	Meat and egg distributors
Pig	Feed mills and agro-processing industries
	Veterinary Teaching Hospital/State Veterinary Clinics
	Abattoir
	Universities and Research Institutes
	Meat processing industries
	NEPC
Micro-Livestock	Universities and Research Institutes
	Feed mills and feed industries
	Veterinary Teaching Hospital/State Veterinary Clinics

	Tanneries and leather industries
	NEPC