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NATIONAL STRATEGY FOR THE CONTROL AND ERADICATION OF PESTE DES PETITS RUMINANTS (PPR) IN NIGERIA

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NATIONAL STRATEGY FOR THE CONTROL AND ERADICATION OF PESTE DES PETITS RUMINANTS (PPR) IN NIGERIA

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ACRONYMS

ABU	Ahmadu Bello University
APHIS	Animal and Plant Health Inspection Service
ARIS	Animal Resources Information System
ASF	African Swine Fever
AU-IBAR	African Union Inter-African Bureau for Animal Resources
CBPP	Contagious Bovine Pleuro-Pneumonia
COAG	Committee on Agriculture
CVO	Chief Veterinary Officer
DVS	Director of Veterinary Services
ECOWAS	Economic Community of West African States
ELISA	Enzyme Linked Immunosorbent Assay
ESN	Epidemiosurveillance Network
FAO	Food and Agriculture Organization of the United Nations
FCT	Federal Capital Territory
FGN	Federal Government of Nigeria
FMARD	Federal Ministry of Agriculture and Rural Development
FMD	Foot and Mouth Disease
GCEP	Global Control and Eradication Programme
GCES	Global Control and Eradication Strategy
GF-TADs	Global Framework for the Control and Eradication of Transboundary Animal Diseases
GoN	Government of Nigeria
HPAI	Highly Pathogenic Avian Influenza
ICE	Immunecapture ELISA
LGAs	Local Government Areas
MoU	Memorandum of Understanding
NADIS	National Animal Diseases Information and Surveillance
NBS	National Bureau of Statistics
NCD	Newcastle Disease
NPCC	National PPR Coordinating Committee
NVRI	National Veterinary Research Institute

OIE	World Organization for Animal Health
PACE	Pan African Programme for the Control of Epizootics
PMAT	Monitoring and Assessment Tool
PPR	Peste des Petits Ruminants
RESEPI	Regional Epidemio-surveillance Network
RESOLAB	Regional Laboratory Network
RT-PCR	Reversed Transcription Polymerase Chain Reaction
SRDs	Small Ruminant Diseases
SHOATS	Sheep and Goats
TADs	Transboundary Animal Diseases
TCE	Technical Committee of Experts
UNIMAID	University of Maiduguri
UNN	University of Nigeria, Nsukka
UoA	University of Agriculture, Umudike
USAID	United States Agency for International Development
VCN	Veterinary Council of Nigeria
VTHs	Veterinary Teaching Hospitals

FOREWARD

Sheep and goats production is a major means of livelihood which combines economic and food security, nutrition and means of survival for rural households, where they are largely the property of women and children. They supply protein, income, organic fertilisers for crop productivity, cash reserves for use in adversities, and are always handy to fulfill cultural and religious obligations. The attributes which confer these versatile roles to these species of livestock are their ability to survive in harsh environment across most agro ecological zones; high reproductive rate, good quality protein, and absence of religious bias for the consumption of their products among others.

The country's total resource of 109,728,554 sheep and goats is spread across the six geopolitical zones; kept by both males and females in Nigeria. The full development of these animals will no doubt improve the socio-economic well-being of rural families, assure nutritional and food security, and achieve the objectives of government in the area of providing gainful employment for the citizenry.

The full development of the potential contributions of sheep and goats to our national food security and economy has been adversely hampered by the preponderance of diseases that afflict them of which the most important is Peste des Petits Ruminants (PPR) locally known as "kata". Other priority diseases of sheep and goats in Nigeria include worm infestation, external parasites and pox. To achieve the optimal productivity of these animals, these diseases especially PPR need to be controlled and eliminated from Nigeria. This informs the full acceptance of the PPR Global Control and Eradication Programme (GCEP) by Nigeria. The pprogramme is being supported by the World Organisation for Animal Health (OIE) and Food and Agriculture Organisation of the United Nations (FAO) as well as other partners such as the African Union Inter-African Bureau for Animal Resources (AU/IBAR) and the Economic Community of West African States (ECOWAS).

I wish to use this opportunity to appreciate the OIE for contributing and supporting this very important global project that will not only empower the rural poor but also impact positively on the national economy of poor and underdeveloped countries

across the globe; and to also affirm the preparedness of the Government of Nigeria to fully support this project to ensure its successful implementation in the Country.

Chief Audu Ogbeh, CON
Honourable Minister of Agriculture and Rural Development, Abuja.
March 31, 2017

EXECUTIVE SUMMARY

In October, 2012, the Steering Committee of the Global Framework for the Control and Eradication of Transboundary Animal Diseases (GF-TADs) recommended that Peste des Petits Ruminants (PPR) be included in the activities of the GF-TADs Working Group, with the specific task of developing a PPR Global Control and Eradication Strategy (GCES). This recommendation was adopted by the OIE during its Delegates' meeting of May, 2014 in Paris, France, and further supported by the Committee on Agriculture (COAG) of the Food and Agriculture Organisation (FAO) and the FAO Council in October and December, 2014 respectively. The global strategy for PPR eradication is expected to benefit from the experience of the global eradication of Rinderpest, availability of effective and state-of-the-art diagnostic and surveillance tools, as well as effective, inexpensive and easy to administer PPR vaccines (PPRV) that cover all known strains and linkages of the viral causative agent of the disease. The no long-term virus carrier status of recovered animals and unknown to nil significant role of wildlife in the transmission and maintenance of PPR are also strong supports to the effective control and eventual eradication of the disease. Under the strategy, the eradication of PPR will be combined with that of three other priority small ruminant diseases (SRDs) namely gastrointestinal parasitism, ectoparasitism and pox. This approach is aimed at ensuring healthy animals, elimination of the impact of these diseases and in so doing strengthen the contributions of small ruminants to global food security and economic growth, with the ultimate goal of improving the livelihoods of sheep and goat farmers especially the smallholders.

This document was put together as the strategy and roadmap for the control and eradication of PPR in Nigeria taking into consideration the global, pan-African and ECOWAS strategies and the peculiarities of Nigeria.

In Nigeria, sheep and goat production is constrained mainly by heavy burden of Peste des Petits Ruminants (PPR) which is a contagious viral disease of small ruminants that causes high morbidity and mortality, thereby reducing the number and productivity of the flock and herd which impacts negatively on food security and the livelihoods of smallholder rural women and youth. The disease is currently endemic in Nigeria and

trade limiting. Information and knowledge on the prevalence, socioeconomic impacts and risk exposure of the disease are negligible. Officially, the total number of reported outbreaks of PPR in Nigeria for the period 2010 – 2016 is 24,143; this represents a gross under-reporting of actual number of outbreaks.

The overall objective of the national control strategy is a productive small ruminants population that would contribute to national food security and nutrition, human health and economic growth; while the specific objectives of the strategy are:

a. Progressive control and eradication of PPR by the year 2023
b. Strengthening of Veterinary Services to re-enforce the capacity of Veterinary Services, across the three strata of government, to face current and future challenges of animal diseases emergence and re-emergence
c. Control of three other important small ruminant diseases to improve animal health by reducing the impact of these infectious SRDs alongside PPR control and eradication.

Adequate funding is critical to the success of the PPR project. For the PPR project to achieve its set goals, pragmatic efforts towards mobilisation of funds must be made. Funding for the project is expected to come from Government of Nigeria (GoN) and Donor Agencies. To achieve this, the line Ministries responsible for livestock and Veterinary Services at the Federal and State levels will be encouraged to raise and mobilise adequate funds for the successful execution of the project. Governments at various levels are encouraged to provide adequate funds in their annual budgetary allocations, starting from 2017, that will be dedicated to the control and eradication of PPR.

1 INTRODUCTION

Peste des Petits Ruminants (PPR) is a contagious viral disease that has over the years been identified as the most important limiting factor in the realization of the full potentials of sheep and goats in Nigeria. Its occurrence is associated with high morbidity and mortality of these animals, thereby reducing both the number and productivity of the flock and herd, thereby impacting negatively on food security and the livelihoods of rural women and youth who are the main keepers of sheep and goats in the Country. The disease is currently endemic in Nigeria and therefore disqualifies her from international trade in sheep and goats.

Although various studies have been conducted especially on sero-prevalence and virus characterization, assessment of the socioeconomic impact and risk exposure is limited (Woma et al, 2015) which calls for a nation wide study of the disease in Nigeria. Officially, the total number of reported outbreaks of PPR in Nigeria for the period 2010 2016 is 24,143; this represents a gross under-reporting of actual number of outbreaks which far outweighs this figure. Proper understanding of the actual disease prevalence is paramount for effective, evidence-based planning and implementation strategies for the control and eradication of PPR.

To address the menace of PPR on sheep and goats and attendant food security implications of the disease, a 15-year Global Control and Eradication of PPR (GCEP) Project has been put in place. The Project is expected to globally eradicate PPR by 2030 as was done for Rinderpest in 2011. The overall objective of the national control strategy is a productive small ruminant population that would contribute to national food security and nutrition, human health and economic growth; while the specific objectives are:

a. Progressive control and eradication of PPR by the year 2023
b. Strengthening of Veterinary Services to re-enforce the capacity of Veterinary Services, across the three strata of government, to face current and future challenges of animal diseases emergence and re-emergence

c. Control of three other important small ruminant diseases to improve animal health by reducing the impact of these infectious SRDs alongside PPR control and eradication.

The document was put together as a strategy and roadmap for the control and eradication of PPR in Nigeria in line with Global, Pan-African and ECOWAS strategies.

The process is as follows:

- Global and Regional Consultative meeting in Cotê d'Ivoire and Dakar respectively
- Extensive consultations with theVeterinary Services in the three tiers of government
- Private Veterinary Practitioners Forum, Sheep and Goat Farmers Association of Nigeria
- A 5-man team of Nigerian Experts on PPR and other relevant stakeholders
- The draft document was finally validated at a meeting of the Federal and States' Directors of Veterinary Services, Heads of the Veterinary Teaching Hospitals and Veterinary Diagnostic Laboratories in Nigeria.

2 RATIONALE FOR PPR ERADICATION

2.1 The Context

The global strategy for PPR eradication is expected to benefit from the experience of the global eradication of Rinderpest, availability of effective and state-of-the-art diagnostic and surveillance tools as well as effective, inexpensive and easy to administer PPR vaccine (PPRV) that covers all known strains and lineages of the viral causative agent of the disease. The no long-term virus carrier status of recovered animals and unknown to nil significant role of wildlife in the transmission and maintenance of PPR are also strong supports to the effective control and eventual eradication of the disease. Nigeria is endowed with enormous human resources in the field of veterinary and animal healthcare provision that would be effectively deployed to control and eradicate the disease.

2.1.1 Basic Information on Nigeria

Nigeria is the most populous country in Africa. It is located in the Gulf of Guinea in

West Africa and surrounded by Niger Republic to the North, Chad to the North-East, Cameroun to the East, Benin Republic to the West and the Atlantic Ocean to the South, with geographical coordinates of 9.0820°N, 8.6753°E. The human population in Nigeria is currently estimated at about 170 million and is projected to increase to over 200 million by 2030.

Administratively, Nigeria runs a Federal System with three strata of Government namely Federal (national), States (37No) and Local Government Areas (774No). Agriculture, including animal diseases control, is on the con-current list. Each of these levels of governance is autonomous in carrying out agricultural activities. The control of animal diseases is the responsibility of State Governments while the Federal Veterinary Services deals with national policy formulation and implementation. The Federal Government drives the process of control, management and eradication of transboundary animal diseases as well as other diseases of national importance especially when they assume epidemic proportions.

2.1.2 Small Ruminants Production System

Sheep and goats production system in Nigeria is characterized by animals of low genetic predisposition, inadequate feeding and an underdeveloped marketing system that leave producers at the mercy of middle men. The farming system is classified into three major production systems namely, extensive (pastoral), semi-intensive (agro-pastoral) and intensive (urban and peri-urban). Sheep and goats are major means of livelihood among rural households in Nigeria where they are largely the property of women and children and serve as major sources of economic and food security, nutrition and means of livelihood.

The intensification of sheep and goats production has been bedeviled with the problem of diseases mostly PPR, pasteurellosis, gastrointestinal and ecto-parasitism as well as pox, dry season feeding shortage and poor management.

2.1.3 Population and Distribution of PPR Susceptible Species

The country's total resource of 109,728,554 small ruminants is made up of 41,147,464 sheep and 68,581,090 goats and spread across the six geopolitical zones (National

Bureau of Statistics, 2014). Currently, sheep contribute 5% while goats contribute 16% of the 833,000 tonnes of meat production in the country per annum. The full development of these animals will no doubt improve the socio-economic well-being of rural families, assure nutritional and food security, and achieve the objectives of government in the area of gainful employment for the citizenry. The spread and distribution of small ruminants population in Nigeria (2014) is shown in Table 1 and Figures 1 and 2 below:

TABLE 1: *Agro-ecological distribution of Sheep and Goats*

S/N	Agro-Ecological Zone	Sheep Population	Goats Population	Total (Sheots)
1	North West	24,285,558	25,327,293	49,612,851
2	North East	6,928,508	7,440,665	14,369,173
3	North Central	5,989,257	15,930,450	21,919,707
4	South East (with parts of South South)	1,584,103	8,721,119	10,305,222
5	South West (with part of South South)	2,360,038	11,161,563	13,521,601
	Total	**41,147,464**	**68,581,090**	**109,728,554**

Source: National Bureau of Statistics (2014)

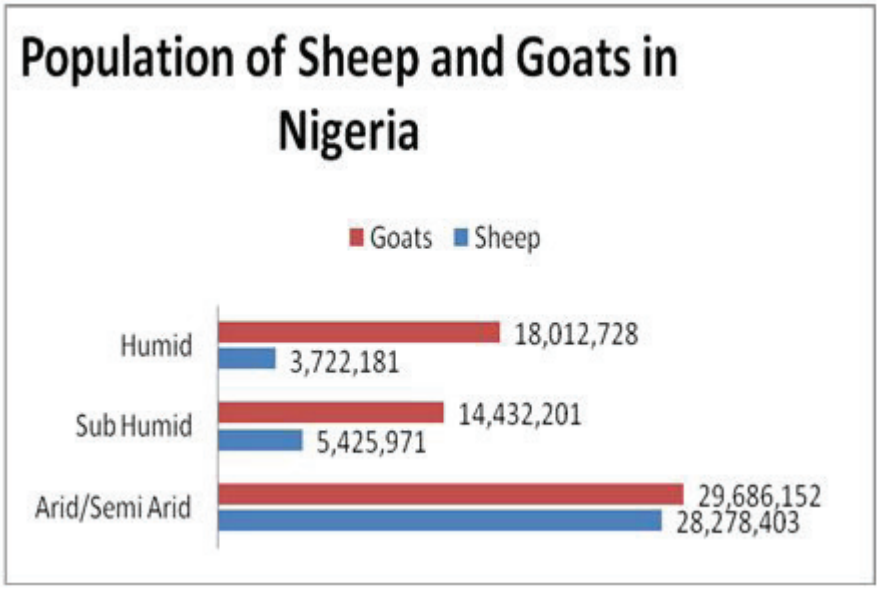


Figure 1: *Agro-ecological spread of Sheep and Goats in Nigeria*

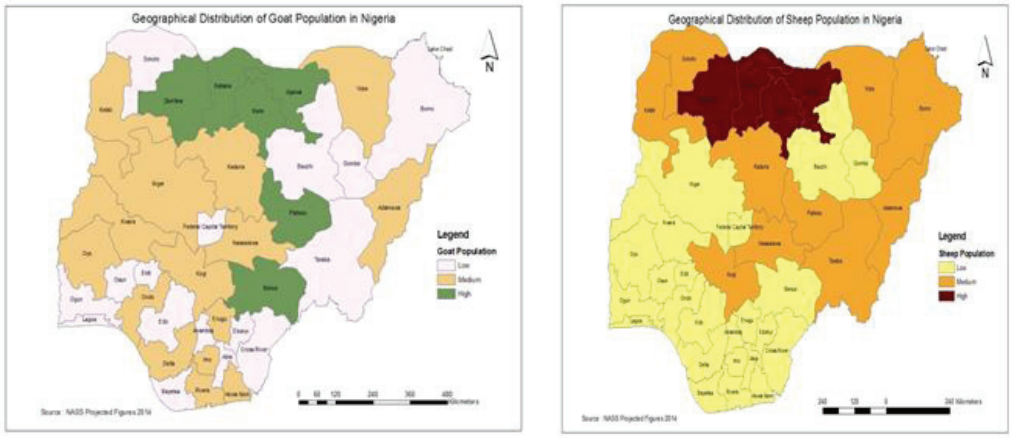


Figure2: *Maps of Nigeria showing the distribution of Sheep and Goats*

2.1.4 PPR Risk Factors along the Small Ruminants Value Chain

In Nigeria, marketing system for sheep and goats varies from producer(s) direct to consumer(s), producers to consumers through an intermediary or middleman or producer to a regrouping market before being moved to a terminal market for purchase by the consumer. Additionally, available statistics from the National Bureau of Statistics on changes in the national herd between 2010 and 2011 is suggestive of a net fall in population of 59% and 34% for sheep and goats respectively and this is due to higher annual extraction rates than the additions to the herd. The lower addition rate to the national small ruminants' population is attributed to their fast decimation by PPR. The resultant increasing demand with reduction in supply has also led to a rise in the slaughter of emaciated and young animals tending towards the depletion of the national herd in the near future, if measures are not put in place to increase the addition rates, with dire consequences. There is therefore, a growing need for increased attention towards the eradication of PPR to stimulate the development of this sector of the livestock industry that will ensure greater additions to the national herds than extractions.

There is a vast Nigerian market for sheep and goats as well as their products especially in the southern and middle belt States. So also is there a huge demand from the international market, especially in the Middle East and the Gulf countries where the Sokoto Red Goat breed is in high demand. We need to initiate, provide and facilitate sustainable platforms between farmers and the local and international markets.

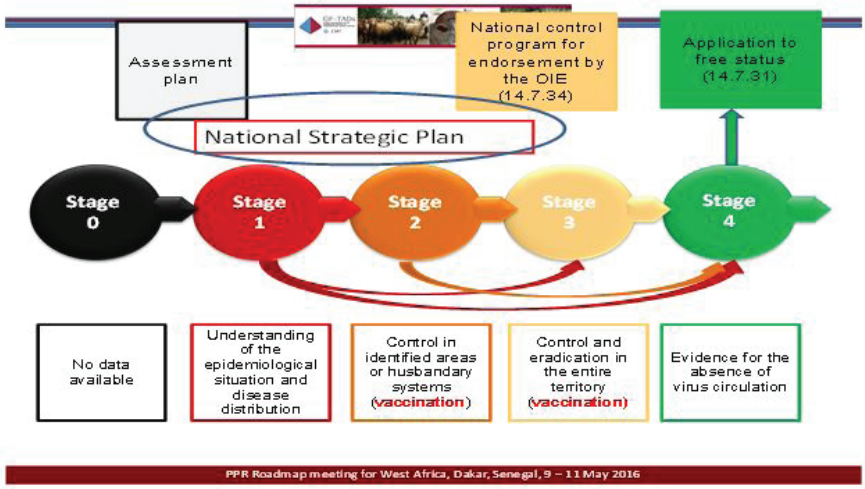
Movement of sheep and goats across the country is influenced by season and market. Often times, movement occurs from neigbouring countries (Cameroon, Benin, Chad and Niger). The routes taken could be the cattle trade route, or by vehicles through the international control posts. These movements are not only through very porous unmanned borders but also indiscriminate in nature; and this factor poses serious threat of PPR and other small ruminant diseases to the sheep and goats populations in the country. The risk factors for PPR outbreaks and spread across the country include uncontrolled and indiscriminate movement of animals, male borrowing between farmers, gathering of animals in market, non-compensation of affected farmers, extensive system of production, lack of access to veterinary services especially in the rural areas and inadequate vaccines and supplementary medications against the disease.

2.2 *Current Status and Impacts of PPR*

2.2.1 Current PPR-GCES Stage

The Pests des Petite Ruminants (PPR) Global Control and Eradication Strategy (GCES) is based on 4 stages viz:

- Stage 0 – No data is available
- Stage 1 – Assessment stage
- Stage 2 – Control stage
- Stage 3 – Control & Eradication stage
- Stage 4 – Post-eradication stage
- Beyond Stage 4 – OIE free status



Timelines for these stages are summarised as follows:

- Stage 1 à minimum 12 months and up to 3 years
- Stage 2 à 3 years (from 2 to 5 years)
- Stage 3 à 3 years (from 2 to 5 years)
- Stage 4 à 2 years up to 3 years

Based on the country self-assessment, using the PPR Monitoring and Assessment Tool (PMAT), Nigeria is in stage 1. PPR status in Nigeria is currently based on a weak, passive surveillance.

2.2.2 PPR Situation in Nigeria and in Neighbouring Countries/Regions

PPR situation especially its distribution is poorly documented; however there are regional studies that showed 23.16% PPR prevalence in goats from twelve states (Woma et al., 2015). The realization of the full potentials of sheep and goats is constrained mainly by heavy burden of PPR with further complications from gastrointestinal parasitism and ectoparasitism. PPR is currently endemic in Nigeria and neighboring countries therefore a limiting factor in international trade in sheep and goats. The high morbidity of the disease reduces both the number and productivity of the flock and herd and has been associated with an annual loss of over 40% of sheep and goats population in the country.

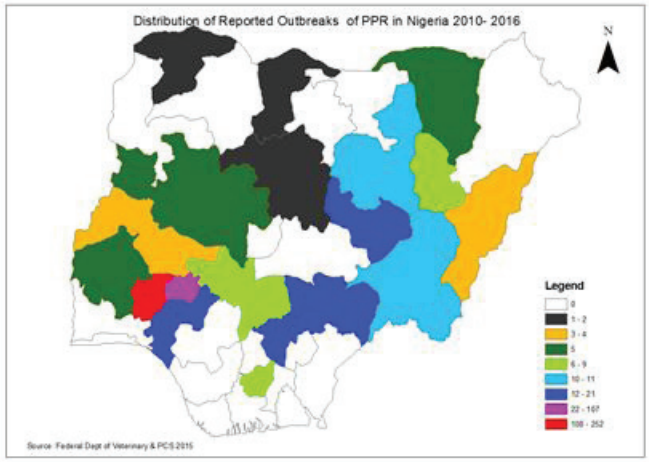


Figure 3: *Reported cases of PPR Outbreaks 2010 - 2016*

The total number of reported outbreaks of PPR in Nigeria is poorly documented. The year by year figures and location are presented in Table 2:

TABLE 2: Reported outbreaks of PPR in Nigeria (2010 – 2016)

S/N	Year	No of reported outbreaks	PPR surveillance
1	2010	2,359	Passive
2	2011	1,909	Passive
3	2012	1,143	Passive
4	2013	1,066	Passive
5	2014	7,153	Passive
6	2015	3,117	Passive
7	2016	7,396	Passive
	Total	**24,143**	

PPR is not only endemic but also widespread in occurrence in Nigeria. It affects large numbers of sheep and goats across the Country. Although the disease occurs throughout the year, it is most prevalent during the wet season around the months of May to November.

2.2.3 Impact of PPR

Sheep and goats constitute a major source of livelihood for rural households, where they are mostly owned by women and children, combining economic and food security, nutrition and means of survival for this vulnerable group. They provide income, organic fertilisers for crop productivity, cash reserves for use in adversities, and are always handy to fulfill cultural and religious obligations. High incidence of PPR has enormous socioeconomic and livelihood implications on the rural economy. The case-fatality rate may be as high as 100%. The estimated annual direct financial losses as a result of deaths is as high as N50Billion (Fifty Billion Naira) at the rate of N10,000/animal. With indirect losses, it could be as high as N65Billion Naira. The control of PPR is therefore expected to alleviate hunger, malnutrition and poverty and solve associated societal problems such as youth and women unemployment and restiveness.

Nigeria is blessed with enormous manpower in the Veterinary and Animal Health Services in both public and private sectors. Previous animal disease control programme provided the Country the opportunity to establish and strengthen Veterinary

structures to face animal health challenges. These structures and experiences from previous programme will be brought to bear on the PPR control and eradication project in Nigeria.

2.3 Current Capacity and Activities to Control PPR

The Veterinary Services of Nigeria has adequate human and technical resources and capacities to successfully control and eradicate PPR from the country given necessary financial support. This is predicated on the day one competencies from the veterinary curriculum which is also reinforced through regular continuing education training for veterinarians by the Veterinary Council of Nigeria (VCN). Nigeria has shown and deployed these capacities in controlling African Swine Fever and Avian Influenza in 1997-1999 and 2006-2008 respectively. The structures and infrastructures set up by these projects are still in place and could be effectively deployed for the control and eradication of PPR. These, however, need to be strengthened for optimal performance.

Over the years, Nigeria had attempted to control PPR as a component of the "National Animal Diseases Control Programme" using national resources. Annually, vaccines (PPRV) procured from NVRI are used in field vaccination of small ruminants across the Country. However, there is a challenge with inadequacy of vaccines quantities and other disease control logistics as a result of paucity of funds. Nigeria can effectively and successfully control and eradicate PPR under the GCEP project given the provision of adequate funding for vaccines, consumables and other logistic support from the international community.

2.3.1 Laboratory Diagnostic System

The National Veterinary Research Institute (NVRI), Vom-Nigeria has been involved in the processing and analysis of samples for the diagnosis of PPR and other animal diseases for decades. In the course of this period, the Institute has progressively grown in its capacity in terms of equipment, facilities and manpower. It is part of the Regional Laboratory Network (RESOLAB) and has been designated as the reference laboratory on avian influenza and other TADs for West and Central Africa. The NVRI also operates a number of zonal laboratories spread across the Country.

In addition to the central laboratory (NVRI), Nigeria has ten (10No) Veterinary Teaching Hospitals (VTHs) laboratories also spread across the Country.

These laboratories, however, need to be strengthened and fully networked for better coverage of the Country for the PPR control and eradication project, through upgrading of critical equipment and facilities, and provision of adequate laboratory reagents and consumables. A needs assessment exercise of the central, regional and zonal laboratories should also be conducted to evaluate their status and prepare them to fully participate in the PPR control and eradication project.

The laboratory tests currently used for PPR diagnosis in the veterinary laboratories in Nigeria include:

i. Competitive or Blocking ELISA
ii. Immuno-histochemical staining
iii. Immune capture ELISA (ICE)
iv. Reversed Transcription Polymerase Chain Reaction (RT-PCR)
v. Isolation of PPR virus in cultured cells

There is a full-fledged functional Department at the NVRI for quality assurance and quality control. The mandate of this Department is to ensure that all research and vaccines production processes in the Institute conform with laid down Standard Operating Procedures and international best practices, and that all products produced by the Institute are certified before release for field use.

2.3.2 Surveillance System

The national epidemio-surveillance network also known as the National Animal Diseases Information and Surveillance (NADIS) established during the Pan-African Programme for the Control of Epizooties (PACE), was effectively deployed in the activities for the eradication of Rinderpest and control of the Highly Pathogenic Avian Influenza (HPAI). The NADIS is part of the Regional Epidemio-surveillance Network of ECOWAS (RESEPI) and and continues to serve in the surveillance, control and reporting of all OIE listed diseases including PPR. The network comprises the following:

i. Federal Veterinary Services at Headquarters and 37 State field offices (one per State and the FCT)
ii. State Veterinary Services with Zonal and Area Veterinary offices located at the LGAs
iii. Local Government Agriculture Departments with veterinary units
iv. A total of 591 surveillance agents and points located at disease high risk areas such as livestock/live bird markets, abattoirs and control posts, etc. These surveillance agents comprise of veterinarians and veterinary para-professionals
v. The National Veterinary Research Institute Laboratory, strategically located Regional (10No Veterinary Teaching Hospitals in the Faculties of Veterinary Medicine) Laboratories and a number of Private Laboratories whose activities are supervised by government laboratories under a public-private-partnership arrangement.

Passive surveillance is routinely carried out by veterinary and para-veterinary professionals especially at the surveillance points. Disease outbreak incidence are reported at the farm level by the veterinarian, animal health officer, farmer or ranger to the surveillance agent or Area/Zonal veterinary officer who carries out the preliminary investigation and also institutes preliminary control measures. The report is then made to the Director of Veterinary Services (DVS) at the State level while samples are forwarded to either the central laboratory at NVRI or any of the Veterinary Teaching Hospitals (VTHs) as appropriate. The affected DVS, in liaison with the Federal Epidemiology Officer domiciled in the State, then makes a report to the Chief Veterinary Officer (CVO) who in turn notifies the African Union/Inter-African Bureau of Animal Resources (AU-IBAR) and World Organization of Animal Health (OIE). Meanwhile disease outbreak mitigation measures are implemented to control and prevent further spread of the disease.

Animal Resources Information System (ARIS) developed for use as database and reporting system in Member States by the African Union/Inter-African Bureau for Animal Resources (AU-IBAR) has been deployed for animal diseases data management in Nigeria since 2005. It is a web-based system and has been continually updated and customized to suit our data gathering and management needs. Nigeria will draw

from the experience of utilization of ARIS in the generation, analysis, storage and dissemination of data under the PPR project.

Currently, there is gross under reporting and poor investigation of PPR and other animal diseases outbreaks in Nigeria. The key reason for this major gap is poor networking of the public sector Veterinarians, VTHs, private veterinarians, researchers and veterinary para-professionals in providing information on animal disease incidences encountered in their practice to the central level disease reporting platform. The passage of the Veterinary Hospital Bill currently in the National Assembly will immensely assist in properly networking these animal health care providers with the national disease reporting and investigation platforms. The reporting structure and channel is clearly defined in the Bill with provisions for sanctions and rewards as appropriate. With this in place, reporting and better understanding of the status, pattern and distribution of animal diseases in the Country will be enhanced.

The opportunities offered by the Global Control and Eradication of PPR (GCEP) project will be used to strengthen the existing Integrated Animal Disease Reporting System, including data collection and analysis, and position it to not only be proactive but sustainable thereby improving our transparency in international animal disease outbreaks reporting.

Additionally, the epidemio-surveillance network needs to be further strengthened through training/re-training on disease surveillance principles and practices, adequate equipping and financing to meet its current challenges and international best practices such as continued and sustained active disease surveillance, etc. Private veterinary practitioners should also be engaged to cover remote areas where public veterinary services lack human capacity to presently cover.

The Veterinary Services has limited capacity to conduct scientific risk analysis. In addition to this gap, there are also limited resources to support risk analysis programmes.

2.3.3 Prevention and Control

The policy of PPR control in Nigeria, over the years, is routine annual vaccination. However, annual coverage has been limited by inadequate resources.

Under the PPR vaccination campaigns, joint field teams made up of Federal and States Veterinary Services staff as well as private veterinarians, veterinary para-professionals, inoculators, recorders and drivers are constituted annually. Vaccines are routinely procured from NVRI by the Federal Veterinary Services and distributed to the field through States' Veterinary Services. The vaccines are stored in low temperature freezers at -20 degrees centigrade both at the NVRI central vaccines stores, Federal Veterinary Services stores and States' stores. From States' vaccines stores, the vaccines are dispensed in coleman boxes and vaccine carriers for field vaccination exercises by the vaccination teams.

In addition to the vaccines, vaccination equipments are also provided for field use. These consist of syringes, needles, deep freezers, Coleman boxes, vaccine carriers and ice packs.

Communication and awareness creation is provided through different communication tools such as print and electronic media, cinemas, town criers, advocacy to community leaders and promotional materials.

The current national PPR vaccination strategy has not been very effective due to a multiplicity of factors such as:

- Poor awareness and utilization of knowledge-based evidence
- Inadequate capacity in the application of some basic disease control principles especially in the rural setting
- Irregular and unsustainable funding to finance vaccination campaigns
- Poor surveillance activities, poor veterinary infrastructure, under-reporting of outbreaks and inadequate disease investigation and awareness creation
- Non-optimal utilization of vaccine production capacity at NVRI
- Nature of production systems – pastoral, nomadic, small holdings (grouping for effective vaccination is a challenge)

National capacities will be built in areas where there are skill and material gaps, especially in the identification of vaccinates from infected, through collaboration with donor and development partners by providing vaccination cards, age of vaccinates and the use of DIVA technology using tagged PPR vaccines.

2.3.4 Legal Framework

Animal Diseases (Control) Act of 2004, LFN has been in operation in Nigeria as legal instrument and legislation for the practice and implementation of animal healthcare delivery. The law is being reviewed to address some identified gaps and deficiencies with a view to making it meet current and future realities. Also the passage into law of the Veterinary Surgeon and Veterinary Hospital bills presently in the National Assembly will enhance the practice and implementation of Animal Healthcare delivery through adequate disease reporting.

There are existing provisions within the law for the Honourable Minister to institute regulations on the effective control and eradication of PPR and other animal diseases and other animal diseases as well as development of EPP for PPR eradication.

2.3.5 Stakeholders' Involvement

The prevention and control of PPR in Nigeria is multi-sectoral and multi-disciplinary and will involve the following:

- Federal Veterinary Services which provides policy development and implementation; prevention and control of transboundary animal diseases (TADs); coordination of national animal diseases control programme, etc
- States Veterinary Services carry out field disease control and coordination activities at the State level
- NVRI is both a diagnostic and vaccine producing laboratory; and designated as the National Central Veterinary Laboratory
- A network of 10 Regional (VTH) laboratories evenly spread across the Country
- National Agricultural Quarantine Service for quarantine and animal products movement control at the borders
- National Sheep and Goats Producers Association including individual small ruminants owners for awareness creation, disease outbreaks intelligence

- Private Veterinary Practitioners – engagement in disease control and sanitary mandate measures; disease outbreaks intelligence.
- Security agencies for enforcement of the legal provision of Animal Disease Laws
- Veterinary Extension Agents for dissemination of new knowledge and technologies
- Research and Academia to ensure new knowledge through research and development of new technologies.

2.4 Other Small Ruminants Priority Diseases

Other Small Ruminants Diseases (SRDs), on their own or in combination with PPR, have serious economic consequences on sheep and goats production and need to be controlled for sheep and goats industry to thrive. For the purpose of this project, and in line with the global, regional and sub-regional strategies for the control of PPR, the Veterinary Services of Nigeria has identified three other SRDs to be incorporated into the National PPR Control Strategy for it to achieve its set goals. These diseases are:

- Gastrointestinal Helminthosis
- Ecto-parasitism
- Sheep and Goat Pox

There has never been a nationally coordinated programme for the control of these diseases; rather, over the years, small ruminant producers seek for help in medicating and preventive measures against the diseases in an uncontrolled and uncoordinated manner.

A herd-health, population medicine approach will be adopted for the control and management of these diseases under the PPR project. In this wise, PPR vaccination teams will be adequately equipped and mobilized to also handle helminthosis, ectoparasitism and pox cases with anthelmintics, antiprotozoans and pox vaccines. Refresher trainings specific for these other SRDs will be organized for PPR vaccination teams to improve their knowledge and skills on the diseases and their control methodologies.

3 ORGANISATION OF VETERINARY SERVICES

3.1. The Role of Public and Private Veterinary Services

Animal diseases control and Veterinary Services are in the con-current list of regulation, as such all three tiers of Government (Federal, States and Local Government Areas) have their assigned and defined roles to play. Under this arrangement, the Federal Government of Nigeria (FGN), through Federal Ministry of Agriculture & Rural Development (FMARD), is responsible for the development and coordination of national policies on animal diseases control while the States have the responsibility to control and prevent these diseases in their respective domains. The Local Government Areas (LGAs) are responsible for meat inspection, the development of public abattoirs and slaughter slabs and mobilization for grassroots activities. There is also a growing development and participation of private veterinary practice that drives most animal healthcare delivery services at commercial level. In addition to its role in policy formulation and coordination, the FGN is also responsible for implementing the management, containment, control and eradication programme for disease outbreaks of epidemic proportion.

3.2 OIE PVS Pathway Missions Report for Nigeria

In 2007 Nigeria requested the OIE to carry out evaluation of the Veterinary Services of the Country using the OIE Performance, Vision and Strategy (PVS) tool. The mission took place between August 20 and September 5, 2007 with the objectives of identifying the main gaps and weaknesses of the Veterinary Services with reference to compliance with the OIE guidelines. The mission observed, amongst others, that Nigeria has adequate numbers of veterinary and veterinary para-professionals for the implementation of effective Animal Health and related functions, effective regulatory and administrative framework in place, adequate networking of the veterinary services in the three tiers of Government and diagnostic laboratory network. The major limitation identified by the mission was in the area of lack of sustainable funding of veterinary services.

	Date when conducted	Level of confidentiality	Comments (if any)
OIE PVS initial Evaluation	2007	Report was shared with OIE partners and donors	Due for follow up mission
OIE PVS Follow-up evaluation			
PVS Gap Analysis	2010	Report was shared with OIE partners and donors	
Veterinary Legislation Identification Mission	2011		
Other OIE Capacity Building Activities (laboratory mission, twinning programmes)			Laboratory twinning programme with NVRI

4 PPR STRATEGIC ERADICATION FRAMEWORK

4.1 Guiding Principles

The PPR Strategic Eradication Framework will be based on surveillance, vaccination against the disease and treatment of the three identified SRDs

4.1.1 Risk-based Approach

The starting point in the control strategy and approach would be the assessment of the actual status and prevalence of PPR in the Country as a basis for scientifically informed planning and implementation of sustainable control measures against the disease. This would also establish the hotspots taking into cognizance the peculiarities of village and nomadic pattern of rearing that need to be targeted for intensive vaccination, biosecurity, movement control and other measures. In addition, studies will be conducted on the socioeconomic impact of PPR in Nigeria to enable a proper understanding of not only the magnitude of the problem, but also segments of the society most affected as well as the magnitude of the risks associated with the disease in Nigeria.

4.1.2 Cross Border Approach

PPR is a major transboundary animal disease (TAD) and has the propensity to occur and easily spread between countries. Control efforts on the disease that do not take this into account are bound to fail. The best approach in our situation where the disease is already present in Nigeria as well as her neighbouring countries of Cameroon, Chad, Niger and Benin Republic is to, as much as possible, organize a combination of in-Country and harmonized cross border control activities including vaccinations, biosecurity, movement control. A platform for cross border sharing of information and disease outbreaks intelligence as well as legal frameworks need to be put in place. Cross border meetings and harmonized vaccination programme against PPR will be conducted.

4.1.3 Control of Other National Priority SRDs

The three other small ruminant diseases (SRDs) to be covered under the PPR programme include gastrointestinal parasitism, ectoparasitism and pox.

Gastrointestinal parasitism is mostly manifested as huge worm burden in livestock with significant effect on productivity. In Nigeria, the interaction of pneumonia and gastrointestinal parasitism has been established through research and field activities. Therefore, anthelmintic treatment in the course of PPR campaign is beneficial.

Ectoparasitism involves the invasion of the skin of these animals with external parasites such as ticks, fleas, lice and other blood sucking insects e.g. tsetse. Although ectoparasitism is observed all through the year whenever the predisposing factors present, it is of greatest concern during the wet season when the parasites breeding is greatest. These parasites cause a lot of discomfort on the small ruminants through their bites and blood sucking activities but their greatest menace on these animals is in the enormous disease transmission and spread activities. The diseases and conditions of note in this regard include anaplasmosis, Trypanosomosis, mange, scabies, myiasis and debilitating wounds.

Sheep and goat pox is a viral disease that manifests mostly in unsightly skin lesions. They result in poor quality skins from these animals if not prevented or treated early.

4.1.4 Self-sustaining Mechanisms for Animal Health Services Delivery

Nigeria has established systems and mechanisms for effective delivery of veterinary services in the Country. These systems and mechanisms will be further strengthened through the PPR project to be more pro-active and responsive to animal diseases challenges. Simple and basic disease control tools and mechanisms that are easily adaptable to animal handlers will be developed and put in place. For example, small ruminant producers will be trained on disease recognition, intelligence gathering, reporting, basic biosecurity principles and practices, movement control as well as other preventive measures that would protect their flock and herd. Existing Sheep and Goats Producers Associations will be strengthened while new ones will be established as platforms for a more robust interaction with the veterinary and animal healthcare services. The producers will be empowered through sensitization to source for veterinary care for their animals rather than depend on government to provide the services. Also, private sector veterinarians and veterinary para-professionals, established through known business model (Cooperatives-microfinance interactions)

will be assisted through their engagement in providing needed veterinary services to majority of the farmers. Under this arrangement, animal healthcare services delivery, including PPR and other SRDs control will be private sector driven which is more sustainable than government services. Government will continue to provide policy frameworks, monitoring, coordination, disease investigation, reporting, quality control and guidance to the private veterinary services to ensure adherence to laid down internationally approved best practices and standards.

Other participants along the small ruminants' production value chain such as transporters, processors, marketers, distributors, vendors and consumers, will also be organized to be more proactive and engaged in disease prevention and control mechanisms. National capacities will be built in areas where there are skills and material gaps through collaboration with donor and development partners.

Other aspects of the project in Nigeria that would ensure its long lasting sustainability include:

- Setting up of a National Committee on PPR Control, duplicated at States and LGAs levels
- Strengthening and networking of national diagnostic laboratories
- Resource mobilization and inclusion in the national, states and LGAs annual budgets dedicated to control and eradication of PPR and other animal diseases

4.1.5 Adaptive Management

Lessons learnt and capacities built during the implementation of previous programmes such as PARC/PACE, AICP, and SPINAP as well as in the course of implementing the PPR project will be deployed to strengthen the veterinary service of the country to the extent that it is prepared to face any future animal disease(s) challenge. The implementation strategies of the PPR project will be patterned to address not only PPR and the three identified SRDs to be controlled under the project but also adapted for control of other animal diseases such as CBPP, FMD, ASF, NCD, canine rabies, etc.

4.1.6 Partnerships

The PPR project in Nigeria will be implemented through multi-sectoral and multi-

disciplinary approach where all stakeholders will be engaged to bring their resources and expertise to bear under the central coordination of the national veterinary service. National agencies and groups such as sheep and goat producers associations and veterinary extension services will be fully engaged; so also international donor agencies and development partners such as AU-IBAR, OIE, FAO, ECOWAS etc. The private sector will be engaged through Public-Private-Partnership arrangement.

4.2 Results Framework

4.2.1 Overall Objective

The overall long term objective for implementing the national programme for the control and eradication of PPR in Nigeria is a productive small ruminants' population that would contribute to national food security and nutrition, human health and economic growth; while the specific objectives are:

a. Progressive control and eradication of PPR by the year 2023 through
b. Strengthening of Veterinary Services to reinforce the capacity of Veterinary Services, across the three strata of government, to face current and future challenges of animal diseases emergence and re-emergence
c. Control of three other important small ruminant diseases to improve animal health by reducing the impact of these infectious SRDs alongside PPR control and eradication.

The strategic objective of the programme in Nigeria is a 7-year PPR control and eradication programme that would be executed from 2017-2023. This will entail a 3-year nationwide mass vaccination targeting 80% of the national sheep and goat population to be followed with a 2-year mop-up vaccination in high risk areas and among new additions and, thereafter, a 2-year intensive disease search to establish the presence or absence of virus circulation among the sheep and goat population as a prelude for application for disease and infection freedom status from the OIE.

4.2.3 Expected Outputs and Activities

Expected outputs include:

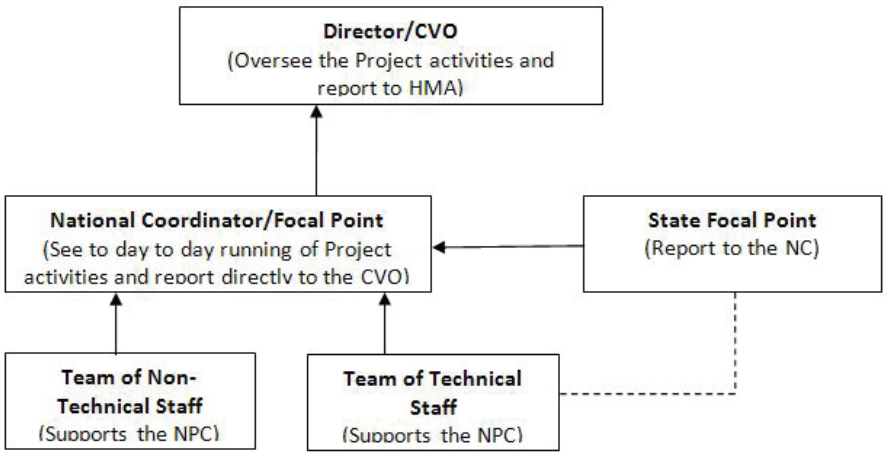
- National prevalence of PPR in sheep and goats establishment
- Mass vaccination to achieve a progressive reduction of the incidence and spread,

- PPR controlled and eradicated of from Nigeria
- Gastrointestinal parasitism, ecto-parasitism and pox in sheep and goats controlled
- Veterinary Services strengthened and capable of addressing animal diseases challenges effectively
- Sheep and goats industry enhanced

4.2.4 Coordination, Management and Partnerships

A Command Structure, with clearly spelt out responsibilities, for the management of the project will be established. The Institutional Framework and Command Structure for the PPR project will be in line with existing structure of the national veterinary services namely a vertical approach with central coordination. This structure has been successfully used in the past for various disease control programme of government such as Rinderpest, African swine fever and Avian Influenza. The institutional framework to be put in place will provide leadership, effectiveness, efficiency and decorum in the implementation of the project.

At the apex of the structure will be the Director/Chief Veterinary Officer (Federal Department of Veterinary & Pest Control Services) with the support of the National Coordinator/Focal Point of the project who will see to the day to day running of the project activities and report directly to the Chief Veterinary Officer (CVO). The National Coordinator will be supported by a team of technical and non-technical staff who will be responsible for various components of the project. A similar structure will be established at the States and LGA levels to handle issues at those lower levels.



In the area of laboratory diagnostics, the NVRI will be properly networked with all 10No VTH laboratories spread across the Country. Basic and secondary field sample testing and diagnosis will be mainly carried out by the regional laboratories located in the VTHs while tertiary testing, analysis and confirmatory diagnoses will be conducted at the central laboratory at the NVRI. Field samples and test results collected at the VTH level will be further processed to the central laboratory who in turn will submit reports of tests and results to the National Coordinator's office.

In addition, a **National Coordinating Committee** (Steering Committee) under the Chairmanship of the Honourable Minister of Agriculture (HMA) will be set up. Other members of the NCC will include the Director, Veterinary and Pest Control Services/ Chief Veterinary Officer of Nigeria, States Directors of Veterinary Services (2 per geo-political zone) and Head of the Central laboratory, Head of Animal Production, Head of Goat Producers and the Nigerian Agricultural Quarantine Service (NAQS); with the National Project Coordinator/Focal Point as Committee Secretary.

Also a **Technical Committee** under the Chairmanship of the Chief Veterinary Officer of Nigeria (CVO) will be put in place with membership drawn from States Directors of Veterinary Services (2 per geo-zone and different from those in the Steering Committee) on rotational basis, Deans of Faculties of Veterinary Medicine, Heads of Laboratories (NVRI and 1 private), Heads of Epidemiology and Veterinary Public Health Divisions of VPCS, Producers Associations, Development Partners, Animal Husbandary, NAQS and Veterinary Council of Nigeria (VCN).

Whereas the Steering Committee will approve the work plan and budget of the project, the Technical Committee will handle all technical issues and report to the Steering Committee.

Similarly, international donors and development partners such as the World Bank, United States Agency for International Development (USAID), Food and Agriculture Organization (FAO), World Organization for Animal Health (OIE) and African Union/ Inter-African Bureau for Animal Resources (AU/IBAR), will be fully engaged in the areas of capacity building, strengthening of government veterinary services, logistics

support, strengthening of veterinary laboratory network and diagnosis. Supports from these agencies will be efficiently coordinated in order to prevent duplication, clashes of interest and waste of resources.

5 MONITORING AND EVALUATION

The project team, with technical support from relevant agencies, will develop the M&E plan for the PPR Programme. During this process, participatory work sessions will be conducted. The M&E plan will focus mainly on addressing target indicators in the project log- frame and will apply the PPR Monitoring and Assessment Tool (PMAT).

PMAT is a companion tool of the GCEP that monitors and assesses the progress made in the implementation of the project. All three components of the project namely PPR control and eradication, Strengthening of Veterinary Services and control of other major SRDs will be monitored to assess progress being made. Five critical elements to be monitored include diagnostics, surveillance, disease prevention and control, legal framework and stakeholders' involvement.

Monitoring will focus on the management and supervision of activities, seeking to improve efficiency and overall effectiveness of project implementation. The monitoring team will continually collect information on actual implementation of project activities and compare these information with set goals and objectives as indicated in the workplan. The monitoring process will also be geared towards delivery of quality outputs in a timely manner, to identify problems and constraints (technical, human resource, and financial), to make clearly defined and practicable recommendations for corrective actions, and identify lessons learned and best practices for scaling up. Performance evaluation will assess the project's success in achieving its set goals and objectives.

The key indicators for the project implementation include the following:

i. Appointment of a National Focal Point
ii. Setting up and inauguration of National PPR Coordinating/Steering Committee (NPCC)

iii. Setting up and inauguration of Technical Committee
iv. Production, validation and activation of National PPR Control Strategy document
v. Assessment of actual prevalence of the disease in Nigeria
vi. Conduction of 3-year annual mass vaccination exercises
vii. Number of vaccines and vaccination consumables procured
viii. Number of vaccination equipment procured
ix. Number of annual vaccination campaigns conducted
x. Graded annual vaccination coverage
xi. Number of field personnel trained
xii. Number of samples collected for post vaccination sero-monitoring exercises
xiii. Number of samples analyzed
xiv. Level of immunity conferred
xv. % of animal immunized
xvi. Number of small ruminants treated against gastrointestinal parasitism
xvii. Number treated against ectoparasitism
xviii. Number vaccinated against sheep and goat pox
xix. Targeted vaccination campaign in hot spots areas
xx. Mop-up vaccination for young/new additions
xxi. Number of risk-based surveillance
xxii. Number of trained surveillance agents
xxiii. Number of trained veterinarians and veterinary para-professionals
xxiv. Number of targeted surveillance carried out annually
xxv. Number of passive surveillance carried out
xxvi. Number of disease incidence investigations carried out
xxvii. Number of disease outbreaks reports delivered
xxviii. Number of personnel trained on gap analysis
xxix. Number of gap analysis reports delivered
xxx. Networking of diagnostic laboratories
xxxi. Number of laboratory staff trained
xxxii. Number of field staff trained on disease investigation, samples collection, packaging and transportation to the laboratories
xxxiii. Development of a national policy on PPR
xxxiv. Enhancement of institutional linkages and command structure on PPR

xxxv. Number of sheep and goats farmers Clusters formed
xxxvi. Number of sheep and goats farmers associations formed
xxxvii. Number of sensitization and advocacy programmes conducted
xxxviii. Number of farmers trained on specific areas of interest
xxxix. Number of PVS follow-up meeting conducted/hosted
xl. Number of cross-border meetings held
xli. Number of harmonized cross-border vaccination campaigns organized
xlii. Number of monitoring and evaluation missions and activities carried out

6 ESTIMATED BUDGET

ITEM	QTY	UNIT COST (N)	BUDGET (N)					
			Y1	Y2	Y3	Y4	Y5	TOTAL BUDGET (N)
1. Epidemiology & Surveillance								
a) Equipment	Assorted	Sum	26,530,500	58,352,000	25,454,000	20,000,000	10,000,000	120,000,000
b) Etc (others)	Assorted	Sum	10,612,200	29,176,000	6,363,500	5,000,000	5,000,000	45,000,000
2. Vaccination								
a) Vaccines (PPRV) and pox vaccine	450 million (doses)	20	2,759,172,000	1,815,840,000	1,145,430,000	450,000,000	450,000,000	9,000,000,000
b) Vaccination Equipment	Assorted	Sum	39,795,750	58,352,000	19,090,500	0	0	110,000,000
c) Drugs (for other SRDs)	Assorted	Sum	42,448,800	233,408,000	38,181,000	30,000,000	25,000,000	245,000,000
3. Laboratory								
a) Diagnostic kits	Assorted	Sum	212,244,000	583,500,000	127,270,000	100,000,000	100,000,000	900,000,000
b) Equipment	Assorted	Sum	106,122,000	583,500,000	127,270,000	30,000,000	0	530,000,000
4. Communication	Assorted	Sum	7,959,150	14,588,000	6,363,500	5,000,000	5,000,000	35,000,000
5. Training/Studies	Assorted	Sum	23,877,450	58,352,000	25,454,500	5,000,000	5,000,000	95,000,000
6. Others/Coordination	Assorted	Sum	39,795,750	102,116,000	44,544,500	20,000,000	20,000,000	185,000,000
7. Vehicles, maintenance, utilities, etc	Assorted	Sum	90,203,700	175,056,000	63,635,000	50,000,000	50,000,000	380,000,000
8. Personnel	Assorted	Sum	26,530,500	145,880,000	63,635,000	50,000,000	50,000,000	250,000,000
9. Contingency (unforeseen costs)	-	Sum	338,529,180	466,816,000	169,269,100	76,500,000	72,000,000	1,079,500,000
TOTAL (N)			**3,723,800,980**	**4,324,936,000**	**1,861,960,600**	**841,500,000**	**792,000,000**	**11,544,197,580**

Structures, infrastructures, equipment and human resource capacities built during previous projects and programmes such as Rinderpest, Pan-African Control of Epizootics (PACE) and Avian Influenza Control will be mobilised for use under the PPR project.

7 RESOURCE MOBILISATION

PPR is a disease that is gender biased, has national character in spread and its control has the benefit of poverty alleviation. Therefore funding for this project is expected to come from these sources:

i. Public/Government sources (FGN, States & LGAs)
ii. International sources – PPR Secretariat (global); donor/development/technical partners (AU/IBAR, ECOWAS, OIE, FAO, etc)
iii. African Development Bank
iv. Private sources (Sheep & Goats Association of Nigeria, other non-governmental organizations, etc)
v. National donors (Entrepreneurs, oil and communication companies)
vi. Recovery from previous projects: Avian influenza, PACE, etc

The private sector, including private veterinary practitioners, will be sensitized and mobilized to support the implementation of the Project. Their areas of support and participation will be clearly defined.

The line Ministries responsible for livestock and Veterinary Services at the Federal and States levels will be encouraged to provide adequate funds for the successful execution of the Project in their annual budgetary allocations specifically dedicated to the control and eradication of PPR.

On her part, the Nigerian government will continue to pay for the recurrent and overhead cost for the running of the project.

ANNEXES

Annex 1: Logical Framework

NATIONAL STRATEY DESCRIPTION		Objectively Verifiable Indicators	Source and Means of verification	Assumptions
	Control and eradication of animal diseases including PPR.	Control and eradication of PPR in Nigeria Strengthened Veterinary Services that would be capable of addressing animal diseases challenges efficiently. Robust sheep and goats industry	Vaccination returns No of Veterinary Officers and Veterinary para-professionals trained Production Data for Sheep and Goats Evidence of absence of disease	The vast market for sheep and goats in Nigeria as well as their products especially in the southern and middle belt States and the far north. So also there is a huge demand from the international market, especially in the Middle East and the Gulf countries where the West African Red goats breed is in high demand
PURPOSE	A productive small ruminants' population that would contribute to national food security and nutrition, human health and economic growth	Growth in national food security and nutrition, human health and economic"	Nutrition Data Core Welfare indicators, Statistics	Nigeria's Initiation, provision and facilitation of sustainable platforms between farmers and the local and international markets.
OUTPUT	A progressive control and eradication of PPR by the year 2023	Reduction of the incidence and spread	Disease outbreak report	Movement of sheep and goats across the Country and from neighbouring countries (Cameroon, Benin, Chad and Niger to be monitored as the factor poses serious threat of PPR and other small ruminant diseases to the sheep and goats populations in the Country.
ACTIVITIES	1. Consultative meeting on National Strategy for PPR Control 2. Validation meeting 3. 5-yearr action plan 4. Develop/update EPP for PPR 5. Develop/update and harmonise SOPs for vaccination procedures, laboratory procedures, training, quarantine, surveillance, etc	PPR strategy and technical plans designed; Validation meeting held; Plan developed; EPP developed; SOP developed;	PPR Strategy and technical Plans document Meeting report Document; Document; Document;	Commencement of project implementation not delayed; Availability of required resources in the right quantities and quality; Cooperation of all stakeholders.

NATIONAL STRATEY DESCRIPTION		Objectively Verifiable Indicators	Source and Means of verification	Assumptions
	6. Mapping of stakeholders	Stakeholders mapped;	Document;	
	7. Develop IEC materials	IECs developed;	IEC materials;	
	8. Strategic animal health communication and extension	Communication tools developed;	Communication and extension Tools and materials;	
	9. Awareness campaigns including advocacy and lobbying	Awareness and advocacy meetings held;	Advocacy report;	
	10. Develop policies on PPR	PPR policies developed;	Policy document;	
	11. Develop regulations relevant to PPR	Regulations developed; Meetings /workshops held;	Meeting reports;	
	12. Awareness creation for different segments of the society (media, judicial officers, security agencies, etc) on existing veterinary and animal health regulations and laws			
	13. Build capacity (trainings, equipment, etc) of veterinary and para-veterinary personnel	Personnel trained;	Training reports;	
	14. Implementation of PVS gap-analysis recommendations	Outstanding PVS recommendations implemented;	Report;	
	15. Training of relevant value chain stakeholders	Stakeholders trained;	Reports;	
	16. PVS follow up missions	Follow-up missions held	Reports;	
	17. Conduct socio-economic impact assessment	Assessment conducted	Report;	
	18. Conduct epidemiological assessment	Assessment conducted;	Report;	
	19. Training/retraining on disease reporting, principle and practices of disease surveillance	Training conducted;	Training reports;	
	20. Provision of equipment, consumables and logistics for disease investigation and reporting	Provisions made;	Equipment/consumable/ logistics provided;	
	21. Regular active PPR surveillance exercises	Active surveillance done;	Report;	
	22. Provide sanitary mandates in areas not covered by public veterinary services	Sanitary mandates engaged	Database of sanitary mandates;	
	23. Capacity building on new techniques for laboratory staff	Training conducted;	Training report;	
	24. Needs assessment of the various levels of diagnostic laboratories to establish their status and preparedness	Needs assessment done	Report;	

NATIONAL STRATEY DESCRIPTION		Objectively Verifiable Indicators	Source and Means of verification	Assumptions
	25. Provide laboratory equipment and consumables	Provisions made;	Equipment and consumables provided;	
	26. Hold national epidemiology and laboratory meetings	Meetings held;	Meeting reports;	
	27. National inter-laboratory proficiency tests	Proficiency tests done;	Reports;	
	28. Conduct a 3-year mass vaccination campaign targeting 80% of sheep and goats population	Vaccination exercise done;	Report;	
	29. Sero-monitoring of vaccinates	Sero-monitoring done;	Report;	
	30. 1-year targeted vaccinations in PPR hotspots (post 3-year mass vaccination)	Vaccination done;	Report;	
	31. 1-year mop-up vaccination for the young and new additions	Vaccination done;	Report;	
	32. Biosecurity and movement control	Biosecurity/movement control instituted;	Report;	
	33. Animal tracing and PPR outbreaks forecasting	Tracing and disease forecasting done;	Report;	
	34. Procurement of pox vaccines	Drugs procured;	Drugs provided;	
	35. Procurement of wormers and antiprotozoans	NPCC established;	NPCC established;	
	36. Establish a National PPR Coordinating Committee (NPCC)	TCE established;	TEC established;	
	37. Establish a Technical Committee of Experts (TCE) on PPR	Focal Point Appointed;	National Focal Point appointed;	
	38. Appoint the PPR National Focal Points	Focal Points Appointed;	States' Focal Points appointed;	
	39. Appoint PPR States' Focal Points	Meetings held	Reports;	
	40. Regular meetings of the NPCC and TCE		Reports;	
	41. Cross-border meetings and collaboration on PPR	Meetings held;	Shared data;	
	42. Regular cross border sharing of data and information	Data and information shared;	Reports;	
	43. Joint vaccination campaigns between neighbouring countries	Joint vaccination done;	Reports;	
	44. Participation at Continental and Global	Participates at fora;		

NATIONAL STRATEY DESCRIPTION		Objectively Verifiable Indicators	Source and Means of verification	Assumptions
	45. Engagement with PANVAC and PPR World Reference Laboratories 46. Twinning of laboratories 47. Engagement of International Development Partners.	Linkage with PANVAC and WRL on PPR Laboratories twinned; International development partners engaged.	Reports; Reports; Reports.	

Annex 2: Action Plan for the first 5 Years

1.0: Introduction

The PPR project in Nigeria will go through stages 1 – 4 of the GCES. In this wise, an active surveillance will be conducted to establish the actual status of the disease in the Country and a study carried out to evaluate its socio-economic impacts. This will be followed with mass vaccination of sheep and goats, in the first instance; thereafter, mop-up vaccination in high risk areas and new additions will be carried out. The stages to be followed in Nigeria are thus:

- **Stage 1 –** understanding the epidemiological situation of the disease including its distribution
- **Stage 2 –** mass nationwide vaccination campaign for 3 years
- **Stage 3 –** mop-up vaccination in high risk areas and on new additions for 2 years
- **Stage 4 –** intensive disease search across the Country for verifiable evidence of presence or absence of virus circulation as prelude for request for disease and infection freedom status from the OIE

The key elements of each stage in the national strategy will be patterned in line with the global strategy thus:

- Disease prevention and control (vaccination, etc)
- Disease surveillance
- Diagnostics
- Legal framework with special attention on PPR

2.0: Objectives and Approach

2.1: Goal of PPR Control and Eradication

The overall long term goal for implementing the national programme for the control and eradication of PPR in Nigeria is a productive small ruminants' population that would contribute to national food security and nutrition, human health and economic growth and empowerment of rural poor especially women.

2.2: Specific Objectives

The specific objective of the programme is to implement steps that would lead to achieving PPR disease and infection freedom from the OIE by year 2023.

3.0: Action Plan

3.1: Components and Activities

Component 1: Enabling Environment Promotion

The control and eradication of PPR programme will benefit from the experience, structure and capacity established during the fight against Rinderpest, the availability of effective diagnostic and surveillance tools established in Nigeria over the years during the FAO-funded ASF control project, World Bank funded Avian Influenza Control Project, as well as other national disease control activities. The availability of effective, inexpensive and easy to administer PPR vaccine (PPRV) that covers all known strains and lineages of the viral causative agent of the disease is also an added advantage; the nil long-term virus carrier status of recovered animals and unknown to nil significant role of wildlife in the transmission and maintenance of PPR are also strong supports to an effective control and eventual eradication of the disease. The availability of adequate manpower (veterinary and veterinary para-professionals) both in the public and private sector is also a potential for the successful implementation of the project in Nigeria.

The political will of government at all levels and the diversification of the economy, with emphasis in the agricultural sector, in the face of dwindling oil prices is also an advantage.

Subcomponent 1.1: PPR Strategy and Technical Plans

- Setting of a Technical Committee of Experts (TCE) on PPR

- Meeting of the TCE to develop the National Strategy on the Control and Eradication of PPR document
- A Consultative Meeting of industry Stakeholders to validate the National Strategy document
- Development of 5-year Action Plan
- Development/Update of EPP for PPR
- Development/Update and harmonization of SOPs for laboratory procedures, training, quarantine, surveillance, etc

A 7-year PPR control and eradication programme will be executed from 2017-2023. The first 5 years of the project will be devoted to setting up the structures (appointment of key staff, setting up of the National PPR Coordinating Committee, stakeholders' inaugural meeting, etc), study to establish actual disease prevalence status, mass nationwide vaccination exercise targeting 80% population of sheep and goats and mop-up vaccination in high risk areas and among new additions.

Subcomponent 1.2: Stakeholders Awareness and Engagement

All stakeholders in the livestock industry, with particular attention to those involved in the sheep and goat industry will be fully engaged through interactive workshops, seminars and advocacy meetings. The major stakeholders and groups to engage include Federal and States Veterinary Services, Veterinary diagnostic Laboratories, Veterinary Quarantine Service, Sheep and Goats Producers Associations, Private Veterinary Practitioners Association, Traditional Institutions, Faith based Associations and Trade-based Association. In realization of this, the following will be carried out:

- Stakeholder mapping
- Stakeholders meetings
- Develop IEC materials
- Strategic animal health extension and communication
- Awareness campaigns including lobbying etc.

Subcomponent 1.3: Legal Framework

The Animal Diseases (Control) Act of 2004, LFN will be deployed as legal instrument and legislation for the PPR control and eradication project in Nigeria. The process of

reviewing the legislation to make it meet current and future realities is ongoing. While awaiting the promulgation/enactment of the reviewed Animal Diseases (Control) Act, specific policies dealing with PPR prevention and control and strengthening the enforcement of relevant sections of existing animal diseases control legislation will be put in place. The Chief Veterinary Officer of Nigeria (CVO) will organize and supervise this process in consultation with other major stakeholders in the sheep and goats industry. The following activities will be carried out:

- Development of regulation relevant to the PPR
- Create awareness for different segments of society about existing regulations and laws. (Media, Professionals, Security personnel and judicial officers)
- Mapping of different existing legislations on animal health

Subcomponent 1.4: Strengthening Veterinary Services

Animal diseases control and Veterinary Services are in the con-current legislative list in Nigeria and as such all three tiers of government (Federal, States and Local Government Areas) have their assigned roles. Under this arrangement, the Federal Government of Nigeria (FGN), through Federal Ministry of Agriculture & Rural Development (FMARD), is responsible for the development and coordination of national policies on animal diseases control while the States have the responsibility to control and prevent these diseases in their respective domains. The Local Government Areas (LGAs) are responsible for meat inspection, the development of public abattoirs, slaughter slabs and livestock markets as well as grassroots mobilization. There is also a growing development and participation of private veterinary practice that drives most animal healthcare delivery services at commercial level. For this component, the following activities will be conducted:

i. Engagement of governments at various levels (Federal, States and LGAs) on their constitutionally assigned roles in the delivery of veterinary services and animal diseases control including the provision of adequate resources
ii. Strengthening of the linkage, collaboration and networking of the veterinary services delivery mechanisms across the three tiers of government
iii. Capacity building of personnel (Training, equipment)
iv. Implementation of recommendations of PVS Gap-analysis
v. Training of relevant value chain-stakeholders

vi. PVS Follow-up Mission

The GCEP is providing an opportunity to strengthen veterinary governance at all levels of government, including the private sector, to make it not only proactive but responsive to national needs.

Component 2: Support to the Diagnostic and Surveillance Systems

The National Veterinary Research Institute (NVRI), Vom, Nigeria is the Central Veterinary Diagnostic Laboratory in Nigeria and is designated as FAO reference laboratory on transboundary animal diseases for West and Central Africa. The institute has been involved in the processing and analysis of samples for the diagnosis of PPR and other animal diseases for decades. In the course of this period, the Institute has progressively grown in its capacity in terms of equipment, facilities and manpower. The laboratory, however, needs to be properly positioned to face new challenges, consequent upon the PPR control and eradication project, through upgrading of critical equipment and facilities, and provision of adequate laboratory reagents and consumables. In addition, Nigeria is endowed with ten (10No) Veterinary Teaching Hospitals (VTHs) laboratories evenly spread across the Country). These Regional Laboratories (VTHs) have been involved in the diagnosis of animal diseases, research and training of veterinary students. Their capacities need to be further enhanced for better service delivery. There are also two functional private laboratories involved in animal diseases diagnostics. The networking of these laboratories (central, regional and private) need to be further strengthened.

The national veterinary epidemio-surveillance network (ESN) established during the Pan-African Programme for the Control of Epizooties (PACE) continues to serve in the detection, control and reporting of all OIE listed diseases including PPR.

Subcomponent 2.1: Epidemiological and Socio-economic Assessment

An active surveillance to have a better understanding of the epidemiological situation of PPR and evaluate the socio-economic impacts of the disease will be conducted. Research work already conducted at the National Veterinary Research Institute (NVRI), Vom, and Universities will be harnessed through a table top exercise, to have

robust information on the current status of the disease. Specific activities to be carried out under this sub-component include:

i. Conduct an active disease surveillance
ii. Conduct socio-economic studies
iii. Conduct research
iv. Conduct epidemiological assessment

Subcomponent 2.2: Strengthening of Surveillance Systems and Laboratory Capacities

2.2.1 The Nigerian epidemio-surveillance network needs to be further strengthened to meet its current challenges and international best practices. We need to carry out the following:

- Training and re-training on disease reporting, surveillance principles and practice
- Provision of equipment, consumables and funding for disease investigation and reporting
- Continued and sustained passive/active surveillance for PPR
- Provide sanitary mandates in areas where public veterinary services cannot reach
- Strengthening and proper networking of diagnostic laboratories at NVRI, Vom and the ten Veterinary Teaching Hospitals (VTHs) spread across the Country

2.2.2 The Central (NVRI) and Regional (VTHs) laboratories need to be fully strengthened and networked for better coverage of the Country through:

- Capacity building of laboratory staff on new techniques in laboratory diagnostic procedures
- Conducting of a Needs Assessment exercise of the laboratory network to evaluate their status and prepare them to fully participate in the PPR control and eradication project.
- Provision of equipment and consumables for laboratories

2.2.3 The National Veterinary Research Institute Vom produces the PPR 75/1 vaccine (PPRV) which is highly efficacious and protective against the disease. Arrangements are nearing completion for the full commercialization of the NVRI vaccine production outfit. When operational, the outfit will be fully self-funding and sustaining. This will optimize the vaccine production capacity of the institute and will prepare it to produce

not only for Nigeria but also West and Central African countries.

Subcomponent 2.3: Epidemiology and Laboratory Networks

The Veterinary Services in the three tiers of government need to be strengthened.

The national epidemio-surveillance and laboratory networks need to collaborate for effective animal health care service delivery which will translate into the control and eradication of PPR .The activities and relationship of both systems will be coordinated to ensure synergy in service delivery.To achieve these, the following will be carried out:

- National Epidemiology and Laboratory Networks meetings
- Sharing of requisite data
- Laboratory proficiency tests

Component 3: Measures towards PPR Eradication

The realization of the full potentials of sheep and goats is constrained mainly by heavy burden of Peste des Petits Ruminants (PPR).

The measures adopted for the control and eradication of PPR focuses on mass vaccination of sheep and goats against the disease leading to a progressive reduction of its incidence and spread, and eventually its eradication from Nigeria. The PPR eradication programme will be jointly carried out with that of gastrointestinal parasitism, ectoparasitism and sheep and goats pox.

Subcomponent 3.1: PPR Preventive and Control Measures

The control strategy for PPR in Nigeria has adopted the global strategy and is premised on mitigating the effects of the disease on the production and productivity levels of the national small ruminants' resource.The control measures to use include the following:

i. A 3-year mass vaccination of targeted 80% of our national sheep and goats herd
ii. Sero-monitoring to determine the effectiveness or otherwise of the vaccination exercise
iii. 1-year targeted vaccinations in PPR high risk areas (post 3-year programme)
iv. Mop-up vaccination for the young/new additions for the next 1 year
v. Biosecurity and animal movement control

vi. Passive and targeted Surveillance
vii. Animal tracing and PPR outbreaks forecasting
viii. Engagement of private veterinarians in vaccination, biosecurity and other disease control and preventive measures
ix. Engagement of transporters, marketers and processors in animal movement control, etc.

Subcomponent 3.2: Demonstration of PPR Freedom

Early detection and reporting of the occurrence of any new or sporadic outbreak(s) in the course of control activities, and the institutionalization of prerequisite early and emergency responses, will be deployed through improved on-farm, abattoir and markets passive surveillance system. As a prelude to applying for PPR freedom certification from the OIE, there has to be evidence of nil outbreaks of PPR, after ceasation of vaccination exercise, for at least a 24-month period across the Country. During this period, intensive, structured disease search and surveillance will be conducted to show evidence of absence of the disease or infection. This aspect of the strategy will not be covered during the first 5 years action plan.

Subcomponent 3.3: Control of Other Small Ruminants Diseases in Support of PPR Eradication

The strategy for PPR control shall adopt a concurrent control and eradication of other major Small Ruminants Diseases (SRDs). Some of these other SRDs, on their own or in combination with PPR, have serious economic consequences on sheep and goats production and need to be controlled. The Veterinary Services of Nigeria has identified three other SRDs to be incorporated into the National PPR Control Strategy for it to achieve its set goals. These diseases are gastrointestinal parasitism, ecto-parasitism and sheep/goat pox.

PPR vaccination teams will be adequately equipped and mobilized to also handle helminthosis, ectoparasitism and pox cases with wormers, antiprotozoans and pox vaccines.

Component 4: Coordination, Management and Partnerships

An organized and effective "Command Structure", with responsibilities clearly spelt out, for the management of the project will be established. The Institutional Framework and Command Structure for the PPR project will be in line with existing structure of our national veterinary services. The institutional framework to be put in place will provide leadership, effectiveness, efficiency and decorum in the implementation of the project. There shall be a National PPR Coordinating Committee (NPCC) to approve the workplan and provide direction for the project.

Subcomponent 4.1: National Level

At the head of the national level coordination and management structure will be the Director/Chief Veterinary Officer (Federal Department of Veterinary & Pest Control Services). A National Coordinator/Focal Point of the project who will see to the day to day running of the project activities will be appointed. The Focal Point will report to the CVO. The National Coordinator will be supported by a retinue of technical and non-technical staff, drawn also from the Federal Veterinary Service, who will be responsible for various components of the project. A similar structure will be established at the States and LGA levels to handle issues at those "lower" levels.

In the area of laboratory diagnostics, the NVRI will be properly networked with the VTH laboratories spread across the Country. The older VTHs located at Ibadan, Nsukka, Maiduguri, Zaria and Sokoto will be given preference over the new ones.

National Coordinating Committee (Steering Committee) should be chaired by HMA, National Coordinator will be the secretary, and members will be the DVS (2 per political zone), Head of the Central laboratory, Head of Animal Production, Head of Goat producers and NAQS.

Technical Committee to be chaired by the CVO, members will include DVS (2 per zone and different from those in the Steering Committee) on rotational basis, Universities, Laboratories, Associations, Development Partners, Animal Production, NAQS, VCN, VTHs, NIAS, Head of Epidemiology Division and Head of Veterinary Public Health Division.

The steering committee will approve the work plan and budget.

Subcomponent 4.2: Regional Partners and Programmes

Nigeria will partner and collaborate with fellow ECOWAS Member States in PPR control and eradication activities. This is important especially against the background that the borders between different ECOWAS countries are very porous. Movement across these borders is very frequent and, in most cases, uncontrolled. Activities under this subcomponent will include:

- Cross border meetings
- Sharing of data and information
- Joint vaccination campaigns between neighboring countries will be organized.
- Regional animal health and production networks' meetings
- Participation at regional commissions' meetings (Lake Chad Basin Commission, Nigeria-Niger joint Commission)
- Cross-border collaboration on PPR control activities with neighboring ECOWAS countries.

Subcomponent 4.3: Pan-African and Global Partners and Programme

The intervention of the international community through the sponsorship and funding of capacity building mechanisms in the areas of staff training, strengthening of the veterinary services and infrastructure across the various strata of governance, logistics support and strengthening of veterinary laboratory diagnostics and network will be pursued. The development partners include the World Bank, United States Agency for International Development (USAID), United States Department of Agriculture/ Animal & Plant Health Information System (USDA/APHIS), Food and Agriculture Organization (FAO), World Organization for Animal Health (OIE), African Union/ Inter-African Bureau for Animal Resources (AU/IBAR) and the Economic Community of West African States (ECOWAS). The technical and financial support from these development partners will go a long way in assisting the Veterinary Services of Nigeria in providing the enabling environment that would ensure successful eradication of PPR. The support received from these development partners towards the control and eradication of Avian Influenza in 2006-2008 were instrumental to the achievement of the feat by Nigeria. The structures and capacities as well as collaborations with

the international community established under the World Bank funded project on Avian Influenza (2006-2012) are still in place, and will be deployed for the control and eradication of PPR. The activities of and support from these agencies will be efficiently coordinated in order to prevent duplication, clashes of interest and waste of resources.

3.2: Sustainability

The national strategy for PPR control and eradication targets at strengthening our Veterinary Services to be pro-active to respond adequately to animal diseases challenges. Effective control strategies for PPR that are sustainable, rather than the current "ad-hoc" and peace-meal approach, will be developed and institutionalized. National capacities will be built in areas where there are skills and material gaps through collaboration with donor and development partners. Governments at various levels will be encouraged include PPR control activities in their annual budgetary allocations, starting from 2017.

3.3: Risks and Assumptions

Sheep and goats production in Nigeria is predominantly nomadic, pastoral and extensive production systems. These systems pose serious risks in any disease control strategies and measures on small ruminants in the Country. Other risks include lack of livestock movement control, local and traditional systems of livestock keeping, poor biosecurity, inadequate animal healthcare facilities in rural areas as well as inadequate local production of PPRV. The following have also been identified as risks:

- Policy inconsistency
- Security challenges
- Funding inconsistency
- Stakeholder resistance
- Natural disasters

The control and eradication of PPR project is premised on the assumption that the risks enumerated above will be adequately addressed through adequate funding of activities, gradual adoption of modern livestock production systems, strict livestock movement control, animal tracing and PPR forecasting and intelligence, etc.

The assumptions include:

- Political will of Government in terms of policies and funding
- Donors and partners' support in mobilizing funds
- Cooperation of all stakeholders
- Political stability and policy consistency

4.0: Funding, Monitoring and Evaluation and Communication

4.1: Funding

Adequate funding is critical to the success of the PPR project. Funding for the project will come from multiple sources such as government of Nigeria (Federal, States and LGAs), international donor agencies and development partners (OIE, FAO, World Bank, AU-IBAR, ECOWAS, etc) and private sector (Sheep and Goats Producers Association of Nigeria and other non-governmental organizations). Each of the funding sources will be dedicated to specific aspects of the funding needs to avoid duplication and waste of scarce resources while optimizing the funds utilisation.

The line Ministries responsible for livestock and Veterinary Services at the Federal and States levels will be encouraged to source adequate funds for the successful execution of the project in their annual budget allocations specifically dedicated to the control and eradication of PPR.

The budget for the first 5 years of the project is estimated at N11,544,197,580.00 (Eleven Billion, Five Hundred and Forty-four Million, One Hundred and Ninety-seven Thousand, Five Hundred and Eighty Naira) only. Details are in chapter 6.

4.2: Monitoring and Evaluation

The project team, with technical support from development partners, will develop a M&E plan for the project. M&E will be a continuous process with data and information generated being used to re-align and re-strategise on project implementation as appropriate.

4.3: Communication and advocacy

Farmers sensitization, advocacy and public awareness on best animal health practices

including biosecurity will be instituted using communication tools such as electronic and print media, promotional materials, town hall meetings as well as farmers fora. Strategic animal health extension and communication programme as well as cross-border collaboration with neighbouring ECOWAS countries will be enhanced.

Annex 3: Comprehensive Budget

S/N	Description	Amount (N)	Responsible
1	Development and printing of national strategy	8,645,000.00	FGN & AU-IBAR
2	National PPR Committee meetings (one meeting/year)	50,000,000.00	FGN
3	Vaccine & Vaccination a) Procurement of 450,000,000 doses of vaccines (PPRV) b) Procurement of vaccination equipment c) Procurement of project vehicles (4WD Hilux) d) Cold chain facilities (ultra-low freezers, refrigerators, etc) e) Logistics (transportation, field allowances, coordination, monitoring & evaluation)	 9,000,000,000 100,000,000 150,000,000 25,000,000 120,000,000	FGN;STATES; & DONORS
4	Laboratory & Diagnostics a) Sample collection equipment b) Transportation of samples c) Laboratory diagnosis d) Laboratory equipment e) Laboratory Reagents f) Laboratory kits g) Field samples storage equipment (ultra-low freezers, etc) h) Mobility (4WD Hilux) i) Logistics (transportation, field allowances, coordination)	 120,000,000 15,000,000 45,000,000 330,000,000 425,000,000 110,000,000 5,000,000 30,000,000 45,000,000	FGN, STATES; & DONORS
5	Capacity Building	125,000,000	FGN; STATES; & DONORS
6	Surveillance a) Procurement of equipment b) Procurement of consumables c) Procurement of vehicles d) Logistics (transportation, allowances, collection, etc) e) Disease investigation and sampling materials f) Disease outbreaks simulation exercises	 120,000,000 20,000,000 40,000,000 45,000,000 5,000,000 1,000,000	FGN; STATES; & DONORS
7	Animal Health Communication (meetings, promotional materials, awareness creation, etc)	35,000,000	"
8	Control of other priority small ruminants diseases a) Veterinary Drugs b) Veterinary Equipment c) Vaccines (pox)	245,000,000	"
9	OIE PVS Follow Up mission • In-Country movements • In-Country meetings	35,000,000	"
10	Development of Policies on PPR	20,000,000	"
11	Socioeconomic Impact Assessment	48,000,000	"
12	Sheep and Goats Farmers Association • Clustering, formation of associations • Sensitisation, advocacy and public awareness	12,000,000	"
13	Animal diseases reporting, data collection and analysis	10,000,000	"

S/N	Description	Amount (N)	Responsible
14	Gap analysis	15,000,000	"
15	Cross border collaboration	40,000,000	"
16	Central coordination, monitoring and evaluation	130,000,000	"
	TOTAL	**N11,544,197,580.00**	

Annex 4: Segregated Logical Framework

S/N	OBJECTIVE	ACTIVITIES	DELIVERABLES	OUTCOMES	TIMELINE
1	Appointment of National Focal Point	Appointment of national focal point	National Focal Point appointed	National Focal Point	2 weeks
2	Setting up and inauguration of National PPR Coordinating Committee (NPCC)	Setting up and inauguration of NPCC)	NPCC inaugurated	NPCC inaugurated	3 weeks
3	Production and activation of national control and eradication strategy document	a) Setting up of Departmental Committee to produce draft Strategy b) Setting up and meeting of Technical Committee of Experts to review draft Strategy c) Validation meeting on Strategy d) Production and activation of national control and eradication strategy document	National PPR control Strategy document	National PPR control Strategy document	16 weeks
4	Assessment of the actual status of PPR for the design and implementation of evidence-based disease control strategies	a) Conduct a baseline survey b) Validate Results c) Set Targets	Baseline survey report with clear targets	Clear bench mark for measuring performance	4 weeks
5	A 3-year mass vaccination of targeted 80% (60%, 15% and 5% in the 1st, 2nd and 3rd year respectively) of our national sheep and goats herd	a) Procurement of Vaccines b) Procurement of Vehicles c) Procurement of equipment d) Training of field Personnel e) Field vaccination	a) Adequate vaccines procured b) Project vehicles procured c) Equipment procured d) Trained field personnel e) Field vaccination done f) Vaccination report	a) Reduced PPR incidence b) Healthy and productive sheep and goats a) Reduced PPR incidence b) Healthy and productive sheep and goats	144 weeks
6	Sero-monitoring to determine the effectiveness or otherwise of the vaccination exercise	a) Field samples collected b) Lab analysis of samples	Sero monitoring report	Effectiveness of vaccination determined	12 weeks
7	Concurrent control of helminthosis, ecto-parasitism and pox	a) Treatment of sheep and goats against helminthosis and ectoparasitism b) Vaccination of sheep and goats against pox	a) Treatment figures b) Vaccination figures c) Treatment and Vaccination reports	Healthy and productive animals	40 weeks

S/N	OBJECTIVE	ACTIVITIES	DELIVERABLES	OUTCOMES	TIMELINE
8	1-year targeted vaccinations in PPR high risk areas (post 3-year programme)	a) Vaccines b) Equipment c) Field vaccination	a) Vaccines and equipment procured b)Vaccinated flock	Productive population of Sheep and goats	48 weeks
9	Mop-up vaccination for the young/new additions for the next 1 year	a) Vaccines b) Equipment c) Field vaccination	a) Vaccines and equipment procured b)Vaccinated flock	Productive population of Sheep and goats	48 weeks
10	Strengthen epidemio-surveillance network to carry out both passive and active surveillance	a) Training and re-training of field staff and surveillance agents on disease surveillance principles and practice b) Equipping and enhancement of surveillance agents c) Continued targeted surveillance for PPR d) Continued passive surveillance	a) Number of field staff and surveillance agents trained b) Surveillance agents equipped c) Report of targeted surveillance d) Report of passive surveillance	Good knowledge of PPR status in the Country	56 weeks
11	Strengthening of the national animal diseases reporting, data collection and analysis system	a) Disease reporting b) Data collection c) Data analysis d) Training	a) Number of field/ states reports received b) Volume of data collected c) disease reporting, data collection and analysis reports	Improved disease reporting from the field; networking of disease reporting agencies	52 weeks
12	Identification of the gaps (Gap Analysis) in disease control implementation and seeking for measures to address the gaps – continuous monitoring of programme	a) Commissioning of Study b) Review of Study c) Implementation of Study recommendations d) Training and retraining e) Capacity building	a) Gap Analysis report with clear recommendations. b) Trained personnel	Effective and efficient veterinary service	24 weeks
13	Strengthening and properly networking the animal diseases diagnostic laboratories	a) Training and retraining b) Capacity building c) Management Information System	a) Trained personnel b) Management information system in place	Efficient and effective diagnosis	36 weeks
14	Strengthen legal framework on disease control	Development of national policies on PPR	National policies on PPR document produced	PPR policies with delineated roles and functions	3 weeks
15	Institutional framework and command structure	Establishment of institutional linkages and command structure	Well defined institutional linkages and command structure in place	An organized and effective command structure with clearly spelt out roles	2 weeks
16	Formation and strengthening of farmers groups	a) Clustering of sheep and goats farmers b) Formation of sheep and goats farmers associations c) Strengthening of existing associations	a) Number of farmers' clusters and associations formed		10 weeks

S/N	OBJECTIVE	ACTIVITIES	DELIVERABLES	OUTCOMES	TIMELINE
		d) Sensitization, advocacy and public awareness to farmers	b) improved networking of farmers associations c) Farmers sensitization, advocacy and public awareness	Robust engagement and participation of sheep and goats farmers in PPR control and eradication programme	
17	Training and capacity building for various stakeholder groups on various areas of identified gaps	Training of stakeholder groups on specific areas	Number of stakeholders trained; Training reports	Identified capacities gaps addressed	60 weeks
18	Monitoring & Evaluation	a) Supervision of project activities b) Information gathering on the progress of project activities implementation	a) Number of monitoring and supervision exercises carried out b) Monitoring and Evaluation Reports	a) Early identification of constraints b) Addressing constraints	
19	Cross border collaboration	a) Cross border meeting b) Harmonization of vaccination campaigns and sharing of information among neighbouring countries	a) Number of cross border meetings held	Beter collaboration on animal diseases control among countries; animal movement control across borders	7 weeks