

UNFOLDING THE GLOBAL STRATEGY FOR THE CONTROL AND ERADICATION OF PESTE DES PETITS RUMINANTS (PPR) IN AFRICA

A. Bakkouri¹

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Summary: *Peste des petits ruminants (PPR) is a virulent, highly contagious transboundary disease. It has serious repercussions on food security, undermining the resilience of smallholder farmers and limiting animal production opportunities and the economic development of countries with an important small ruminant sector.*

The PPR Global Control and Eradication Strategy (PPR-GCES), approved by the International Conference for the Control and Eradication of PPR, held jointly by the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) in Abidjan (Côte d'Ivoire) in April 2015, sets out a conceptual approach and provides the technical and policy tools needed to eradicate PPR by 2030. It was endorsed by FAO and OIE supreme governing bodies and is based on three core components:

- *a progressive, step-wise approach to PPR control and final eradication;*
- *strengthening Veterinary Services;*
- *better control of other small ruminant diseases.*

To implement PPR-GCES, in 2016 the PPR Global Secretariat, established jointly by FAO and the OIE, drew up a PPR Global Eradication Programme (PPR-GEP) (2017–2021) after conducting a broad-based consultation involving stakeholders and experts. PPR-GEP was endorsed by the managements of both organisations before being officially launched in October 2016. With an estimated budget of 996.4 million US dollars (USD), this five-year programme is the first phase in a process for achieving PPR eradication.

Between 2015 and 2016, five regions of Africa drew up their regional roadmaps for PPR-GCES implementation.

The success of PPR-GCES, particularly in Africa, relies on:

- *the political will and ongoing commitment of regional economic communities and countries to its implementation;*
- *aligning the continental programme and current regional and national strategies with PPR-GCES and PPR-GEP;*
- *the establishment, through PPR regional roadmaps, of a common regional vision based on exchange, collaboration and coordination in order to monitor and harmonise planned national activities;*
- *a high degree of coordination among stakeholders and key partners at all levels (national, regional and continental);*
- *the effective involvement of all actors in the small ruminant value chain.*

Keywords: Africa – peste des petits ruminants (PPR) – PPR Global Control and Eradication Strategy (PPR-GCES) – PPR Global Eradication Programme (PPR-GEP).

1 Dr Abdenacer Bakkouri, Moroccan expert, official veterinarian in Morocco's Veterinary Services from 1995 to 2016

INTRODUCTION

Peste des petits ruminants (PPR) is an OIE-listed disease² caused by a Morbillivirus. It is a virulent, highly contagious transboundary disease of sheep and goats on which it has a devastating impact (morbidity and mortality rates, depending on the epidemiological context, of up to 80–90% and 50-100% respectively) [1].

As a result of its heavy impact on small ruminant health and productivity and on farmers' incomes, PPR poses a threat to food security and hinders economic development and the production opportunities of small ruminant value chains. It undermines the livelihoods and resilience of millions of households, particularly in developing countries where the most disadvantaged populations remain dependent on livestock, especially small ruminants (around 300 million families worldwide, according to FAO³).

FAO estimates annual losses from PPR to be USD 1.4–2.1 billion. In Africa, the PPR epidemics in Kenya in 2006 and 2008 were responsible for the deaths of 1.2 million small ruminants, with an estimated value of more than USD 23.5 million, and a drop in milk production of around 2 million litres.

Building on the successful experience of rinderpest eradication in 2011, close collaboration between the OIE and FAO on animal health led to the development of the PPR Global Control and Eradication Strategy (PPR-GCES) in 2015. PPR-GCES aims to eradicate PPR by 2030 by integrating a horizontal vision of animal health problems, focused on strengthening Veterinary Services, with a vertical vision focused on the dual aim of progressive PPR eradication and reducing the prevalence of other priority small ruminant diseases. In 2016, under the FAO-OIE Global Framework for the progressive control of Transboundary Animal Diseases (GF-TADs), the OIE and FAO established a PPR Global Secretariat, which developed a PPR Global Eradication Programme (PPR-GEP) for the period 2017–2021 that lays the foundations for implementing PPR-GCES and is the first phase in the PPR eradication process.

In view of the transboundary nature of PPR, for the deployment of PPR-GCES in Africa it is planned to establish five regional information-sharing platforms endowed with a common long-term vision tailored to the specific needs of each region, where the effective involvement of regional stakeholders – especially regional economic communities – will be a major advantage for strengthening, harmonising, coordinating and monitoring planned regional and national actions under PPR-GCES.

² www.oie.int/en/animal-health-in-the-world/oie-listed-diseases-2017/

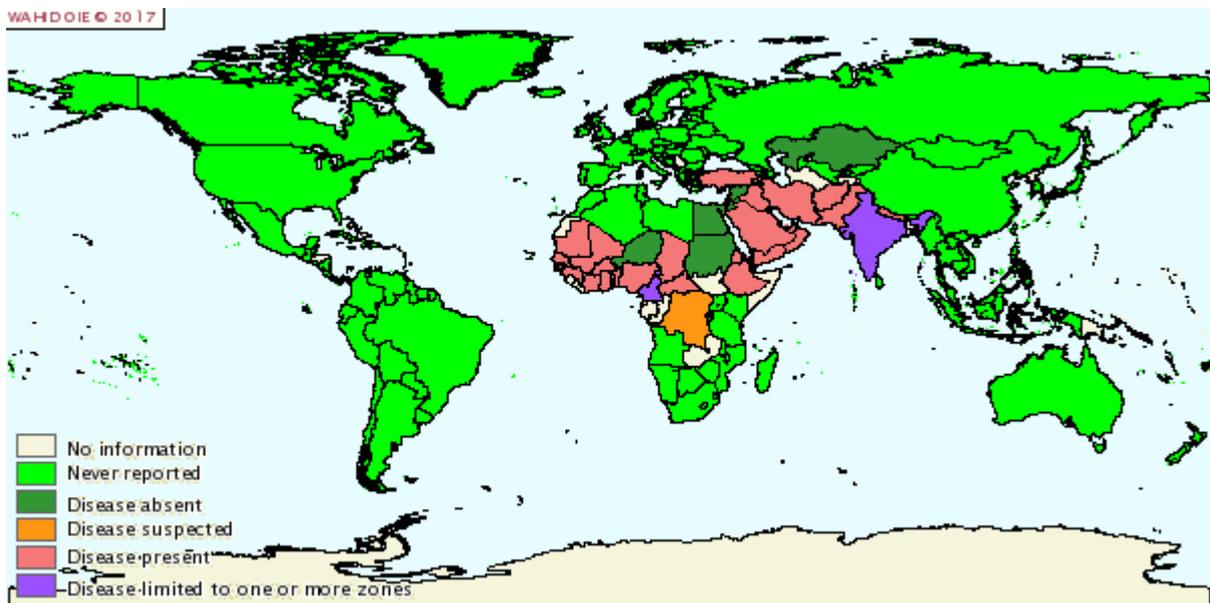
³ www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/450942/

PART A: PPR GLOBAL CONTROL AND ERADICATION STRATEGY

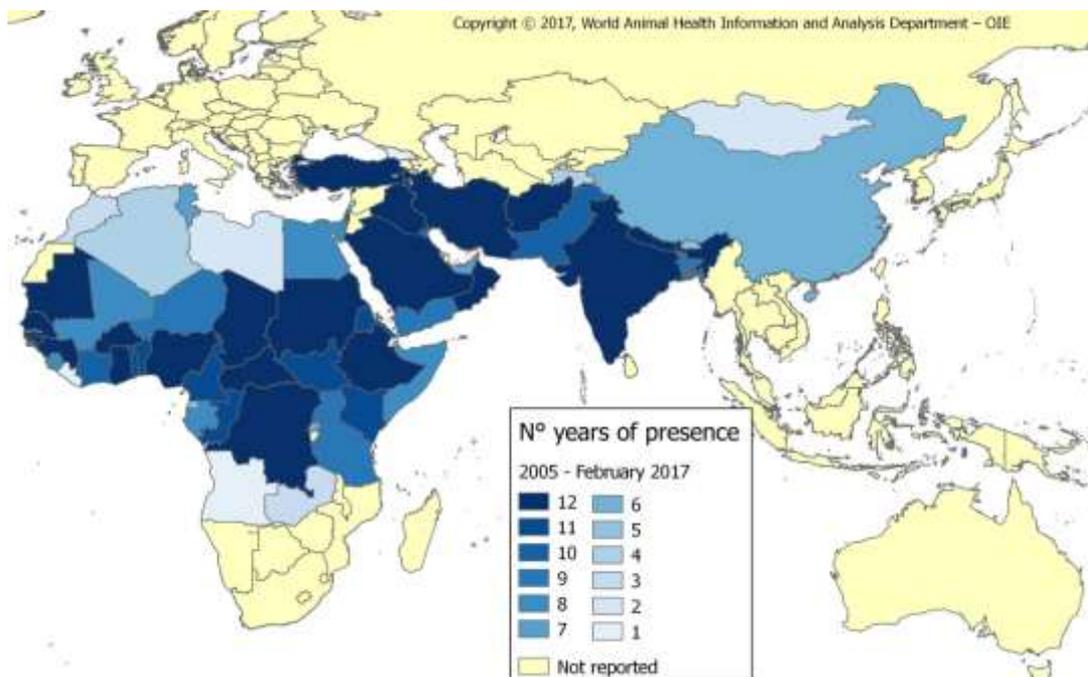
I. Global PPR situation

PPR was first reported in Côte d'Ivoire in 1942. Since 2007, its geographic spread has expanded greatly (see Maps 1 and 2), from West Africa, where it is endemic, to more than 75 countries across Africa (where over 60% of countries are infected), the Middle East and Asia (most recently Mongolia in 2016), and has even reached Europe (Georgia, 2016). These regions host more than 80% of the world's small ruminant population.

Map 1: Global distribution of PPR in 2005 (OIE World Animal Health Information System [WAHIS])

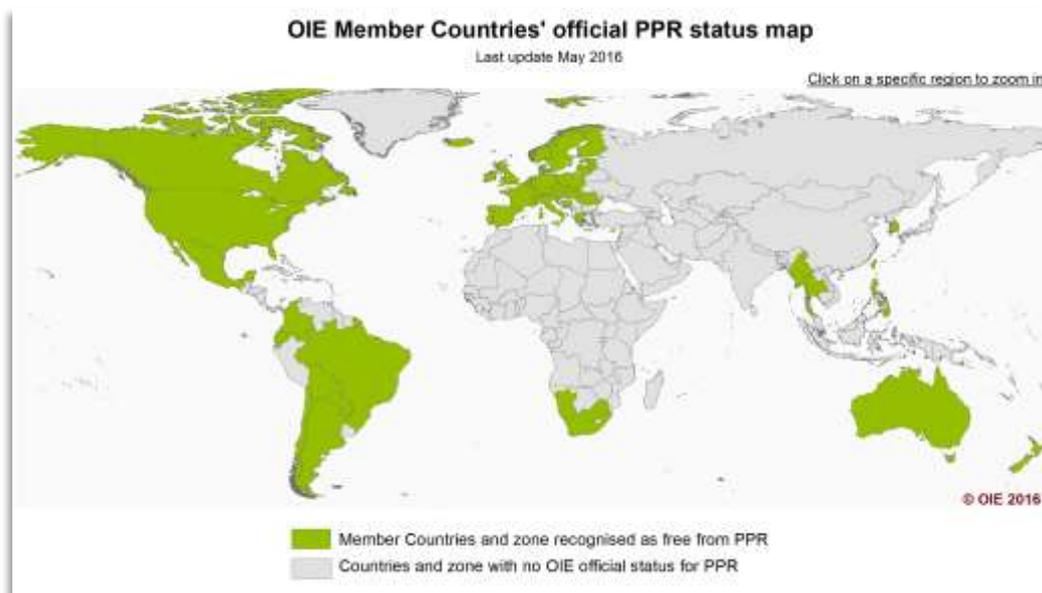


Map 2: Global incidence of PPR (2005–2016) (WAHIS)

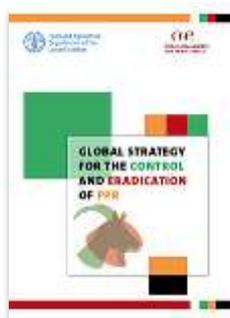


In 2016 and in accordance with Resolution No. 22 of the 84th General Session of the World Assembly of OIE Delegates, 53 Member Countries⁴ were officially recognised as PPR-free in 2016 (see Map 3).

Map 3: Official PPR status of OIE Member Countries (OIE, 2016)⁵



II. Approach of the PPR Global Control and Eradication Strategy



Its heavy animal-health and social and economic impact, coupled with wide spatial spread, have made PPR such a cause of global concern that, in 2012, it was included among the priority diseases of the GF-TADs Global-level Five-Year Action Plan for the Progressive Control of Transboundary Animal Diseases (2013–2017).

The GF-TADs Global Steering Committee (in 2012), the FAO Council and FAO Committee on Agriculture and the OIE (in the form of a Resolution of the World Assembly of OIE Delegates at its General Session in 2014) have all recommended drawing up a **PPR Global Control and Eradication Strategy**⁶.

At the FAO/OIE International Conference for the control and eradication of PPR in April 2015 in Abidjan, the high-level authorities and Chief Veterinary Officers (CVO) of 70 countries endorsed PPR-GCES, which had been developed jointly by the OIE and FAO under the GF-TADs common platform. PPR-GCES aims to pool and coordinate all current efforts of governments, regional organisations, research institutes, donors and farmers to eradicate PPR by 2030. To this end, a PPR Global Secretariat was established jointly by FAO and the OIE in early March 2016 to prepare, coordinate and implement a **PPR Global Eradication Programme**⁷ (2017–2021). PPR-GCES was supported by the supreme governing bodies of FAO and the OIE, at the 39th session of the biennial FAO Conference in June 2015, and at the 84th OIE General Session (see Resolution No. 25 of 24 May 2016).

4 Plus one free zone in Namibia

5 www.oie.int/en/animal-health-in-the-world/official-disease-status/peste-des-petits-ruminants/en-ppr-carte/

6 www.oie.int/eng/ppr2015/doc/PPR-Global-Strategy-2015-03-28.pdf

7 www.oie.int/fileadmin/Home/eng/Media_Center/docs/pdf/PortailPPR/EN_GEP_PPR_Finalweb.pdf

1. PPR-GCES objectives

The **specific objectives** of the global strategy are structured around the following three core components.

- eradication of PPR by 2030, which requires:
 - in infected countries, achieving a progressive reduction in PPR incidence and spread, leading to its final eradication;
 - maintaining the officially recognised PPR-free status of Member Countries;
- building and improving the capacity of Veterinary Services to control animal diseases, in particular PPR;
- improving animal health globally by reducing the impact of other priority small ruminant diseases.

2. Global Strategy concept and approach

Drawing on the success of the global programme that led to the eradication of rinderpest in 2011, PPR-GCES is designed to promote coherence and harmonisation of actions and efforts at national and regional levels and to ensure effective coordination and support at regional and global levels.

2.1. At national level

PPR-GCES is structured around three core components:

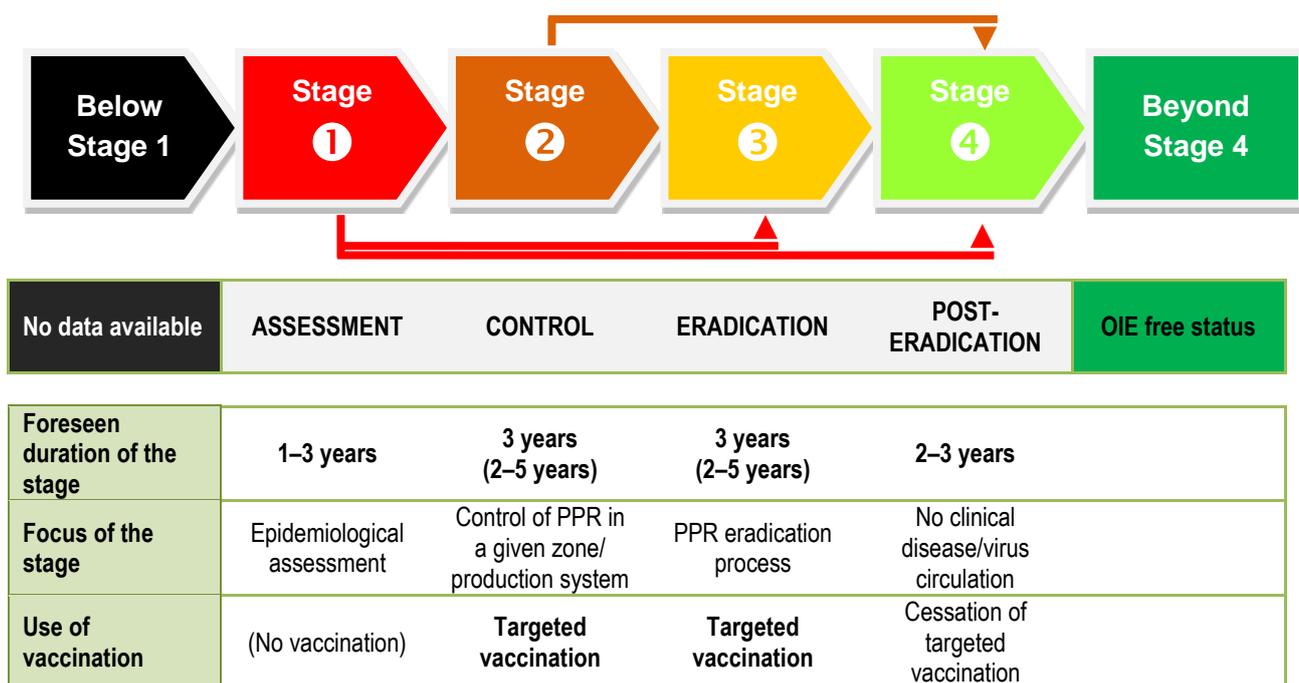
- a step-wise technical approach for categorising countries according to four specific stages in **PPR control and eradication**;
- **strengthening Veterinary Services**, which goes hand in hand with successful implementation of the aforementioned technical component;
- improving the prevention and control of **other priority small ruminant diseases** by maximising the impact of control measures.

a. A progressive step-wise approach

A country is assessed in order to categorise it in one of four progressive stages in the eradication of PPR, based on a combination of **decreasing levels of epidemiological risk** and **increasing levels of prevention and control**. It may also be ranked as 'below Stage 1', where epidemiological data are unavailable, or 'beyond Stage 4' when it has been officially recognised as PPR-free.

The PPR stages (see Fig. 1) range from Stage 1, where the epidemiological situation is being assessed, to Stage 4, when a country can demonstrate absence of the disease and of virus circulation and is ready to apply for official OIE recognition of PPR freedom. For countries wishing to eradicate PPR more rapidly, there is a fast-track procedure allowing them to skip intermediate stages, provided that adequate and appropriate investment is made.

Fig. 1: Progressive step-wise approach of the PPR Global Control and Eradication Strategy



b. Assessment of PPR stages

Specially designed tools, including the PPR Monitoring and Assessment Tool (PMAT)⁸ and the Post-Vaccination Evaluation (PVE) tool⁹ (when vaccinations have been carried out), along with performance indicators for each activity, will be used on a yearly basis to monitor and assess progress at national level.

To assess the effectiveness of Veterinary Services in supporting PPR monitoring and eradication activities, the OIE Tool for the evaluation of Performance of Veterinary Services (OIE PVS Tool) is also used, on a voluntary basis, to assess Veterinary Services’ level of compliance with the specific critical competencies of the OIE PVS Tool relating to PPR. Thirty-three of the 47 critical competencies have been included in PPR-GCES (12, 15, 2 and 4 critical competencies relating to stages 1, 2, 3 and 4 respectively)¹⁰.

Furthermore, a country’s progress through the PPR stages is based on an assessment of its evolving capacities and on actions it implements to achieve objectives, as well as in accordance with each of the three PPR-GCES core components.

Progress with activities for Component 1 (PPR eradication) is assessed on the basis of objectives defined in accordance with the following five technical elements:

-  PPR diagnostic system(s)
-  PPR surveillance system(s)
-  PPR prevention and control system(s)
-  legal framework in place for PPR prevention and control
-  stakeholder involvement.

8 See Annex 3.3 of the Global Strategy for the Control and Eradication of PPR in Africa

9 See Annex 3.4 of the Global Strategy for the Control and Eradication PPR in Africa

10 See Annex 3.4 of the Global Strategy for the Control and Eradication PPR in Africa

The following progressive levels correspond to each stage:

- an epidemiological situation and objective;
- a stage focus, with its specific objectives, activities and outcomes for each of the five technical elements listed above;
- tools used (surveillance, vaccination, PVE, OIE standards¹¹);
- an enabling environment for Veterinary Services. For each stage there are OIE PVS Tool critical competencies with which Member Countries are required to comply;
- gradual improvement in the prevention and control of other priority small ruminant diseases.

In summary, the following assessment steps are required to determine the PPR stage in which a country should be ranked:

- self-assessment (PMAT questionnaire) or external evaluation of the Member Country;
- assessment of the questionnaire by designated experts;
- review and discussion of the assessments by the **Regional Advisory Group (RAG)**¹² at annual **regional roadmap** meetings and provisional/final ranking of the country in a PPR stage;
- presentation of the ranking to roadmap meeting participants.

c. Main PPR-GCES tools

Tools have been developed for each stage in the progressive eradication of PPR, the main ones being as follows.

- **Vaccination** is one of the key tools for controlling PPR and has been identified as the main option for PPR-GCES Stage 2 (control) and Stage 3 (eradication). Large-scale vaccination, in endemic countries, with effective and certified attenuated live vaccines can also be facilitated by the establishment of OIE regional vaccine banks.
- Surveillance and post-vaccination monitoring and evaluation, using available diagnostic tests, to ensure vaccination efficacy in terms of herd immunity, reduced number of PPR cases, reduced virus circulation and eradication.
- Evaluation of the capacities of Veterinary Services and their investment needs by implementing the tools provided by the OIE Performance of Veterinary Services Pathway (OIE PVS pathway).

Other non-specific tools include the OIE World Animal Health Information System (WAHIS), FAO's EMPRES Global Animal Disease Information System (EMPRES-i) and the FAO/OIE/World Health Organization (WHO) Global Early Warning System for major animal diseases, including zoonoses (GLEWS).

2.2. *At regional level*

As at national level, the PPR-GCES regional component is structured around its three core components.

Given the transboundary nature of PPR and the fact that the success of PPR-GCES relies on the harmonisation, or even synchronisation, of national actions in the same region, in order to instigate an **epizone** approach, PPR-GCES has identified nine regions across Africa¹³, the Middle East, West Eurasia and Asia (see Map 4).

11 Chapter 1.6 of the OIE *Terrestrial Animal Health Code* on procedures for self-declaration and for official recognition by the OIE (2016 edition); Chapter 14.7 of the OIE *Terrestrial Animal Health Code* on infection with peste des petits ruminants virus (2016 edition)

12 Governance body responsible for monitoring and regional coordination of PPR-GCES implementation at national level

13 As a transcontinental country, Egypt was included in the Middle East

Map 4: Nine regions identified in the PPR Global Control and Eradication Strategy¹⁴

a. PPR control and eradication

Support, harmonisation of national strategies and the synchronisation of some of their actions are key to the success of PPR-GCES. This makes regional coordination vital, based on intensified interactions and exchanges among the ministerial departments responsible for animal health in countries in the same region and among the technical structures reporting to them (CVOs, laboratories, and epidemiology teams or centres). The **regional networks approach** adopted by PPR-GCES calls for the establishment or strengthening of **regional laboratory networks** and **regional epidemiology networks**, in particular to facilitate exchanges, meet the need for training or expertise and harmonise the actions of countries in the region.

The regional level also provides the ideal interface for building or strengthening strong partnerships involving sub-regional, regional and international organisations, such as the African Union–Interafrican Bureau for Animal Resources (AU–IBAR) in Africa, the Association of Southeast Asian Nations (ASEAN) in Asia, the South Asian Association for Regional Cooperation (SAARC) in South Asia and regional economic communities. It also makes the ideal interface for pooling and coordinating the efforts of regional projects, and inputs from donors, non-governmental organisations (NGOs) and private-sector regional and international stakeholders.

New or strengthened GF-TADs Regional Animal Health Centres (RAHCs) will strongly support the implementation of regional activities, as they will be able to provide Member Countries with multidisciplinary expertise (expert missions, assistance in preparing regional and national strategies, establishment of regional vaccine banks, organisation of simulation exercises, etc.). Some partners, such as AU–IBAR and the African Union Pan African Veterinary Vaccine Centre (AU–PANVAC) for Africa, will be involved as key players.

Regional coordination also entails developing a **regional PPR roadmap** and holding the associated meetings. Regional action plans identify control and eradication measures to be established at regional and national levels.

¹⁴ www.oie.int/fileadmin/home/eng/Media_Center/img/Portail_PPR/global_strat4.PNG

b. Strengthening Veterinary Services

The OIE organises several regular activities, in the form of regional animal health programmes run by its Regional and Sub-Regional Representations, to ensure information-sharing, continuing education and capacity-building of OIE Delegates and national focal points.

OIE regional meetings and GF-TADs regional steering committee meetings also provide opportunities for exchanging animal-health and technical information for the regional harmonisation of animal health strategies and programmes.

c. Other priority diseases

The same regional (network) approach is used for combining activities for other priority small ruminant diseases identified for a region.

2.3. *At global level*

The OIE and FAO will continue to engage partners in PPR-GCES implementation by building partnerships with other international and regional organisations and private-sector associations.

The following global activities have been selected for the PPR component:

- establishment of a PPR International Laboratory Network to support regional laboratory networks;
- establishment of a PPR International Epidemiology Network to support regional epidemiology networks;
- establishment of a PPR Global Research and Expertise Network (PPR-GREN) under the auspices of GF-TADs, with FAO-OIE providing expertise for research and for the definition and implementation of control programmes;
- support for regional and national laboratories from the FAO-International Atomic Energy Agency (IAEA) Joint Division;
- at the request of a country, the FAO-OIE Crisis Management Centre – Animal Health (CMC-AH) immediately deploys international resources in an emergency;
- support and improvement of information exchange and data analysis on PPR, in particular through existing platforms (WAHIS run by the OIE, EMPRES-i by FAO and GLEWS by FAO-OIE-WHO).

At international level, OIE activities involve OIE Delegates, CVOs and technical experts from Member Countries, in particular through their contribution to OIE standard-setting and their participation in international meetings and conferences, including the annual General Session of the World Assembly of OIE Delegates and the conference of Regional Commissions.

For other diseases, activities similar to those for PPR are planned at the global level.

3. **PPR-GCES governance and timeline**

GF-TADs principles and mechanisms and the PPR Global Secretariat will be used to ensure and support coordination and monitoring of PPR-GCES implementation, at both international and regional levels. The PPR-GCES timeline foresees three 5-year phases spread over 15 years, with a provisional timeline for progress in each component at three levels: national, regional and international. At the end of the first phase (2021), an overall evaluation of the results of PPR-GCES implementation will be conducted to provide the necessary measures and guidance on continued activities.

4. Cost–benefit ratio of eradication

Implementation of the 15-year eradication programme would save an annual USD 1.8 billion. This investment cost would be recovered within five years of PPR eradication with a cost–benefit ratio of 33.8 and an internal rate of return of 199% [2].

III. PPR Global Eradication Programme (2017–2021)



In October 2016, close collaboration between the OIE and FAO, with the support of their joint PPR Secretariat, led to finalisation of the **PPR Global Eradication Programme (2017–2021)**. This operational programme, costing an estimated **USD 996.4 million**, provides the technical and policy tools to be deployed over the next five years. It focuses on reducing PPR prevalence in currently infected countries and on building the technical capacity for non-infected countries to demonstrate freedom from PPR virus as a basis for official OIE endorsement of their PPR freedom.

PPR-GEP focuses on building the capacity of Veterinary Services as key players in the programme's implementation. The programme will also support activities to reduce the prevalence of other priority small ruminant diseases.

To this end, PPR-GEP has developed the PPR step-wise approach for PPR-GCES based on the following 4 components and 13 operational sub-components, each accompanied by deliverables and activities at three levels: national, regional and international.

- Component 1: promoting an enabling environment and reinforcing veterinary capacities;
- Component 2: support to diagnostic and surveillance systems;
- Component 3: measures supporting PPR eradication;
- Component 4: coordination and management.

The breakdown of the PPR-GEP budget (see Table I) shows that:

- a) **PPR-GEP** funds virtually the entire budget (98%). The direct contribution expected from governments (and/or regional economic communities), of around 2%, is allocated mainly to regional and national coordination activities;
- b) the biggest share is allocated to the implementation of Component 3 activities (87% of the overall budget). It is devoted mainly to paying vaccination costs and procuring vaccines against PPR and other identified priority diseases).

Table I: Breakdown of the Peste des Petits Ruminants Global Eradication Programme (PPR-GEP) budget (2017–2021) by component

Component	PPR-GEP funding*	Government funding*	Total*
Component 1	20,266	0	20,266
Component 2	46,841	0	46,841
Component 3	880,730	4,550	885,280
Component 4	48,534	16,272	64,806
Total	996,371	20,822	1,017,193

* (thousands of US dollars)

Source: Peste des Petits Ruminants Global Eradication Programme (PPR-GEP), 2016

PART B: DEPLOYMENT OF THE PPR GLOBAL CONTROL AND ERADICATION STRATEGY AND THE ACCOMPANYING PPR GLOBAL ERADICATION PROGRAMME

In Africa, small ruminants account for 32% of the global population, with almost 28% of the world's sheep and 37% of its goats¹⁵ respectively (see Table II). Over the past decade, PPR evolution and spread has continued to undermine the small ruminant sector's valuable contribution to food and nutrition security, to improving the livelihoods of vulnerable families and to economic development.

Table II: Number of small ruminants in Africa

Regions of Africa	Sheep*	Goats*	Total*	Percentage
Central Africa	10.0	26.1	36.2	5
East Africa	92.0	137.2	229.3	32
West Africa	104.5	149.9	254.4	36
North Africa	106.4	50.5	156.9	22
Southern Africa	27.8	10.6	38.4	5
Africa	340.7	374.4	715.1	32
World	1,195.6	1,011.3	2,206.9	

* (millions of head)

Source: FAOSTAT, 2014

The PPR Global Secretariat is responsible for overall supervision, coordination, consensus-building, management, implementation and evaluation of PPR-GEP. In Africa, it will partner with AU-IBAR, regional economic communities, other relevant institutions and FAO and OIE Representations to develop and support national and regional actions, and will promote broad partnerships with other relevant organisations.

I. Continental level

PPR is endemic in many African countries. Indeed, over the past decade, PPR has spread over vast expanses of Africa to devastating effect, and has now reached North Africa (Morocco 2008, Tunisia 2008, Algeria 2011), Central Africa (Republic of the Congo 2006, Gabon 2011), East Africa (Kenya 2006, Uganda 2007, Tanzania 2008), Southern Africa (Democratic Republic of the Congo 2005, Tanzania 2008 and Comoros 2010).

Prior to the adoption of PPR-GCES in 2015, a number of national, sub-regional, regional and international actions and efforts had been undertaken to control or eradicate PPR in infected countries. Several initiatives were undertaken with the support of international organisations, including OIE, FAO, GF-TADs and IAEA, continental actors (AU-IBAR and AU-PANVAC) and other partners, organisations, research institutes and stakeholders working actively in Africa, including the European Union, European Commission, International Livestock Research Institute (ILRI), United States Agency for International Development (USAID), Global Alliance for Livestock Veterinary Medicines (GALVMed) and French Agricultural Research Centre for International Development (CIRAD). These activities covered several areas, including:

- support for countries in an emergency through the FAO/OIE Crisis Management Centre – Animal Health (CMC-AH);
- building the capacity of Veterinary Services and improving veterinary governance in Africa through the OIE PVS pathway;
- capacity-building for PPR diagnosis, surveillance and early warning;

¹⁵ FAOSTAT (2014).

- improving information-sharing and developing the network approach to ensure regional coordination and harmonisation of animal health programmes;
- mass vaccination campaigns in several countries (VACNADA project)¹⁶;
- improving research, quality control and vaccine production capacity in Africa and support for the establishment of OIE regional PPR vaccine banks (project on Vaccine Standards and Pilot Approach to PPR Control in Africa [VSPA]) [3].

At continental level, the **Pan African strategy for the control and eradication of PPR**¹⁷ was drawn up in 2013 by AU-IBAR and ILRI, with OIE and FAO support and the collaboration of AU-PANVAC. In 2015, it was aligned with the PPR-GCES approach. On 14-15 October 2016, the African Union, AU-IBAR and six regional economic communities – East African Community (EAC), Intergovernmental Authority on Development (IGAD), Common Market for Eastern and Southern Africa (COMESA), Economic Community of Central African States (ECCAS), Arab Maghreb Union (AMU) and Southern African Development Community (SADC) – met¹⁸ in Arusha (Tanzania) to **align the Pan African PPR prevention, control and eradication programme** with PPR-GEP and to initiate implementation of the Pan African five-year plan. As envisaged by PPR-GEP, the meeting discussed the establishment of a PPR continental secretariat (at AU-IBAR) to ensure effective coordination of PPR-GEP implementation at national, regional and continental levels.

II. Regional level

As in the case of the successful global rinderpest eradication programme, even though the linchpin of PPR-GCES is national action, the transboundary nature of PPR calls for a common long-term vision to achieve eradication, based on information-sharing and the harmonisation, coordination and monitoring of actions by countries in the same region.

PPR-GCES provides for annual regional PPR roadmap meetings, to be held on the sidelines of GF-TADs regional meetings. The idea is that, by closely involving regional economic communities and representatives of regional professional organisations in the small ruminant sector, each region will receive support in preparing (or aligning) its **regional strategic plan**, conducting the activities pertaining to each PPR-GEP component and overseeing national activities. To this end, each region will designate a **Regional Advisory Group (RAG)**, comprising three CVOs, the coordinator of the regional epidemiology network and coordinator of the regional laboratory network, the PPR Global Secretariat, representatives from FAO and OIE regional and sub-regional offices and representatives from regional and sub-regional organisations.

The five African regions held their first regional roadmap meetings between 2015 and 2016:

Central Africa	Yaoundé, Cameroon	August 2015
East Africa	Kampala, Uganda	September 2015
West Africa	Dakar, Senegal	May 2016
North Africa	Tunis, Tunisia	October 2016 (Egypt: Doha, Qatar – 2015)
Southern Africa	Harare, Zimbabwe	October 2016

These regional seminars provided an opportunity to:

- present PPR-GEP and its tools;
- review PPR projects and the approaches adopted to implement them;
- carry out the first national self-assessment, formulate the regional roadmap for PPR control and eradication and set up a governance structure (RAG);
- identify other priority small ruminant diseases that could be controlled.

¹⁶ <http://au-ibar.org/vacnada>

¹⁷ www.au-ibar.org/component/jdownloads/finish/77/2774

¹⁸ www.au-ibar.org/2012-10-01-13-08-42/press-releases/170-au-ibar/1027-au-ibar-and-recs-resolve-to-kick-ppr-out-of-africa

PPR-GCES provides a timeline¹⁹ for the expected results of the step-wise approach for the following 15 years (see Table III). In 2020, an estimated 30% of countries worldwide are expected to have reached Stage 3 and 30% to have reached Stage 4. Around 40% of countries are expected to be implementing a control programme (Stage 2) and less than 5% will still be at the assessment stage (Stage 1). Similarly, in Africa, an estimated 25% of countries will be beyond the post-eradication stage and around 50% will have entered the control stage (Stage 2).

Table III: Provisional timeline for stages in the PPR step-wise approach (2015–2030)

World	2015					2020					2025					2030				
	PPR stage	1	2	3	4/+	1	2	3	4/+	1	2	3	4/+	1	2	3	4/+			
Number of countries	3	36	32	12	13	0	4	40	25	27	0	0	8	39	49	0	0	0	0	96
Percentage	3	37	33	12	15	0	4	42	26	28	0	0	8	41	51	0	0	0	0	100
Africa	2015					2020					2025					2030				
	PPR stage	1	2	3	4/+	1	2	3	4/+	1	2	3	4/+	1	2	3	4/+			
Number of countries	3	19	19	3	11	0	4	25	12	14	0	0	8	24	23	0	0	0	0	55
Percentage	5	35	35	5	20	0	7	46	22	25	0	0	15	44	43	0	0	0	0	100

■ No data available

1. Central Africa

The first regional PPR roadmap meeting for Central Africa took place in Cameroon on 24–25 August 2015 when a roadmap was drawn up for countries in the region (see Table IV). The meeting also assessed the feasibility and potential role in implementing PPR-GCES in the region of the animal health networks of the Economic and Monetary Community of Central Africa (CEMAC): the West and Central Africa Veterinary Laboratory Network for avian influenza and other transboundary diseases (RESOLAB) and the regional network of national epidemiological surveillance systems (RESEPI) for Central Africa. Upon completion of PPR-GEP, the majority of countries should be at the end of the control stage.

Table IV: Provisional regional roadmap for Central Africa based on self-assessment by Member Countries (2015)

Country	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
São Tomé	1	2	3	4	FS*											
Cameroon	1	2	3	4	FS											
Central African Republic	1	2	3	4	FS											
Chad	1	2	3	4	FS											
Gabon	1	2	3	4	FS											
Republic of the Congo	1	2	3	4	FS											
Equatorial Guinea	1	2	3	4	FS											
Democratic Republic of the Congo	1															

*FS: PPR-free status ■ No data available

19 Global Strategy for the Control and Eradication of peste des petits ruminants (PPR) in Africa

2. East Africa

In 2014, IGAD drew up its Regional PPR Progressive Control and Eradication Strategy²⁰ under the auspices of the FAO Emergency Centre for Transboundary Animal Diseases (FAO-ECTAD), AU-IBAR, ILRI and the European Commission.

In September 2015, the first PPR roadmap meeting for East Africa was held on the sidelines of the annual meeting of the Eastern Africa Regional Animal Health Network (EARAHN) in Kampala (Uganda). The meeting developed a roadmap for the region (see Table V) and designated an RAG (composed of the CVOs of Ethiopia, Burundi and Uganda, the coordinators of the regional epidemiology networks and regional laboratory networks in East Africa and representatives from IGAD, EAC, AU-IBAR and AU-PANVAC). It also adopted the PPR-GCES progressive step-wise approach and stressed the need for Member Countries and regional economic communities to commit to aligning their national and regional strategies with PPR-GCES.

Table V: Provisional regional roadmap for East Africa based on self-assessment by Member Countries

Country	GCES	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Ethiopia		2				3	4						FS*				
Kenya		2		3		4								FS			
Tanzania		2				3		4						FS			
Uganda		2				3		4						FS			
Djibouti	1	2				3		4						FS			
Somalia		2				3		4						FS			
Eritrea	1	1 (2)					2		3		4				FS		
Burundi		1				2		3		4				FS			
South Sudan		1				2		3		4				FS			
Sudan		2				3		4						FS			
Rwanda																	

*FS: PPR-free status

Upon completion of the 2017–2021 programme, two-thirds of countries expect to be at the eradication stage, or even the post-eradication stage.

3. West Africa

The workshop to draw up a PPR roadmap for West Africa was held in Dakar (Senegal) on 9-11 May 2016 and was attended by CVOs and laboratory and epidemiology focal points. It stressed the need to align the progressive PPR prevention and control strategy of the Economic Community of West African States (ECOWAS) with PPR-GCES. The provisional roadmap for West Africa (see Table VI) provides that, upon completion of PPR-GEP, 60% of countries should be at the end of the control stage and 20% should be ready to enter the eradication stage.

20 <http://icpald.org/wp-content/uploads/2016/01/Progressive-Control-and-Eradication-Strategy-1.pdf>

Table VI: Provisional regional roadmap for West Africa based on self-assessment by Member Countries

Country	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cabo Verde	1					4			FS*						
Nigeria	1	2				3			4			FS			
Senegal	2			3				4			FS				
Burkina Faso	1	2			3				4			FS			
Ghana	1			2			3			4			FS		
Togo	1			2			3			4			FS		
Niger	1			2			3			4			FS		
Gambia	1			2			3			4			FS		
Guinea	1			2			3			4			FS		
Benin	1			2			3			4			FS		
Liberia	1			2			3			4					
Guinea-Bissau	1			2			3			4			FS		
Côte d'Ivoire	1			2			3			4			FS		
Mali	1			2			3			4			4	FS	
Sierra Leone	1			2			3			4			FS		

*FS: PPR-free status

4. North Africa

Since 2009, the Mediterranean Animal Health Network (REMESA) has been responsible for regional coordination of the PPR control actions of North African countries (Maghreb and Egypt), with the support of GF-TADs. With its four thematic sub-networks (RELABSA for laboratories, REPIVET for epidemiology, RECOMSA for communication and RESEPSA for socioeconomics)²¹, REMESA is the platform for coordination, capacity-building of Veterinary Services and ongoing exchanges of animal health information leading to the development of harmonised strategies for the surveillance, control and eradication of animal diseases in the region.

At a workshop to formulate a regional roadmap for PPR eradication in the AMU region, held in Tunis (Tunisia) in October 2016, Member Countries drew up a provisional roadmap (see Table VII), nominated REMESA as the regional governance structure (RAG) (composed of two CVOs and representatives from RELABSA, REPIVET, FAO and OIE) and identified sheep pox as the priority disease to be linked with PPR-GCES.

Table VII: Provisional regional roadmap for North Africa based on self-assessment by Member Countries

Country	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Algeria	2			3			4	FS*							
Morocco	2			3			4	FS							
Tunisia	2			3			4	FS							
Libya	1			2			3			4	FS				
Mauritania	1			2			3			4	FS				
Egypt (Middle East)	1	2			3			4	FS						

*FS: PPR-free status

In the case of Egypt, a workshop in Doha (Qatar) in 2015 drew up a regional roadmap for the Middle East, designated a RAG and identified brucellosis, sheep pox and goat pox as priority diseases in the region.

5. Southern Africa

In Southern Africa, South Africa, Swaziland, Mauritius and one zone in Namibia are officially recognised as PPR-free. In 2012, SADC member states drew up a Control Strategy for PPR²² to deal with the emergence of PPR in the region. It aims to contain and control virus circulation in infected countries (Democratic Republic of the Congo and Tanzania), to prevent it spreading to Angola, Malawi, Mozambique and Zambia, and to propose a long-term methodology for PPR eradication in the region.

The first roadmap meeting for Southern Africa (see Table VIII), held at Harare (Zimbabwe) on 12–13 October 2016²³, established a RAG and Member Countries agreed to review and reformulate the SADC regional strategy to align it with PPR-GCES and PPR-GEP.

Table VIII: Provisional regional roadmap for Southern Africa based on self-assessment by Member Countries

Country	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
South Africa	SOI**														
Swaziland	SOI														
Mauritius	SOI														
Botswana	4		SI*												
Angola	1	4		SI											
Malawi	1		4	SI											
Mozambique	1		4	SI											
Namibia	1		4	SI											
Seychelles	1		4		SI										
Zimbabwe	1		4		SI										
Zambia	1		2		3		4		SI						
Tanzania	2			3				4		SI					
Dem. Rep of Congo	1			2				3			4				SI
Lesotho															
Madagascar															

*Si : PPR-free status – **SOI Officially recognised as PPR-free

III. At national level

Planned national activities under PPR-GEP for the next five years are as follows.

COMPONENT 1 – Promoting an enabling environment and reinforcing veterinary capacities

Component 1 includes activities relating to the logical framework for action, the involvement of actors in the small ruminant sector, an adapted legal framework and strengthened Veterinary Services.

Sub-Component 1.1 – PPR strategy and technical plans

Countries adopting the step-wise approach will appoint a **PPR national coordinator** (see Component 4) to oversee implementation of PPR-GEP activities. They will be supported in realising the regional vision and developing a **national strategic plan**, accompanied by an **epidemiological assessment** (Component 2) and a technical plan consisting of one of the following, depending on the stage:

- **national assessment plan** (for countries entering Stage 1);
- **national control plan** (for countries entering Stage 2);
- **national eradication plan** (for countries entering Stage 3).

22 www.sadc.int/files/7413/5542/4349/PPR_Strategy.pdf

23 www.fao.org/africa/news/detail-news/en/c/447428/

At the end of the eradication stage, countries will receive assistance in applying for OIE-certified PPR-free status.

Sub-Component 1.2 – Stakeholder awareness and engagement

Mapping the organisation and activities of the small ruminant value chain is a crucial step in raising awareness and engaging stakeholders in PPR-GEP. Member Countries will be supported in implementing a **national communication strategy** and **awareness campaigns** using communication materials provided to them in advance.

Partnerships with NGOs, the private sector and civil society organisations will be promoted, and support for communication training for community-based animal health workers, operating under veterinary supervision, will be provided wherever needed.

Sub-Component 1.3 – Legal framework

An adequate legal framework is the cornerstone that provides national and local authorities, and Veterinary Services in particular, with the necessary authority and capability to implement measures to eradicate PPR. The **OIE Veterinary Legislation Support Programme**²⁴ will assist Member Countries in updating their veterinary legislation, progressively and as required.

Progressive harmonisation at the regional level is essential to build a common legal framework. In collaboration with regional economic communities, PPR-GEP will facilitate regional seminars for harmonising veterinary legislation.

In Africa, under the European Union-funded Reinforcing Veterinary Governance in Africa (**Vet-Gov**) programme²⁵ (2012-2017), OIE, AU-IBAR and FAO have held six of the seven regional seminars for African regional economic communities on regional harmonisation of veterinary legislation.

Sub-Component 1.4 – Strengthening Veterinary Services

PPR-GEP will support countries that already have a PVS evaluation under the OIE PVS pathway to review the findings and recommendations with relevant authorities and policy-makers in the context of implementing PPR-GEP, in order to identify key areas that require strengthening and adequate funding. Countries that have not undergone a PVS evaluation or whose PVS evaluation is more than five years old, will be encouraged and helped to apply to the OIE for a PVS evaluation or a PVS evaluation follow-up mission.

PPR-GEP will assist the OIE in conducting regional training of Veterinary Service staff on a case-by-case basis, on use of the OIE PVS pathway and monitoring its results. Regional analysis of PVS evaluations and PVS gap analysis reports will help to better define needs.

By October 2016, the OIE had conducted 51 PVS evaluation missions²⁶ in Africa out of a world total of 136 applications.

PPR-GEP will also encourage countries to use the following OIE tools and programmes²⁷ that make up the 'treatment' stages of the OIE PVS pathway:

- Veterinary Legislation Support Programme;
- PVS laboratory missions;
- laboratory twinning;
- veterinary statutory body twinning;
- veterinary education establishment twinning.

24 www.oie.int/en/support-to-oie-members/veterinary-legislation/

25 www.rr-africa.oie.int/projects/VETGOV/en_index.html

26 www.oie.int/en/support-to-oie-members/pvs-evaluations/status-of-missions/
www.rr-africa.oie.int/en/mandates/en_veterinary_services_pvs.html

27 www.oie.int/en/support-to-oie-members/

COMPONENT 2 – Support to diagnostic and surveillance systems

PPR-GEP will support efforts to better understand the presence (or possibly absence) of PPR in a country or region, its distribution in the different production systems and its impact on those systems. In this context, regional epidemiology networks and regional laboratory networks are a major asset for improving coordination and an ideal framework for information-sharing.

Sub-Component 2.1 – Epidemiological assessment

PPR status will be updated annually using PMAT. Countries will formulate a **national assessment plan** and undertake field assessments to identify risk hotspots, transmission pathways and PPR maintenance factors, through risk analysis principles applied to epidemiological systems and value chains in the sector. This will culminate in a draft surveillance plan for domestic and wild animals.

Sub-Component 2.2 – Strengthening surveillance systems and laboratory capacities

At the outset of PPR-GEP, the purpose of surveillance will be to inform strategy development and enable eradication. The objective is to identify populations and areas that are critical in maintaining the virus, and then to develop appropriate vaccination strategies.

PPR-GEP will provide a series of training courses in outbreak investigation, participatory epidemiology and participatory disease surveillance. It will also support the development of the FAO-led Field Epidemiology Training Programme for Veterinarians (FETPV) to tackle PPR.

Capacities for laboratory diagnostics and testing, differential diagnosis of PPR and laboratory characterisation of field virus isolates will be strengthened. Regional Leading Laboratories (RLL) will be identified and assisted in developing assured expertise, in order to quality-assure diagnostic tests and support national laboratories.

It is expected that support from the OIE twinning programme and FAO–IAEA Joint Division support activities will enable at least one or two laboratories in each region to be upgraded to a standard sufficient for successfully implementing modern techniques for full identification and characterisation of PPR virus.

Sub-Component 2.3 – Regional epidemiology and laboratory networks

National epidemiology and laboratory focal points are required to meet annually for exchanges and coordination in connection with the activities of regional epidemiology networks and regional laboratory networks.

COMPONENT 3 – Measures supporting PPR eradication

The following PPR-GCES tools will be gradually introduced as an individual country moves along the pathway to PPR freedom.

Sub-Component 3.1 – Vaccination and other PPR prevention and control measures

1. Vaccination

An important early action will consist of consultations with countries in Stage 1 where vaccination is on-going, to agree to reschedule vaccination based on the results of epidemiological surveillance. PPR-GCES suggests that effective and targeted vaccination in identified risk areas needs to be implemented in Stage 2 during two successive years, followed by the vaccination of young animals (4-12 months of age) during one or two successive years. The number of rounds of vaccination campaigns (one or two per year) may differ from one production system to another:

- one vaccination campaign each year in arid and semi-arid pastoral and agro-pastoral systems;
- six-monthly vaccination campaigns in humid mixed crop-livestock farming systems;
- in peri-urban production systems, one or two vaccination campaigns each year, according to animal turnover in the flock.

A review of vaccination methods is required to ensure that vaccination campaigns are properly planned, are well-resourced and include adequate information-sharing to ensure the participation of all stakeholders. Harmonisation of vaccination schedules between neighbouring countries will be supported and vaccine needs will be assessed annually at regional level.

Standard operating procedures will be developed for the management of vaccine stocks and vaccination, and the vaccines used will be those certified in accordance with OIE standards by **AU-PANVAC** [4]²⁸. PPR-GEP will also support the use of **OIE regional PPR vaccine banks**²⁹ to facilitate the delivery of high-quality vaccines to countries on demand, while mitigating storage challenges, reducing the complexity of procurement procedures and cutting costs. Globally, 24 production units, including 13 in Africa, produce PPR vaccines based on the Nigeria 75-1 vaccine strain (see Table IX).

Table IX: Units producing PPR vaccine based on the Nigeria 75-1 vaccine strain [5]

Region	Number of production units
Asia	5
Eurasia	3
Middle East	3
Central Africa	2
East Africa	3
North Africa	2 (2-3)
West Africa	4
Southern Africa	2
Africa total	13
World total	24

2. Post-vaccination evaluation

At the completion of each round of vaccination, countries will be supported in conducting a post-vaccination evaluation by collecting data to evaluate the results of the vaccination programme and monitor the whole vaccination chain accordingly. PPR-GEP will develop protocols for serological surveys (in accordance with PPR-GCES principles).

3. Improved biosecurity

PPR-GEP will assist Veterinary Services in exploring ways of working with communities and other services involved (notably police, customs, slaughterhouses and border control inspectors) to implement animal movement controls. This includes developing and disseminating awareness materials and organising sensitisation meetings.

Standard operating procedures for a response mechanism in case of a suspected/confirmed outbreak will be formulated and implemented. PPR-GEP will also support countries in implementing movement permit systems using livestock identification and traceability systems (LITs) where possible.

4. PPR contingency plans and other prevention and control measures

Support will be provided to countries in developing/updating their contingency plan and regularly testing its application through desk and/or field simulation exercises. Countries will also be encouraged to develop procedures to compensate farmers (or to establish insurance schemes), accompanied by an appropriate legal framework, where stamping-out is needed.

Sub-Component 3.2 – Demonstrating PPR-free status

Countries historically free from PPR will be assisted in applying for OIE official recognition of PPR freedom. For countries entering at Stage 4 (PPR post-eradication), their surveillance system should be able to provide evidence of PPR infection or virus circulation and generate the data required to make this application to the OIE.

²⁸ In 2013, the African Union Pan African Veterinary Vaccine Centre (AU-PANVAC) was designated as OIE Collaborating Centre for Quality Control of Veterinary Vaccines.

²⁹ www.oie.int/en/support-to-oie-members/vaccine-bank/

Sub-Component 3.3 – Control of other small ruminant diseases in support of PPR eradication

Where adequate epidemiological data are available, PPR-GCES advocates combining control strategies for PPR with efforts to control other priority small ruminant diseases, for cost-effectiveness. Countries will then be supported in formulating and implementing **control plans for the other priority diseases**.

COMPONENT 4 – Coordination and management

PPR-GEP will help countries to establish a **national PPR committee** to facilitate consultation and promote stakeholder engagement. A **PPR national coordinator** will be appointed by the country to oversee PPR-GEP implementation.

CONCLUSION

Implementation of PPR-GCES offers a number of benefits and provides countries engaged in the progressive PPR eradication process with investment and technical and policy tools. Its success, particularly in Africa, relies on:

- the political will and strong and sustained commitment of regional economic communities and countries to its implementation;
- alignment of the continental programme and of current regional and national strategies with PPR-GCES and PPR-GEP;
- the establishment, through PPR regional roadmaps, of a common regional vision based on exchange, collaboration and coordination in order to monitor and harmonise planned national activities;
- a high degree of coordination among stakeholders and key partners at all levels (national, regional and continental). This makes AU-IBAR the key continental partner for coordinating and monitoring regional and national actions;
- the effective involvement of all actors in the small ruminant value chain.

PPR-GCES expects the following three types of **operational outcomes**.

a) On PPR:

- effective surveillance systems are in place in infected countries and countries at immediate risk;
- laboratory capacity for PPR diagnosis is established;
- effective vaccination systems are used, with outreach to all livestock holders;
- eradication of PPR worldwide in 15 years.

b) On strengthening Veterinary Services:

- overall improvement in the capacities of Veterinary Services, resulting in compliance with OIE standards by means of the OIE PVS pathway.

c) On other priority small ruminant diseases:

- significantly reduced incidence.

Globally, by improving animal health systems, food safety and the livelihoods and resilience of hundreds of millions of the world's poorest households, particularly in Africa, PPR eradication will contribute significantly to meeting world expectations, expressed as follows.

- a)* The Sustainable Development Goals of the United Nations 2030 Agenda for Sustainable Development³⁰.
- b)* The five FAO Strategic Objectives³¹:
- help eliminate hunger, food insecurity and malnutrition;
 - make agriculture, forestry and fisheries more productive and sustainable;
 - reduce rural poverty;
 - enable inclusive and efficient agricultural and food systems;
 - increase the resilience of livelihoods to disasters.
- c)* The Strategic Objectives of the OIE Sixth Strategic Plan (2016-2020) to achieve the OIE's Global Vision of 'protecting animals, preserving our future'³²:
- securing animal health and welfare, the sanitary safety of animals and animal products and foods derived from animals, and reduction in the transmission of diseases by managing risks at the human-animal-environment interface;
 - establishing trust between stakeholders, including trading partners, in the cross-border exchange of animals, animal products and foods derived from animals, by transparency and good communication of the occurrence of diseases of epidemiological significance, and in OIE processes and procedures;
 - strengthening the capacity and sustainability of national Veterinary Services.

30 www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&referer=/english/&Lang=E (page 14)

31 www.fao.org/docrep/018/mi317e/mi317e.pdf

32 www.oie.int/en/about-us/director-general-office/strategic-plan/

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