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# COMMITTEE ON AGRICULTURE

## Twenty-fourth Session

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### *Peste des Petits Ruminants* Global Eradication Programme

#### Executive Summary

Livestock plays a major role in the growth of world agriculture and contributes approximately 43 percent to agricultural gross domestic product (GDP).

In declaring the world free of rinderpest, the 37<sup>th</sup> FAO Conference in 2011<sup>1</sup> "Encouraged FAO to take full advantage of the rinderpest eradication achievement and apply the lessons learned to prevent and control other diseases impacting food security, public health, the sustainability of agriculture systems and rural development". *Peste des Petits Ruminants* (PPR) is a devastating viral disease of sheep and goats of the same family as rinderpest and many of the tools developed for rinderpest can be adapted and used to successfully combat PPR. Sheep and goats play a crucial role in the livelihoods, nutrition, and food security of millions of livestock holders, traders and consumers. The incursion or presence of high impact infectious diseases in small ruminant populations within livestock dependent or mixed farming systems can be devastating for the livelihoods and resilience of these communities. The geographic expansion of this disease in recent years is of grave concern. Several initiatives aiming at PPR control are ongoing on an ad hoc basis. This is without the benefit from any coordinating mechanism to achieve the expected eradication, in contrast to the successful Global Rinderpest Eradication Programme (GREP) led by FAO. A *Peste des Petits Ruminants* global eradication programme (PPR-GEP) - based principally on the model of GREP would offer the framework for coherence of national and regional efforts and ensure effective and efficient coordination at regional and global levels. The likelihood of the success of an adequately funded eradication campaign over a 15-year period is high as the technical tools required are available, but not accessible, to the rural populations or pastoral areas and one dose of vaccine protects the animals for life. This programme will protect the livelihood of almost one billion extremely poor smallholders and pastoralists in more than 70 countries, which are currently affected or at risk of this devastating disease. Official recognition of country status and global progress will be verified by the World Organisation for Animal Health (OIE).

<sup>1</sup> C 2011/REP. Para. 64-65



**Suggested action by the Committee:**

The Committee may wish to:

- a) Endorse the establishment and implementation by FAO in collaboration with OIE of the PPR global eradication programme (PPR-GEP) in line with the proposed governance structure, including acting as its FAO-OIE joint secretariat in collaboration with other international and regional partners, such as the African Union (AU), South Asian Association for Regional Cooperation (SAARC) and the Association of Southeast Asian Nations (ASEAN), among others.
- b) Recommend that FAO member countries support the PPR programme and note the emphasis on the need for a broad range of partnerships at national, regional and international levels.
- c) Provide guidance for the periodic reporting and updates to COAG on programme progress of implementation.

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## I. Introduction

1. Livestock plays a major role in world agriculture and represents approximately 43 percent of the agriculture contribution to national gross domestic product (GDP) as a global average<sup>2</sup>. The important role livestock will continue to play in the coming decades is due to the transformation in the world food economy and the increasing demand for quality nutritious products from animal sources (meat, eggs, dairy). This is primarily due to increases in income, urbanization and population growth. An estimated 75 percent of the world's 1.2 billion extremely poor (< USD 1 a day) live in rural areas and derive a significant part of their income from agriculture and /or agriculture related activities (World Development Report: Agriculture for Development, 2008). Three quarters of the extreme poor are estimated to keep livestock as part of their livelihood and welfare. Therefore, the good governance and health of agriculture is critical to progress in FAO efforts to poverty reduction, nutrition, and hunger.

2. In developing countries, about 25 percent of rural households keep either sheep or goats (small ruminants), with this share reaching about 30 percent for the poor. Conversely, cattle are kept by about 20 percent of all rural households, but only held by about 15 percent of the poor. Indeed, compared with cattle, sheep and goats are less expensive and their reproduction rate is relatively high (i.e. renewed populations). In addition, there is little capital investment in building barns, feeding, watering and other materials required for their upkeep and health. The space and maintenance requirements are also minor. According to FAO (2013), the global population of small ruminants surpasses 2 billion head. The largest number of goats is in Asia, followed by Africa, representing about 59.7 percent and 33.8 percent, respectively. Together, this represents 93.5 percent of the total goat and sheep population of the world. Goats and sheep are the primary livestock of the poor and can adapt to harsher environments, when compared with other species. In particular, goats have the capability to browse and feed efficiently on a variety of vegetation types. Besides being high quality animal products for consumption, they supply fibre, wool and leather as important commodities and value-added goods.

3. In line with its vision to eradicate hunger, in declaring the world free of rinderpest (first animal disease and the second time in history after smallpox in 1980 by WHO), the 37<sup>th</sup> FAO Conference in 2011 "*Encouraged FAO to take full advantage of the rinderpest eradication achievement and apply the lessons learned to prevent and control other diseases impacting food security, public health, the sustainability of agriculture systems and rural development*". The FAO/OIE Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs; 2004), recognizes PPR as one of the top five most damaging animal diseases in Africa, the Near East and Asia.

4. *Peste des Petits Ruminants* (PPR) is a widespread, virulent, and devastating disease of small ruminants. It has a significant economic, food security and livelihood impact, which is particularly devastating among the rural and most impoverished communities. Learning from FAO's leading role in the eradication of rinderpest, the PPR global eradication programme (PPR-GEP), will be in line with FAO's mandate, vision and Strategic Framework.

## II. Small ruminants and livelihoods

5. Small ruminants play a crucial role in the livelihoods, nutrition and food security of millions of livestock holders, farming communities and consumers. Meat and milk from small ruminants represent value to daily household nutrition and food security. According to FAO the absolute increase in annual consumption of mutton from 2000 to 2030 is estimated to be 1,287 thousand metric tonnes in the Near East and North Africa and the percentage increase of consumption in 2000 was 103 percent. During the same period, there were increases of 58 percent in East Asia and 115 percent in South Asia. In subhumid and humid areas, the sale of live small ruminants and their milk accounts for up to 30 and 80 percent of household income, respectively. In arid and semi-arid areas, the proportion

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<sup>2</sup> Livestock in the balance. SOFA, FAO 2009. In some PPR infected or at risk countries this can surpass 85 percent.

ranges between 17 and 58 percent, and is higher in the drought prone regions where goats can easily adapt, conceive and continue to produce milk at the very early stages of drought recovery and beyond. Sheep and goat production is a source of quality nutrition and income, and meets other family needs (i.e. education, dowries, customs and festivities, as well as a source of wool, fibre, leather for clothing and value-added products). Women are more often than men the primary care giver of sheep and goats making it an important resource for their empowerment. While women's role in small ruminant production varies depending on the culture, in most cases they are responsible for milking, processing and selling milk products, providing feed/fodder, caring for new-born lambs/kids and sick animals. When women lose their small ruminants, they can be left out of livestock production altogether and may be forced to migrate to the cities where they are likely to experience peri-urban poverty, overcrowding and sedentary lifestyles.

6. Smallholder livestock producers account for about 20 percent of the world population. Livestock production and marketing are important for the livelihoods of about one billion poor people. Out of the population of 821 million people in sub-Saharan Africa, an estimated 63 percent live in rural areas and derive their livelihoods and household food security from livestock, mostly small ruminants and poultry. The agriculture sector represents 24 percent of the India's GDP, with one quarter being derived from livestock. Nearly 72 percent of India's population lives in rural areas, and 75 percent of these people depend on agriculture and allied activities for their fragile livelihoods. Thus, the growth of agriculture – and sustainable livestock production – is critical to the livelihood of millions of smallholders, rural poor and landless people. These communities manage 75 percent of the country's livestock resources and are capable of producing at a lower cost because of the availability of sufficient labour. In Bangladesh, around 31 percent of the rural households keep goats.

7. FAO's projections indicate that small ruminant production could continue to influence positively food security, the health of women and children and household income of developing countries. For food security, consumption of mutton is projected to increase globally by 28 percent by 2030 (Sub-Saharan Africa by 30 percent and 45 percent in South Asia). There is increasing evidence that goat farming can be a profitable business for household income, if the animals are healthy. This can be achieved by adopting available technologies for shed, adequate feeding and watering devices. In addition, small and large commerce, including proper control and management of animal diseases, would help small ruminant keepers exit poverty. The entry or presence of high impact small ruminant diseases or heavy disease burdens within these settings can be devastating for the livelihoods and resilience of these communities.

### **III. *Peste des Petits Ruminants* and economic impact**

8. PPR is a viral disease characterized by clinical signs and pathologies attributed to haemorrhagic enteritis, pulmonary insufficiency and collapse, rapid dehydration and death. PPR is of particular interest because of the important role of small ruminants in food security, nutrition and coping mechanisms for improved resilience. PPR can result in huge losses due to mortality in susceptible flocks from 10 to 100 percent and morbidities ranging from 50 to 100 percent. Morbidity losses include severe weight loss, reduced reproductive capability and reduced milk production. Other losses associated with the disease are associated to the costs of bringing the disease under control at both household and national levels. It is endemic in Africa, the Near East, and Asia. Almost 70 percent of the global sheep and goat population is at risk. Other sheep and goats diseases may pose a challenge in the accurate diagnosis of PPR. This is due to the similarities in the clinical presentation of these diseases (e.g., contagious caprine pleuropneumonia, contagious ecthyma, pasteurellosis, or sheep and goat pox).

9. The economic impact and losses in a PPR outbreak can be very high with mortalities among sheep and goats up to 90 percent; for villagers and communities this can be devastating in terms of food security, livelihoods and availability of quality products. A recent FAO study (2010) carried out in two areas of the United Republic of Tanzania (Tandahimba and Ulanga districts) indicated that the average value of sheep and goats had dropped by 10 percent, and their overall ability to sustainably support household livelihoods had decreased by about 30 percent following a PPR outbreak. More

than half of the flocks in the survey areas were affected by PPR within 12 months, and households lost about 72 percent of the stock. The PPR impact on households include: change of the flock size and value, the capacity of the flock to contribute to the household livelihood and loss of potential income. The average income that a household may have earned but was lost to PPR was estimated to be USD 233.60; while the total household loss from mortality and forgone revenue was USD 490.60. The cumulative yearly loss due to PPR was estimated to be around USD 67.9 million. In Kenya's first PPR outbreak, estimates of production losses for the greater Turkana District during 2006-08 was USD 2.4 million. It is estimated that PPR causes annual losses of more than USD 342 million in Pakistan with subsequent depletion of genetic stock throughout the country. In late 2013, PPR outbreaks were detected in western parts of China; by April 2014, 22 of China's 34 provinces were affected and although the mortalities number in the tens of thousands, sheep and goats at risk in the 22 provinces alone surpass 216 million head.

10. According to a GALVMed<sup>3</sup> study conducted in 2012, despite significant economic growth rates, in South Asia (Bangladesh, Bhutan, India, Nepal and Sri Lanka) the impact and costs of uncontrolled PPR and the potential gains when controlled are significant. The losses estimated in this study were USD 3 billion per annum (with India taking the largest share with some 86 percent, followed by Bangladesh with 10 percent and the other countries at about 4 percent). Therefore, PPR control and other small ruminant diseases, such as foot-and-mouth disease, will ensure food security, improve livelihoods and facilitate the national and international trade of sheep and goats and their products.

#### **IV. Tools and needs for PPR eradication**

11. As with rinderpest, a single administered dose of vaccine would protect the animal for life. The same is true for PPR vaccines. With the close similarity between rinderpest and PPR viruses, many of the tools that made rinderpest eradication possible have or can be adapted specifically to PPR management, elimination and eradication (i.e. diagnostics technologies and effective vaccines, established regional animal health networks and overarching global and regional stakeholder arrangements/partnerships, such as GF-TADs). They will undoubtedly help in obtaining quick and positive results. As was the case with rinderpest, several technical factors favour the prospect of achieving global eradication of PPR virus. These include: i) only one strain of PPR exists and therefore one vaccine type is needed; ii) the absence of a carrier state; iii) the absence of virus reservoirs outside of the small ruminant population; iv) the availability of a vaccine which confers lifelong immunity after a single dose and relatively inexpensive to produce; and v) the availability of diagnostic tests for serological monitoring of vaccination programmes and detection of virus circulation.

12. However, there is a lack of stronger national political support and financial commitments for implementation of eradication strategy and its coordination. Learning from the eradication of rinderpest, it is clear that with the application of the right technology, communication, public-private sector partnership, incipient and innovative approaches for community service delivery, financial support, and political will, PPR can also be eradicated through a well-coordinated global effort. This requires the active participation and support of relevant international, regional and national agencies and institutions.

#### **V. A proposed PPR Global Eradication Programme**

13. To mount an effective PPR campaign there is a need to establish a resourced global coordination platform as was done for the Global Rinderpest Eradication Campaign (and that of smallpox, polio, guineaworm in human health/WHO). It is envisioned that there be a PPR-GEP Secretariat and a small group of regional management centres (five to seven) in key regions of the world.

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<sup>3</sup> Global Alliance for Livestock Veterinary Medicines.

14. The overall objective of the Programme would be the global elimination of PPR. Plans and implementation of the PPR eradication strategy are captured in three stages, which can vary from region or country as it progresses: (I) creation of an enabling environment at national level and coordination at regional and global level, (II) application of targeted use of vaccines and quality control of the surveillance efforts at regional level, and (III) the final phase to ensure that virus circulation has ceased among susceptible stock or wildlife, or verification of freedom from PPR. Whilst the timeframe to eliminate clinical disease in a 15-year period is ideal, this scenario depends on the political will at national and regional level to invest the required resources and essential community engagement.

15. The PPR-GEP would contribute to the FAO Strategic Framework and is relevant to its five Strategic Objectives by: i) establishing an enabling environment for poverty alleviation and food availability; ii) providing policy support services to producers to overcome barriers for sustainable animal production, economic growth and improved natural resources efficiencies; iii) providing outreach awareness/education and rural employment for reducing poverty and meeting international standards in animal health, food safety, and thus promoting trade in live animals and their commodities; and iv) building the resilience of agricultural communities.

16. There is considerable interest in participating in a global programme on the part of many national veterinary authorities and some specialized regional organizations. Some countries and regions have embarked in the control of PPR<sup>4</sup>; many of these with the advice and assistance of FAO. The Organization led the process of formulating regional PPR “road maps” for the South Asian Association for Regional Cooperation (SAARC), Southern African Development Community (SADC), Intergovernmental Authority on Development (IGAD), and the African Union institutions Interafrican Bureau for Animal Resources (IBAR) and the Pan African Veterinary Vaccine Centre (PANVAC). Several countries in Africa, Asia and the Near East are attempting to control PPR through annual vaccination but the coverage is very low, not well targeted and likely not be successful.<sup>5</sup> Several partners and donors are engaged in PPR control. OIE has developed a system for PPR verification of freedom. In May 2014, 48 countries were recognized PPR free<sup>6</sup>.

17. With this in mind, the FAO/OIE GF-TADs initiative proposed the establishment of a PPR Global Research and Expertise Network (PPR-GREN). In early 2014, FAO and OIE held an electronic conference to gain support and the elements for the development of a global strategy for the progressive control of PPR with more than 300 contributors. The concept of including other important diseases of small ruminants in an overall programme of disease control with PPR was largely supported as a more cost-effective approach to improving small ruminant health and associated livelihoods. The selection of these health risks should be made at a regional or national level, and the interventions chosen should not interfere with the primary purpose of progressively controlling PPR to the point where eradication is compromised. Contributors confirmed that PPR-GREN should be primarily a forum for technical consultation and discussion that would require regional and subregional networks under a FAO global Secretariat. Therefore, the basis for establishing a global programme is present. However, current ad hoc activities continue to take place without the benefit of a coordinating mechanism to monitor progress and achieve the expected outcome of eradication. Learning from FAO's leading role in rinderpest eradication through the Global Rinderpest Eradication Programme, the PPR global eradication programme will overcome this gap.

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<sup>4</sup> China, India, Lebanon, Pakistan, Somalia, Sudan and Turkey. Through its Technical Cooperation Programme (TCP), FAO is currently assisting several countries (DR Congo, Jordan, Lebanon, Malawi, Mozambique, Pakistan, Somalia, Sudan and Zambia among others) to formulate and implement national strategic plans.

<sup>5</sup> It is estimated that only about 5-20 percent of the population at risk is vaccinated annually, which is far below the targeted 70-80 percent.

<sup>6</sup> Most of these are in historically free areas in the Americas or Europe. Yet OIE has set up such an international accepted process (as with rinderpest) for others to follow.

## **VI. Governance of the Programme**

18. The proposed PPR-GEP will be guided by a *Peste des Petits Ruminants* and Small Ruminant Health Advisory Committee (AC) assisted by the PPR-GEP Secretariat (Global Secretariat). The AC will provide strategic guidance and oversight on the execution of the programme. It also plays an important advocacy role with policy makers, donors, national veterinary services and livestock owners. The AC is to be composed of selected members of the FAO/OIE GF-TADs global/regional committees, the FAO/IAEA joint division, FAO and OIE Reference Centres, research institutions, funding partners and foundations and other stakeholders (i.e. regional intergovernmental organizations, non-governmental organizations, etc.). The main role of the Secretariat is to provide overall strategic coordinated direction, as well as to develop cost-effective control methodologies, tools, guidelines and training materials and networks (PPR-GREN) to support the implementation of the programme at regional and country levels. The work at regional level will be led by FAO Decentralized Offices in partnership with regional specialized or economic cooperation organizations (i.e. IBAR, IGAD, SAARC), where technical assistance and training to countries can be channelled. The OIE standards will be upheld and the conduit of official recognition of a country's status verified through the OIE process.

## **VII. Implementation of the Programme**

19. PPR-GEP implementation of the FAO/OIE global strategy would be adapted to each region to capture regional characteristics. At global level, the programme is coordinated by the PPR-GEP joint FAO-OIE Secretariat, under GF-TADs. Major regional campaigns (Africa, Caucasus, East Asia, Near East, South Asia) will be established and channelled through FAO decentralized structures and regional institutions. At the country level, the FAO Representation will serve to facilitate exchanges with other offices to assist the government in the formulation and implementation of the PPR national strategic plan. Other partners may contribute based on their respective competencies.

## **VIII. Resource mobilization**

20. The PPR global strategy and efforts to mobilize additional financial resources are under formulation and shall be presented during an international conference (planned for early 2015 with OIE) to gain support from the international community and funding partners to complement baseline core FAO funding.

## **IX. Guidance sought from COAG**

21. Based on the above description, COAG is invited to review the nature, broad scope and implementation modalities of the proposed PPR Global Eradication Programme and support the Global Secretariat.

22. The Committee may wish to:

- a) Endorse the establishment and implementation by FAO in collaboration with OIE of the PPR global eradication programme (PPR-GEP) in line with the proposed governance structure, including acting as its FAO-OIE joint Secretariat in collaboration with other international and regional partners, such as the African Union (AU), South Asian Association for Regional Cooperation (SAARC) and the Association of Southeast Asian Nations (ASEAN), among others;
- b) Recommend that FAO member countries support the PPR programme and note the emphasis on the need for a broad range of partnerships at national, regional and international levels;
- c) Provide guidance for the periodic reporting and updates to COAG on programme progress on implementation.