

PANORAMA

Thematic portfolio



➤ Pastoralism and
sanitary challenges

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PERSPECTIVES

DOSSIER

AROUND THE WORLD

EDITORIAL

Pastoralism and sanitary challenges



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Beyond the idealised image of nomadic caravans, we all too often lose sight of the fact that pastoralism made it possible for humans to discover and exploit new territories. Today, pastoralism is still an important activity for people living in arid or semi-arid regions, steppes and mountainous regions. It is also worth highlighting the interdependent relationship between herders, their livestock and the environment they exploit, which makes this method of production unique.

Nomadic and transhumant herding of livestock provides more than 150 million people in arid and mountainous regions with their livelihood ⁽¹⁾. Consequently, even if agricultural policies have focused mainly on developing modern animal production systems to feed an exponentially growing urban population, pastoralism must be preserved. It must be preserved as a culture; it must be preserved as a production system resilient to severe climate and environmental conditions in regions where there are virtually no alternatives; it must be preserved because it can still offer a future for young people in these regions.

Unfortunately, public services rarely take the interests of pastoral populations into account. Furthermore, over the past few years, a number of pastoral herding areas have become socially unstable through lack of political representation and the absence of viable economic opportunities.

Distribution of veterinary medicines, implementation of vaccination campaigns, parasite control operations...

For pastoralists, whether they are herding cattle in the Sahel region, dromedaries in the Middle East, yaks on the

steppes of Mongolia or small ruminants, the good health of their animals is a constant concern, as they represent the family's entire wealth. This means that veterinary services, such as the following, need to be accessible: distribution of veterinary medicines, implementation of vaccination campaigns, parasite control operations, etc.

The OIE cannot therefore ignore the sanitary challenges facing so many pastoralist families. In particular, it is enthusiastically involved in the World Bank-backed Regional Sahel Pastoralism Support Programme (PRAPS) in West Africa. Furthermore, our engagement in the control and eradication of **peste des petits ruminants** and other such scourges also helps to protect livestock and, consequently, the livelihoods of families.

For this second issue of the OIE *Panorama*, we might have chosen numerous other topics. However, I am delighted to give the floor to those striving to build a better future for the millions of pastoralists around the world. They deserve our thanks.

I hope you find this issue informative and interesting and that you like the new format for this OIE publication.

Monique Éloit
Director General

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(1) Source: CIRAD

PERSPECTIVES

Gender and pastoralism

KEYWORDS

#animal health, #gender empowerment, #gender equality, #International Fund for Agricultural Development (IFAD), #Mera Declaration, #social inclusion

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India. Global Gathering of Women Pastoralists, November 2010. ©IFAD/M.Benanav

Pastoralist communities, even when placed in vulnerable circumstances and faced with difficult climatic conditions, conserve rangeland biodiversity, protect the ecosystem and, thanks to their knowledge and ability to adapt, maintain a sustainable balance with the surrounding

environment [1]. Women are the main custodians of this knowledge and are a cornerstone of pastoralism, a livelihood centred around livestock mobility.

While men and boys are away tending the herd, pastoralist women are responsible for collecting fodder to supplement the feed of those livestock kept close to the homestead. They look after pregnant stock, and then their calves, kids and lambs, and take care of sick animals that cannot keep up with the main herd [2]. They milk lactating animals and make sour milk and butter, which are important parts of the diet of many pastoralist families. They also sell these products at markets.



*Ethiopia. Pastoral Community Development Project (PCDP III), September 2017
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It is important to note that there is huge diversity among ethnic groups and their production systems, as to who owns the animals, who takes care of them, who sells the products and who controls the income.

Pastoralist women face enormous challenges, which are mainly linked to the complex gender relationships between pastoralist women and men [3]. Inequality affects their roles and responsibilities, and plays a major part in traditional customs, property rights, decision-making, and the use and control of income, assets, resources and services [4]. Such inequalities restrict women's development potential and limit the opportunities and economic growth of the entire family.

In 2010, more than 100 pastoralist women from 31 countries gathered in the small village of Mera

Women pastoralists want to take full advantage of development opportunities and capture the benefits of economic empowerment, becoming real agents of transformation for their society. In 2010, more than 100 pastoralist women from 31 countries gathered in the state of Jharkhand in India, in the small village of Mera, and demanded more opportunities, including better access to productive resources, markets, technologies, knowledge and services, while still retaining their culture and traditional lifestyle. This was documented in the Mera Declaration [4, 5].

'This is our right and it is by remaining pastoralists that we can be of greatest

service to the entire human community' (from the Mera Declaration, sponsored by IFAD)

Women and animal health interventions

Effective management of animal health, especially the control of animal and zoonotic diseases, is the main challenge facing pastoral communities. Access to reliable veterinary care, inputs and services is made difficult by the mobility of pastoral livestock herds, which are often located in remote areas, while pathogens and the insect vectors that carry them can be spread with the movement of people and animals [6].

Women play a hugely important role in disease control and are very knowledgeable about disease symptoms. They are often the first to identify livestock diseases and treat sick animals. For example, when calves are suckling, they are in close contact with both cow and calf, and can observe any sudden drop in milk production, which could indicate illness.



Young women pastoralists in Mera, India
©IFAD/S.Chakrabarti

Governments and development organisations have come to appreciate the importance of including women in animal health interventions. Evidence in the field shows that, when pastoralist women receive adequate training and technical support, they play a key role as community animal health workers and paraveterinarians [7]. They are crucial in reaching out to other women in their community, passing on valuable knowledge and skills and acting as powerful development drivers. Therefore, it is essential to recognise the role that women play in livestock production in pastoral areas. National policies, development projects and livestock service-delivery planning should take women's roles, needs and knowledge into full consideration, leading to gender empowerment, social inclusion and gender equality.

The IFAD-funded Rural Microfinance and Livestock Support Programme in Afghanistan trained female facilitators as community-based animal health workers. They now provide animal health services to their community, teach livestock keepers how to vaccinate their animals and share information and technologies with other women.

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DOSSIER

Animal movements in the run-up to religious festivals

Their scale and the risk for Tunisia

KEYWORDS

#animal disease, #animal movement, #risk factor, #Tunisia, #religious festival

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Tunisia, a country at the crossroads of North Africa, is not immune to the emergence and re-emergence of animal diseases, due largely to a significant increase in informal animal movements, as religious festivals approach (such as Eid el-Adha, Ramadan and Hadj), between the majority of North African countries [1].

These movements pose a threat to Tunisia and the risk of epizootic outbreaks is closely associated with their

frequency [2]. Against this background of mobility of ruminants, which are essential production animals in Tunisia, two surveys were carried out in livestock markets before the month of Ramadan in 2016. The results of these surveys have been useful for risk-based surveillance, mainly for epizootic diseases and those with a significant economic impact.

Identification and traceability are important tools for addressing animal health and food safety, and the OIE's international standards (in particular, [Chapters 4.1. and 4.2. of the *Terrestrial Animal Health Code*](#)) provide the framework for its Members. Nonetheless, implementation of such systems in low- and middle-income countries remains a significant challenge. In such settings, cross-sectional studies on animal movements provide an important and achievable means of gaining an understanding of the factors that influence disease risk.

Animal mobility in livestock markets in Tunisia

The geographical location of Tunisia makes the country vulnerable to the introduction and spread of animal diseases. To better understand and assess the scale of animal mobility in order to improve the control of animal diseases, a survey was conducted in livestock markets before the month of Ramadan (2016) using direct interviews with animal owners.



El Faidh livestock market (Sidi Bouzid)

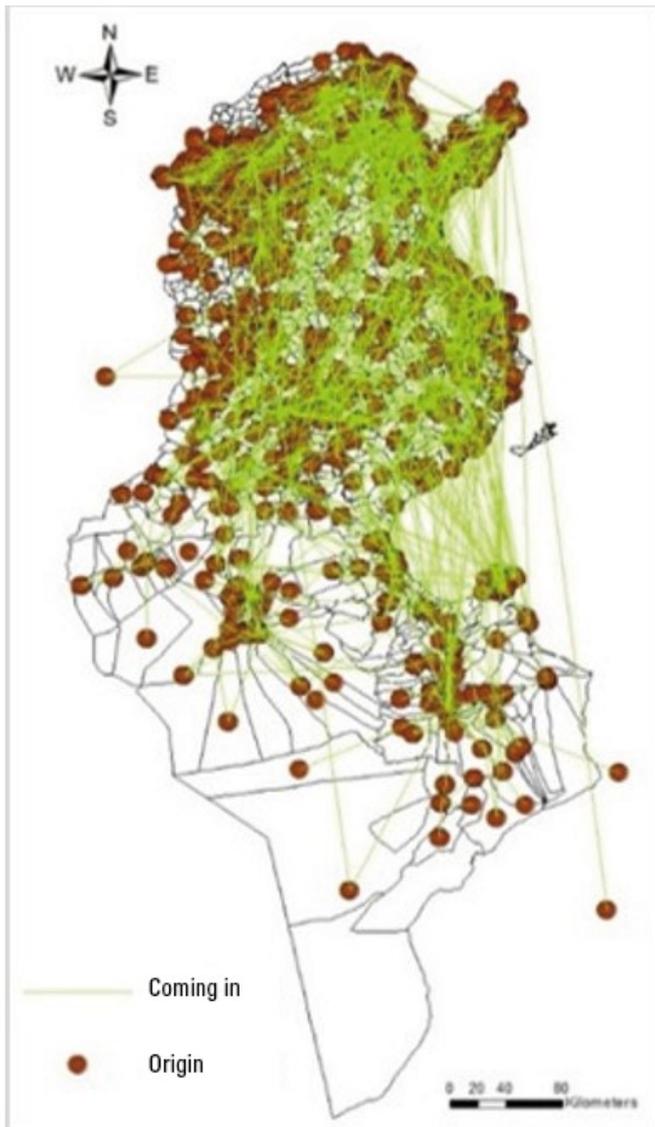
A total of 7,317 movements were identified during the two study periods. The north-east region recorded 31.3% of total movements. The north-west recorded 12.9%. The centre-west, centre-east and south regions had almost equal flows, with respectively 18.9%, 18.5% and 18.1% of all recorded movements. Small ruminants represented 84.6% of species traded, while cattle represented 15.4% of recorded movements.

It is of primary importance to ascertain the origin of the animals found in livestock markets. In-depth knowledge of animal mobility (origin and destination of animals, numbers traded, etc.) can be used to adjust animal health strategies and surveillance plans more effectively.

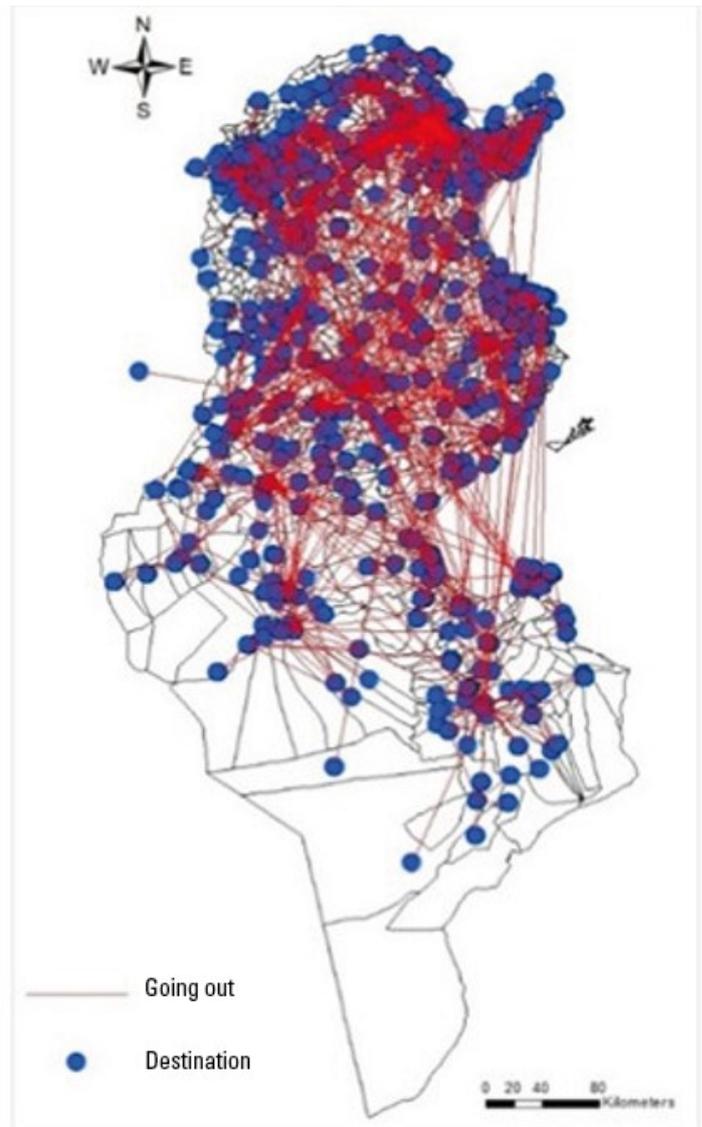
Intra- and inter-country trade flows

The trade flows identified show animal movements throughout Tunisia with a concentration of flows in the centre and north of the country. Trade with Algeria was observed largely in the north and centre of the country.

The social network analysis (SNA) method was used to characterise the livestock trade network in Tunisia and to identify the areas of high mobility. It showed that certain markets (Sidi Bouzid [Sidi Bouzid], Majel Bel Abbas [Kasserine], Gafsa [Gafsa], Mateur [Bizerte]) can play a major role in the large-scale spread of diseases (host and transmitter) and are classified as superspreaders. Other markets/locations have proven to be vulnerable to disease because they receive animals from several sources, such as the livestock markets of El Ouardia (Tunis), Beja (Beja), El Krib (Siliana) and Sers (Kef). This information is indispensable for animal disease surveillance. When setting up checkpoints to control such pathologies, these specific factors should be taken into account.



Incoming movements to livestock markets



Outgoing movements from livestock markets

The animal mobility study is an asset for the surveillance of animal and zoonotic diseases. The resulting information could be used when drawing up disease risk maps. Surveillance and management based on animal disease risk could be used to optimise the budgets allocated to animal health, especially in the Tunisian context. A regional approach to such surveys in the Maghreb region would certainly provide key elements for understanding and managing transboundary disease introduction and propagation routes. In addition, a study and regular monitoring

of meat prices on markets in the Maghreb region would give a better understanding of the direction of movements, especially in the run-up to major religious festivals, and so help to optimise surveillance. These two issues are being discussed, in particular with the French Agricultural Research Centre for International Development (CIRAD), with which the National Animal Health Monitoring Centre (CNVZ) is collaborating for the first time. The second issue, regarding price movements on meat markets, will be the subject of discussions with a view to a public-private partnership in 2019.

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DOSSIER

Traditional animal movement: a challenge to controlling FMD in the Mekong region

KEYWORDS

#animal movement, #FMD, #foot and mouth disease, #Mekong, #SEACFMD

AUTHORS

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Through its Sub-Regional Representation for South-East Asia, the OIE works closely with the Members of the South-East Asia and China Foot and Mouth Disease Campaign (SEACFMD) to combat FMD in the Mekong region. Among the biggest challenges are the risks posed by traditional movements of cattle and buffalo in this area.

There are two main types of movement: short-distance movements in the local area (mainly for pasture and water), and cross-border movements for the livestock trade.

Local movements may involve a number of villages or districts, depending on the landscape and natural geographical barriers, and can contribute to the local circulation of FMD virus in an endemic setting. The maintenance and local spread of the FMDV serotype O Myanmar/98 in central Myanmar may be due to local cattle movements.

A more challenging risk factor is the cross-border movement of livestock for trade. FMDV serotypes O and A from South-East Asia could have spread to China and Mongolia by this route. The recent introduction of FMDV India/2001/d from the Indian subcontinent into South-East Asia, China and Mongolia could also be attributed to

cross-border trade movements.

To better understand these pathways, the OIE undertook two studies:

- a study of movement pathways and market chains for large ruminants in the Greater Mekong Sub-Region in 2015 [1]
- a risk analysis of the incursion of exotic FMD viruses into South-East Asia in 2017 [2].

The OIE also facilitated the signing of a Joint Statement on Harmonising Procedures for Livestock Movement by OIE Delegates in the Mekong region, to develop, strengthen and improve procedures for managing the movement of livestock and their products in each country. The goal is to assist in the control of transboundary animal diseases, improve food safety and promote safe trade, in accordance with the requirements of the *Terrestrial Animal Health Code* [3], to protect animal and public health in the South-East Asian region.

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DOSSIER

The impact of the PRAPS on the improvement of animal health in pastoral livestock farming

KEYWORDS

#Comité permanent inter-États de lutte contre la sécheresse dans le Sahel (CILSS), #Nersy C., #Nouakchott Declaration, #Projet régional d'appui au pastoralisme au Sahel (PRAPS)

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Pastoral communities manage space and time in a way that enables them to take advantage of huge areas of land which are largely desert and not suitable for the development of farming. Their approach, which is based on mobility and uses the knowledge passed down to them by their ancestors, serves as both a strategy for managing risks and a way of optimising the use of seasonally available fodder resources. They harness the economic potential of the land and have kept a unique ecological system intact.

Yet despite its economic and social importance, pastoral farming is not valued by society, and those who work in the sector – both nomadic and semi-nomadic pastoralists – have a low social status and continue to be institutionally marginalised and politically neglected.

It is for this reason that the **Regional Sahel Pastoralism Support Project (PRAPS)** was created. The programme has a budget of USD 248 million and is considered to be a direct consequence of the [Nouakchott Declaration](#), which was signed in October 2013 by Sahel-Saharan heads of state and regional and international players. It concerns the six countries in the Sahel area: Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal.

| *The PRAPS project is fully consistent with the OIE's strategic objectives*

To factor in all the issues involved in the protection and promotion of pastoralism, [the PRAPS was organised into five components](#). One of these works to improve animal health, a key priority for the populations concerned. The project has been implemented at the national level and is coordinated at the regional level by the [Permanent Interstate Committee for Drought Control in the Sahel \(CILSS\)](#).

The **animal health improvement** component (**component 1**) accounts for roughly 20% of the overall project budget. One of its distinctive features is that it was planned on the basis of the results and recommendations of the [Performance of Veterinary Services \(PVS\) evaluations and PVS gap analyses](#) carried out by OIE experts over the last ten years in the countries concerned. These missions revealed numerous shortcomings and constraints, the major consequence of which has been the persistence and even propagation of most major animal diseases (including peste des petits ruminants [PPR], contagious bovine pleuropneumonia [CBPP], foot and mouth disease [FMD] and rabies).

To take account of the needs identified during the evaluation process, the animal health activities rolled out at national level have been organised into two main areas:

- Improving infrastructure and boosting the capacities of national Veterinary Services;
- Supporting the harmonised surveillance and control of two priority diseases, namely PPR and CBPP.

The regional coordination of animal health improvement activities was entrusted to the OIE, through the [Regional Animal Health Centre](#) of Bamako, as part of the partnership agreement between CILSS and the OIE. This agreement, which was signed on 23 October 2015 sets out the framework for the OIE's management of this section of the programme.

By controlling and eradicating animal diseases such as PPR and CBPP and supporting pastoral communities – key players in livestock farming – the PRAPS project is fully consistent with the OIE's strategic objectives.

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AROUND THE WORLD

▶ OIE ACTIONS

The OIE PPR Vaccine Bank

A concrete tool in the fight against PPR

KEYWORDS

#Global Strategy for the Control and Eradication of Peste des Petits Ruminants (PPR-GCES), #OIE, #peste des petits ruminants (PPR), #PPR, #PPR-GCES, #vaccination, #vaccine, #vaccine bank, #World Organisation for Animal Health (OIE)

AUTHORS

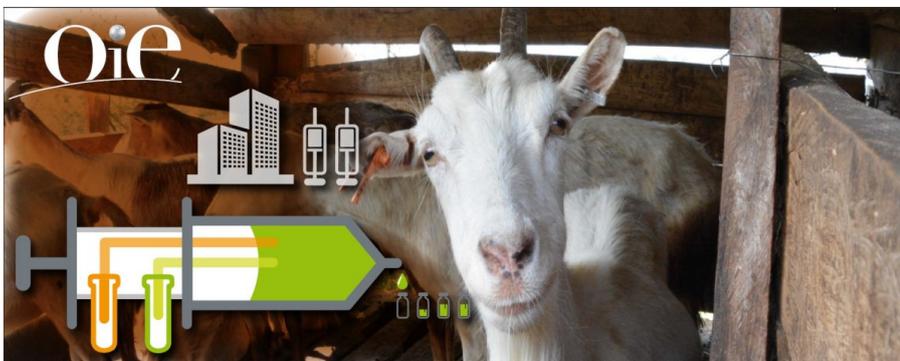
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Battles are won by having a strategy, operational plans, soldiers and the right equipment. The OIE and FAO, together with their international partners, have engaged in a difficult battle by setting the objective (in Abidjan in 2015) of eradicating peste des petits ruminants (PPR) by 2030. PPR is a formidable enemy and one which continually seeks to conquer new territories. It often affects poor populations and brings with it food insecurity and poverty.

Through the [global strategy for the control and eradication of PPR](#), approved together with FAO, the OIE has a strategy. Through its standards and recommendations, it has established operational plans. And through its experts

and Collaborating Centres, it boasts determined soldiers. So what of the right equipment?

Fifty million doses already delivered for planned vaccination campaigns and in response to emergencies

It is in this last respect that the OIE's PPR Vaccine Bank plays a vital role. Created in 2013, the PPR Vaccine Bank facilitates access to top-quality vaccines in Africa. It is supplied by vaccine producers selected through international calls for tender and offers clear and transparent conditions for those seeking its assistance. It is a tool that is complementary to national procurement procedures and it is used on a voluntary basis via country requests. A clear indication of its success is that some 50 million vaccine doses have been delivered over the course of five years, with an extra 38 million planned for 2018.

The mechanism has mostly been used by large-scale programmes that combine vaccination, awareness-raising and capacity-building. First among these is the [Vaccine Standards and Pilot Approach to Peste des Petits Ruminants Control in Africa Project \(VSPA\)](#). This programme, which is funded by the Bill & Melinda Gates Foundation, has delivered 10 million doses to Burkina Faso, Ghana and Mali. Togo was also able to purchase four million doses in 2014 and 2015 as part of a World Bank project. Today, as part of the Regional Sahel Pastoralism Support Programme (PRAPS) financed by the World Bank, several Sahel countries (Burkina Faso, Chad, Mauritania and Niger) benefit from access to the OIE Vaccine Bank.

The recent delivery to Burundi in March 2018 demonstrated that the Vaccine Bank also has the capacity to respond to situations that demand urgent action. Reports of PPR cases in Burundi mobilised numerous players, who chose to use the OIE Vaccine Bank as it provided a simple and quick way to deliver 1.6 million doses. This response was made possible by the commitment of the Burundi authorities, which carried out vaccination campaigns, and the World Bank, which provided funding. The Vaccine Bank served as the tool for implementing a proactive policy and concerted action.

The OIE Vaccine Bank's main strengths are its adaptability, its flexibility and the quality of the vaccines it provides. The FAO and the World Bank demonstrated their confidence in the mechanism by approving its use by countries as part of the projects that they finance.

However, it is not intended that this tool should be in place forever. It could be shelved once the countries are equipped and the battle has been won. Pending that victory, the OIE will continue to facilitate access to high-quality vaccines for those that need them.

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[More information about the OIE Vaccine Banks](#)

AROUND THE WORLD

▶ NETWORK INITIATIVES

Pastoralism as a sustainable development tool in the Sahel

KEYWORDS

#Africa, #Comité permanent inter-États de lutte contre la sécheresse dans le Sahel (CILSS), #pastoralism, #Projet régional d'appui au pastoralisme au Sahel (PRAPS), #Sahel, #sustainable development, #World Bank

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Photo: Ayache Bouhous

Since 2015, the World Bank has provided funding of USD 248 million to the Regional Sahel Pastoralism Support Programme (PRAPS) in six countries (Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal) as part of a six-year programme administered regionally by the Permanent



Interstate Committee for Drought Control in the Sahel (CILSS).

This investment in pastoral livestock farming in the Sahel is justified, not only because it guarantees continued diversity in livestock methods, but also because it ensures a better standard of living for the 50 million people in the Sahel directly concerned with this type of farming. Pastoralism contributes to:

1. employment and income distribution;
2. the supply of consumer markets;
3. the resilience of farming households whose production is shifting towards agro-sylvo-pastoral systems that are more diversified and better able to cope with different types of unforeseen events;
4. the development of land and the management and safety of territories, notably through the agro-ecological use of areas ill-adapted to cultivation;
5. the promotion and protection of natural resources and the protection of biodiversity;
6. social relationships between ethnic groups and nationalities, which serve to drive regional integration by societies and form the basis for ensuring that animal movements are managed peacefully and that animals are accepted in transit and destination areas.

The protection of this form of livestock farming is vital for the populations concerned and requires long-term investments through the creation and introduction of structural programmes. Thanks to the progress achieved on the ground by the PRAPs since its launch, other technical and financial partners (including the European Union, the French Development Agency and the Swiss Agency for Development and Cooperation) have expressed an interest in developing and modernising pastoralism.

Animal health is a key component in all the programmes under way or in development. Several diseases causing productivity losses and often considerable mortality are still rampant in our region. The fall in productivity decreases income and increases food insecurity among pastoral households. Consequently, strengthening animal health through the implementation of efficient veterinary services that are compliant with the standards of the World Organisation for Animal Health (OIE) is an objective shared by all pastoral development programmes in the Sahel.

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AROUND THE WORLD

▶ NETWORK INITIATIVES

Peste des petits ruminants – Follow-up on regional meetings and national strategic plans

KEYWORDS

#Global Strategy for the Control and Eradication of Peste des Petits Ruminants (PPR-GCES), #peste des petits ruminants (PPR), #Peste des Petits Ruminants Global Eradication Programme (PPR-GEP)

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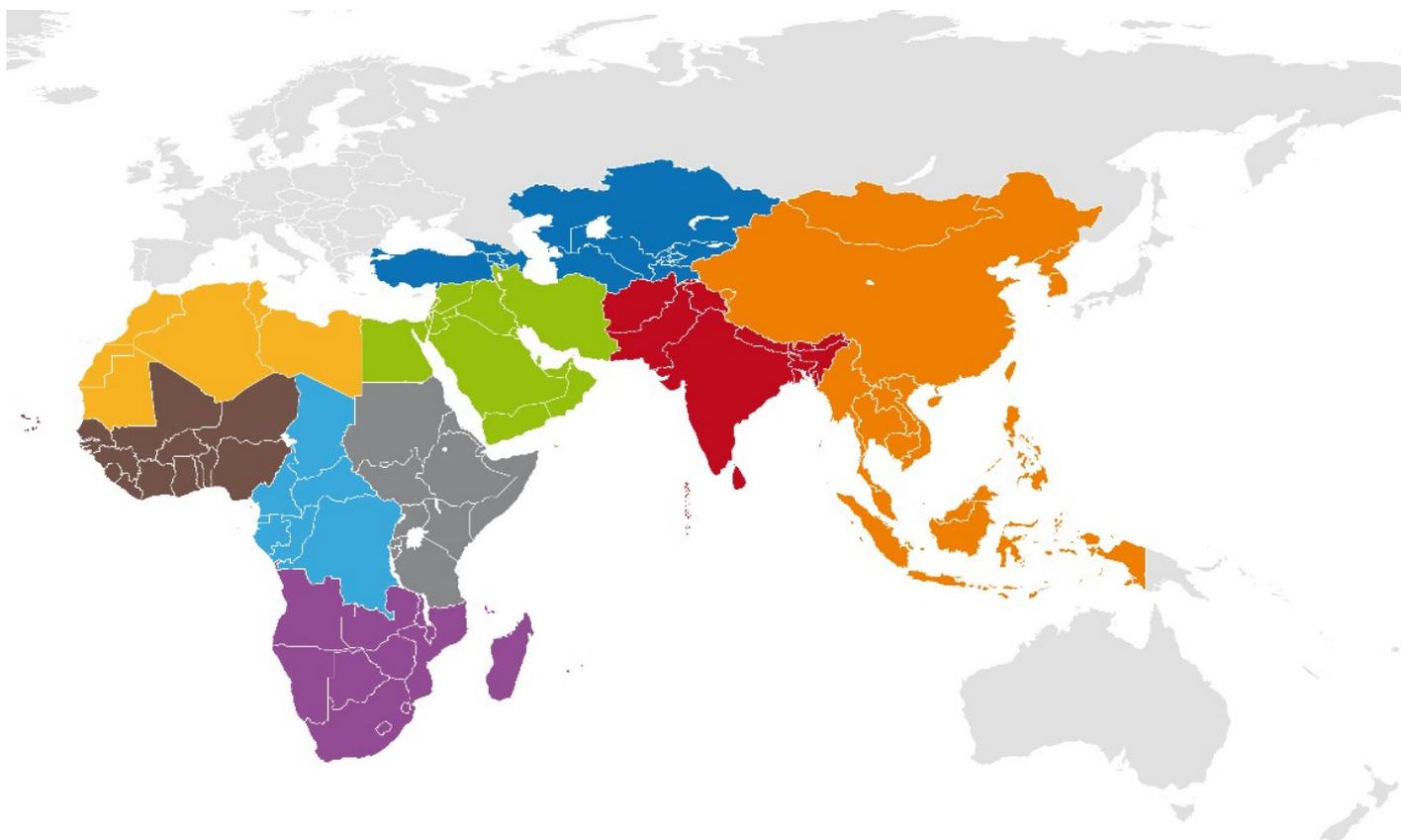
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The [Global Strategy for the Control and Eradication of PPR \(PPR-GCES\)](#), and the [Peste des Petits Ruminants Global Eradication Programme 2017-2021 \(PPR-GEP\)](#), adopted by the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) in 2015 and 2016 respectively, divide the 76 countries that are infected with PPR, or are at risk of infection, into nine regions.

These regions were determined on the basis of regional economic communities:

- Arab Maghreb Union (AMU)
- Association of Southeast Asian Nations (ASEAN)
- Economic Community of Central African States (ECCAS)
- Economic Cooperation Organization (ECO)
- Economic Community of West African States (ECOWAS)
- Gulf Cooperation Council (GCC)
- Intergovernmental Authority on Development (IGAD)

- South Asian Association for Regional Cooperation (SAARC)
- Southern African Development Community (SADC).



In line with PPR-GCES and PPR-GEP, the PPR status of each country in a region is evaluated every two years at regional meetings. This evaluation is based on a progressive stepwise approach (Stages 1 to 4 below, Fig. 1) and on the use of a dedicated tool: the PPR Monitoring and Assessment Tool (PMAT).



Fig. 1 - The progressive stepwise approach for the prevention and control of PPR

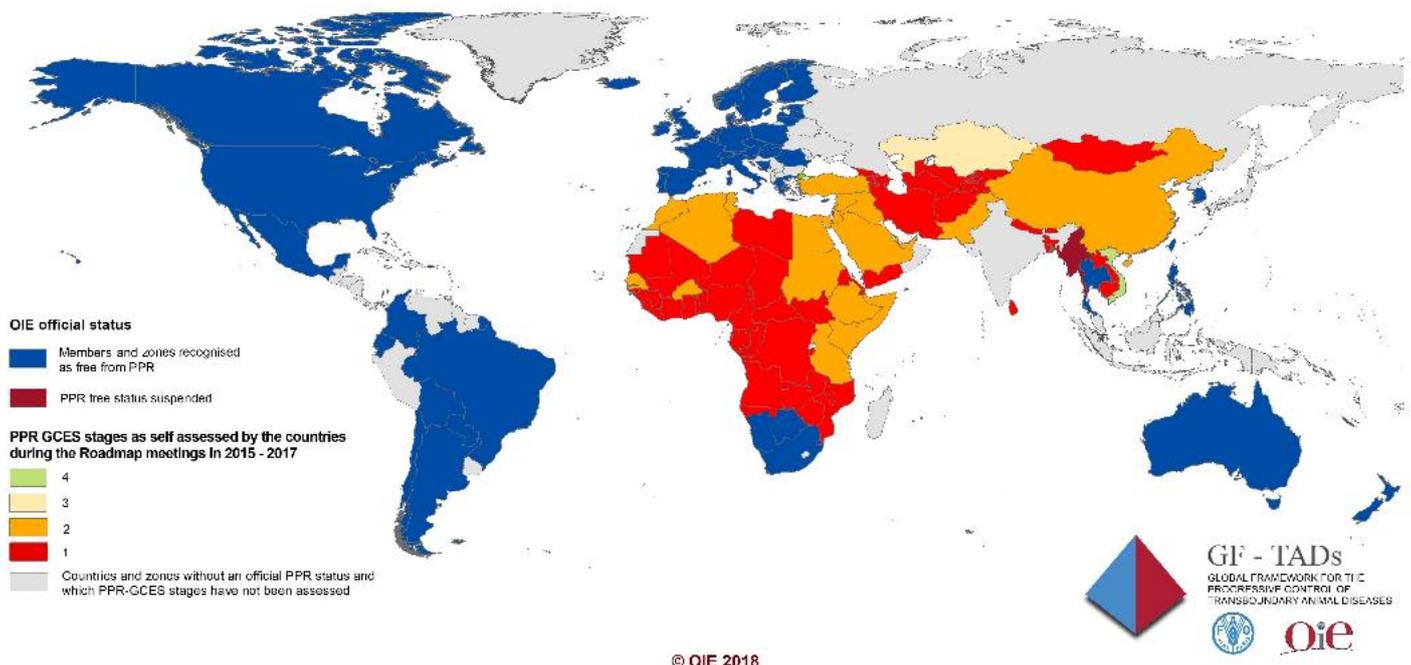
The outcome of these regional meetings and the establishment and updating of roadmaps indicate each country's progress towards eradication, with the global objective remaining eradication by 2030. The meetings are organised by FAO and the OIE, through their joint PPR secretariat, in conjunction with regional economic communities and the

countries themselves.

The process commenced in August 2015 and led to a first round of nine regional meetings. A second round began in 2017 and is due for completion in early 2019. In light of the progress made with PPR control, the map of the PPR global situation has been updated, also taking into consideration those countries that are officially free of the disease.

Peste des petits ruminants global situation 2015 - 2017

OIE official PPR free status and PPR Global Control and Eradication Strategy (GCES)



At the national level, PPR-GCES and PPR-GEP recommend the adoption of national strategic plans (NSPs) for PPR eradication. These documents, which must be approved by each country's competent authorities, include: a rationale for eradication based on the socio-economic impact of PPR; a description of the way the Veterinary Services are organised; the country's own vision and strategy; a budget estimate; and a description of the resource-mobilisation process, targeting the different partners. To date, over half the countries concerned have either completed or formally validated their NSP. This should rise to two thirds by the end of 2018 thanks to strong support from the African Union - Interafrican Bureau for Animal Resources (AU-IBAR).

Constantly updated PPR regional roadmaps, coupled with NSP validation and implementation, are the pillars of the PPR eradication process and, as such, are at the heart of the work carried out by FAO and the OIE, with the support of regional economic communities and the countries themselves.

<http://dx.doi.org/10.20506/bull.2018.2.2870>

[OIE portal on PPR](#)

AROUND THE WORLD

▶ NETWORK INITIATIVES

OIE Reference Laboratories for PPR provide support to the PPR Global Eradication Programme

KEYWORDS

#OIE Reference Laboratory, #peste des petits ruminants (PPR), #Peste des Petits Ruminants Global Eradication Programme (PPR-GEP)

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The OIE Reference Laboratories for peste des petits ruminants (PPR) are providing extensive support to countries across Africa, Asia and the Middle East in their efforts to control and

eventually eradicate PPR.

There are currently three **OIE Reference Laboratories** for peste des petits ruminants (PPR); namely, **CIRAD** (International Cooperation Centre for Agronomic Research and Development, Montpellier, France), **the Pirbright Institute** (Surrey, United Kingdom), and **CAHEC** (China Animal Health and Epidemiology Center, Qingdao, People's Republic of China).

As part of their mandate, the OIE Reference Laboratories are involved in a wide range of activities to support the global effort to control and eradicate PPR, launched by the OIE and FAO and known as the [PPR Global Eradication Programme \(PPR-GEP\)](#).



The bulk of these activities involve training the staff of national diagnostic laboratories on PPR diagnostic methods and epidemiology. Candidate laboratories can apply under the OIE Twinning Agreement to collaborate with OIE Reference Laboratories in a one- to three-year programme to improve their capacities for PPR diagnosis and expertise. Laboratories usually undertake such a twinning programme with the aim of becoming an OIE Reference Laboratory for PPR in their own right. Twinning projects have already been completed with laboratories in Morocco, Uganda and several countries in the Asia-Pacific region such as Cambodia, Laos, Mongolia, the Philippines, Thailand and Vietnam. New programmes have started or are under evaluation in Jordan, Kazakhstan and Tanzania (Figs 1 & 2).



Fig. 1 - On-site training is a vital component of the current OIE twinning programme between Tanzania and the Pirbright Institute ©P.Rajkow-Nenow



Fig. 2 - Training laboratory technicians in Morocco (CIRAD, 2011) ©CIRAD

Intensive one-week training on PPR diagnostic methods is also offered each year in the OIE Reference Laboratories to laboratory technicians from applicant countries. In 2017, more than 30 technicians from 16 countries received training on diagnosing PPR at these laboratories (Figs 3 & 4).



Fig. 3 - Combined European Union and OIE training on PPR diagnostic methods (CIRAD, 2017) ©CIRAD



Fig. 4 - The 6th regional symposium and training on diagnosing Newcastle disease and PPR (Qingdao, China, 2017) ©TiangangXu/CAHEC

This training will not only make it easier to eradicate the disease but will also contribute to its prevention in PPR-free countries. In some cases, training can be organised in a country's own national diagnostic laboratory. Such in situ training was notably provided by CIRAD in Georgia, after the first-ever case of PPR appeared there in 2016, and in Mali, for the six countries participating in the [Regional Sahel Pastoralism Support Project \(PRAPS\)](#), financed by the World Bank (Fig. 5). The OIE Reference Laboratories also organise annual proficiency testing, which enables participating laboratories to evaluate their capacity to perform PPR diagnostic tests.



Fig. 5 - Opening ceremony of training programme on diagnostic methods, provided by CIRAD as part of the PRAPS project (Bamako, Mali, 2017) ©PRAPS

In addition, OIE Reference Laboratories offer their expertise and diagnostic services to OIE Members on request. In September 2016, ten samples from Mongolia were sent to the Reference Laboratory in China for confirmation of PPR infection. All samples tested positive for the virus at the laboratory. This was the first outbreak of PPR in Mongolia. Similarly, the 2016 PPR outbreak in Georgia was only discovered when samples originally sent to the Reference Laboratory at the Pirbright Institute to be tested for bluetongue came back negative. They were subsequently tested for PPR virus (PPRV) and this time the results were positive.

Experts from OIE Reference Laboratories have travelled to multiple countries facing PPR outbreak emergencies to support their control efforts and assist in epidemiological investigations. These experts have also taken part in OIE and FAO meetings on the PPR-GEP to offer their expertise during discussions and decision-making processes. In April 2017, the PPR Regional Roadmap Meeting for ASEAN countries ⁽¹⁾, China, Mongolia and Timor Leste, was organised in China and attended by Dr Monique Éloit, Director General of the OIE. Dr Zhiliang Wang delivered a presentation on the eradication plan for PPR in China (Fig. 6). All representatives finally reached agreement on a regional strategy to eradicate PPR. In December 2017, Dr Baron and Dr Libeau (from the Pirbright Institute and CIRAD, respectively) attended a joint OIE/FAO meeting in Rome to develop criteria for the preparation of a thermotolerant vaccine, seen as an important tool for the PPR-GEP.



Fig. 6 - Dr Zhiliang Wang during the PPR Regional Roadmap Meeting for the ASEAN countries of China, Mongolia and Timor Leste, jointly sponsored by the OIE and FAO (Qingdao,

China, 2017) ©TiangangXu/CAHEC

OIE Reference Laboratories both lead and take part in research and development projects that aim to fill the gaps in our knowledge of PPR and improve methods for eliminating the disease altogether. New diagnostic kits, such as lateral flow devices and camel-adapted, competitive enzyme-linked immunosorbent assay (ELISA) methods, are being developed, validated, produced and/or distributed, to widen the scope of PPR diagnosis in non-typical hosts and in the field. A key role of the OIE Reference Laboratories is the collection of samples and virus isolates from many countries, enabling the validation of diagnostic reagents and vaccines against the broadest possible range of viruses – a task that is not feasible for national diagnostic or research laboratories. All three OIE Reference Laboratories work intensively on the development and validation of the next generation of PPR vaccines, especially vaccines that permit the differentiation of vaccinated and infected animals (DIVA vaccines). They have also entered partnerships with many African and Asian countries to collaborate on research into PPRV transmission dynamics; in particular, the role of wildlife and transboundary livestock trade in PPRV circulation.

All the activities described above are crucial in providing the resources and support required at both the national and regional levels if we are to reach our goal of worldwide control and eradication of PPR. The OIE Reference Laboratories have lost no time in showing that they are there to help, every step of the way.

(1) ASEAN: Association of Southeast Asian Nations – Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam

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AROUND THE WORLD

▶ SUCCESS STORIES

Pastoral livestock farming in Burkina Faso

Driving economic growth and the hope of well-being

KEYWORDS

#Burkina Faso, #contagious bovine pleuropneumonia (CBPP), #pastoralism, #peste des petits ruminants (PPR), #Projet régional d'appui au pastoralisme au Sahel (PRAPS)

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Livestock farming plays a key role in the economy of Burkina Faso. With a considerable diversity of livestock animals, it contributes to the food and nutritional security of rural and urban

households. Small ruminants figure heavily, contributing close to 32% of the FCFA 30 billion generated annually by livestock farming in Burkina Faso [1].

According to Burkina Faso's Ministry of Animal Resources (DGESS/MRAH, 2017), the ruminant livestock population of the country is estimated at 9,647,000 cattle, 15,180,000 goats and 10,137,000 sheep.

Various forms of livestock farming exist in Burkina Faso, ranging from sedentary farming to transhumant pastoralism. Pastoral production, characterised by herd mobility and extensive grazing, is the best way of using pastoral land and protecting livestock.

In Burkina Faso, around 75% of livestock is farmed using a nomadic and migratory approach, both on a national and cross-border basis. Pastoralism is therefore the main activity that uses the fragile and irregular natural vegetation in a sustainable way. This form of livestock farming adapts quickly to major seasonal and interannual variations in plant biomass and water resources.

But, in Burkina Faso, weather events, the extent and quality of pastures, and health and economic constraints often make pastoralism a precarious activity.

Sheep and goats, which make up the largest share of ruminant livestock in the Sahel (roughly 64% according to the results of the second national survey on livestock population), contribute substantially to resolving the socio-cultural and economic problems of Sahel pastoral communities and play a vital role in assuring the food and nutritional security of these communities.

| *PPR and CBPP are the primary diseases targeted by the PRAPS-Burkina Faso*

Despite its considerable role in the fight against poverty and under-employment, the livestock sector continues to be faced with numerous constraints that limit its contribution to the socio-economic development of the country. The constraints on ruminant farming include animal diseases, which remain an obstacle to livestock productivity and the development of livestock farming as a whole in Burkina Faso.

To help resolve these constraints, the Regional Sahel Pastoralism Support Project-Burkina Faso (PRAPS-Burkina Faso) has committed, through its first component - 'Improving Animal Health', to supporting the implementation of the national strategic plan for the control of **peste des petits ruminants (PPR)**. PPR and contagious bovine pleuropneumonia (CBPP) are the main contagious diseases limiting the development of livestock production in Burkina Faso, causing enormous economic losses for the country and rural households. They are also the primary diseases targeted by the PRAPS-Burkina Faso.

Work under way or already completed in this area includes the acquisition and provision of vaccines at a subsidised cost and the provision of vaccination equipment (syringes and needles), cold chain equipment (refrigerated vans, ice boxes, combined refrigerators) and logistics resources (including motorbikes).



An example of logistics equipment



Vaccinating sheep

[Web page of PRAPS Burkina Faso](#)

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AROUND THE WORLD

► SUCCESS STORIES

Transforming Veterinary Services in Mauritania with the PRAPS

KEYWORDS

#Mauritania, #pastoralism, #peste des petits ruminants (PPR), #Projet régional d'appui au pastoralisme au Sahel (PRAPS), #Veterinary Services

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In 2014, given the socio-economic importance of the livestock sector, Mauritania created a Ministry dedicated to livestock farming. The Ministry now has to tackle a broad range of challenges.

Mauritania is a prime example of a pastoral country, with over 1.7 million cattle, 1.5 million camels and 16

million small ruminants, for a human population estimated in 2017 at 3,758,571.

The [PVS evaluation mission](#) carried out by the OIE in 2010 revealed shortcomings in the performance of the country's Veterinary Services.

The Regional Sahel Pastoralism Support Programme (PRAPS) launched in January 2016 arrived at a perfect time. The programme's animal health activities, which serve to structure Veterinary Services, have two focuses:

- improving infrastructure and strengthening the capacities of national Veterinary Services;
- supporting the harmonised surveillance and control of priority diseases: contagious bovine pleuropneumonia (CBPP) and peste des petits ruminants (PPR).

In logistical terms, PRAPS support has enabled the acquisition of 38 off-road vehicles and ten motorbikes. **This has produced results in the vaccination campaigns, with record figures**, especially for PPR. The forecasts for 2018 are 2 million doses for CBPP (for 100% coverage) and 4 million for PPR (ten times the 2015–2016 figure).

The project also provides support for the implementation of baseline surveys (CBPP) and the creation of national strategic plans for control (CBPP) and eradication (PPR).

With regard to infrastructure, the PRAPS intends, in the long term, to build 100 vaccination parks and 25 equipped veterinary stations.

To improve the knowledge and skills of veterinary personnel, the PRAPS is supporting vocational training courses and diploma courses for 20 veterinary doctors at the [EISMV](#) in Senegal.

To strengthen epidemiological surveillance, the PRAPS is contributing substantial support to the Mauritanian Animal Disease Surveillance and Monitoring Network, REMEMA.

For the control of veterinary medicines, the project is supporting the implementation of an inspection unit by purchasing laboratory equipment and materials, training managers, and providing international technical assistance.

Once these initiatives have been completed, the country's Veterinary Services will have been truly transformed.

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[Website of PRAPS Mauritania](#)

AROUND THE WORLD

▶ SUCCESS STORIES

PRAPS–Senegal strengthens the vaccination capacity of the Veterinary Services

KEYWORDS

#pastoralism, #peste des petits ruminants (PPR), #Projet régional d'appui au pastoralisme au Sahel (PRAPS), #Senegal, #vaccination

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In Senegal, the mobility of livestock farmers and their herds throughout the year has long been the subject of much talk and extensive commentary on the part of other segments of society, which has resulted in the stigmatisation of this form of resource use as a phenomenon that

inevitably leads to environmental degradation. Consequently, this livestock farming approach, which is based on the search for natural resources, has also never been considered by the authorities as a form of land development.

However, nowadays, as climate change is assuming ever more worrying proportions and significantly reducing the quantity of surface water and biomass accessible to cattle, decision-makers have been forced to admit that, in this context, pastoral mobility is nothing less than the most effective and efficient way of using resources.

The substantial 29.1% contribution of livestock farming to primary sector GDP in Senegal has not gone unnoticed by the public authorities, which are now actively supporting pastoralism by taking the following decisive action:

- voting for the agro-sylvo-pastoral law in 2017, whereby pastoralism is now considered beneficial to the land;
- imposing tougher sentences for cattle rustlers;
- submitting a bill on the pastoral code to legislators;
- asking the World Bank in 2015 to fund a support project for pastoralism aimed at reassessing the ecology of rangelands and providing livestock farmers with production resources and access to the market.

In addition to the resources described above, the Regional Sahel Pastoralism Support Project in Senegal is making improvements in the area of animal health. Since its second year of existence, it has been increasing the intervention level of livestock field workers by providing training and equipment for vaccine conservation. The project is preparing to provide the national livestock laboratory with a high-capacity freeze-dryer for manufacturing vaccines in order to respond to national and sub-regional demand.

Given these developments, all that is needed now is the willingness of livestock farmers to start vaccinating against peste des petits ruminants. This would be enough to give us reason to hope that we will win the war against this disease, which continues to keep our country dependent on others to meet its needs in terms of small ruminants.

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[Website of PRAPS-Senegal](#)

AROUND THE WORLD

▶ SUCCESS STORIES

The importance of pastoralism in Chad

KEYWORDS

#Chad, #pastoralism, #Projet régional d'appui au pastoralisme au Sahel (PRAPS)

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Pastoralism concerns a full 80% of the national herd. Through its mobility-based practices, it contributes to the development of forgotten or lightly populated territories. The pastoral system also plays a key role in feeding the population through the supply of milk and meat and in

agricultural production through the provision of manure and animal traction. It helps to generate currency through the export of live cattle and products, such as leather and hides.

A livestock farming country par excellence, Chad has a total of 94 million heads of cattle. Livestock farming is the second most significant source of income behind oil and contributes 53% of national GDP. It ensures the living of roughly 40% of the population and accounts for 30% of exports. It plays a considerable role in the reduction of poverty and improvement of food security.

The financial value of the national herd is estimated at FCFA 1,000 billion, while the value of meat and milk production was estimated at FCFA 155 billion in 2012. Livestock farming thus stands as a major component of the national economy and remains one of the most productive sectors for which the country has high hopes in its drive to achieve sustainable economic and social development.

Pastoral infrastructure and animal health issues need to be rethought in their entirety

The diversity of pastoral lifestyles and production is a strength for the country. This is illustrated in adapted races and the ancestral herding of cattle that promotes unique know-how making optimum use of a diverse set of natural resources. It is on the strength of this diversity that pastoral livestock farming and intensive livestock farming will be able to combine to contribute to national food security and the improvement in Chad's balance of trade. To enhance this potential, pastoral infrastructure (market, processing, promotion and sales venues) and animal health issues need to be rethought in their entirety by integrating the sector of livestock farming and pastoralism. This is precisely what the Regional Sahel Pastoralism Support Project-Chad (PRAPS-Chad) intends to do.

The impact of the PRAPS on pastoralism

The four components of the PRAPS are interdependent and mutually beneficial, thus constituting strategic intervention focuses. In the first component - improvement of animal health - well cared-for animals (treated against diseases on a preventive or curative basis) will enhance the use of available pastoral resources (water and natural pastures). The second component - the development and management of pastoral resources - will serve to improve access to and management of these resources. As part of the third component, well-fattened animals will fetch higher prices through better organised trade, controlled through infrastructures designed to this end. The fourth component secures the livelihoods of farmers through economic interventions helping them to cope with weather- and disease-related events.

Questions on access to essential production services for pastoral farmers as well as the rational and organised management of natural resources are more fully taken into account. Solutions are proposed in terms of access to quality veterinary medicines through the implementation of pastoral veterinary pharmacies and in terms of the diversification of water points, which will enable the use of pastures that remain inaccessible due to water shortages.

Today, a large part if not all of the political initiatives on livestock farming development are supported by the

PRAPS-Chad. The resources of the latter are not unlimited but will serve to implement the programme of the Head of State, Mr Idriss Déby Itno, who by focusing closely on rural development has sought to prioritise the economic and political importance of rural communities in Chad.

| *Over 5 million people have directly benefited from the work of the programme*

The contributions of the PRAPS-Chad are already widely visible on the ground. Over 5 million people, over one-third of them women, have directly benefited from the work of the programme, notably regarding the vaccination of animals against CBPP and PPR, both of which are priorities of Chad's animal disease epidemiological surveillance and monitoring network, REPIMAT. With 7 million vaccine doses and a campaign against PPR consisting of 10 million vaccine doses, the mass vaccination campaigns thus far – two of which were against PPR – are the most appreciated actions by the beneficiaries, since CBPP and PPR alone cause more damage in ruminant farming than all of the other diseases monitored by REPIMAT. According to experts, the losses resulting from these two diseases amount to over FCFA 10 billion. But the strategy has now been ramped up and reported cases of CBPP have fallen sharply, by over 60% at the end of 2017.



Fig. 1 – Vaccination campaign against contagious bovine pleuropneumonia

As part of the prevention and management of pastoral crises, a large quantity of cattle feed (2,850 tonnes of cake) has been acquired and is currently being distributed to save the lives of animals during the lean season, already at hand. The weather forecasts are extremely alarming this year, with expectations of a longer and more severe drought across the Sahel strip than in previous years. The distribution of this cattle feed will clearly soften the impact of the coming drought.

The herd mobility practices of farmers serve to optimise the use of natural resources, which fluctuate in space (agro-ecological areas) and time (rainy and dry seasons). The growing pressure on land and resources calls for the design and implementation of pastoral development plans that facilitate access to water and pastures by clarifying rules as well as providing for infrastructure such as hydraulic works and transhumance routes.

Consequently, a regionalised intervention strategy by the PRAPS-Chad, taking account of the extent of the

12 regions involved and the array of pastoral constraints in terms of limited resources, the number of achievable infrastructures and the interventions of other projects, was established on the basis of pastoral assessments.

Some 82 kilometres of transhumance corridors have been rehabilitated through the repair and replacement of way markers.

The social engineering process has been concluded for the rehabilitation of 40 wells, five pastoral stations and 15 ponds, along with 50 new wells, 40 ponds, 12 cattle markets and five exit posts, leading to the signature of the attendant labour and party agreements.



Fig. 2 - Vehicles acquired within the framework of the PRAPS

The Ministry of Livestock Farming, the PRAPS, local authorities, livestock farmer associations and rural organisations have learned a number of lessons through these achievements.

While substantial expectations remain, the PRAPS–Chad livestock farming project remains a source of hope for the development of pastoralism, the aim being for the country to take advantage of the benefits, such as cattle farming along increasingly rare and distant routes.

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AROUND THE WORLD

▶ SUCCESS STORIES

Saving livestock

KEYWORDS

#Comité permanent inter-États de lutte contre la sécheresse dans le Sahel (CILSS), #Mali, #pastoralism, #Projet régional d'appui au pastoralisme au Sahel (PRAPS), #Sahel

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In the Sahel in general and Mali in particular, the most widespread method of rearing livestock is pastoralism. Long considered a source of instability and conflict, it is today recognised as a

sustainable system that is particularly well adapted to arid regions.

Livestock farming is a key sector of the economy in Mali, practised by over 85% of the population. The national herd is estimated at 10,622,620 cattle, 36,230,565 small ruminants, 538,545 horses, 979,510 donkeys, 1,008,440 camels and 37,691,913 poultry [1]. In terms of export revenue, livestock farming ranks third behind gold and cotton.

Pastoralism is based on the constant or seasonal movement of the herd and aims to feed the animals through the itinerant use of natural resources. During transhumance, livestock farmers are faced with a number of constraints that threaten the very survival of pastoralism.

Given this situation, Mali, Burkina Faso, Chad, Mauritania, Niger and Senegal introduced the Regional Sahel Pastoralism Support Programme (PRAPS) in their respective countries in 2015, the aim being to support the pastoral production system, strengthen the resilience of pastoralists and ensure the sustainability of their actions. Funded by the host-country governments and the World Bank, the project is implemented by Project Coordination Units (UCPs) under the regional coordination of the Permanent Interstate Committee for Drought Control in the Sahel (CILSS).



The PRAPS is based on four technical components, the integrated and combined initiatives which aim to improve animal health, natural resources management, access to markets and the management of pastoral crises.

The regional ‘Animal Health’ component of the PRAPS is implemented by the OIE Regional

Representation in Bamako, Mali.

PRAPS-Mali results

In Mali, the PRAPS is supervised by the Ministry of Livestock Farming and Fishing. It operates in ten regions, 39 circles and 220 municipalities, targeting 440,000 beneficiaries, of whom 32,000 are women and young people.

Since it was initiated in 2016, the PRAPS-Mali has rolled out a broad range of activities, notably, it has:

- strengthened the capacity of relevant actors – particularly private-sector veterinarians accredited to work on behalf of the government (vétérinaires titulaires du mandat sanitaire) and veterinary station heads in the regions of Kayes, Koulikoro, Sikasso, Ségou and Mopti – to diagnose priority animal diseases and employ sampling techniques;
- organised labour negotiations at all the infrastructure sites and pastoral facilities;
- carried out technical studies with a view to building/renovating pastoral development areas and infrastructure, including animal health services;
- acquired 23 vehicles for the use of UCP/PRAPS and its operational partners and 25 tricycles equipped with solar refrigerators for the transport of meat and the collection and conservation of unpasteurised milk (access to refrigerated meat and milk brings significant benefits to women and young people in the community in terms of food safety);
- supported vaccination campaigns (71,913 pastoralists and agro-pastoralists, including 17,978 women, have benefited from vaccination activities in the project intervention area).

The project has also generated the following results:

- baseline information ('T0') has been collected on the current contagious bovine pleuropneumonia situation (prevalence: 36.92%);
- vaccination coverage for peste des petits ruminants has increased from 7% to 14%;
- the contract to set up a zone for pastoralism in the Mopti region has been provisionally awarded;
- work has begun to renovate and equip three cattle markets in the regions of Timbuktu, Gao and Ménaka;
- construction work has begun on ten cattle-feed warehouses in the north-east and central delta regions of Mali.

The major challenge in 2018 is the completion of construction and renovation work on pastoral infrastructure and on a large number of pastoral development sites, including vaccination parks, animal health service buildings, cattle markets and slaughter facilities, pastoral tracks and stop-overs, and water points.

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AROUND THE WORLD

► SUCCESS STORIES

PPR control and eradication programme in Afghanistan

The role of veterinary para-professionals in successful implementation

KEYWORDS

#Afghanistan, #pastoralism, #peste des petits ruminants (PPR), #public-private partnership, #veterinary field unit, #veterinary para-professional, #paravet

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PPR vaccination of Kuchi flocks in Afghanistan © Arif Noori

Peste des petits ruminants (PPR) is endemic throughout Afghanistan. This is a transboundary disease of major importance for the government in a country where 75% of the population are rural and depend on animals and animal products for their livelihoods.

The majority of the country's 30 million sheep and goats are owned by **Kuchi nomadic pastoralists**, and these livestock are their most important economic asset. Their migratory routes traverse vast areas of the countryside, with periodic stops at animal markets, summer pastures, and in settled villages during the winter. The Kuchi pastoralists were identified as the primary target group for the programme because their nomadic way of life and animal movements mean that the potential for infectious disease spread is high.

National control strategy

In 2015, the General Directorate of Animal Health and Production of the Ministry of Agriculture, Irrigation and Livestock (MAIL) initiated Afghanistan's formal programme for PPR control and eradication. It did so in collaboration with FAO, the implementing organisation, funded by the Government of Japan. [The programme was aligned with the OIE/FAO Global Strategy for the Control and Eradication of PPR \(PPR-GCES\)](#), and the objective of the intervention was to take the country to Stage 2 of the GCES pathway.

In April 2016, at the Regional Roadmap meeting in Nepal, Afghanistan qualified as being in Stage 1, and was carrying out many Stage 1 and Stage 2 activities of the GCES progressive pathway.

After a successful pilot project in 2015, which targeted 270,000 small ruminants belonging to the Kuchi community in three provinces, the programme has continued to expand each year (Fig. 1).



Fig. 1 - Provinces in which DCA-supported VFUs vaccinated livestock between 2015 and 2017

In 2018, the total number of animals vaccinated since 2015 will reach **12.5 million sheep and goats**, all belonging to the Kuchi community and throughout all 34 provinces of Afghanistan.

In addition to the targeted vaccination of animals, **3,004 serum samples** (2015 to 2017) were collected pre- and post-vaccination, which were submitted to the **Central Veterinary Diagnostic and Research Laboratory** for testing and analysis, with **another 3,000 samples** planned to be taken in 2018.

Reporting disease outbreaks, as well as animal owner education⁽¹⁾ are also components of the overall strategy.

Programme implementation and the role of veterinary para-professionals

The ability to reach all livestock owners, including Kuchi pastoralists and their animals, is beyond the capacity of the limited number of university-trained veterinarians and government Veterinary Services. To fulfil this crucial need, a system of **Veterinary Field Units (VFUs)**⁽²⁾ has been established throughout the country. VFUs are private-sector, service-delivery units at the community level, charging a fee per service.

VFUs, staffed by trained veterinary para-professionals (VPPs), locally referred to as ‘paravets’, have been the key to successfully implementing and administering Afghanistan’s National PPR Control Strategy, and the overall provision of clinical veterinary services. Para-veterinarian trainees are selected by their own communities, receive six months

of in-depth practical training, and then establish their own, private, fee-for-service VFU back in their local community.

Afghanistan's 1,000 paravets are licensed by MAIL and have disease-reporting responsibilities to MAIL, but receive their training and the majority of technical support from non-governmental organisations (NGOs)⁽³⁾ working in Afghanistan's animal health sector. **The Dutch Committee for Afghanistan (DCA)**, an NGO that has been working in the livestock sector on animal health, production and welfare in Afghanistan for nearly 30 years, is recognised as the leading NGO in the field. DCA provides the majority of paravet training and VFU technical support, actively coordinates with MAIL programmes, and liaises with other stakeholders. With technical support from DCA, VPPs are contracted by the government to provide specified services⁽⁴⁾, including vaccine administration, disease reporting, and sample collection and submission. Paravets have personal links to the villages and communities that they serve, as well as established relationships with settled and migratory Kuchi, and other animal owners. The **VFU network** is an excellent sustainable model of private-sector, veterinary clinical service delivery and has proven to be a reliable partner in **public-private partnership** with government Veterinary Services. That partnership has become an integral element in the continuing implementation of the national PPR control programme. VPPs and the VFU system are a valuable resource for MAIL, and for the effective delivery of veterinary care to Afghanistan's livestock.

The pilot PPR programme was conducted through DCA alone but it was expanded from 2016 to 2018 through a group of NGOs led by DCA and their supported VPPs, via the VFUs, for the field delivery of activities, so as to achieve nationwide coverage.

(1) This involves structured sessions on different topics related to animal health and disease prevention. Specially prepared teaching materials, developed on a needs-based approach, are used

(2) 1,000 licensed by MAIL with approximately 800 active

(3) Such as the Aga Khan Foundation, the Mission to Support the Development of Rural Economies in Afghanistan (MADERA), Relief International. DCA is the lead organisation and currently supports 650 VFUs nationwide

(4) Under the Sanitary Mandate Contracting Scheme, the private sector performs certain public-sector functions under contract for payment

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AROUND THE WORLD

▶ SUCCESS STORIES

Veterinary Surveillance Points for animal migration routes in Georgia

KEYWORDS

#Alliances Caucasus Programme (ALCP), #animal movement, #Avaliani L., #Caucasus, #Georgia, #public-private partnership, #seasonal migration of livestock, #Veterinary Surveillance Point

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Background

Georgia is located in the Trans-Caucasus region, where more than 30% of the land is mountainous. The method of livestock farming used is almost exclusively the extensive system. Backyard farms typically have three to five head of large ruminants or up to 300 small ruminants. The majority of the country's sheep population are the native Georgian breed 'Tushuri', which is characterised by its disease resistance, adaptability to local mountainous conditions and excellent flavour. The rest of the population consists principally of 'Imeruli', also a native breed,

which is smaller and less fatty. The Imeruli breed appears in the Greek myth of the Golden Fleece.

Many farmers in Georgia keep large numbers of livestock and undertake seasonal movements over long distances to make optimal use of pastures. This migration is an important feature of their traditional culture and economic livelihood. About 70% of small ruminants (i.e. 700,000 head) and about 10% of large ruminants (i.e. 100,000 head) migrate to seasonal pastures. There are two historical destinations for migration in Georgia: some herds/flocks migrate to summer pastures in the Greater Caucasus to the north, while others move to the Lesser Caucasus in the south-west (Fig. 1). Spring migration begins in the middle of April and lasts until mid-June. Autumn migration begins in the second half of September and lasts until the end of November. Animals travel from 150 to 300 kilometres along these migration routes over 10 to 20 days. The average flock/herd is supervised by five to six shepherds.

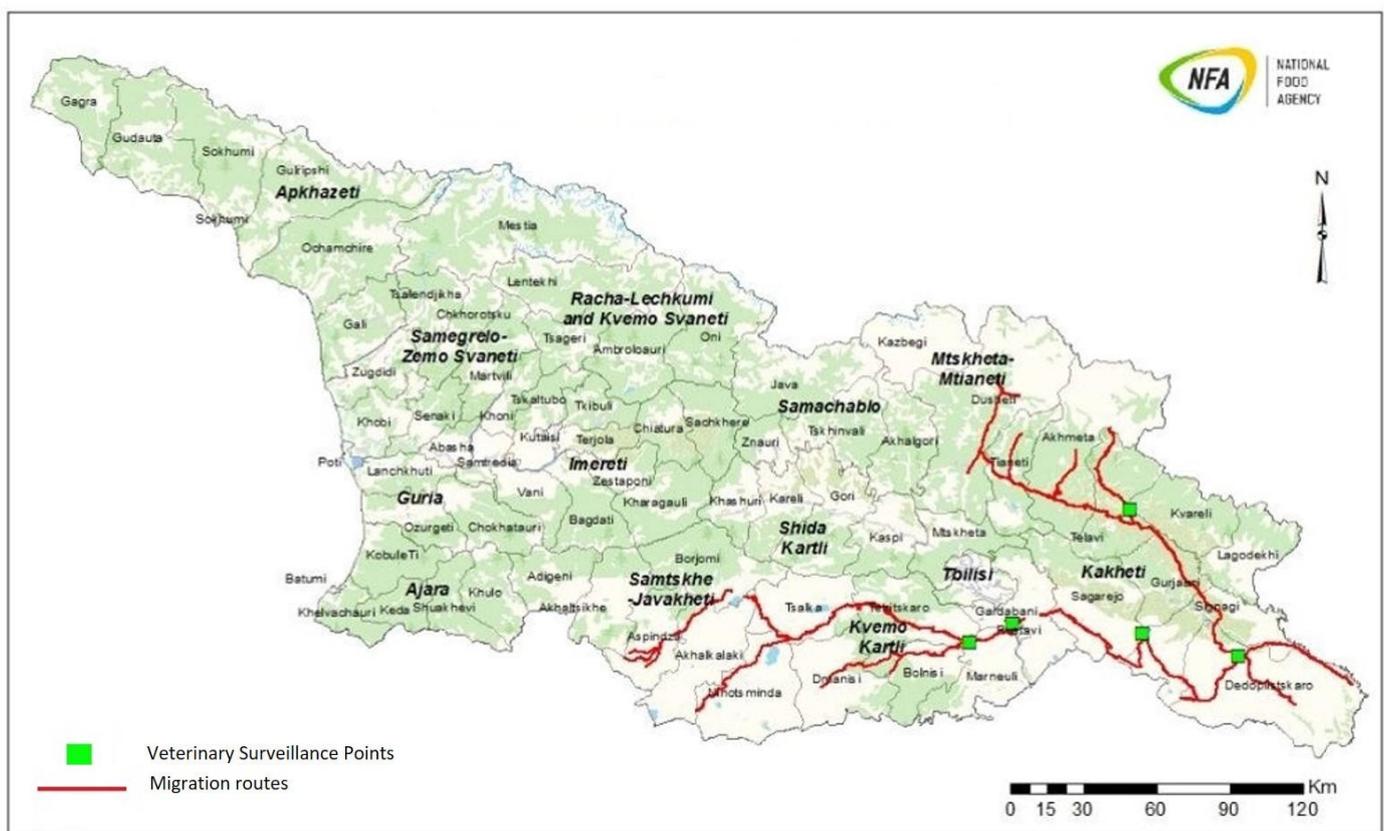


Fig. 1 - Map of migration routes and Veterinary Surveillance Point locations

The need for Veterinary Surveillance Points

Animal husbandry and, in particular, sheep farming has been intensifying in Georgia over recent years, due to an increase in export capacity, bringing in good incomes for animal owners.

The Government of Georgia supports the development of the animal husbandry sector with free vaccination against major transboundary animal diseases, financed by the state. Diseases endemic for the Trans-Caucasus region, such

as foot and mouth disease, lumpy skin disease, peste des petits ruminants, sheep pox and goat pox, Crimean-Congo haemorrhagic fever, piroplasmosis, babesiosis and theileriosis, etc., threaten the development of the animal production sector. These diseases could easily enter or spread throughout Georgia due to seasonal animal migration. To prevent vector-borne diseases, animal owners used to treat their sheep in home-made dipping pools but biosafety practices were poor. Furthermore, loose adherence to acaricide instructions resulted in inadequate treatment and environmental pollution (Fig. 2).



Fig. 2 - Old dipping pool © Tea Shvelidze/National Food Agency, Georgia

Controls over animal movement, including seasonal migration, fall within the responsibility of the national Veterinary Services of the [National Food Agency \(NFA\)](#). Therefore, with state budget support, the [Alliances Caucasus Programme \(ALCP\)](#) has built a series of Veterinary Surveillance Points (VSPs) along the animal migration routes. These VSPs - now known as Biosecurity Points - were made possible by funding from the [Swiss Agency for Development and Cooperation \(SDC\)](#), and implemented by [MercyCorps Georgia](#).

Goals of the establishment of Veterinary Surveillance Points:

- to improve animal welfare conditions along migration routes (by providing watering places, animal rest areas, etc.);

- to monitor animal health during the migration;
- to raise awareness among animal owners in different fields (animal health, welfare, animal identification-registration etc.);
- to treat animals against vectors to reduce the negative effects of external parasites.

The overarching purpose is to increase the productivity of livestock and their export potential.

The locations of these VSPs were selected in consultation with relevant stakeholders, including the Shepherds Association of Georgia, animal husbandry experts and local municipalities. Five VSPs currently operate along the migration routes with one additional VSP yet to be established.

Description of Veterinary Surveillance Points

A VSP is a concreted, iron-fenced facility, consisting of two separate areas; one for large ruminants and one for small. Both have isolated animal-holding pens, animal treatment zones and animal-resting areas (Fig. 3).



Fig. 3 - A Veterinary Surveillance Point (Biosecurity Point)

VSPs function seasonally, during the period of animal migration. Small ruminants are treated by dipping them in a pool where they swim freely and are soaked in an acaricide, while large ruminants are herded through narrow thoroughfares where they are showered (Figs 4 and 5).



Figs. 4 and 5 - Treating animals against vectors © Tea Shvelidze/National Food Agency, Georgia



A public-private partnership

For animal owners, animal treatment at the VSPs is free of charge, and they shepherd their own animals through the procedure, in accordance with the self-service principle. A state veterinarian and technician work daily shifts, with the following responsibilities:

- preparing the acaricide solution
- supervising animal health and welfare
- recording animal-movement information
- issuing animal treatment cards, to confirm treatment
- ensuring cleaning/disinfection/waste management
- providing animal owners with plunging fork sticks and other necessary equipment
- instructing animal owners on treatment procedures and safety precautions.

The responsibilities of the animal owners include:

- providing information about the exact number of animals;
- providing accurate information to the veterinarian on the health status of their herd/flock;
- ensuring that their animals are treated in a safe manner, following the basic principles of animal welfare;
- confirming that their animals have undergone treatment with their signature.

Environmental protection and waste disposal

Acaricides can cause soil and ground-water pollution. To avoid this, special attention is paid to waste disposal. After the acaricide solution has been used, it is poured into fluid-collecting tanks (septic pools) and later pumped out and managed by a contracted company, in full compliance with the environmental protection laws of Georgia.

Future goals

Veterinary Surveillance Points represent a potential opportunity to increase the efficiency of state Veterinary Services, enabling them to make targeted inspections and control risk conditions at specific locations in a cost-effective manner.

In the future, it is planned that VSPs will have additional functions, such as vaccination, sampling, and animal identification. These VSPs would also help to ensure that animal owners take part in knowledge, attitude and practice (KAP) surveys and participatory surveillance.

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AROUND THE WORLD

▶ SUCCESS STORIES

A pilot project to determine the most effective strategies to control and eradicate PPR

KEYWORDS

#Africa, #African Union Panafrican Veterinary Vaccine Centre (AU-PANVAC), #Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), #eradication, #GF-TADs, #Global Strategy for the Control and Eradication of Peste des Petits Ruminants (PPR-GCES), #Peste des Petits Ruminants Global Eradication Programme (PPR-GEP), #peste des petits ruminants (PPR), #Vaccine Standards and Pilot Approach to PPR Control in Africa (VSPA)

AUTHORS

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Photo: Daniel Bourzat

A pilot project named '**Vaccine Standards and Pilot Approach to PPR Control in Africa**' (**VSPA**) was implemented from 2012 to 2014 by the OIE in partnership with the African Union Panafrican Veterinary Vaccine Centre (AU-PANVAC) and with the scientific support of the Centre for International Cooperation in Agricultural Research for Development (CIRAD). It was funded by the Bill & Melinda Gates Foundation.

Objectives

- 1) establish a PPR vaccine bank for Africa (component 1)
- 2) strengthen continental capacities in terms of quality control of PPR vaccines (component 2)
- 3) develop a pilot strategy to determine how to most effectively combat PPR in West Africa

(component 3).

Component 1 was implemented in West Africa, component 2 throughout sub-Saharan Africa and component 3 in Burkina Faso and Ghana.

PPR affects almost 30 million small ruminants every year. The disease has sizeable negative socio-economic impacts on the income of livestock farmers and it affects a large number of countries in Africa, the Middle East and Asia. Eliminating the disease will result in improved productivity, food security and income generation and is key to poverty reduction.

Multiple small ruminant production systems exist. Animals can be raised in marginalised extensive production systems or by smallholders with limited access to services. PPR control strategies can therefore prove to be very complex. They require a good understanding of these production systems and the design of targeted, risk-based approaches that can be adapted to different contexts.

Vaccination is the major method used in PPR-endemic regions but, to be effective, the vaccination programmes have to cover a high percentage of the small ruminant populations and use a wide range of delivery systems.

To ensure that vaccination is effective, high-quality vaccines have to be made permanently and easily available. To meet this prerequisite, [a PPR vaccine bank was created](#) (component 1) and [the laboratory capabilities to produce such high-quality vaccines were supported](#) (component 2), particularly by strengthening the AU-PANVAC in order to regularly monitor and control all PPR vaccines manufactured in Africa, in accordance with OIE standards. A quality control strategy for PPR vaccines produced in Africa was developed [1].

In order to take the many epidemiological and socio-economic contexts into account, it was indispensable [when implementing the VSPA project, and in particular its component 3](#), to increase the number of trials and to monitor and precisely evaluate the vaccination conditions in order to determine the effectiveness rate of the various vaccine delivery systems and define a scientifically sound control strategy.

Results

Within two years, a large amount of work was completed in the field and a substantial quantity of data was analysed.

The data and conclusions of the pilot strategy were used in the drafting of the Global Strategy for the Control and Eradication of PPR

From the results of these trials and using various vaccination delivery scenarios, the VSPA project enabled lessons and conclusions to be drawn, which made a crucial contribution to the [Global Strategy for the Control and Eradication of PPR](#) [2] being prepared by the OIE and FAO. This strategy was subsequently presented to and endorsed by the participants at the [OIE/FAO International Conference for the Control and Eradication of Peste des Petits Ruminants \(31 March–2 April 2015 in Abidjan, Côte d'Ivoire\)](#).

The implementation of the three components of the VSPA project was successful. It showed the importance of establishing a regional PPR vaccine bank and of strengthening AU-PANVAC's leading role in supporting and managing a vaccine quality control strategy in Africa. Regarding the implementation of the pilot strategy (component 3), all expected results were achieved. The methods and strategic options, particularly for vaccination schemes, were tested and these tests made it possible to identify the factors which are important for the success or failure of PPR control programmes.

PPR can be controlled and eradicated and rapid results can be obtained at the national level and in some regions. Global eradication is a long-term objective.

PPR eradication can be used as a flagship strategy for controlling other small ruminant diseases and it must be based on strong Veterinary Services. The OIE will continue to support its Member Countries in developing the implementation of a PPR global eradication programme together with FAO as part of the [GF-TADs programme](#) (Global Framework for the Progressive Control of Transboundary Animal Diseases).

Acknowledgments

The VSPA project was implemented with the strong involvement of many professionals, including the authorities of Ghana and Burkina Faso and particularly the Veterinary Services authorities (Lassina Ouattara, Joseph Savadogo, Philipp K.B. Salia, Stephen Ockling, Germaine Minoungou, Amadou Dicko and Joseph Awuni) and their teams, OIE Bamako and Headquarters staff (Daniel Bourzat, Yacouba Samake, Joseph Domenech and Alain Dehove), AU-PANVAC staff (Karim Tounkara, Nick Nwankpa and Charles Bodjo), CIRAD researchers (Renaud Lancelot, Fanny Bouyer, Marisa Peyre, David Chavernac, Pachka Hammami and Geneviève Libeau), vaccine-producing laboratories staff, an independent expert (Pierrette Mefomdjo) and the donor, the Bill & Melinda Gates Foundation, deserves special mention.

We should like to take this opportunity to pay tribute to the role played by Daniel Bourzat, who passed away on 18 August 2017. With his great experience of livestock farming in the Sahel, he was the linchpin of the pilot strategy to combat PPR in West Africa.

<http://dx.doi.org/10.20506/bull.2018.2.2879>

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AROUND THE WORLD

► SUCCESS STORIES

Establishment of a PPR vaccine bank for Africa

Component 1 of the VSPA project

KEYWORDS

#Africa, #African Union Panafrican Veterinary Vaccine Centre (AU-PANVAC), #Botswana Vaccine Institute (BVI), #eradication, #peste des petits ruminants (PPR), #vaccine bank, #Vaccine Standards and Pilot Approach to PPR Control in Africa (VSPA)

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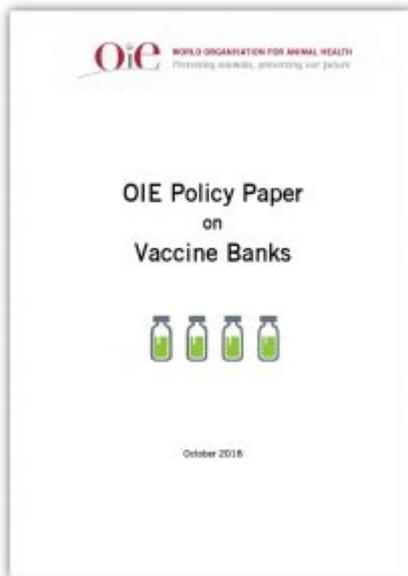
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Vaccination of small ruminants in Burkina Faso © OIE/J.Domenech

The establishment of a peste des petits ruminants (PPR) vaccine bank in Africa was one of the objectives (component 1) of the VSPA project. The conclusion was that a vaccine bank of this kind is indispensable if the implementation of a PPR control and eradication programme is to be successful.



In 2012, following an OIE international call for tender for the first component of the VSPA project, the Botswana Vaccine Institute (BVI) was chosen to supply the vaccines for the 'PPR Vaccine Bank for Africa'.

Composed of **freeze-dried modified PPR 75 virus** to protect small ruminants (sheep and goats) against PPR, these vaccines are packaged in vials of 100 doses.

The OIE Policy Paper on Vaccine Banks outlines five guiding principles that drive the management of OIE Vaccines Banks. It clarifies the role of and the responsibility of the OIE, but also of the countries benefiting from the mechanism.

Results

A total of 14 million doses of PPR vaccine and the corresponding quantities of vaccine diluent were made available to the following four countries: Burkina Faso, Ghana, Mali and Togo. The World Bank has confirmed the value of the PPR Vaccine Bank in Africa and direct purchase by the countries concerned.



Vaccination of goats in a village in Ghana
© OIE/J.Domenech

The main benefits of the PPR Vaccine Bank demonstrated by the programme were the following:

1. the management of regional vaccine banks by a standard-setting organisation, such as the OIE, ensures that vaccines supplied to the countries concerned are of high quality and comply with intergovernmental standards (internationally renowned and recognised experts on the *ad hoc* selection committee evaluating the tenders received);
2. a reduction in the risks associated with storing large quantities of vaccine in potentially sub-optimal conditions, since the burden of storage lies with the selected vaccine supplier(s) rather than the purchasing countries. Moreover, the virtual stock replenishment mechanisms ensure that purchased vaccines do not expire before use (shelf life of the delivered vaccines);
3. fluid logistics are ensured: the timely dispatch of emergency stocks in line with field needs, possible delivery of relatively small quantities, easy procurement and delivery systems, easy customs clearance (international aid), virtual stocks, production on demand, the burden of storage lies with the selected

vaccine supplier(s) rather than the purchasing countries;

4. cost incentives (economies of scale, one call for tender only and contract for large quantities resulting in reduced fixed costs), better coordination (e.g. harmonisation and coordination of regional control programmes, support for multi-party vaccination campaigns, public-private partnerships), strong synergies and leverage effects.

Based on the positive outcomes of this project and the proven value of the PPR Vaccine Bank, two new vaccine suppliers were selected to continue to support PPR control efforts in West Africa. Through the World Bank Group funded Regional Sahel Pastoralism Support Project (PRAPS), the OIE launched a new international call for tender in 2016. Since its establishment and as at 30 August 2018, through the OIE PPR Vaccine Bank for Africa **50 million vaccine doses have been delivered, with an extra 38 million planned for 2018.**

Acknowledgments

The VSPA project was implemented with the strong involvement of many professionals, including the authorities of Ghana and Burkina Faso and particularly the Veterinary Services authorities (Lassina Ouattara, Joseph Savadogo, Philipp K.B. Salia, Stephen Ockling, Germaine Minoungou, Amadou Dicko and Joseph Awuni) and their teams, OIE Bamako and Headquarters staff (Daniel Bourzat, Yacouba Samake, Joseph Domenech and Alain Dehove), AU-PANVAC staff (Karim Tounkara, Nick Nwankpa and Charles Bodjo), CIRAD researchers (Renaud Lancelot, Fanny Bouyer, Marisa Peyre, David Chavernac, Pachka Hammami and Geneviève Libeau), vaccine-producing laboratories staff, an independent expert (Pierrette Mefomdjo) and the donor, the Bill & Melinda Gates Foundation, deserves special mention.

We should like to take this opportunity to pay tribute to the role played by Daniel Bourzat, who passed away on 18 August 2017. With his great experience of livestock farming in the Sahel, he was the linchpin of the pilot strategy to combat PPR in West Africa.

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[Additional information on vaccine banks](#)

AROUND THE WORLD

▶ SUCCESS STORIES

Strengthening AU-PANVAC's capacities

Component 2 of the VSPA project

KEYWORDS

#Africa, #African Union Panafrican Veterinary Vaccine Centre (AU-PANVAC), #eradication, #peste des petits ruminants (PPR), #Vaccine Standards and Pilot Approach to PPR Control in Africa (VSPA)

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The African Union Panafrican Veterinary Vaccine Centre (AU-PANVAC) was strengthened as part of the second component of the VSPA project, in order to ensure the production and use of high-quality PPR vaccines in Africa, in compliance with international standards.

Objectives

The expected results are as follows: reliable PPR vaccine quality control is provided; vaccine production laboratories produce high-quality PPR vaccines; PPR vaccine quality is monitored at different levels (primary and secondary storage in producing countries, secondary and tertiary storage in importing countries, and in the field prior to

administering vaccine to animals).

With AU-PANVAC ⁽¹⁾ playing the central role, the issues addressed were related to vaccine certification, support for producing laboratories and quality control support throughout the production and delivery chain [1]. These issues included many aspects, particularly with regard to the stakeholders involved on a continental (regional economic communities [RECs], African Union Inter-African Bureau for Animal Resources [AU-IBAR]), national (laboratories and Veterinary Services, private actors, etc.), and international (international organisations) level. Vaccination registration issues and the need for harmonisation were also addressed.

Implementation

The activities included recruitment, training and new equipment purchases at AU-PANVAC's Headquarters (Bishoftu, Ethiopia), strengthening the capacities of PPR vaccine producers to produce good-quality products through field missions, and appropriate training sessions in the ten vaccine-producing laboratories concerned ⁽²⁾. They also included field missions during vaccination campaigns in various African countries ⁽³⁾ and coordination meetings attended by representatives of all members of the producing laboratory network (managed by AU-PANVAC).

The conclusions of component 2 of the VSPA project represented a major contribution on the part of AU-PANVAC to preparing the Global Strategy for the Control and Eradication of PPR

A '**Quality control strategy for PPR vaccines produced in Africa**' [1] was prepared, which includes the definition of quality control procedures for PPR vaccines in Africa. This strategy defines all the steps to be undertaken regarding the shipment, customs clearance, reception, testing and certification of PPR vaccine samples at AU-PANVAC and it also addresses vaccine registration issues and the need for harmonisation. It clarifies the roles and commitments of all stakeholders ⁽⁴⁾, taking into account the legal, regulatory and institutional framework for their activities, and the tools available (vaccine, tests, standards, post-vaccination monitoring tool, etc.).

Through its vaccine quality assurance systems, AU-PANVAC plays a pivotal role in facilitating the adoption of improved methods for the production and quality control of priority vaccines in Africa. It also provides free quality control for African Union (AU) member states.

National Veterinary Services and animal health practitioners must provide quality immunisation services, in other words use a vaccine whose quality control has been certified by AU-PANVAC and ensure that the cold chain is respected from storage to field. AU-IBAR and RECs, along with international organisations, will promote the use of PPR vaccines whose quality control has been certified by AU-PANVAC and these vaccines will be included in all specific tenders.

Finally, along with AU-IBAR, AU-PANVAC helped to draft a scientifically sound African Union programme for the progressive control of PPR in Africa [3]. The conclusions of component 2 of the VSPA project represented a major contribution on behalf of AU-PANVAC to preparing the [Global Strategy for the Control and Eradication of PPR](#) [2].

Acknowledgments

The VSPA project was implemented with the strong involvement of many professionals, including the authorities of Ghana and Burkina Faso and particularly the Veterinary Services authorities (Lassina Ouattara, Joseph Savadogo, Philipp K.B. Salia, Stephen Ockling, Germaine Minoungou, Amadou Dicko and Joseph Awuni) and their teams, OIE Bamako and Headquarters staff (Daniel Bourzat, Yacouba Samake, Joseph Domenech and Alain Dehove), AU-PANVAC staff (Karim Tounkara, Nick Nwankpa and Charles Bodjo), CIRAD researchers (Renaud Lancelot, Fanny Bouyer, Marisa Peyre, David Chavernac, Pachka Hammami and Geneviève Libeau), vaccine-producing laboratories staff, an independent expert (Pierrette Mefomdjo) and the donor, the Bill & Melinda Gates Foundation, deserves special mention.

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-
- (1) AU-PANVAC was recognised as an OIE Collaborating Centre for Quality Control of Veterinary Vaccines at the 81st General Session of the World Assembly of Delegates to the OIE in May 2013 through Resolution no. 32
 - (2) Botswana, Cameroon, Chad, Egypt, Ethiopia, Kenya, Mali, Niger, Nigeria, Senegal and Sudan
 - (3) Benin, Burkina Faso, Cameroon, Chad, Ghana, Mali, Nigeria, Senegal, Tanzania and Togo
 - (4) Stakeholders involved on a continental (RECs, AU-IBAR), national (laboratories and Veterinary Services, private actors, etc.) and international (international organisations) level

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AROUND THE WORLD

▶ SUCCESS STORIES

Development of a pilot strategy for PPR control

Component 3 of the VSPA project

KEYWORDS

#Africa, #African Union Panafrican Veterinary Vaccine Centre (AU-PANVAC), #Burkina Faso, #eradication, #Ghana, #peste des petits ruminants (PPR), #Vaccine Standards and Pilot Approach to PPR Control in Africa (VSPA)

AUTHORS

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Sheep market in Mossi land, Burkina Faso. Photo: Daniel Bourzat

Under the third component of the VSPA project, a pilot strategy was adopted during the period 2013–2014 to determine how to most effectively combat peste des petits ruminants (PPR) in Burkina Faso and Ghana.

Objective

The objective was to assess different vaccination strategies in these two West African countries and to use the lessons learnt to enrich and help to define regional and international programmes on a larger scale targeting the

progressive reduction and control of PPR.

Implementation

The study design identified a set of possible control strategies offering the most comprehensive possible vaccination coverage in Burkina Faso and Ghana. It selected areas where PPR is present and took into account the local contexts: livestock production systems (the pastoral system and agro-pastoral system in Burkina Faso, and rural smallholder livestock production in villages in coastal Ghana); transportation facilities; Veterinary Services personnel; and coverage of the region by farmers' associations. The design compares different systems for delivering animal health services, particularly vaccination, different vaccination frequencies (a single campaign in Burkina Faso and two successive campaigns in Ghana) and different vaccination protocols:

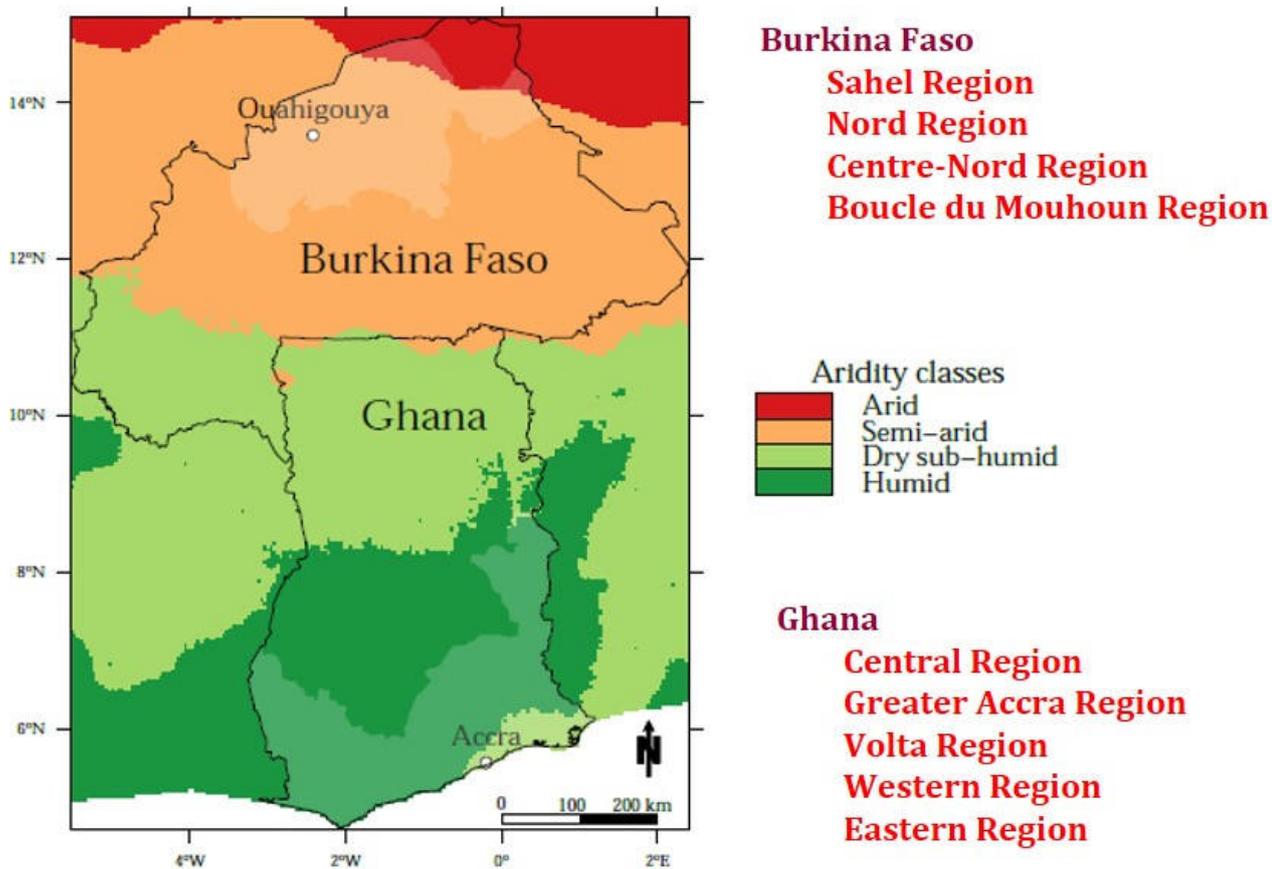
1. no vaccination
2. free PPR vaccine, no contribution to operational costs required
3. free PPR vaccine, plus a partial contribution to the operational costs related to the vaccination campaign
4. free PPR vaccine, plus a partial contribution to the operational costs, and the free distribution of anthelmintics.

Specific activities were undertaken, such as pre-vaccination participatory disease searching (PDS) surveys to select the study areas and training in participatory epidemiology and sociological research techniques.

In Burkina Faso and Ghana, a total of 4 million animals were vaccinated using vaccines delivered through the PPR vaccine bank

A total of 4 million animals were vaccinated using vaccines delivered through the PPR Vaccine Bank. **In Burkina Faso**, 1,310,000 animals were vaccinated under scenario 2, 1,700,000 animals under scenario 3, and 190,000 animals under scenario 4. **In Ghana**, 300,000 animals were vaccinated under scenario 2, 400,000 animals under scenario 3, and 100,000 animals under scenario 4.

Post-vaccination surveys were conducted to assess the differences between the different vaccination scenarios in terms of seroprevalence rates, PPR clinical incidence rates and small ruminant productivity (these values were used to carry out cost-benefit analyses of the different vaccination strategies). In particular, sociological surveys made it possible to assess farmers' and vaccinators' perceptions of vaccination and vaccine delivery.



Selected areas are shaded in southern Ghana and northern Burkina Faso (adopted aridity classes were taken from the World atlas of desertification. Arnold, Hodder Headline, PLC, 2nd edition, 1997). Source: CIRAD

Eco-climatic areas, and selected areas for the VSPA study

Results

The results in both Burkina Faso and Ghana showed that the post-vaccination reduction in PPR clinical incidence was strong as a whole and highly significant (with an exception for vaccination scenario 3 in some districts of Burkina Faso, which was particularly due to the fact that the PPR vaccination campaign was implemented during the hot and dry season). No difference in post-vaccination reduction in PPR clinical incidence was observed between the private and the public vaccination system or between pastoral and agro-pastoral livestock production systems in Burkina Faso. Vaccination protocol 3 provided the best results overall in both countries.

Regarding immunity coverage, the general conclusion is that, with the exception of protocol 2 in Ghana, all the vaccine protocols produced protective immunity against PPR virus in vaccinated animals in both countries (80-95% of post-vaccination serological results were positive).



Mossi goats, Burkina Faso ©CIRAD/R.Lancelot

Cost-benefit analysis revealed that PPR vaccination was highly profitable from the point of view of vaccinators and producers, regardless of the vaccination protocol, and that vaccination strategies with financial support (which represents an incentive for farmers) would be more viable in the medium and long terms, and probably more appropriate to achieve PPR eradication.

Analysis of the links between the different factors that are the main drivers of vaccine coverage, highlighted three major issues:

- a)** the timing of vaccination should be tailored to each area according to season or, more precisely, to the agricultural and livestock practices of the season, for example, avoiding the hot season in dry areas when there are herd movements (e.g. transhumance and nomadism) – and seasons when small herd animals are divagating in or around villages, etc. – for example, in Burkina Faso, the preferred period for intervention is November; the time of day (the time of day when farmers are overloaded by their agricultural practices should be avoided), and the time between the announcement of the vaccination team visit and the visit itself, which should be around two weeks;
- b)** the level of education of farmers on small ruminant breeding, disease management and the benefits of the PPR vaccination;
- c)** official identification should be provided for the vaccination teams so that farmers can easily identify the teams involved.



Participatory consultation, Burkina Faso ©OIE/J.Domenech



Participatory consultation, Burkina Faso

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Inadequate logistics was highlighted as a major issue by the vaccinators using the three different protocols in both countries. For the most part, the amount that the breeders contributed to the vaccination costs was not considered to be a major issue by the farmers or the vaccinators. However, a farmers' lack of ability to pay his dues at the time

of vaccination is often an issue and this is directly linked to the organisation of the campaign (the vaccination period, organisation and information given to herders).

| *The key factors for vaccination success or failure were identified*

Regarding the **lessons learnt** from this pilot strategy, the key factors for vaccination success or failure were identified. They are numerous and include the existence of good relations (trust) between livestock owners and veterinary staff, and the important role of community representatives, especially those from crop associations in humid zones, which are not particularly interested in livestock.

Other key factors are the duration of the vaccination campaign and the period of vaccination. The logistics elements (transport, cold chain, vaccine availability and packaging – e.g. 20–25 doses per vial for village smallholders) are always decisive factors.

Communication and awareness-raising are key. They should combine the use of official communication channels, along with other possible channels, such as griots (public criers), mosques, radio, leaflets, markets, etc., as well as farmers' representatives and leaders, particularly among Fulani herders in extensive farming areas, and they should take vernacular names into account.

Combining PPR vaccination with other control activities and other types of initiatives (e.g. other types of vaccination, including combined vaccines, screening campaigns, deworming, livestock extension, etc.) offers a good opportunity to improve vaccination rates.

In addition to all these determining factors, the role of Veterinary Services remains indispensable and all possible options for delivering animal health services should be considered, under strict control and monitoring by the official veterinary authorities.

Although the VSPA project's pilot strategy component has been effectively implemented, it was not feasible to expect the immediate eradication of PPR in the pilot areas after the vaccination campaigns, carried out within the programme's limited timeframe (two years only). Several years of implementing a well-designed vaccination strategy are required before robust control or eradication of PPR can be achieved.

Conclusion

The expected results of component 3 of the VSPA project were achieved and the important factors for the success of PPR control and eradication programmes were identified. Global eradication of the disease is a long-term objective but can be obtained on the national level and in some regions. PPR eradication can also be used to drive other small ruminant disease control programmes.

The conclusions of the pilot strategy represented a major contribution to the preparation of the [FAO/OIE Global Strategy for the Control and Eradication of PPR](#), which was presented and adopted at the [OIE/FAO International Conference for the Control and Eradication of PPR in Abidjan, Côte d'Ivoire](#).

Acknowledgments

The VSPA project was implemented with the strong involvement of many professionals, including the authorities of Ghana and Burkina Faso and particularly the Veterinary Services authorities (Lassina Ouattara, Joseph Savadogo, Philipp K.B. Salia, Stephen Ockling, Germaine Minoungou, Amadou Dicko and Joseph Awuni) and their teams, OIE Bamako and Headquarters staff (Daniel Bourzat, Yacouba Samake, Joseph Domenech and Alain Dehove), AU-PANVAC staff (Karim Tounkara, Nick Nwankpa and Charles Bodjo), CIRAD researchers (Renaud Lancelot, Fanny Bouyer, Marisa Peyre, David Chavernac, Pachka Hammami and Geneviève Libeau), vaccine-producing laboratories staff, an independent expert (Pierrette Mefomdjo) and the donor, the Bill & Melinda Gates Foundation, deserves special mention.

We should like to take this opportunity to pay tribute to the role played by Daniel Bourzat, who passed away on 18 August 2017. With his great experience of livestock farming in the Sahel, he was the linchpin of the pilot strategy to combat PPR in West Africa.

<http://dx.doi.org/10.20506/bull.2018.2.2882>

AROUND THE WORLD

THEMATIC EVENTS

The Peste des Petits Ruminants Global Research and Expertise Network (PPR-GREN)

First meeting in Vienna (Austria), 17-19 April 2018

KEYWORDS

#eradication, #peste des petits ruminants (PPR), #Peste des Petits Ruminants Global Research and Expertise Network (PPR-GREN)

AUTHORS

[Jean-Jacques Soula](#), OIE Coordinator in the PPR Secretariat



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There is a strong and lasting international consensus on the goal of eradicating peste des petits ruminants (PPR) by 2030. This devastating viral animal disease threatens 80% of the global sheep and goat population in more than 70 countries in Africa, Europe, the Middle East and Asia, where small ruminants are the primary livestock resource of 300 million poor rural families. Economic losses caused by this disease are estimated at USD 2 billion per year.

The eradication of PPR is linked directly to other major global challenges, including food security, strengthening resilience, poverty alleviation and migration control, particularly in regions where conflict is raging. If eradication is achieved by 2030, it will also contribute towards the success of the United Nations' Sustainable Development Goals (SDGs); especially SDG 1 (No poverty) and SDG 2 (Zero hunger).

In 2015, the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) endorsed the [Global Strategy for the Control and Eradication of PPR \(PPR-GCES\)](#). The Members of these

organisations subsequently confirmed their commitment to the programme through formal resolutions of their governing bodies.

In 2016, the OIE and FAO established their **joint PPR Secretariat** and launched the [PPR Global Eradication Programme \(PPR-GEP\) for 2017-2021](#), taking the first step towards eradication.

The governance structure of the PPR-GCES and PPR-GEP includes the PPR Advisory Committee, established in 2017, and the **PPR Global Research and Expertise Network (PPR-GREN)**, which met for the first time from 17 to 19 April 2018 in Vienna (Austria), hosted by the International Atomic Energy Agency (IAEA).

The PPR-GREN aims to build strong partnerships between researchers, technical bodies, regional organisations, recognised experts and development partners, in line with the recommendations of the electronic conference on PPR organised by FAO and the OIE from 3 February to 15 March 2014.

This first meeting brought together representatives from FAO and OIE World Reference Laboratories, research institutes, National Veterinary Research Institutes in developing countries, wildlife conservation and civil society organisations, regional economic communities, PPR experts, and the joint FAO/IAEA Division, as well as staff from FAO and the OIE. The meeting was officially opened by Dr Meera Venkatesh, acting Deputy Director General for Nuclear Sciences and Applications, IAEA; Dr Matthew Stone, Deputy Director General of the OIE, charged with the International Standards and Science; and Dr Berhe Tekola, Director of the Animal Production and Health Division, FAO.

Main outcomes of the meeting

a) The meeting endorsed the terms of reference of the PPR-GREN, as a forum for scientific and technical consultations to foster a science-based and innovative debate on this disease.

b) Elections were held for the PPR-GREN Bureau, with the following results:

Chair

- Adama Diallo, [Centre de coopération internationale en recherche agronomique pour le développement \(CIRAD\)](#)

Representatives

- Amanda Fine, [Wildlife Conservation Society \(WCS\)](#)
- Jeremy Salt, [Global Alliance for Livestock Veterinary Medicines \(GALVmed\)](#)
- Hamid R. Varshovi, [Razi Institute \(Iran\)](#)
- Barbara Wieland, [International Livestock Research Institute \(ILRI\)](#).

c) The meeting defined the following main thematic areas, which needed to be addressed:

- PPR epidemiology, including socio-economic factors and the livestock-wildlife interface;
- PPR diagnostics and surveillance;

- PPR vaccines and delivery;
- outreach and advocacy, to help to raise awareness of the disease;
- resource mobilisation;
- local and national participation in carrying out the global eradication programme.

d) The meeting identified the priority research needs within the strategic framework of PPR-GEP:

- epidemiology, ecology and socio-economics;
- laboratory diagnostics and field sampling methods;
- PPR vaccine production, quality and delivery, including vaccines that enable differentiation between infected and vaccinated animals (DIVA);
- communication, in particular, translating research findings into narratives and policies.

e) The meeting also identified PPR-GREN opportunities for financial support and funding through target partners, and for data collection, sharing and analysis.

f) Finally, the meeting recommended that the PPR Secretariat, in collaboration with the PPR-GREN Bureau, convene an expert meeting to exchange views on research into PPR diagnostic tests, and agreed to consider the PPR vaccine producers' group under the umbrella of the PPR-GREN.

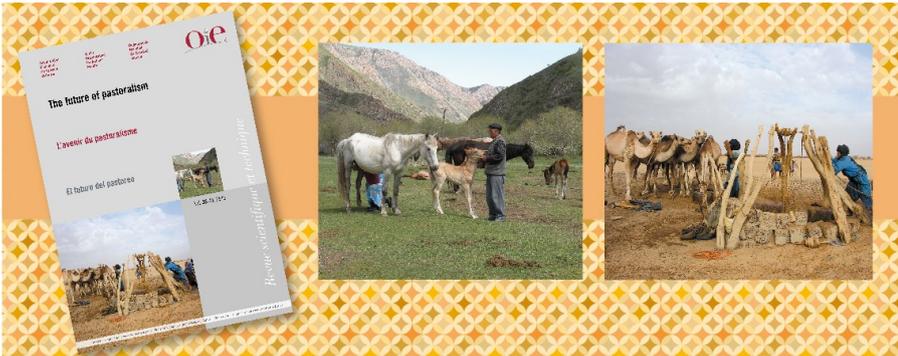
The next meeting of the PPR-GREN is expected to take place in June 2019.

<http://dx.doi.org/10.20506/bull.2018.2.2861>

[Peste des Petits Ruminants Portal](#)

RESOURCES

The future of pastoralism



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Scientific and Technical Review, Vol. 35 (2)

Coordinators and editors: J. Zinsstag, E. Schelling & B. Bonfoh

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August 2016

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Price: EUR 70

[doi:10.20506/rst.issue.35.2.2521](https://doi.org/10.20506/rst.issue.35.2.2521)

This issue of the *Scientific and Technical Review* discusses human and animal health services and the added value of improved collaboration between the two under a 'One Health' approach. It provides a vision for the sustainable use of pastoral ecosystems, providing innovative ideas for livelihoods, economic development, sustained ecosystem services, animal health management, and social and institutional development.

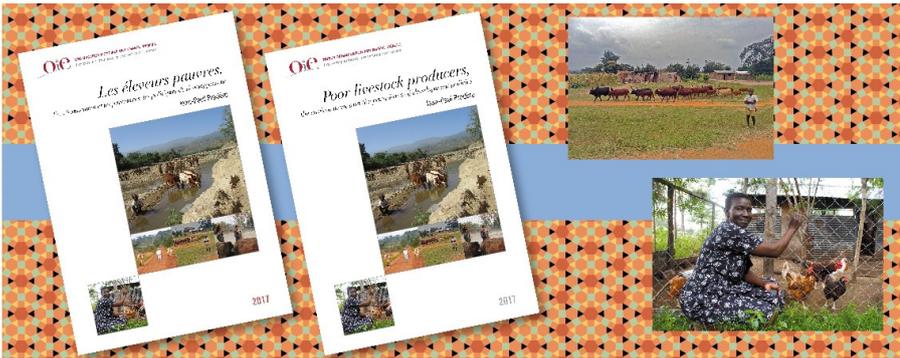
Two-thirds of the world's agricultural land is grassland. Most of the semi-arid and high-altitude ecosystems are not suitable for growing crops, either because these areas have limited rainfall or because the terrain is mountainous, so they are predominantly used for various types of mobile livestock husbandry systems. Such systems are the only way that these grasslands can become a source of human nutrition, as humans cannot digest grass cellulose. Extensive pastoral livestock production is, therefore, the most productive use of these lands. Moreover, in addition to providing food for both humans and animals, pastoral livestock production absorbs carbon and sustains

livelihoods that could not be maintained in any other way in these areas.

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RESOURCES

Poor livestock producers, the environment and the paradoxes of development policies



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Jean-Paul Pradère

2017

29.7 × 21 cm

104 pages

ISBN 978-92-95108-29-5

Price: EUR 40

Livestock production has increased considerably in recent decades, and this growth is likely to continue in all regions, particularly in developing countries. Ensuring sustainable growth of livestock production is a challenge facing all countries.

In developed countries and in many developing countries, livestock production volumes continue to increase. However, due to improved productivity and more rational husbandry methods, animal pressure on natural resources and climate change is decreasing. By contrast, in poor countries, there are major obstacles to the sustainable development of livestock farming. Growth in livestock production is achieved primarily by increasing the numbers of animals, which is aggravating the environmental impact of livestock farming. At the same time, animal diseases take an enormous toll on natural resources and on the assets of the most vulnerable households, which contributes to keeping them in extreme poverty. The high risk of animal disease makes investments vulnerable and impedes innovation that could improve productivity.

The report confirms the need for international solidarity and the need to strengthen the capacity of Veterinary Services in poor countries in order to promote sustainable livestock development, tackle poverty and preserve the

global public goods of health and the environment more effectively.

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RESOURCES

Camelid infectious disorders



Ulrich Wernery, Jörg Kinne & Rolf Karl Schuster

2014

29.7 × 21 cm

512 pages

ISBN 978-92-9044-954-6

Price: EUR 60

This edition of *Camelid Infectious Disorders*, published and distributed by the OIE, provides an up-to-date reference book covering all infectious diseases in camelids.

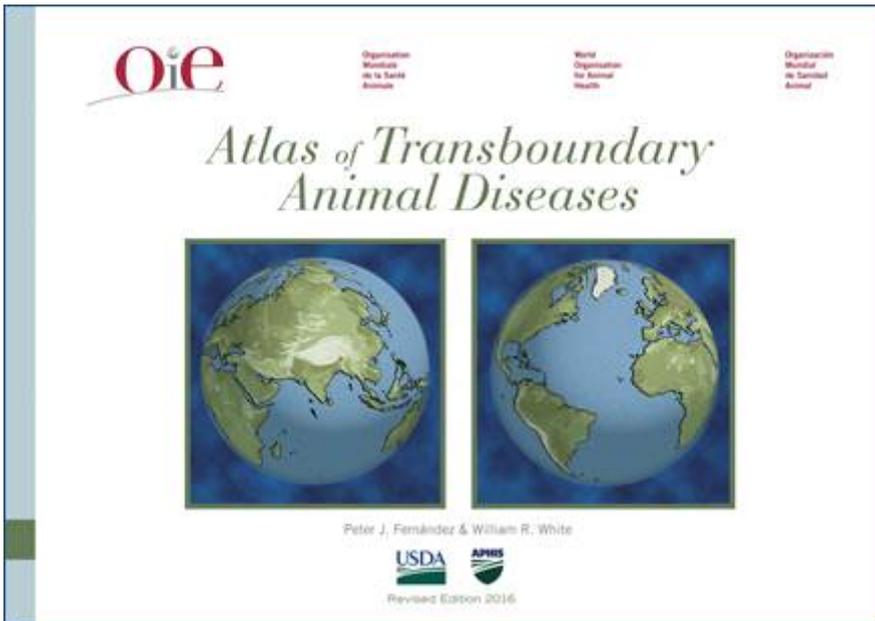
The book is divided into chapters on bacterial, viral, fungal and parasitic diseases, each section containing information on aetiology, epidemiology, clinical signs, pathology, diagnosis, prevention and control.

The eminently qualified authors, Drs Ulrich Wernery, Jörg Kinne and Rolf Karl Schuster, have combined their expertise and extensive experience in microbiology, pathology and parasitology to share their knowledge with colleagues around the world.

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RESOURCES

Atlas of transboundary animal diseases



Editors: Peter J. Fernández & William R. White

Revised edition, 2016

ISBN 978-92-95108-21-9

21 x 29.7 cm

279 pages

Price : EUR 60

The *Atlas of Transboundary Animal Diseases*, the OIE's bestseller, is intended to assist Veterinary Service field staff involved in animal disease surveillance and diagnostics in identifying important transboundary diseases of livestock. The focus of this publication is on key images of clinical signs and post-mortem lesions associated with 29 OIE notifiable animal diseases supplemented by basic disease information from the OIE technical disease cards.

Input for this consolidated reference volume comes from the OIE's global network of veterinary epidemiologists and diagnostic experts and the support of the United States Department of Agriculture - Animal and Plant Health Inspection Service (USDA-APHIS).

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RESOURCES

An epidemiological overview of small ruminant diseases in Algeria



Kardjadj M. (2017). - **An epidemiological overview of small ruminant diseases in Algeria.** In: [Scientific and Technical Review](#), **36** (3).

[doi:10.20506/rst.36.3.2731](https://doi.org/10.20506/rst.36.3.2731)

Small ruminant production is one of the main sources of meat in Algeria and plays a vital role in the country's food security. Algeria's small ruminant industry has the potential to improve the living standards of farmers and households, as well as to increase animal protein availability to the public, and as a consequence to alleviate poverty and improve health.

This review describes the main infectious diseases that have an impact on small ruminant production in Algeria. It also discusses the adopted control measures for these diseases. The epidemiological status of small ruminant diseases in Algeria is striking and the main infectious diseases threatening its small ruminant industry are peste des petits ruminants, bluetongue, foot and mouth disease, sheep pox/goat pox, brucellosis and Rift Valley fever. Therefore, the establishment of early warning systems and the proper implementation of control measures are needed in order to prevent, control and/or eradicate these diseases that have a significant impact on Algeria's economy.

RESOURCES

Selected technical items presented to the OIE World Assembly of Delegates or to OIE Regional Commissions

Al-Majali A.M. (2017). - **Sustainable strengthening of the epidemio-surveillance systems in the Middle East Member Countries of the OIE**. 14th Conference of the OIE Regional Commission for the Middle East (Istanbul, Turkey, 2-6 October 2017). [doi:10.20506/TT.2759](https://doi.org/10.20506/TT.2759).

Bakkouri A. (2017). - **Unfolding the global strategy for the control and eradication of peste des petits ruminants (PPR) in Africa**. 22nd Conference of the OIE Regional Commission for Africa (Swakopmund, Namibia, 20-24 February 2017). [doi:10.20506/TT.2656](https://doi.org/10.20506/TT.2656).

Idriss O. & Nersy C. (2017). - **Pastoralism: opportunities for livestock and challenges for Veterinary Services**. 22nd Conference of the OIE Regional Commission for Africa (Swakopmund, Namibia, 20-24 February 2017). [doi:10.20506/TT.2655](https://doi.org/10.20506/TT.2655).

[All the technical items](#)

presented to the OIE World Assembly of Delegates or to OIE Regional Commissions

RESOURCES

Other OIE resources on PPR

[OIE PPR - Review of scientific articles](#). Contact: [OIE Documentation Cell](#).

[OIE Peste des Petits Ruminants Portal](#). Contact: [OIE Communication Unit](#).

[OIE Web page on the official PPR status of countries](#). Contact: [OIE Status Department](#)

RESOURCES

External publications

Guillaume Fournié, Agnès Waret-Szkuta, Anton Camacho, Laike M. Yigezu, Dirk U. Pfeiffer & François Roger (2018). - **A dynamic model of transmission and elimination of peste des petits ruminants in Ethiopia**. *PNAS*, **115** (33) 8454-8459. [doi:10.1073/pnas.1711646115](https://doi.org/10.1073/pnas.1711646115).

Jean-Jacques Soula (2018). - **Eradicating Peste des petits ruminants (sheep and goat plague) to fight rural poverty**. *CIHEAM Watch Letter*, **39**, 3 pages.

The Pirbright Institute (2018). - **Pirbright scientists run vaccination campaign to eradicate peste des petits ruminants**.

[FAO Portal on PPR](#).

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