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SUPPORT TO IMPLEMENTATION OF THE FOOT-AND-MOUTH DISEASE (FMD) PROGRESSIVE CONTROL PATHWAY (PCP) IN SOUTH SUDAN

December 2019

SDGs:



Countries:

South Sudan

Project Codes:

TCP/SSD/3602

FAO Contribution:

USD 451 000

Duration:

2 January 2017 – 30 September 2019

Contact Info:

FAO Representation in South Sudan

FAO-South-Sudan@fao.org

Implementing Partner

Ministry of Livestock and Fisheries.

Beneficiaries

Traders, livestock owners, community animal health workers, civil servants, State Ministries of Animal Resources and Fisheries and Ministry of Livestock and Fisheries.

Country Programming Framework (CPF)

CPF – South Sudan – 2018-2021.

Priority Area 1: Sustainable increase in agricultural production and productivity realized

Priority Area 3: Increased resilience of livelihoods to threats and crises.

Regional Priority 1: Increase production and productivity of crops, livestock and fisheries.

Regional Initiative 3: Resilience-building in drylands of Africa.



BACKGROUND

Livestock production constitutes a vital component of the agricultural economy of South Sudan, accounting for up to 15 percent of household food supply in the country. Specifically, it contributes directly to nutrition security through the supply of milk, meat and eggs – high-quality sources of protein and micronutrients. Livestock is also an indirect source of income (through aspects such as manure, fertilizer and fuel) and is closely linked to the social and cultural lives of a millions of resource-poor farmers, for whom animal ownership ensures varying degrees of sustainable farming and economic stability.

In recent decades, animals (both livestock and wildlife) have moved freely between the countries bordering South Sudan in search of pasture, water and trade opportunities. Although Foot-and-Mouth disease (FMD) is endemic in South Sudan, this movement heightens of the risk of introduction and spread of the disease around the country. One notable outbreak of the disease occurred in 2014/2015 in the country's Lakes, Eastern and Central Equatoria states.

Since its independence in 2011, South Sudan has lacked a properly functioning veterinary service. Disease control within the country has, until now, been overseen by Non-governmental Organizations (NGOs) and United Nations agencies, without whose support the Government's veterinary services are ineffective.

At the outset of the project in 2017, although FMD activities were ongoing, South Sudan was at level zero of the Progressive Control Pathway (PCP), the approach developed by FAO and the World Organisation for Animal Health (OIE) for classifying country progress in FMD risk management. In this context, the project focused on establishing a framework facility in South Sudan, with a view to improving the capacity of national and local institutions to effectively control FMD in the country.

IMPACT

The project was expected to improve livestock production and productivity through control of FMD.

ACHIEVEMENT OF RESULTS

The three planned outputs of the project were (i) assessment of the FMD risk in South Sudan, (ii) establishment of a functional FMD-PCP and (iii) reinforcement of FMD awareness in the country. Overall, these outputs were achieved, however vaccination against FMD could not be carried out due to the delay in the identification of the FMD field strain circulating in South Sudan. The project did not have sufficient funds for vaccine procurement and administration.

The project improved the processes of investigation and intervention regarding FMD and other infectious diseases, contributing to the resulting reduction in losses from mortalities. The reduction in morbidities also led to an increase in production.

The project was unable, however, to achieve the overall expected outcome due to the security situation and the general economic framework in South Sudan, which hindered the development of capacities among national and local institutions to effectively control FMD in the country.





IMPLEMENTATION OF WORK PLAN

All activities were fully covered by the project budget, while savings were made given that certain components of the project were jointly implemented with the Standard Methods and Procedures in Animal Health (SMP-AH) project fund (such as the survey on the trade-sensitive diseases including FMD, Rift Valley fever, *Peste des petits ruminants* and Contagious Bovine Pleuropneumonia (CBPP)).

There was, however, a significant lack of access to livestock areas as a result of insecurity, while laboratory work to test the FMD samples for diagnosis was carried out abroad, causing significant delays in the implementation of a number of activities scheduled in the budget.

Further constraints include the inaccessibility of a number of locations, the increased cost of stakeholder services and the lack of development projects in the Ministry.

FOLLOW-UP FOR GOVERNMENT ATTENTION

There is a need to mobilize resources for the implementation of the FMD-PCP for South Sudan, as well as the implementation of vaccination activities. It is also important to conduct a Performance of Veterinary Services evaluation.



SUSTAINABILITY

1. Capacity development

South Sudan lacks the policies and legal frameworks to support the implementation of FMD control, including policies on the development of the livestock sector. Legal frameworks such as livestock movement control and their implementation are either not available or, broadly, are not enacted. FAO and other partners supported the development of the livestock development framework in 2019, which is awaiting approval from parliament. The bills for the veterinary and livestock legal framework are under review by the Ministry of Legal Affairs. These bills will be presented for discussion in parliament, with a view to passing into law.

The Department of Epidemiology and Disease Information, the Department of Vector and Disease Control and the laboratories have received support and will provide disease surveillance on FMD and other livestock diseases. The knowledge and skills acquired will be used in the investigation of disease outbreaks and disease diagnosis, as well as their containment and control.

The project brought together different stakeholders, while roles were identified for the different stakeholders during workshops. Stakeholders, including academics from Juba, Upper Nile, Bahr el Ghazal and John Garang universities, were engaged and partnerships established, involving government partners including parliamentarians, administrative officers and law enforcement officers. Regional and international FMD reference laboratories were involved, including those in Embakasi, Kenya and Addis Ababa, Ethiopia, as well as the Pirbright Institute.

2. Gender equality

The participation of women was numerically lower than that of their male counterparts during training and sensitization meetings, due to the limited number of women available in the veterinary sector. However, efforts were made to target women during workshops, sensitization meetings and training.

The project made every effort to include women in all project activities, however these efforts did not reach the desired level for reasons beyond the project's control, such as the fact that departments in the Ministry of Livestock and Fisheries (MLF), in particular the laboratories, could only call on small numbers of women to participate in project activities.

3. Environmental sustainability

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4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The involvement of women in project activities and the control of FMD will improve not only the production of milk, but also access to milk for women and children and the sale of excess milk to the public, thereby creating employment opportunities for women.

5. Technological sustainability

The project introduced the use of vaccines to control FMD. Similarly, in other countries, vaccines have been used for the control and eradication of the disease.

Communities were sensitized through radio programmes on the ways in which FMD is spread and how to prevent and control this spread.

However, the lack of resources for the purchase of vaccines and the cost of the vaccinations themselves hindered the progression towards vaccination against FMD.

6. Economic sustainability

A sum of USD 500 000 was mobilized from the Government of Japan for surveillance and laboratory rehabilitation and for capacity development for control of livestock diseases such as FMD. Meanwhile, lobbying and campaigning for the Government and donors to provide funds for FMD control activities remain ongoing.



DOCUMENTS AND OUTREACH PRODUCTS

- Risk analysis and mapping of FMD in South Sudan. Consultancy assessment report.
- Socio-economic impact assessment of FMD in South Sudan. Consultancy assessment report.
- Final test results for FMD samples. LOA-FMD laboratory test report.
- Strategy and action plans for FMD control in South Sudan. Consultancy report.
- FMD vaccine-matching strain differentiation report. Pirbright Institute.



ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	Improved livestock production and productivity through control of FMD		
Outcome	Improved capacity of national and local institutions to effectively control FMD in South Sudan		
	Indicator	<ol style="list-style-type: none"> 1. Increased contribution of livestock to GDP and revenue. 2. Increased number of livestock monitoring and surveillance reports on livestock. 3. Institutions increase the provision of livestock services to livestock keepers and other stakeholders. 4. Increased income and enhanced sustainable livelihoods of livestock owners. 	
	Baseline	<ol style="list-style-type: none"> 1. 5.7% of GDP. 2. 12 surveillance reports per year received. 	
	End Target	<ol style="list-style-type: none"> 1. No current data available. 2. 13 surveillance reports per year. 3. 8% increase. 4. No current data available. 	
	Comments and follow-up action to be taken	<p>The project has improved the processes of investigation and intervention on FMD and other infectious diseases, contributing to the resulting reduction in losses from mortalities. The reduction in morbidities has also led to increased production.</p> <p>The sensations expressed by communities and other stakeholders and the training of animal health workers has resulted in an improved surveillance system.</p>	
Output 1	FMD risk in South Sudan assessed		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> • Number of meetings conducted on FMD. • Number of assessments produced on FMD mapping. 	<ul style="list-style-type: none"> • 10 meetings. • 3 assessments. 	Yes
Baseline	0		
Comments	<p>A study on the FMD risk in South Sudan was conducted by an expert in the sector. Primary data was collected through the administration of a questionnaire in selected locations in different agro-ecological zones of the country. Further data was gathered from focus group discussions, stakeholder workshops and key informant interviews. Secondary data was obtained from published reports and peer-reviewed journals. In addition, circulating FMD virus serotypes and strains were identified by virus isolation, antigen ELISA and genetic characterization of recent outbreaks. FMD serotypes identified from samples collected from the selected locations show their spatial distribution.</p>		
Activity 1.1	Support the implementation of two national consultative workshops and action plans on FMD control		
	Achieved	Yes	
	Comments	<p>Two consultative stakeholder workshops facilitated by two consultants were conducted. Sixty participants took part in the workshops, including representatives from NGOs, the MLF state-level Ministry of Animal Resources, the Wildlife Department, FAO and the universities of Upper Nile, Juba, Bahr el Ghazal and John Garang.</p> <p>The first consultative workshop was for the assessment and analysis of the socio economic impact of FMD and risk factors for generating information for the formulation of an FMD strategy and action plans.</p> <p>The second consultative stakeholder workshop was to discuss and validate the results on the FMD risk and socio-economic impact studies, as well as the control strategy.</p>	

Activity 1.2	Support the mapping of FMD distribution and pathway for transmission and FMD risk factors	
	Achieved	Yes
Activity 1.3	Comments	<p>Risks and practices that encourage the introduction and spread of FMD were identified. These included the lack of disease control measures practiced at watering points, grazing fields, livestock markets and uncontrolled mixing of healthy and sick livestock in cattle camps. Furthermore, the cattle trading activities in markets located at the national boundaries, the nomadic lifestyle and uncontrolled livestock movement in the country poses the risk of the introduction and spread of FMD within South Sudan. The risk of spread of FMD between livestock and wildlife in grazing grounds and watering points was not given consideration due to the lack of data.</p> <p>Samples were collected from specially selected areas in the different agro-ecological zones of South Sudan. The samples collected (serum, epithelia and swab) were tested by non-specific protein (NSP) ELISA in the central diagnostic laboratory in Juba. The samples testing positive were submitted to the Embakasi FMD reference laboratory in Kenya to determine the circulating serotypes. Serum analysis at the Embakasi laboratory indicated the circulation of serotypes O, A, SAT1 and SAT2. Epithelial tissues and swab samples collected from the outbreak were submitted to the Pirbright laboratory in the United Kingdom of Great Britain and Northern Ireland to isolate and identify the circulating field strains. However, most of the tissues and swab samples were negative. PCR positive samples were identified as serotype O EA3.</p> <p>The project supported investigations of five suspected FMD outbreaks in different locations and information collected from the outbreaks was used in the analysis of FMD and in risk and socio-economic studies.</p>
	Provide support for socio-economic impact assessment of FMD in different livelihood zones	
Achieved	Yes	
Comments	<p>A socio-economic expert conducted a study to estimate the socio-economic impact of FMD upon individual pastoralists and the economy of South Sudan.</p> <p>A questionnaire was administered in specially selected locations in different agro-ecological zones. Primary data was collected through focus group discussions and key informant interviews in consultative stakeholder workshops and cattle markets. Secondary data, meanwhile, was obtained from published reports and peer-reviewed journals.</p> <p>The result of the study indicated that FMD causes high production losses to the livestock sector, with an impact on the national economy estimated at USD 172 million per year. FMD control through vaccination of cattle in pastoral systems is profitable and vaccination against the disease as a control option was therefore recommended. A proposed strategy should consider integrating control of other prevalent livestock diseases, including East Coast Fever, CBPP, Contagious caprine pleuropneumonia, and Haemorrhagic septicaemia. It was recommended that FMD vaccination should be integrated into ongoing livestock vaccination programme of other livestock diseases.</p>	

Output 2	FMD-PCP established and functional		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> Number of FMD outbreak interventions carried out. Number/frequency of surveillance report/bulletins released. Risk maps produced. Risk factors and circulating strains identified. 	<ul style="list-style-type: none"> 10 outbreaks investigated. 15 surveillance reports. 1 risk map produced. 1 report. 	Yes
Baseline	0		
Comments	FMD virus serotypes and their distribution were identified and the socio-economic impact study conducted. The study identified that vaccination as an option to control FMD in South Sudan is profitable. Vaccine-matching was also conducted to identify the type of vaccine to use for FMD control in South Sudan. This places South Sudan at level one of the PCP global.		
Activity 2.1	Development of a national FMD strategy aligned to global PCP		
	Achieved	Yes	
	Comments	<p>The strategy was developed by the FMD risk and socio-economic experts, who conducted the respective studies. The FMD control strategy, informed by the FMD risk and socio-economic studies, was developed and validated by livestock stakeholders.</p> <p>The strategy was developed with a view to achieving PCP-FMD Level 2 by 2021, with following three strategic objectives: (i) reduction of the number of FMD outbreaks in the pastoral (herds) system to less than 10% per year, (ii) enhancing surveillance activities for FMD based on the risk-based maps and (iii) control of livestock movement into and within different production systems.</p>	
Activity 2.2	Provision of technical support to the Epidemiological Unit		
	Achieved	Yes	
	Comments	<p>Two laptop computers were procured for the development of epidemiology and disease surveillance data for the Epidemiology Department of the national ministry.</p> <p>The project supported the activities of the Central Veterinary Diagnostic Laboratory through (i) rehabilitation of the water system, (ii) NSP-ELISA testing of the samples collected for FMD, (iii) procurement and installation of a generator for the laboratory and the Epidemiology Unit, (iv) procurement of two ELISA machines and FMD ELISA kits for testing of FMD and (v) support to the testing of serum NSP.</p> <p>In addition, the following FMD training was conducted: (i) two laboratory technicians trained in Embakasi, Kenya on laboratory diagnosis, (ii) one technician trained in Ethiopia on laboratory diagnosis and (iii) 15 laboratory technicians trained in Juba on field FMD outbreak investigation, sample collection, surveillance and laboratory diagnosis.</p>	
Output 3	FMD awareness in South Sudan reinforced		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> Number of stakeholder trainings conducted on FMD control. Number of livestock community enlightenment meetings conducted on control. Types of awareness material prepared. 	<ul style="list-style-type: none"> 4 trainings. 10 community enlightenment meetings. 3 types of material prepared (for animal health workers, implementing/regulatory partners and livestock-keepers/community). 	Yes
Baseline	0		
Comments	Two sensitization workshops on the control of FMD and the roles of different stakeholders along the livestock value chain were conducted, involving parliamentarians, administrators, local leaders and beneficiaries.		
Activity 3.1	Awareness-raising and training on FMD control		
	Achieved	Yes	
	Comments	Two sensitization workshops were conducted (see Output 3 above), while awareness was raised through local radio programmes targeting livestock-keepers.	

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