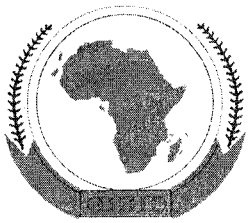

AFRICAN UNION/INTERAFRICAN BUREAU FOR ANIMAL RESOURCES
AU-IBAR

AU-IBAR
VACNADA

Country Selection Criteria for Vaccinations, Estimation of Vaccine Requirement and Vaccination Programme Support Fund Allocation Methods

5th March, 2010

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ACCRONYMS AND ABBREVIATIONS

AU	African Union
AU-IBAR	African Union Interafrican Bureau for Animal Resources
CBPP	Contagious Bovine Pleuropneumonia
CERF	Central Emergency Reserve Fund
CCPP	Contagious Caprine Pleuropneumonia
CIRAD	Centre for International Cooperation in Agronomic Research for Development
DCI	Development Co-operation Instrument
EU	European Union
EDF	European Development Fund
FAO	Food and Agriculture Organization of the United Nations
GALVmed	Global Alliance for Livestock Veterinary Medicine
GNI-PPP	Gross National Income at Purchasing Power Parity
LEISOM	Livestock Emergency Intervention to Mitigate Food Crisis in Somalia
ND	Newcastle Disease
NGO	Non-Governmental Organization
OIE	World Organisation for Animal Health
PANVAC,	Pan African Veterinary Vaccine Centre
PAPC-PPR	Pan African Programme for the Control of *Peste des Petits Ruminants*
PPR	*Peste de Petits Ruminants*
PRINT	Promotion of Regional Integration in the Livestock Sector Project
SADC	South African Development Corporation
SERECU	Somali Ecosystem Rinderpest Eradication Coordination Unit
SOLICEP	Somali Livestock Certification project
SPINAP	Support Programme to Integrated National Action Plans
TAD	Trans-boundary Animal diseases
USAID	United States Agency for International Development
VACNADA	Vaccines for the Control of Neglected Animal Diseases in Africa
VSF	Veterinaires Sans Frontieres

INTRODUCTION

A Financing Agreement for contribution by the European Union (EU) for a sum of € 20 was signed on the 26th of December, 2009 by the African Union Interafrican Bureau for Animal Resources (AU-IBAR), on behalf of the African Union Commission (AUC), with the European Union (EU) Food Facility for a 20 month regional project under the Action entitled: "Food Facility, EU-AU/ IBAR VACNADA" for the implementation of "*Vaccines for the Control of Neglected Animal Diseases in Africa*" (VACNADA project.

The purpose of the VACNADA project is to contribute to poverty alleviation and reduce the consequences of food crisis amongst vulnerable rural African Communities by improving livestock health. The specific objectives are to reduce the impact of animal diseases namely: *Peste de Petits Ruminants* (PPR) in sheep and goats, Contagious Caprine Pleuropneumonia (CCPP) in goats; Contagious Bovine Pleuropneumonia (CBPP) in cattle and Newcastle Disease (ND) in chickens through increased access and use of quality vaccines. The programme, in the short to term, will primary target four result areas:

Result Area 1: Vaccines procured from African laboratories and supplied to target selected countries

Result Area 2: Targeted animal populations vaccinated against the selected diseases

Result Area 3: Production capacity and quality of selected vaccines improved within Africa

Result Area 4: Independent Quality systems strengthened on the African Continent

To achieve the results, the VACNADA project will be coordinated by AU-IBAR in close partnership with the National Veterinary Authorities in the respective countries, the Pan African Veterinary Vaccine Centre (PANVAC), the Global Alliance for Livestock Veterinary Medicine (GALVmed) and the Centre for International Cooperation in Agronomic Research for Development (CIRAD).

From a budget of €20 million, a sum of €9.5 is designated to support the procurement of vaccines, their distribution, support to vaccination campaigns and awareness creation in selected African Union (AU) Member States that qualify for support from the European Union (EU) Food Facility. The rest of the cash fund will be directed to support of infrastructure development in aid of vaccine production and distribution, regional coordination and technical support to the programme through Partner Organizations to implement the activities described in the Result Areas above.

In light of the expected high fund requests by many countries to access the programme against the relatively limited available cash fund, developing sound criteria for country selection, vaccine and fund allocation to support activities in Result Areas 1 and 2 is deemed indispensable and essential for more efficient use of the fund. This document therefore describes the criteria developed for use in these possesses to enable AU-IBAR implement activities that relate to Result Area 1 and partially to Result Area 2 for awareness creation during vaccination campaigns.

The set criteria are based on indicators of influential factors that are expected to affect the accomplishment of the expected results of the action. Fund allocation installments after the first 12 months will be disbursed based on the results of the evaluation of actual achievement against the relevant indicators of expected results.

Selected countries will be required to submit their first 12 month fund requests after completion of a country programme estimate for the intervention. Subsequent funding for the 8 months will be based on considerations of an approved expenditure returns in order for AU-IBAR to make an informed decision on funding allocation priorities.

Based on approved need and taking into consideration relevant influential factors set below, the fund allocation decision will be taken focusing on priority and merits among different participating countries.

COUNTRY SELECTION CRITERIA FOR VACCINATION

The challenging mission is to initially identify countries to support under the VANADA Project for and assigning a fund for each country to carry out vaccination and related supportive activities. Several factors were found most influential in identifying potential beneficiary countries to VACNADA. These factors include:

a) Eligibility for European Commission (EC) and African Union Commission (AUC) for support
b) Relative disease risk
c) Other considerations

Eligibility for European Commission (EC) and African Union Commission (AUC) for Support

On the basis of the European Commission Decision of 30th March 2009 for implementing the facility for rapid response to soaring food prices in developing countries to be financed under Article 21 02 03 of the general budget of the European Communities in 2008 – 2010, 29 countries qualified for support. However, when the 29 countries were subject to the AUC eligibility criterion which excludes countries under sanctions for various reasons, then 28 countries indicated in Annex 1 qualified for selection as beneficiaries to the VACNADA Project.

Relative Disease Risk

Information on disease risk was compiled from geo-referenced data obtained from the OIE and AU-IBAR databases. Additional information was obtained from the South African Development Corporation (SADC) Promotion of Regional Integration in the Livestock Sector (PRINT) Project. Data used was based on reports made in years 2007 and 2008. Disease distribution maps were used in this assessment because they are a reflection of a combination of the real situation (prevalence-incidence) and the ability of the Veterinary Services and laboratories in the respective countries to measure the incidence. Maps therefore seem to be more correlated with the activities of the surveillance teams and my serve as a guide to identifying countries where there is capacity to undertake the proposed activities on the VACNADA Project.

Annex 2 shows disease distribution maps of the reported disease outbreaks and the countries that would qualify for inclusion in the VACNADA Project.

Other Considerations

Other considerations taken into account are as follows:

- The existence of other similar projects in the target countries or regions
- Potential for regional cooperation
- Possibility of other future projects to support the VACNADA effort
- Budgetary allocation

a) *The existence of other similar projects in the target countries or regions*

AU-IBAR has other livestock projects, either being run on a continental level such as Support Programme to Integrated National Action Plans (SPINAP) or on country basis such as Somali Ecosystem Rinderpest Eradication Coordination Unit (SERECU), Somali Livestock Certification project (SOLICEP), Livestock Emergency Intervention to Mitigate Food Crisis in Somalia (LEISOM) among others. There are also other organizations such as the Food and Agriculture Organization (FAO) and Non-Governmental organizations (NGOs) that run similar programmes to those of AU-IBAR. The FAO has just concluded support for PPR vaccination in Kenya and Uganda and is currently supporting a similar programme in Tanzania and the Somali ecosystem of Ethiopia under the Central Emergency Reserve Fund (CERF) while vaccinations against PPR, CCPP and sheep and goat pox in Somalia are planned to start early 2010 under the LEISOM project. The FAO has been supporting CBPP vaccination in Zambia and is poised with United States Agency for International Development (USAID) support to initiate a programme on Newcastle disease (ND) diagnosis in the Eastern African region through laboratory and epidemiology networks on Trans-boundary Animal diseases (TADs).

In West Africa several NGOs, especially Veterinaires Sans Frontieres (VSF) have been working on vaccination of village poultry against ND under the public private partnerships (PPP). FAO is also involved in vaccination against ND in this region.

The assumption is that for these projects to be taking place there is some minimum infrastructure hence the likelihood for success. In this regard, VACNADA will therefore not consider all qualifying countries for support but will identify those in which impact may be readily realized within the scope of the 20 month implementation period and also in whose investment, there would be a realization of complementarity with ongoing activities from other agencies described above.

b) *Potential for regional cooperation*

The projects on poultry vaccination against ND in the Democratic Republic of Congo and West Africa carried out in collaboration with the private sector, the vaccination against CBPP in Southern Africa, which has a strategy for CBPP control, and the efforts of FAO in Eastern Africa for PPR control have potential for regional cooperation and thus help partly meet the anticipated implementation strategy of VACNADA to support the containment of the diseases within the identified foci and limit the spread.

With the long transhumance system in West Africa, Senegal adopted a strategy for PPR control by involving private sector. Supporting PPR vaccination in Senegal and its neighbours (Mali, Gambia and Mauritania) would go a long way in promoting a regional approach to the control of the disease, taking in consideration the involvement of private sector for the

promotion of sustainability. This would also offer a case study for AU-IBAR to compare the disease control in West and East Africa where livestock movement and the vaccination strategy is different, with East African approach to PPR control being mainly supported by the public. This will further offer lessons and a future strategy for AU-IBAR which is currently preparing a continental project on PPR for implementation at a later stage in year 2010.

c) *Possibility of other future projects to support the VACNADA effort*

VACNADA is an emergency project funded by the Food Facility of the EC and implemented by AU-IBAR and partners. The project is therefore meant to supplement effort in the target countries to vaccinate against the targeted diseases. The funding is not for routine activities. AU-IBAR is in the process of identifying other projects that will be able to support activities on some of the identified neglected diseases e.g. the proposed Pan African Programme for the Control of *Peste des Petits Ruminants* (PPR) and other Small Ruminants Priority Diseases (PAPC-PPR). In this regard, countries considered for support to vaccinate against PPR under VACNADA will be those already at risk, taking regionality as an aspect and presence of other effort to address the disease problem as is the case in Eastern Africa and those that have a strategy to control the disease as well as those neighbouring such countries with a strategy as is the case for Senegal with Gambia, Mali and Mauritania as its neighbours benefiting.

On the basis of these factors, and taking cognizance of the budgetary allocation[1] to purchase vaccines, vaccination campaigns and awareness creation and regional focus the following 16 countries shown in Table 1 have been short listed for project support.

Table 1: *Countries Identified for VACNADA Support*

Country	Disease				Region focus
	PPR	CCPP	CBPP	ND	
Benin				✓	West Africa
Burkina Faso				✓	West Africa
Congo DR				✓	Central Africa
Ethiopia	✓	✓			Eastern Africa
Gambia	✓				West Africa
Ghana				✓	West Africa
Kenya	✓	✓			Eastern Africa
Mali	✓				West Africa
Mauritania	✓				West Africa
Namibia[2]			✓		Southern Africa

[1] Only about € 9.5 million (47%) of the total budget available is for vaccines, vaccination support and awareness creation activities. There is greater emphasis from the EC on the number of animals and beneficiaries in the project hence limiting the number of countries targeted for vaccination

Senegal	✓				West Africa
Tanzania	✓		✓		Southern Africa
Togo				✓	West Africa
Uganda[3]	✓				Eastern Africa
Zambia			✓		Southern Africa

In Summary, CCPP activities will be focused in Eastern Africa, ND in West and Central Africa and CBPP in Southern Africa while PPR will have activities in both East and West Africa.

ESTIMATIMATION OF VACCINE REQUIREMENT

Having identified potential beneficiary countries, the main challenge is now to estimate the amount of vaccine to allocate per country. An estimate of the required vaccines was calculated based on the proportion of livestock numbers in the target countries. The livestock numbers used in the calculations were obtained from the FAO database.[4] Once selected, each country willing to participate will be required to identify ***target areas*** for vaccination.[5]

Only € 9.5 million (47%) of the total budget available was allocated by implementing partners to purchase vaccines, support vaccination campaign and for awareness creation during project implementation. Participating countries are expected to contribute to the cost of the campaign in terms of personnel, vehicles, office space and fixed asset costs etc

On the basis of prices per dose[6] and striking a balance for equitable distribution of doses based on the available budget and priority diseases, the amount of funds allocated to each disease, the following doses were allocated: allocation: PPR 12,242,991 doses; CCPP 3,404,528 doses; CBPP 2,090,500 doses; and ND 10,934,301 doses. Table 2 shows a summary of the vaccine estimates per disease, number of vaccinations and proportion of budget allocation to each vaccine.

Based on the pricing used, all the vaccines would cost about € 2.9 million leaving about € 6.6 for support to vaccination campaign and awareness creation. Ten percent (10%) of the amount allocated to vaccine purchase and vaccination campaign was reserved for emergency vaccination and vaccination campaigns in cases of outbreaks outside the identified vaccination areas (*"hot spots"*).

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[2] While Namibia does not qualify for EC support under the food facility, it is does under the 9th EDF support. It is also included here because it qualifies under AU support. The country has had a successful CBPP control programme that would be useful to build on as the activity is implemented in the Southern African region.

[3] Uganda is included in this list although it does not qualify for EC Support. However, to help reduce the effects of CCPP and PPR in the region, it is an important country to consider including in order to reduce spread in the East African region.

[4] FAOSAT, 2008

[5] About 70-80% of animals in the selected target "hot spots" will be vaccinated. It will be the responsibility of the recipient country to provide at least 25% budgetary support in form of vaccination teams and vehicles. The support could also be monetary.

[6] The prices used to calculate the doses required took in consideration the vaccine and delivery costs. In the regard, CCPP CBPP vaccines would cost € 0.175 per dose, PPR € 0.063 while ND € 0.025. The vaccine cost was derived from literature and from contacts with vaccine manufacturers and other sources..

Table 2: *Summary of Vaccine Estimates Per Disease*

	CCPP	PPR	CBPP	ND	Total
Number of doses	3,404,528	12,242,991	2,090,500	10,934,301	28,672,319
Number of vaccinations	1	1	2	2	
Cost per dose (€)	0.175	0.063	0.1750	0.025	
Subtotal cost (€)of vaccines	595,792	765,187	731,675	546,715	2,639,369
TOTAL cost (€)plus 10% extra	**655,372**	**841,706**	**804,842**	**601,387**	**2,903,306**
Total proportion of budget allocation by disease	**23%**	**29%**	**28%**	**21%**	**100%**
Balance (€) for allocation by disease	1,489,481	1,912,968	1,829,187	1,366,788	6,598,424
Total Fund (€) allocation by disease	**2,144,853**	**2,754,673**	**2,634,030**	**1,968,174**	**9,501,730**

It is anticipated that when implemented, the VACNADA project will vaccinate at least 28 million animals (70-80% of targeted animal populations against the selected diseases in target *"hot spots"* areas of the selected countries) to impact about 1 million households within a 20 month implementation period.[7]

VACCINE DOSE ALLOCATION PER COUNTRY

Livestock numbers for countries were obtained from the FAO data base of 2008. Apart from Gambia where the whole sheep and goat population was considered for vaccination because of the geographical location and epidemiological significance of Gambia in relation to Senegal, all other vaccine dose allocations to countries were based on the proportion of the livestock population. As indicated above, 10% of the vaccines allocated per disease were reserved for emergencies vaccination in case of outbreak in different places outside the selected "hot spots" during the course of the project.

Annex 3 shows the vaccine doses allocation per country.

[7] Data on the number of animals was obtained from the FAO database. Based on vaccine budget, we propose to vaccinate about 10.9 million chicken against ND; 12.2 million sheep and goats against PPR; 3.4 million goats against CCPP and 2 million cattle against CBPP. The average flock sizes of these animals per household are 15 for poultry, 50 – 60 for sheep and goats and 40 for cattle. Based on these figures, an estimated number of households were estimated at 1 million. It is expected that during project implementation, "hot spots" for the diseases in the identified countries will be targeted and 70-80% of the animals in that spot will vaccinated against the selected disease.

FUND ALLOCATION FOR PURCHASE OF VACCINES

Based on the vaccine doses allocated in the identified countries, and the number of vaccinations per vaccine, the amount of money allocated per country was computed. As indicated above, for Gambia, the entire population of sheep and goats was considered for vaccination against PPR due to the relatively small number of animals (430,000 sheep and goats), the geographical location and epidemiological significance of Gambia in relation to Senegal.

Ten percent of funds were reserved to purchase vaccine for emergency outbreaks during outbreaks in the process of project implementation.

Figures 1- 4 below show the funding allocation per country.

Figure 1: *Distribution of Funds to Countries to Purchase PPR Vaccine*

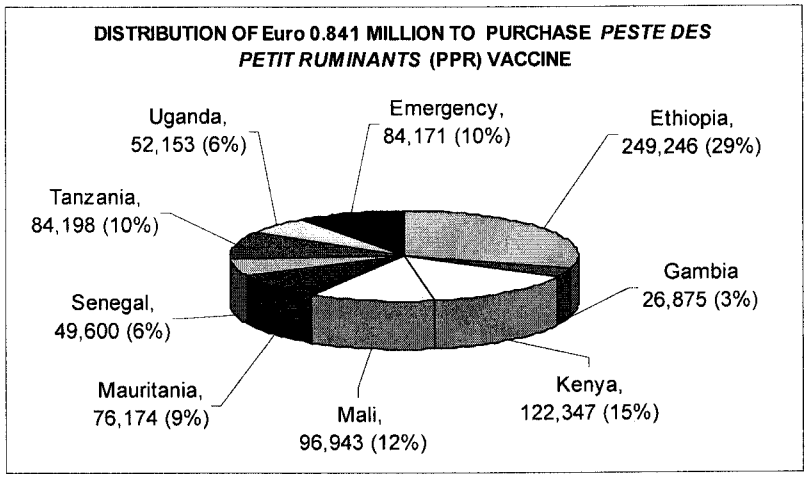


Figure 2: *Distribution of Funds to Countries to Purchase CCPP Vaccine*

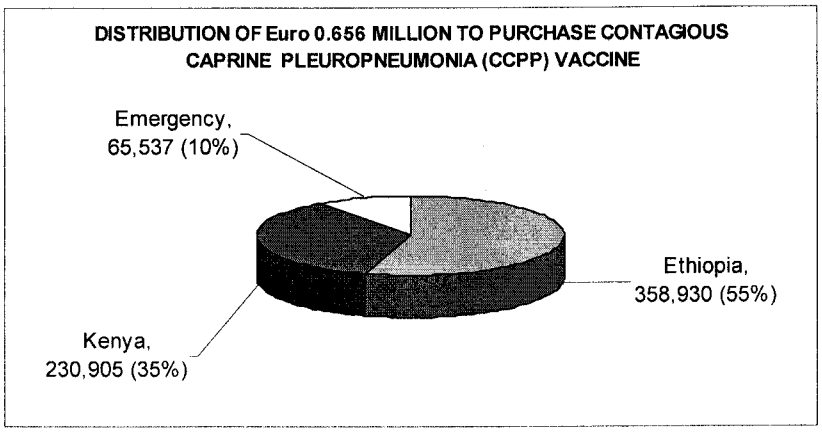


Figure 3: *Distribution of Funds to Countries to Purchase CBPP Vaccine*

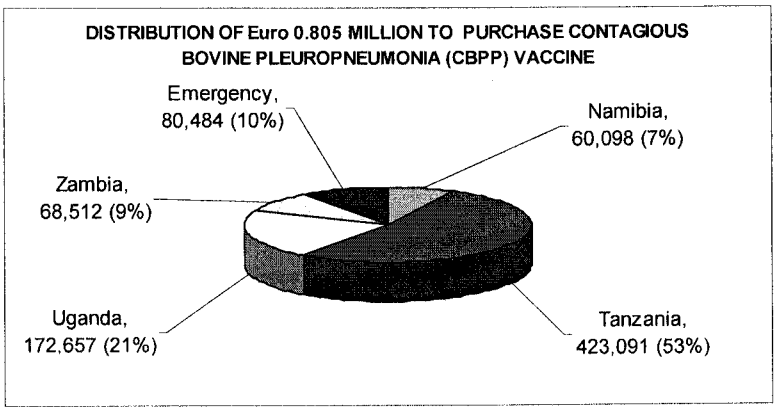
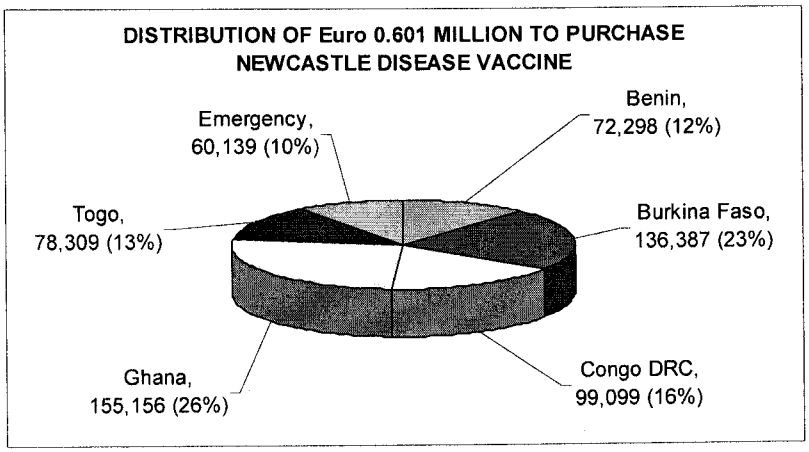


Figure 4: *Distribution of Funds to Countries to Purchase ND Vaccine*



VACCINATION PROGRAMME SUPPORT FUND ALLOCATION METHOD

After vaccine purchase, a sum of € 6,598,424 is available to support vaccination campaigns. The amount is distributed as follows for each disease. (See table 1 also).

Table 3: *Funding allocation per disease*

Disease	% Allocation	€Total
PPR Budget	29	1,912,968
CCPP Budget	23	1,489,481
CBPP Budget	28	1,829,187
ND Budget	21	1,366,788
	Total	**€ 6,598,424**

Factors taken in consideration in allocating these funds to countries were the Gross National Income (GNI)[8] per capita at Purchasing Power Parity (PPP) and the vaccine doses.

a) Gross National Income (GNI) at Purchasing Power Parity (PPP)

GNI per capita is the dollar value of a country's final income in a year (Gross National Income, or GNI), divided by its population. It reflects the average income of a country's citizens. Knowing a country's GNI per capita is a good first step towards understanding the country's economic strengths and needs, as well as the general standard of living enjoyed by the average citizen. A country's GNI per capita tends to be closely linked with other indicators that measure the social, economic, and environmental well-being of the country and its people. For example, generally people living in countries with higher GNI per capita tend to have longer life expectancies, higher literacy rates, better access to safe water, and lower infant mortality rates.[9]

The purchasing power parity (PPP) theory uses the long-term equilibrium exchange rate of two currencies to equalize their purchasing power. The theory states that, in ideally efficient markets, identical goods should have only one price.[10]

The GNI at PPP may be an indication of the financial capacity of a country to implement the VANADA Project. Countries with higher GNI-PPP per capita would get a lower allocation while those with lower GNI-PPP per capita income a higher allocation holding other factors constant. Although this factor would certainly strengthen the lower per capita income country's capability to successfully implement the VANADA Project, it was assigned a negative sign in the applied methodology to enable low income countries to be allotted proportionally more funds in light of their limited financial capacity. This factor is implicitly taking into account other two influencing factors, population in the target area of the country and GDP.

Annex 4 shows the ranked results of the GNI-PPP of the selected countries.

b) Vaccine doses

The vaccine doses, as indicated above relate to the number of livestock to be vaccinated in each country and hence the proportion in which the funds would be shared.

The GNI ranking and the vaccine doses were computed to produce an index upon which the allocation was made.

Annex 5 shows the calculations while Figures 5 to 8 show the funding allocation per country to support the vaccination campaign activities.

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[8] Countries with a GNI per capita of $11,456 or more are described as high income countries, between $3,706 and $11,455 as upper middle income, between $936 and $3,705 as lower middle income, and for lower income countries $935 or less. $20,000+ = Very High Income Countries (VHI), $10,000-$19,999 = High Income Countries (HIC), $5,000-$9,999 = Middle Income Countries (MIC), $2,500-$4,999 = Low Income Countries (LIC), Under $2,500 = Very Low Income Countries (VLI). The GNI – PPP ranking was based on IMF ranking as follows: > 5,000 = 1; 4,000 – 5,000 = 2; 3,000 – 4,000 = 3; 2,000 – 3,000 = 4; 1,000 – 2,000 = 5; and 500 – 1000 = 6

[9] Countries with a GNI per capita of $20,000+ = Very High Income Countries (VHI), $10,000-$19,999 = High Income Countries (HIC), $5,000-$9,999 = Middle Income Countries (MIC), $2,500-$4,999 = Low Income Countries (LIC), Under $2,500 = Very Low Income Countries (VLI). Ranking for GNI-PP was as follows: > 5,000 = 1; 4000-5000 = 2; 3000-4000 = 3; 2000-3000 = 4; 1000-2000 = 5 and < 1000 = 6

[10] The PPP theory was developed by Gustav Cassel in 1918: Gustav Cassel, "Abnormal Deviations in International Exchanges," in *Economic Journal*, (December, 1918), 413-415.

Figure 5: *Distribution of Funds to Countries to Support PPR Vaccination Campaigns*

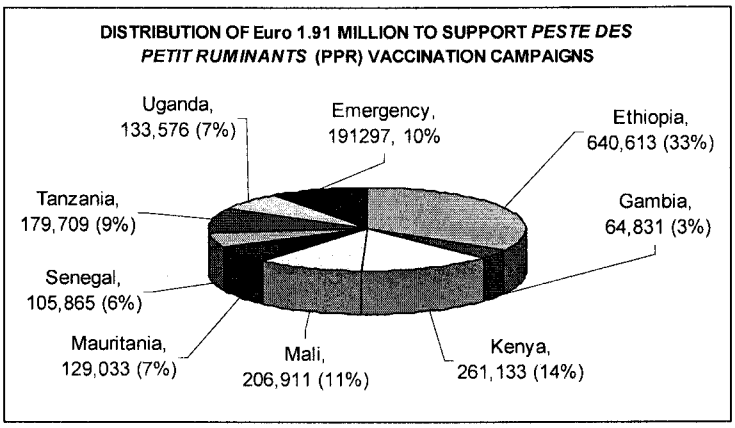


Figure 6: *Distribution of Funds to Countries to Support CCPP Vaccination Campaigns*

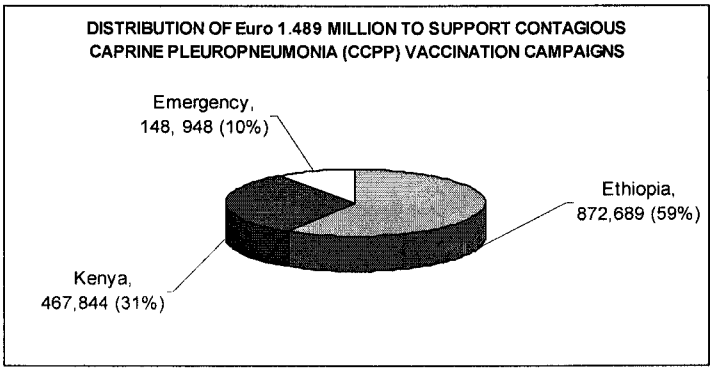


Figure 7: *Distribution of Funds to Countries to Support CBPP Vaccination Campaigns*

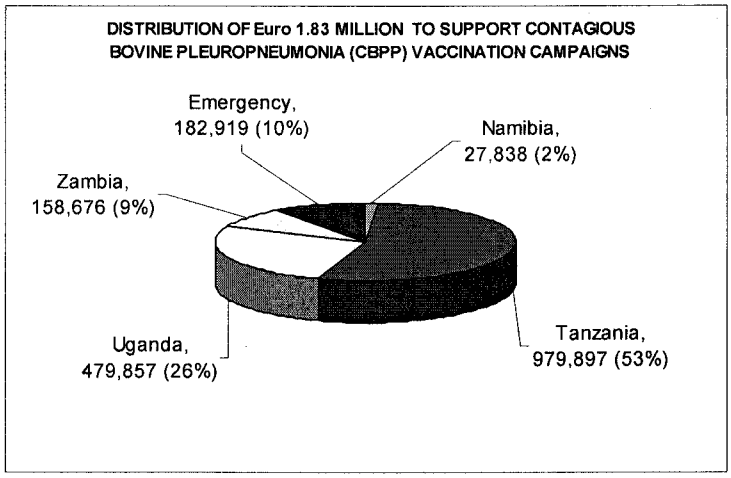
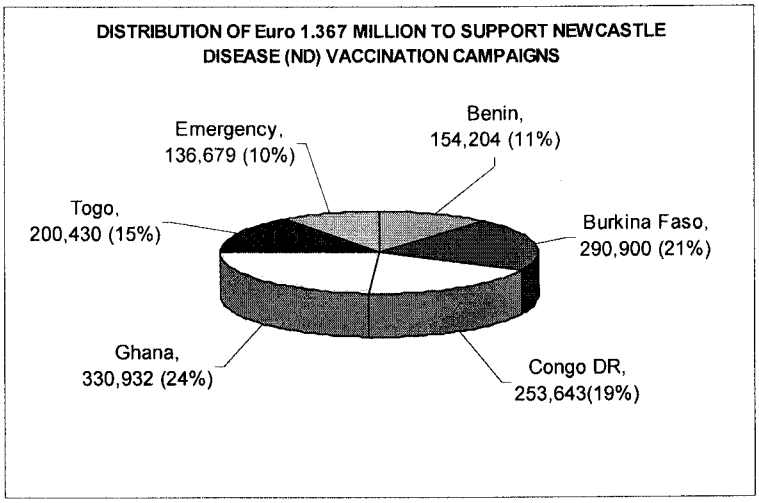
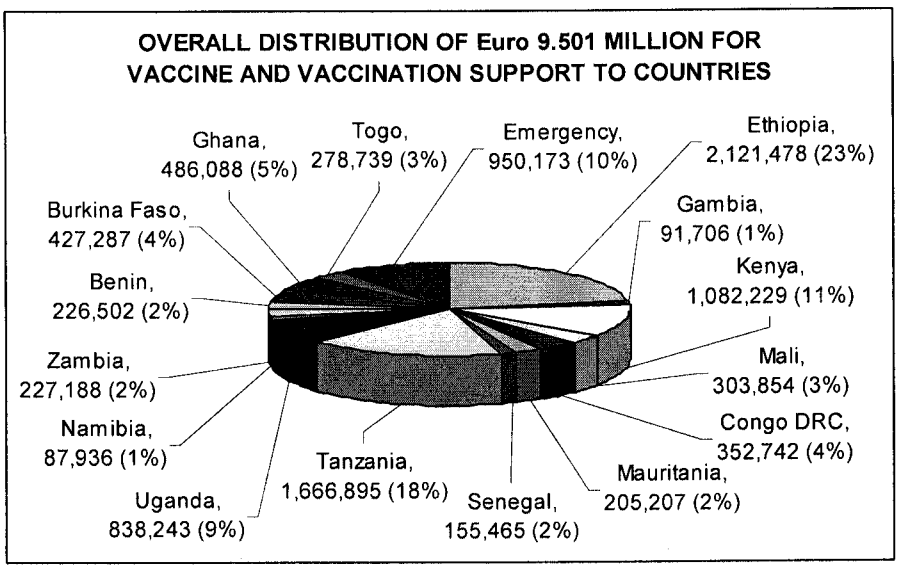


Figure 8: *Distribution of Funds to Countries to Support ND Vaccination Campaigns*



Annex 6 shows the total funding allocation per country while Figure 9 gives a summary of the results.

Figure 9: *Summary Distribution of Funds to Countries*



CONCLUSION

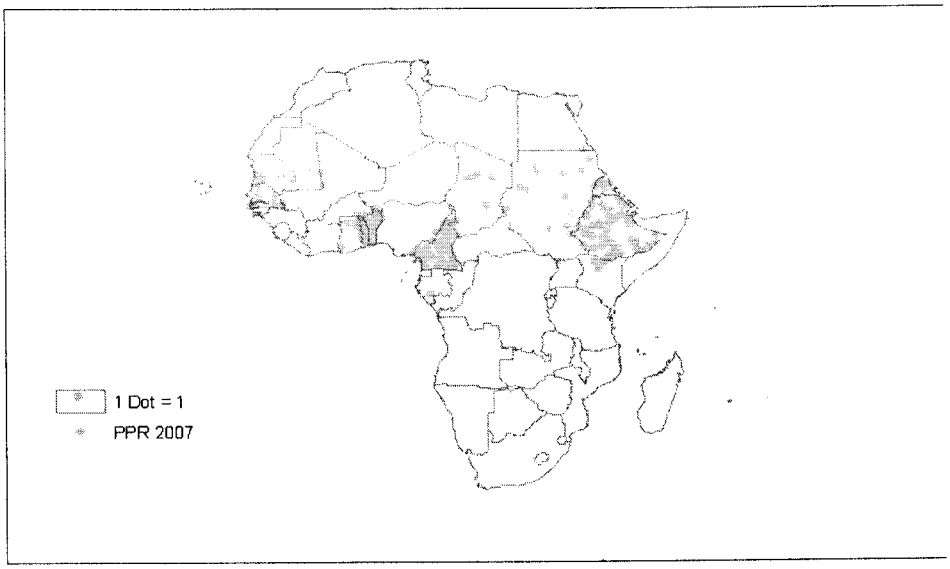
A method for selecting countries and allocating funds has been developed taking considerations of equity and influential factors in mind. Application of this method would help in accomplishing outputs to Result Area 1 and partly to Result Area 2 of the project.

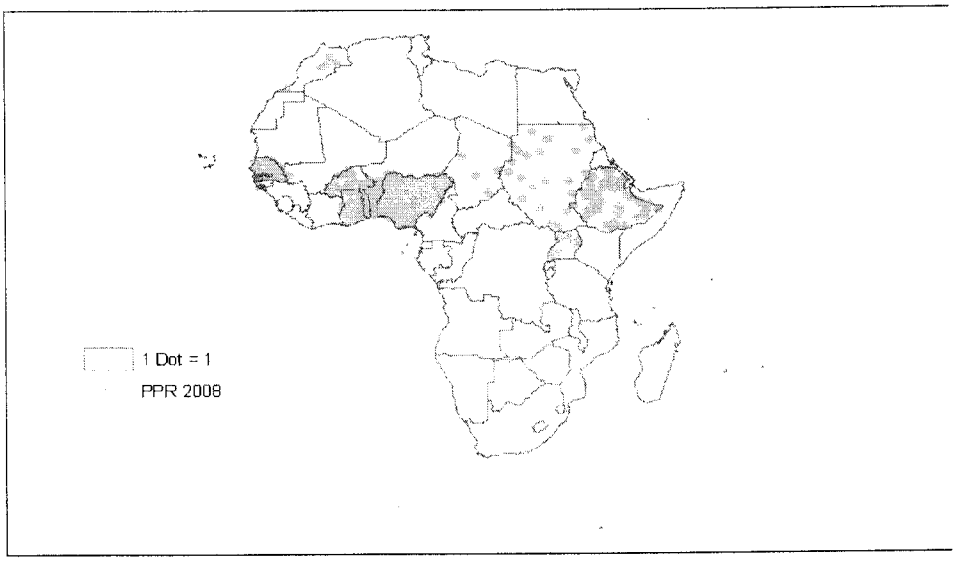
ANNEX 1: COUNTRIES ELIGIBLE FOR EC and AUC SUPPORT UNDER THE VACNADA PROJECT

Country	Region
1. Benin	West Africa
2. Burkina Faso	West Africa
3. Burundi	Central Africa
4. Central Africa Republic	Central Africa
5. Comoros	Indian Ocean
6. Congo DR	Central Africa
7. Ethiopia	Eastern Africa
8. Gambia	West Africa
9. Ghana	West Africa
10. Guinea Bissau	West Africa
11. Guinea	West Africa
12. Kenya	Eastern Africa
13. Lesotho	Southern Africa
14. Liberia	West Africa
15. Madagascar	Indian Ocean
16. Malawi	Southern Africa
17. Mali	West Africa
18. Mauritania	West Africa
19. Mozambique	Southern Africa
20. Niger	West Africa
21. Rwanda	Central Africa
22. Senegal	West Africa
23. Sierra Leone	West Africa
24. Somalia	Eastern Africa
25. Tanzania	Southern Africa
26. Togo	West Africa
27. Zambia	Southern Africa
28. Zimbabwe	Southern Africa

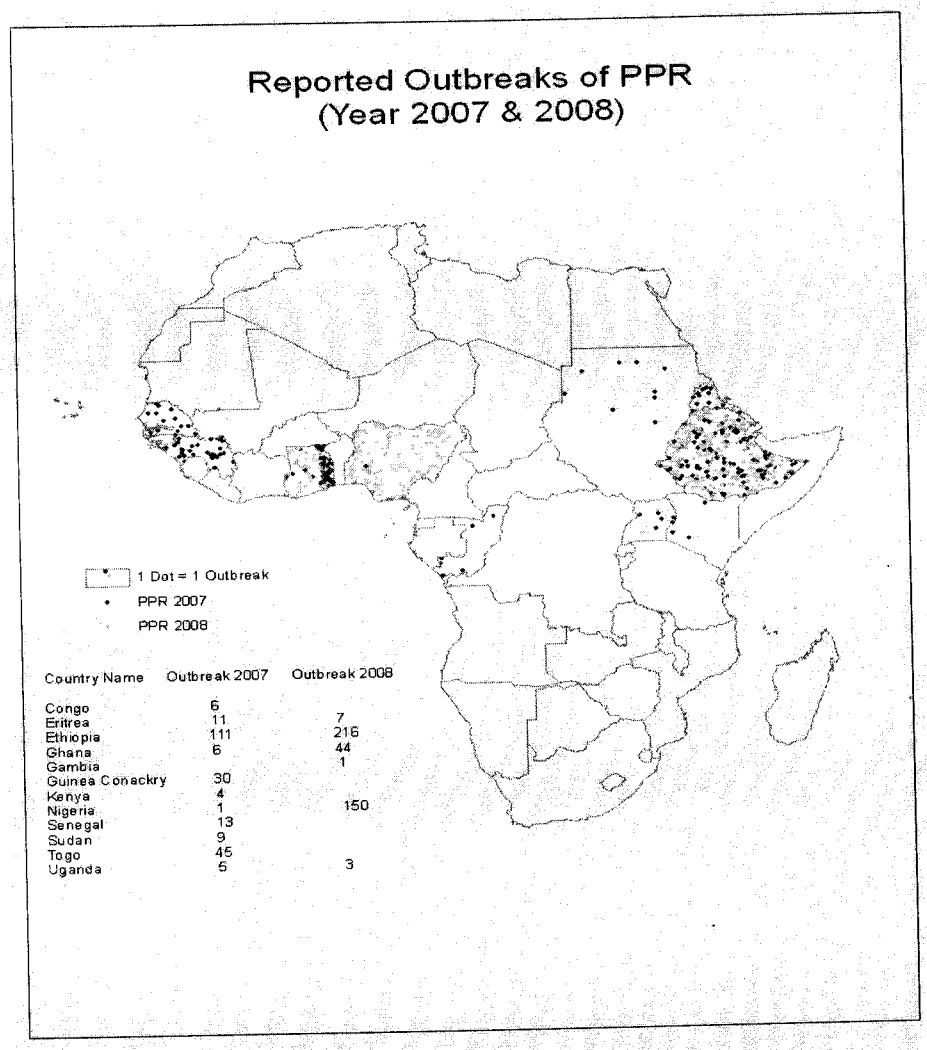
ANNEX 2: DISEASE DISTRIBUTION MAPS

i. Peste des Petits Ruminants (PPR) Distribution Maps.





Source = OIE Data

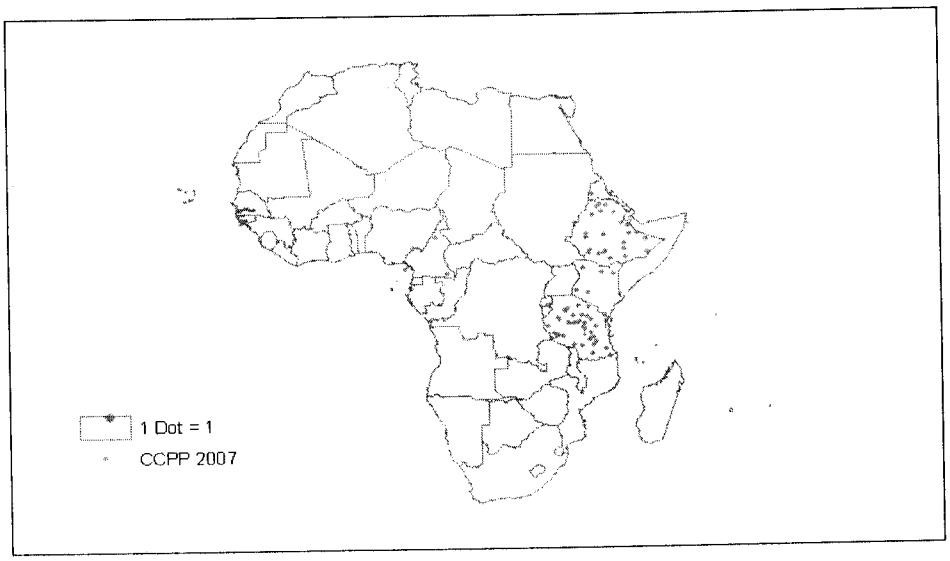


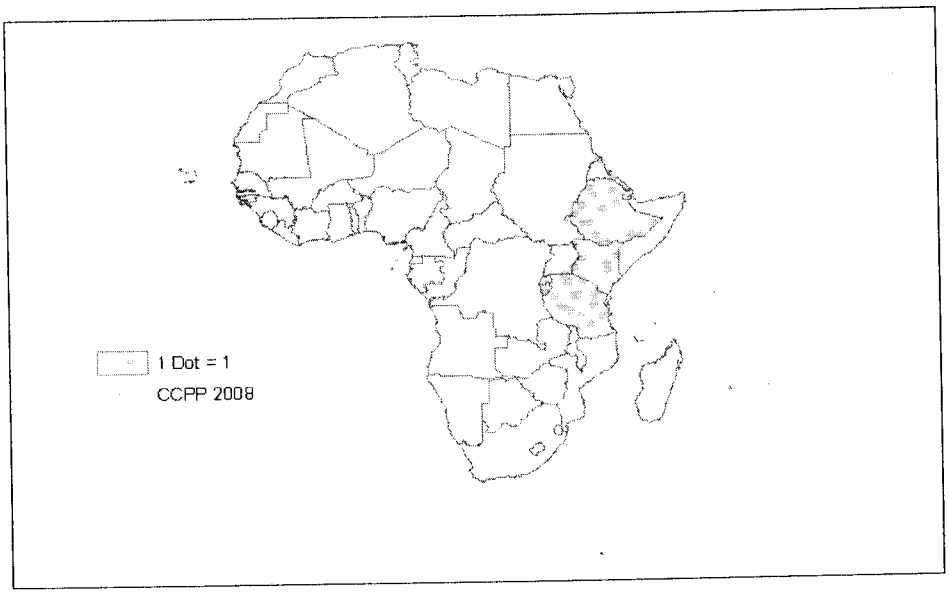
Source = AU-IBAR and OIE data

On the basis of PPR risk the following 7countries would qualify:

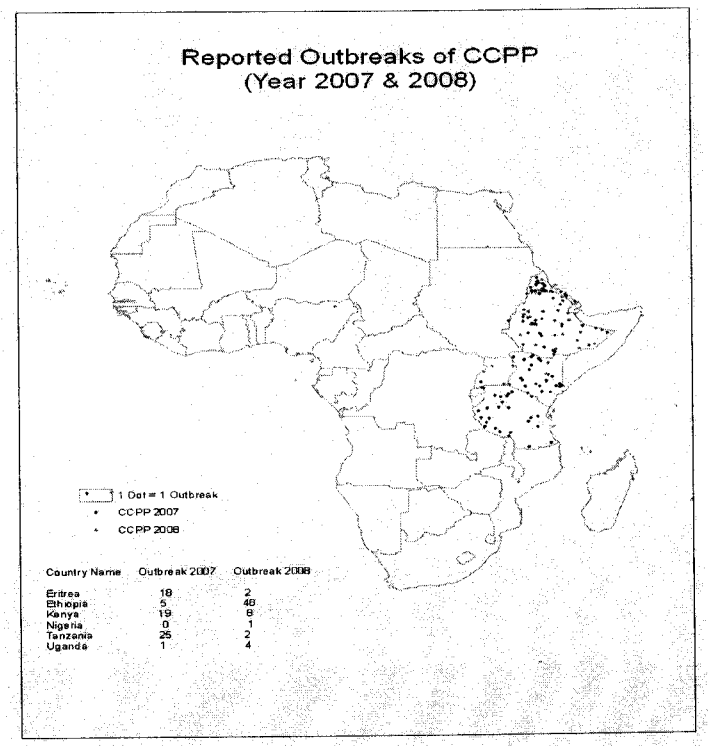
Country	Region	Country	Region
1. Ethiopia	Eastern Africa	5. Senegal	West Africa
2. Gambia	West Africa	6. Tanzania	Southern Africa
3. Ghana	West Africa	7. Togo	West Africa
4. Kenya	Eastern Africa		

ii. *Contagious Caprine Pleuropneumonia (CCPP) Distribution Maps*





Source = *OIE Data*



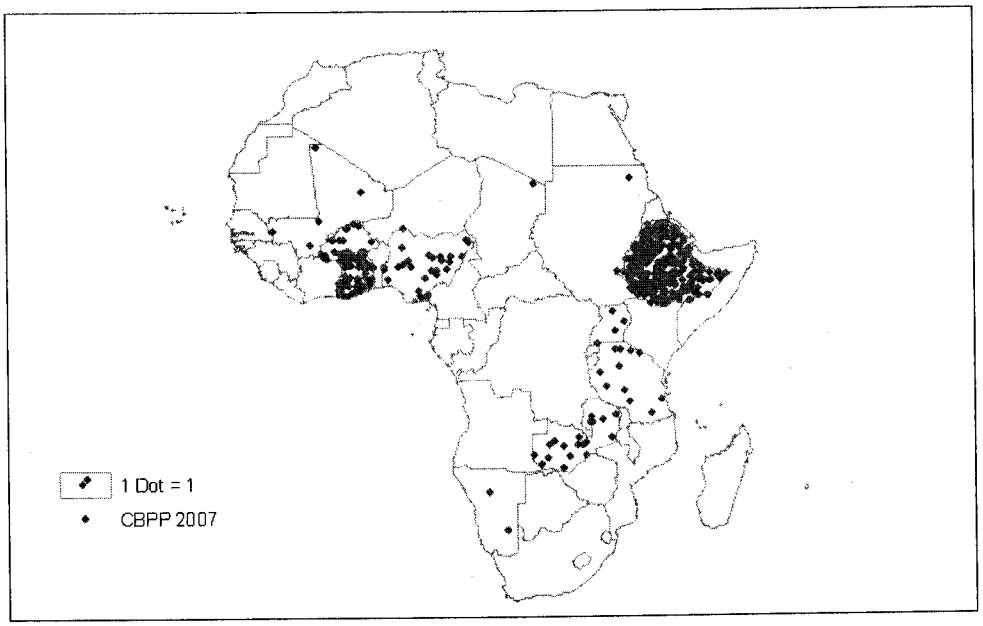
***Source** = AU-IBAR and OIE data*

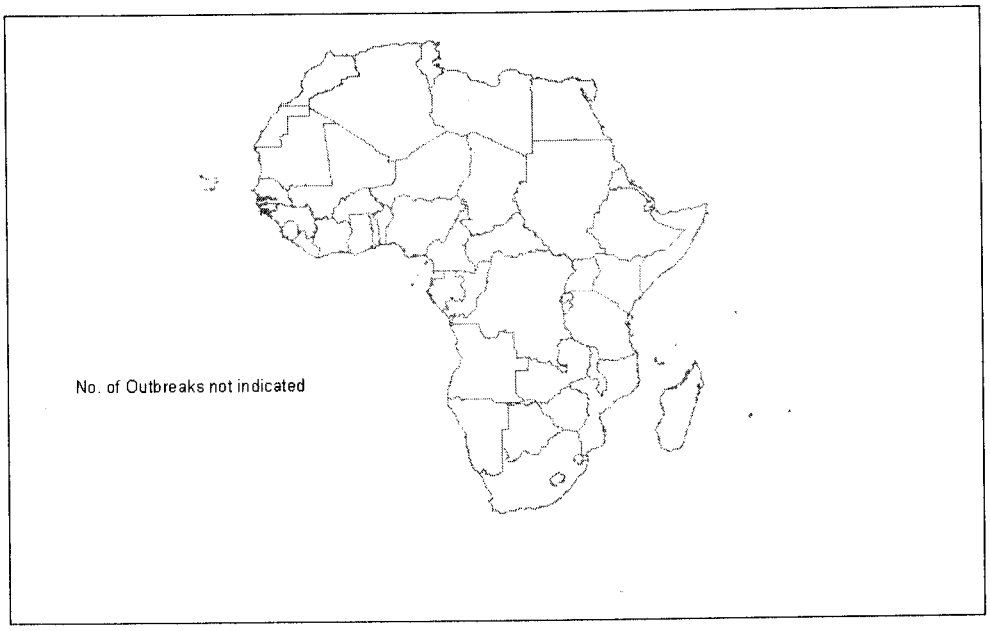
On the basis of CCPP risk the following 4 countries would qualify:

Country	Region	Country	Region
1. Ethiopia	Eastern Africa	3. Tanzania	Southern Africa
2 Kenya	Eastern Africa	4 Uganda[11]	Eastern Africa

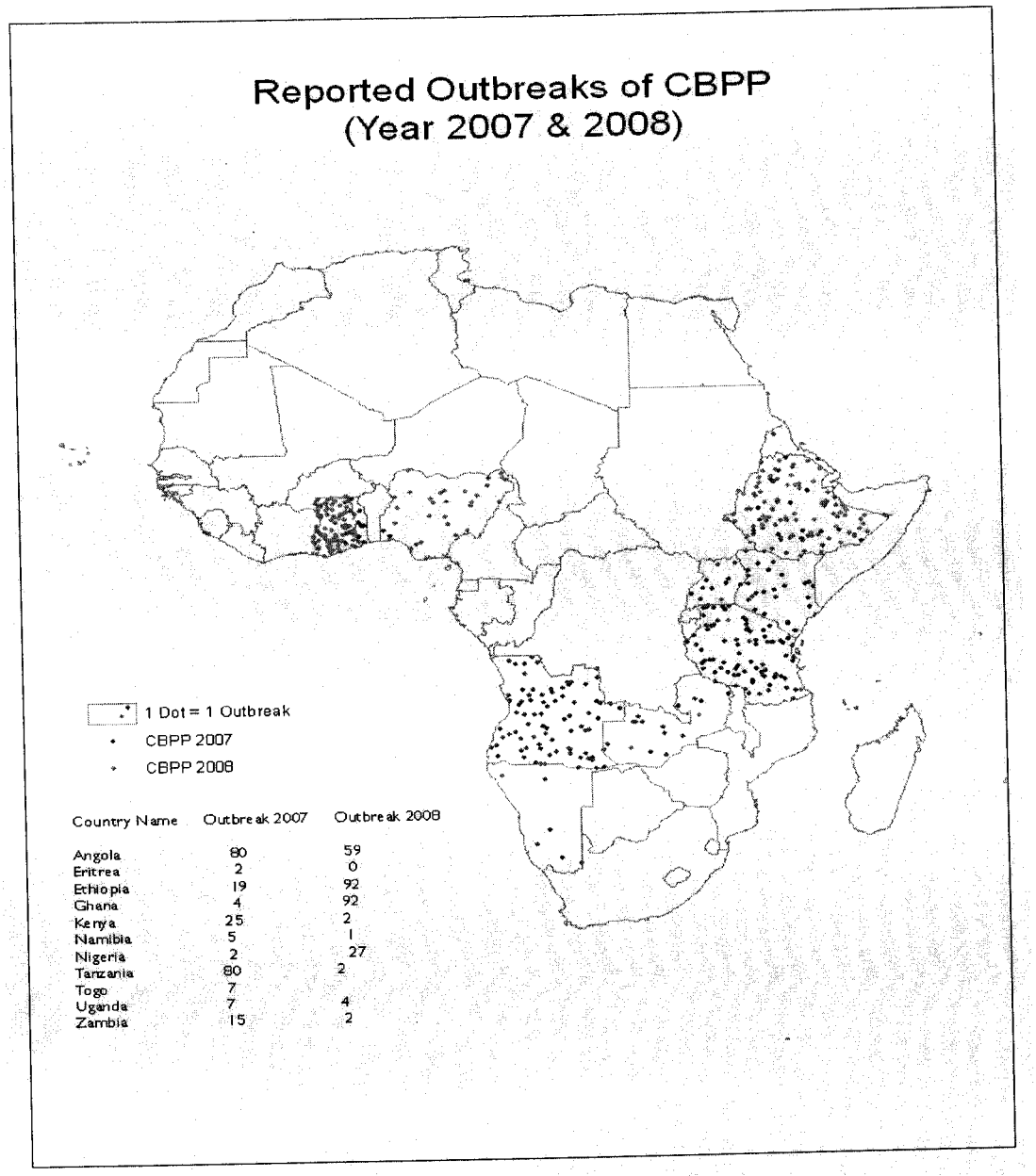
[11] Under regional project of Food Facility, focus in the first place on countries listed as beneficiaries, on a second level there can show flexibility and broaden towards the countries that are eligible under 9th EDF and DCI. However, the latter should be applied under conditionality that this broadening is directly related to countries in the FF list following cross-cutting issues, boarder-issues or operational activities and to be included in the project for these reasons.

iii. *Contagious Bovine Pleuropneumonia (CBPP) Distribution Maps*



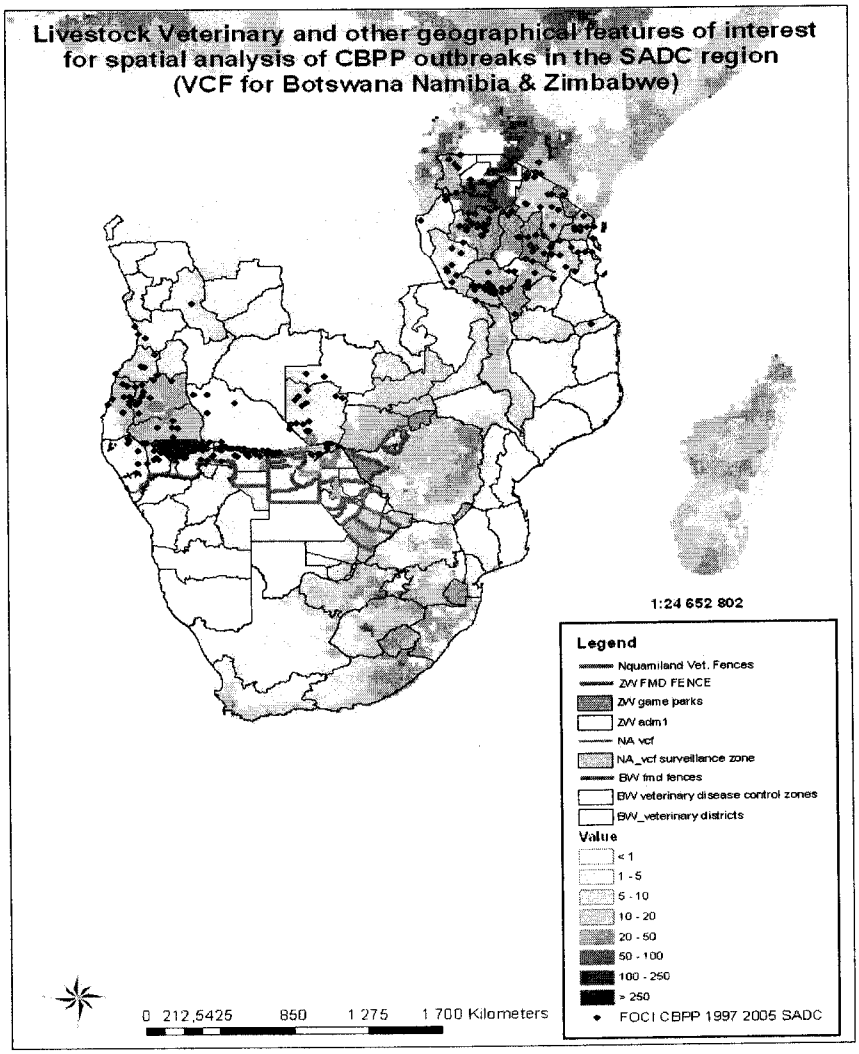


Source; *OIE Data*



Country Name	Outbreak 2007	Outbreak 2008
Angola	80	59
Eritrea	2	0
Ethiopia	19	92
Ghana	4	92
Kenya	25	2
Namibia	5	1
Nigeria	2	27
Tanzania	80	2
Togo	7	
Uganda	7	4
Zambia	15	2

***Source** = AU-IBAR and OIEData*

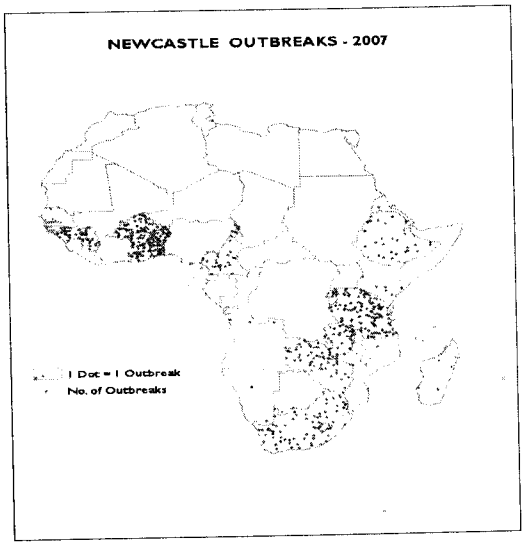


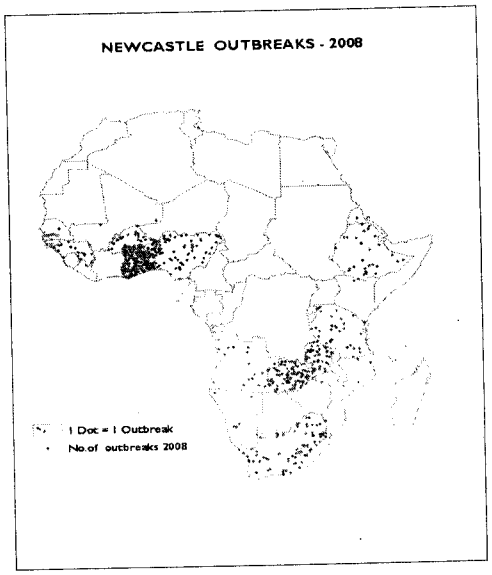
***Source** = SADC Data*

On the basis of CBPP risk the following 8 countries would qualify:

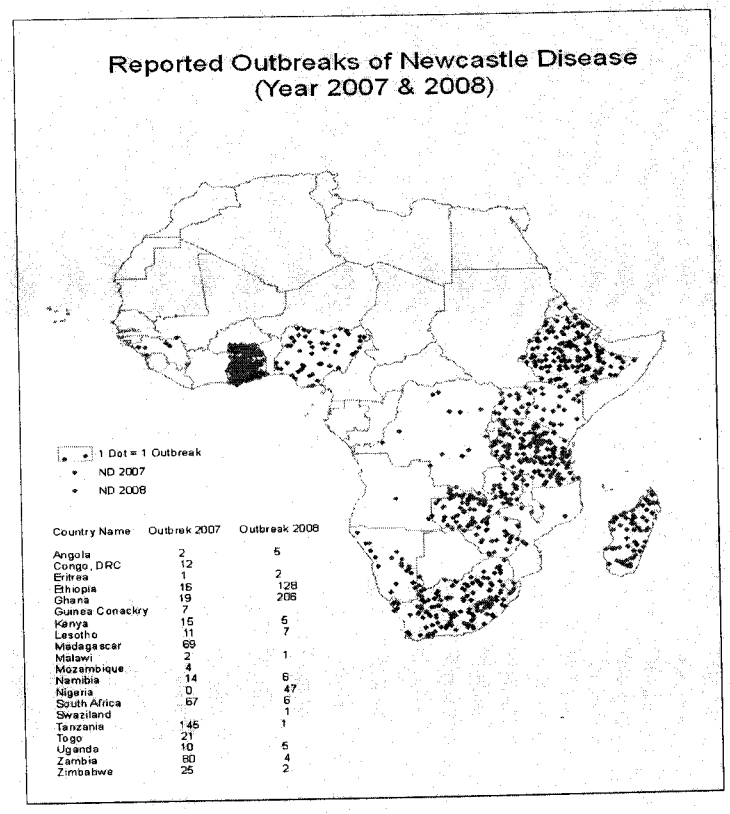
Country	Region	Country	Region
1. Ethiopia	Eastern Africa	5. Tanzania	Southern Africa
2. Ghana	West Africa	6. Togo	West Africa
3. Kenya	Eastern Africa	7. Uganda	Eastern Africa
4. Namibia	Southern Africa	8. Zambia	Southern Africa

iv. *Newcastle Disease (ND) Distribution Maps*





Source = *OIE Data*



Source = *AU-IBAR and OIE data*

On the basis of ND risk the following 13 countries qualify

Country	Region	Country	Region
1. Ethiopia	Eastern Africa	8. Mozambique	Southern Africa
2. Congo DR	Central Africa	9. Tanzania	Southern Africa
3. Ghana	West Africa	10. Togo	West Africa
4. Kenya	Eastern Africa	11. Uganda	East Africa
5. Lesotho	Southern Africa	12. Zambia	Southern Africa
6. Madagascar	Southern Africa	13. Zimbabwe	South Africa
7. Malawi	Southern Africa		

ANNEX 3: VACCINE DOSE ALLOCATION PER COUNTRY

1. *PPR Vaccine dose allocation*

Country	Sheep Population	Goat population	Total population	% population	Vaccine Doses
Ethiopia	26,117,272	21,709,428	47,826,700	33	3,623,379
Gambia	150,000	280,000	430,000	*	430,000
Kenya	9,428,700	13,966,000	23,394,700	16	1,772,396
Mali	8,870,000	9,667,000	18,537,000	13	1,404,374
Mauritania	8,850,000	5,600,000	14,450,000	10	1,094,740
Senegal	5,131,300	4,353,030	9,484,330	7	718,538
Tanzania	3,550,000	12,550,000	16,100,000	11	1,219,745
Uganda	1,697,440	8,275,020	9,972,460	7	755,519
Emergency					1,224,300
TOTAL	**65,914,712**	**78,120,478**	**144,035,190**	**100**	**12,242,991**

2. *CCPP Vaccine dose allocation*

Country	Goat Population	% Population	Vaccine Doses
Ethiopia	21,709,428	58.1	1,864,570
Kenya	13,966,000	37.3	1,199,506
Emergency			340,452
TOTAL	**37,395,428**	**100**	**3,404,528**

3. *CBPP Vaccine dose allocation*

Country	Cattle Population	% population	Vaccine Doses
Namibia	2,500,000	8	156,099
Tanzania	17,600,000	58	1,098,938
Uganda	7,182,293	24	448,460
Zambia	2,850,000	9	177,953
Emergency			209,500
TOTAL	**30,132,293**	**100**	**2,090,500**

ANNEX 6: TOTAL FUNDING ALLOCATION PER COUNTRY

Country	PPR		CCPP		CBPP		ND		TOTAL
	Vaccine Purchase	Vaccination Support	Vaccine Purchase	Vaccination Support	Vaccine Purchase	Vaccination Support	Vaccine Purchase	Vaccination Support	
Ethiopia	249,246	640,613	358,930	872,689					2,121,478
Gambia	26,875	64,831							91,706
Kenya	122,347	261,133	230,905	467,844					1,082,229
Mali	96,943	206,911							303,854
Congo DR							99,099	253,643	352,742
Mauritania	76,174	129,033							205,207
Senegal	49,600	105,865							155,465
Tanzania	841,98	179,709			423,091	979,897			1,666,895
Uganda	521,53	133,576			172,657	479,857			838,243
Namibia					60,098	27,838			87,936
Zambia					68,512	158,676			227,188
Benin							72,298	154,204	226,502
Burkina Faso							136,387	290,900	427,287
Ghana							155,156	330,932	486,088
Togo							78,309	200,430	278,739
Emergency	84,171	191,297	65,537	148,948	80,484	182,919	601,39	136,679	950,173
TOTAL	**841,706**	**1,912,968**	**655,372**	**1,489,481**	**804,842**	**1,829,187**	**601,387**	**1,366,788**	**9,501,730**

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