



REPUBLIC OF KENYA



STATE DEPARTMENT OF LIVESTOCK

VETERINARY SERVICES

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DISEASE FREE ZONES PROGRAMME

ZONE 1: COASTAL ZONE

MARCH 2011

TABLE OF CONTENTS¹

| Section | Title | Page |
|---------|---|------|
| | <i>Project Summary</i> | 5 |
| A | <i>Project overview</i> | 5 |
| B | <i>Needs Assessment</i> | 5 |
| C | <i>Result-based Logical framework</i> | 7 |
| D | <i>Programme Implementation Schedule</i> | 14 |
| I | STRATEGIC THRUST & RATIONALE | 19 |
| 1.1 | Project Linkages with Country Strategy and Objectives | 19 |
| 1.2 | Rationale | 19 |
| 1.3 | Donor Coordination | 20 |
| II | PROJECT DESCRIPTION | 20 |
| 2.1 | Project Objective and Components | 20 |
| 2.2 | Technical solutions retained | 25 |

| | | |
|-----|---|----|
| 2.3 | Project type | 25 |
| 2.4 | Project Cost and Financing Arrangements | 25 |
| 2.5 | Project's Target Area and Population | 27 |
| 2.6 | Participatory Process for Project Identification, Design and Implementation | 29 |
| 2.8 | Key Performance Indicators | 29 |
| III | PROJECT FEASIBILITY | 31 |
| 3.1 | Economic and Financial Performance | 31 |
| 3.2 | Environmental and Social Impacts | 31 |
| IV | IMPLEMENTATION | 33 |
| 4.1 | Implementation Arrangements | 33 |
| 4.2 | Monitoring | 35 |
| 4.3 | Governance | 36 |
| 4.4 | Sustainability | 36 |
| 4.5 | Management of risks to the programme | 36 |
| 4.6 | Knowledge | 37 |
| | ANNEXES | |
| | <i>Policy and Legal Framework for Zoning</i> | |
| | <i>Procedures for attaining disease-free status</i> | |
| | <i>Detailed Implementation Arrangements</i> | |
| | <i>Monitoring and Evaluation Plan</i> | |
| | <i>Implementation Plan</i> | |
| | <i>Gender Analysis</i> | |
| | <i>Detailed Programme Costs</i> | |

Fiscal Year

[Fiscal year beginning 2009/2010– end 2013/2014, maintenance thereafter]

Weights and Measures

| | | |
|-------------------|---|-------------------|
| 1 metric tonne | = | 2204 pounds (lbs) |
| 1 kilogramme (kg) | = | 2.200 lbs |
| 1 metre (m) | = | 3.28 feet (ft) |
| 1 millimetre (mm) | = | 0.03937 inch (“) |
| 1 kilometre (km) | = | 0.62 mile |
| 1 hectare (ha) | = | 2.471 acres |

Acronyms and Abbreviations

LIST OF ABBREVIATIONS

1. ADC Agricultural Development Cooperation

| | | |
|-----|----------|---|
| 2. | AI | Artificial Insemination |
| 3. | ALLPRO | ASAL-Based Livestock and Rural Livelihood Support Project |
| 4. | ALRMP | Arid Lands Resource Management Program |
| 5. | ASAL | Arid and Semi Arid Lands |
| 6. | ASCU | Agriculture Sector Coordinating Unit |
| 7. | BSE | Bovine Spongiform Encephalopathy |
| 8. | CAP | Chapter (of Laws of Kenya) |
| 9. | CBO | Community Based Organization |
| 10. | CBPP | Contagious Bovine Pleuropneumonia |
| 11. | CCPP | Contagious Caprine Pleuropneumonia |
| 12. | DANIDA | Danish International Development Agency |
| 13. | DFZ | Disease Free Zone |
| 14. | DVS | Director of Veterinary Services |
| 15. | ERSWEC | Economic Recovery Strategy for Employment and Wealth Creation |
| 16. | EU | European Union |
| 17. | FIRR | Financial Rate of Return |
| 18. | FMD | Foot and Mouth Disease |
| 19. | GDP | Gross Domestic Product |
| 20. | GoK | Government of Kenya |
| 21. | GTZ | German Development Agency |
| 22. | HACCP | Hazard Analysis for Critical Control Points |
| 23. | HIV/AIDS | Human Immuno-deficient Virus/AIDS |
| 24. | ICT | Information and Communication Technology |
| 25. | KARI | Kenya Agricultural Research Institute |
| 26. | KEVEVAPI | Kenya Veterinary Vaccines Production Institute |
| 27. | KMC | Kenya Meat Commission |
| 28. | KPI | Key Programme Indicators |
| 29. | KVB | Kenya Veterinary Board |
| 30. | LSD | Lumpy Skin Disease |
| 31. | MDG | Millennium Development Goal |
| 32. | M & E | Monitoring and Evaluation |
| 33. | MT | Metric Tonnes |
| 34. | NPV | Net Present Value |
| 35. | NEP | North Eastern Province |
| 36. | OIE | World Organization for Animal Health |
| 37. | PATTEC | Pan African Tsetse and Trypanosomosis Eradication Campaign |
| 38. | PDLP | Provincial Director of Livestock Production |
| 39. | PDVS | Provincial Director of Veterinary Services |
| 40. | PPR | Peste des Petit Ruminants |
| 41. | PRSP | Poverty Reduction Strategy Paper |
| 42. | RVF | Rift Valley Fever |
| 43. | SIDA | Swedish International Development Agency |
| 44. | SPS | Sanitary and Phytosanitary Standards Measures |
| 45. | SGP | Sheep and Goat Pox |
| 46. | SRA | Strategy for Revitalizing Agriculture |
| 47. | TB | Tuberculosis |
| 48. | USAID | United States Agency for International Development |
| 49. | WTO | World Trade Organization |

Programme Summary

A. Programme Overview

| | |
|---|---|
| Programme name | Kenya Disease Free Zones Programme: Coastal Zone |
| Geographical scope | Counties of Kilifi, Mombasa and parts of Taita-Taveta and Kwale in the coastal region of Kenya |
| Goal | To contribute toward poverty reduction and food security |
| Expected impact | Improved livelihoods and improved sector contribution to the national economy |
| Expected outcome | Increased supply of quality meat locally and for export by 48,000 MT, 131,935 new jobs, reduction in human deaths arising from zoonoses through saving over 300 lives per year, increased milk production for sale or household consumption by 5 million litres, increased hides and skins value from increased off-takes and increased square-feet with additional 160,000 high-value hides and rangeland and environmental improvement of 2 million hectares per year. The value of benefits is estimated as Ksh 16.2 billion annually. |
| Expected outputs | Maintenance of freedom from Rinderpest, confirmation of freedom from Mad Cow Disease (BSE) and zonal eradication of Foot and Mouth Disease and Contagious Bovine Pleuropneumonia. There will also reduction of the prevalence of secondary trade-sensitive diseases namely: lumpy skin disease, brucellosis, Rift Valley Fever (RVF), Contagious Caprine Pleuropneumonia (CCPP), Sheep pox and goat pox (SGP), Peste des Petits Ruminants (PPR), trypanosomosis and tuberculosis |
| Overall timeframe | 2009/2010 to 2013/2014; maintenance activities will continue thereafter |
| Programme costs | 2009/2010 Ksh 2,735,850,000/= |
| | 2010/2011 Ksh 2,827,989,000/= |
| | 2011/2012 Ksh 3,134,739,000/= |
| | 2012/2013 Ksh 1,643,132,000/= |
| | 2013/2014 Ksh 1,192,369,000/= |
| | TOTAL Ksh 11,533,535,000/= |
| | Annual budget for maintenance after 2014 is Ksh 674 million |
| Programme outputs' direct beneficiaries | Direct beneficiaries will be livestock owners (pastoralists, agro-pastoralists, ranchers, mixed farmers and some zonal dairy farmers), livestock traders, associated operators, and chambers of commerce, public and private sector animal health service providers, and community based organizations engaged in the sub-sector. The project will also facilitate the earning of foreign exchange for the country. |
| Impact on the direct beneficiaries | Wealth creation, employment creation, better food security and saving human lives. |
| Beneficiaries participation in the programme | Beneficiaries will provide land, labour, social good will and animal resources for the programme. They will also apply the sanitary measures, rehabilitate pastures and conserve the environment. |

B. Needs Assessment:

Assessments have indicated great potential for improving livelihoods and economic development through improving the performance of the livestock sector. The Kenya DFZ Programme addresses the main challenges in livestock sector performance, i.e. high prevalence of trade-sensitive diseases and the resultant failure to access high-value markets.

The project is needed now when the country is identifying areas of investments which would guarantee returns that are necessary for economic growth. Disease-free zoning has been identified as one such economic flagship projects for the country in the period 2008-2030.

C. Result-based logical framework for the Kenva Disease-Free Zones Programme

| HIERARCHY OF OBJECTIVES | EXPECTED RESULTS AND THEME | REACH (TARGET POPULATION) | PERFORMANCE INDICATORS | INDICATIVE TARGETS TIMEFRAME/ Existence of Baseline | | ASSUMPTIONS AND RISKS |
|---|--|---|--------------------------------|---|--|--|
| | | | | Baseline | Target | |
| <p><u>Goal</u></p> <p>To contribute toward poverty reduction and food security</p> | <p><u>Impacts</u></p> <p>Improved livelihoods</p> <p>Improved sector contribution to the national economy</p> | <p>2.7 million persons in target zone, and with trickle-down effect to another 6 million in protective zones and infected areas in the rest of livestock value chain, total 8.7 million</p> | <p>Change in poverty index</p> | <p>46% persons living below poverty line</p> | <p>Contribute to national target of reduction of 46% to 28% in 5 years</p> | <p>1. That existing macroeconomic policies will be retained over the period.</p> <p>2. That adequate resources will be availed for carrying out the necessary activities</p> |

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|---|---|---------------------------|--|---|--|-----------------------|
| | | | | Baseline | Target | |
| <p><u>Project Purpose:</u></p> <p>To facilitate access of livestock and livestock products to local, regional and international markets.</p> <p>To contribute toward the agriculture sector target of 7% economic growth p.a. (or Sh 80 billion p.a.)</p> <p>Employment creation</p> | <p><u>Project Outcomes</u></p> <p>Additional 48,000 MT of quality meat produced for local and export market</p> <p>Additional Sh 16.2 billion contributed to the national economy</p> <p>130,953 new jobs created</p> | | <p>Meat trade volumes in local and export market.</p> <p>Number of new markets accessed</p> <p>% increase in the contribution of agricultural sector</p> <p>Number of new jobs created</p> | <p>390,000 MT of red meat p.a.</p> | <p>438,000 MT p.a. in 5 years</p> | |

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|---|---|---------------------------|---|--|---|--|
| | | | | Baseline | Target | |
| <p><u>Activities</u></p> <p>Component 1: Animal Health Improvement</p> | <p><u>Project Outputs</u></p> <p>Prevalence of FMD & CBPP reduced</p> <p>Freedom from BSE confirmed and that of Rinderpest re-confirmed;</p> <p>Prevalence of lumpy skin disease, brucellosis, RVF, CCPP, SGP, PPR, trypanosomosis and tuberculosis reduced by 99% in the zone.</p> | | <p>Disease prevalence rates</p> <p>OIE freedom certificates</p> <p>% reduction in the prevalence of lumpy skin disease, brucellosis, RVF, CCPP, SGP, PPR, trypanosomosis and tuberculosis</p> | <p>FMD 30%</p> <p>CBPP 30-40%</p> <p>Rinderpest 0%</p> <p>BSE 0%</p> <p>BSL 2 capacity</p> | <p>FMD 0 % in 5 yrs</p> <p>CBPP 0% in 5 yrs</p> <p>Rinderpest 0%</p> <p>BSE 0%</p> <p>BSL 3 capacity in 3 yrs</p> | <p>That adequate resources will be availed for carrying out the necessary activities</p> |

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|---|---|---------------------------|--|--|---|---|
| | | | | Baseline | Target | |
| <p><i>Component 2:</i></p> <p>Infrastructure Development</p> | <p>Quarantine stations, disease-barriers, holding grounds and outspans established</p> <p>6 laboratories rehabilitated (CVL, FMD lab, Mariakani & Garissa RVILs and Ukunda & Witu satellite labs)</p> <p>13 Vet divisional offices rehabilitated and constructed</p> <p>1 modern export abattoir constructed in Mombasa</p> | | <p>No of quarantine stations, holding grounds and disease barriers established</p> <p>% rehabilitation of 6 labs</p> <p>% rehabilitation of 13 offices</p> <p>% construction</p> | <p>3 holding grounds fairly operational</p> <p>20</p> <p>2</p> | <p>800km veterinary fence, 4 quarantine stations and 6 holding grounds and outspans in 4 years</p> <p>33</p> <p>3</p> | <p>New land will be availed for Lungalunga and Manyani/Ndii Quarantine stations</p> <p>Ministry land will be recovered from squatters and illegal encroachers in Kurawa and Karmale Quarantine Stations</p> |

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|--|---|---------------------------|--|---|---|--|
| | | | | Baseline | Target | |
| <p><u>Component 3:</u></p> <p>Animal Productivity Improvement</p> | <p>Average cold-dressed weight increased from 150 kg to 200 kg for cattle and 10 kg-30 kg for sheep or goats.</p> <p>Size of hides increased</p> <p>Export value of hides increased</p> <p>Livestock multiplication farms rehabilitated;</p> <p>New AI centres & runs established;</p> <p>Livestock producers trained</p> <p>Carrying capacity of zonal pastures established</p> <p>Rangelands rehabilitated</p> <p>Ranching promoted</p> | | <p>Increase in cold dressed weights</p> <p>% increase in size of hides and skins</p> <p>% increased in export values of hides</p> <p>No of multiplication farms rehabilitated</p> <p>No of new AI centres and runs established in beef producing areas</p> <p>No of producers trained</p> <p>Carrying capacity survey records</p> <p>Hectares rehabilitated</p> <p>Revival of dormant ranches</p> <p>No of bulking sites established</p> <p>10</p> | <p>150 kg for beef and 10 for kg mutton</p> <p>20 sq ft</p> <p>Sh 2.4 billion</p> <p>0</p> <p>0</p> <p>0</p> <p>0 survey</p> <p>0</p> <p>0</p> <p>0</p> | <p>200 kg beef and 30 kg mutton in 5 yrs</p> <p>30 sq ft in 5 yrs</p> <p>Sh 3.2 billion</p> <p>6</p> <p>6</p> <p>720</p> <p>1 survey in Y1</p> <p>10 million ha</p> <p>5</p> <p>4</p> | <p>That producers will adopt the necessary technology for animal upgrading</p> |

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|------------------------------|--|---------------------------|---|--|---|--|
| | | | | Baseline | Target | |
| <u>Component 4:</u> | | | | | | |
| Marketing Improvement | <p>Livestock off-take rates increased in the zones</p> <p>New export markets accessed</p> <p>Establishment of marketing groups promoted</p> <p>Sensitization of marketing/lobby groups</p> <p>Linking of marketing groups to financial institutions</p> <p>Linkage of marketing groups to markets (external/internal)</p> <p>Establishment of cottage industries biogas plants, tanneries.</p> <p>Trade missions facilitated</p> | | <p>Off-take rate</p> <p>Number of new international markets accessed</p> <p>No of new marketing organizations operationalized</p> <p>Number of marketing/lobby groups sensitized</p> <p>Number of groups linked to financial institutions</p> <p>Number of groups accessing markets (External/Internal)</p> <p>Number of cottage industries established</p> <p>Number of trade missions carried out</p> | <p>Off-take 5%</p> <p>2</p> <p>1</p> <p>1</p> <p>0</p> <p>1</p> <p>1</p> | <p>Off-take 20 % in 15 years</p> <p>6 in 7 years</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>3</p> <p>4</p> <p>8</p> | <p>That markets responds positively to zoning success as expected.</p> |

C. Result-based logical framework for the Kenva Disease-Free Zones Programme

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|--|------------------------------------|---------------------------|------------------------|---|--------|-----------------------|
| | | | | Baseline | Target | |
| | | | | | | |
| <p><u>Source of Funds</u></p> <p>GoK* & development partners</p> | <p>Ksh 11.5 billion in 5 years</p> | | | | | |

** the DFZ programme is a public good service*

D. Programme implementation schedule

| TASK DESCRIPTION | RESOURCES REQUIRED | EXPECTED RESULTS | PERFORMANCE INDICATOR | ACTIVITY/ YEAR | | | | | ASSUMPTION |
|---|---------------------------------------|--|-------------------------------|----------------|---|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 | |
| 1. Appraisal, policy & legal review on zoning | Funds, technical expertise | Programme appraised Policy and legal framework in place | Reports, documents | X | | | | | |
| 2. Prevalence survey for 12 zonal diseases | Funds, technical expertise | Status of 12 zonal disease known | Epidemiological reports | X | | | | | |
| 3. Development and annual review of 12 disease-specific contingency plans (FMD, CBPP, BSE, Rinderpest, TB, Brucellosis, LSD, CCPP, SGP, PPR, RVF, Trypanosomosis) | Funds, technical expertise | 12 disease-specific contingency plans | Reports and Records | X | X | X | X | X | |
| 4. Survey of zonal boundary and design, construction & patrol of disease barrier fence | Funds, technical expertise, materials | Zone delineated Disease barrier erected | Maps, geo-references, records | X | X | X | X | X | That stakeholders will support and own the measure That adequate funds will be availed for the measure |
| 5. Routine disease surveillance | Funds, technical expertise | Status of 12 zonal disease known | Epidemiological reports | X | X | X | X | X | |
| 6. FMD vaccination in the free zone | Funds, staff, Vaccines, equipment | FMD eradicated from the zone | Epidemiological reports | X | X | X | | | That adequate capacity will be availed |
| 7. FMD vaccination in protection zone | Funds, staff, Vaccines, equipment | FMD freedom in free zone protected | Epidemiological reports | X | X | X | X | X | That adequate capacity will be availed |
| 8. CBPP test-slaughter-compensation in free zone | Funds, staff, kits | CBPP eradicated from the zone | Epidemiological reports | X | X | X | | | That compensation decision & fund will be in place |

| | | | | | | | | | |
|--|--|--|--|---|---|---|---|---|--|
| 9. CBPP vaccination in protection and infected areas | Funds, staff, Vaccines, equipment | CBPP freedom in free zone protected | Epidemiological reports | X | X | X | X | X | That adequate capacity will be availed |
| 10. BSE plan implementation (port controls, feed regulation, nationwide surveillance, risk analysis) | Funds, staff, expertise, equipment, kits | BSE incursion prevented and free status upheld | Epidemiological reports | X | X | X | X | X | That adequate capacity will be availed |
| 11. Tuberculosis test-slaughter-compensation in free zone | Funds, staff, expertise, equipment, kits | TB eradicated from the free zone | Epidemiological reports | X | X | X | X | X | That compensation decision & fund will be in place |
| 12. Brucellosis test-slaughter-compensation in free zone | Funds, staff, expertise, equipment, kits | Brucellosis eradicated from the free zone | Epidemiological reports | | X | X | X | X | That compensation decision & fund will be in place |
| 13. Brucellosis vaccination for pre-puberty animals in protection zone | Funds, vaccines, staff | Brucellosis incursion into free zone prevented | Epidemiological reports | | X | X | X | X | That adequate capacity will be availed |
| 14. CCPP, SGP and PPR vaccination in free and protection zones | Funds, vaccines, staff | CCPP, SGP and PPR suppressed | Epidemiological reports | | X | X | X | X | That adequate capacity will be availed |
| 15. RVF vaccination and vector control in free zone | Funds, vaccines, insecticides, staff | RVF suppressed | Epidemiological reports | | | | X | X | That adequate capacity will be availed |
| 16. LSD vaccination in free and protection zones | Funds, vaccines, staff | LSD suppressed | Epidemiological reports | X | X | X | X | X | That adequate capacity will be availed |
| 17. Trypanosomosis vector control | Funds, insecticides, kits, staff | Trypanosomosis suppressed | Epidemiological reports | X | X | X | X | X | That adequate capacity will be availed That producers will adopt the necessary technology |
| 18. Awareness creation on zoning and other SPS measures | Funds, expertise, staff | Sustainability of free zone achieved | Records, industry's own good practises | X | X | X | X | X | |

| | | | | | | | | | | |
|--|------------------------------------|---|---|---|---|---|---|---|--|--|
| 19. Survey, design and construction of 4 holding grounds & outspans (Wenje, Bargoni, Bothai, Garissa) | Funds, expertise, material | Disease-barrier reinforced | Work certificates | X | X | | | | | That Ministry will access land in Garissa for the purpose |
| 20. Survey, design and construction of 4 quarantine stations (Kurawa, Karmale, Lungalunga & Ndi) | Funds, expertise, materials | Disease-barrier reinforced | Work certificates | X | X | X | X | X | | That Ministry land will be recovered from illegal encroachers for the purpose in Kurawa and Karmale. That land will be accessed at Lungalunga & Ndi for the purpose |
| 21. Construction of BSL3 lab at Kabete, rehabilitation of CVL, FMD lab, Mariakani & Garissa RVIL, Ukunda and Witu satellite labs | Funds, expertise, materials, staff | Appropriate disease diagnosis and product quality certification achieved. | Work certificates | X | X | X | X | X | | That adequate capacity will be availed |
| 22. Revamping of 6 livestock multiplication farms at Bachuma, Matuga, Mwachi, Mwatate, Miritini, Sabaki | Funds, expertise, inputs, staff | Prime grades of meat achieved High quality hides and skins | Reports, works certificates | X | X | X | X | X | | That Ministry will recover land at Miritini and Sabaki from illegal encroachers for the purpose |
| 23. Upgrading zonal breeds through AI and purchase from multiplication farms | Funds, expertise, inputs, staff | Prime grades of meat achieved High quality hides and skins | Reports, cold dressed weights, hides and skin sizes | X | X | X | X | X | | |

| | | | | | | | | | |
|---|-------------------------------|---|---------------------------|---|---|---|---|---|--|
| 24. Establishment of rangeland carrying capacity | Funds, expertise | Status of feed and water & appropriate stocking rates established | Reports, records | X | | | | | |
| 25. Rangeland rehabilitation through reseeding, water harvesting and conservation | Funds for training, expertise | Rangeland sustainably used | Reports, records | X | X | X | X | X | |
| 26. Promotion of livestock marketing through formation & capacity building of producers and marketing groups | Funds for training, expertise | Markets accessed | Reports | X | X | X | X | X | |
| 27. Export marketing diplomacy | Funds for missions | Markets accessed | Reports, trade agreements | X | X | X | X | X | |
| 28. Establishment and operation of livestock marketing information system | Funds | Markets accessed | Reports | | X | X | X | X | |
| 29. Promotion of value addition for meat, hides and skins including establishment of cottage industries and biogas plants | Funds for training | Value added to zonal products | Reports, records | | | X | X | X | |
| 30. Recruitment of 935 additional staff and procurement of 40 vehicles, 100 motor cycles & 32 computers with internet and accessories | Funds | Capacity for zoning enhanced | Records | X | X | X | X | X | |

| | | | | | | | | | |
|--|---|---|---------------------|---|---|---|---|---|--|
| 31. Producer registration, animal identification and traceability | Funds, expertise, equipment, kits | Database and meat traceability achieved | Records | X | X | X | X | X | |
| 32. Construction of 1 export abattoir in Mombasa | Funds, expertise | Export market access facilitated | Works certificate | | X | X | X | X | That KMC or private investor will run the plant as PPP |
| 33. Development and implementation of residue monitoring and control plan | Funds for training, awareness, sampling, testing, expertise, kits | Export market access facilitated | Records and reports | X | X | X | X | X | |
| 34. Promotion of the provision of animal welfare by producers | Funds for awareness on welfare standards and for certification | Export market access facilitated | Records and reports | X | X | X | X | X | |
| 35. Research and development | Funds | Free zoning facilitated | Records and reports | X | X | X | X | X | That Ministry will be able to set research agenda |
| 36. Technical self-audit of the zone and evaluation of veterinary services | Funds, expertise | Export market access facilitated | Records and reports | | X | X | X | X | |
| 37. Zoning coordination, monitoring and evaluation through Programme Coordination Unit | Funds, expertise, staff | Zoning facilitated | Records and reports | X | X | X | X | X | |

I – STRATEGIC THRUST & RATIONALE

1.1. Project linkages with country strategy and objectives

The Kenya Disease Free Zones Programme is both a strategy for revitalizing animal agriculture and promoting livelihoods as well as an economic flagship project. It is formulated in line with the Strategy for Revitalizing Agriculture (SRA) 2004 – 2014, Kenya Vision 2030 and National Livestock Policy. Through implementation of this and other flagship projects the Gross Domestic Product (GDP) is expected to grow by 10% per annum. For the agricultural sector, the national target is the generation of additional Sh 80 billion (or 7% growth rate) per year which the programme will contribute into.

The recognition of the concept is emphasized in various government policy documents such as 9th National Development Plan – 2002 -2008, Poverty Reduction Strategy Paper (PRSP), Economic Recovery Strategy for Wealth and Employment Creation (ERSWEC) -2003 to 2007, Strategy for Revitalizing Agriculture (SRA) 2004 – 2014, Kenya Vision 2030 and the Sessional Paper 2 of 2008 for the National Livestock Development Policy. These policies are in line with the Millennium Development Goals (MDGs), i.e. contributing to Goal Number One on reducing hunger and wealth creation, Goal Number Seven on protection of the environment and Goal Number Eight on establishment of global linkages. By empowering communities financially, it will assist them provide Goal Number Two on primary education and Goal Number Six on reversing Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS).

The development of 4-5 Disease Free Zones has been captured as flagship projects in the Vision 2030. In line with new commitments in investment under Vision 2030, the programme proposal was developed in February 2008 to make it responsive to the new policy's prescriptions.

The overall goal of the programme is to contribute to poverty reduction at the national and household levels. The programme is consistent with the government policies of mainstreaming the development of ASAL areas in the economic framework of the country. The proposed zone will be located in Arid and Semi-arid Lands (ASAL).

1.2. Rationale

The specific objectives of the programme are to facilitate access of livestock and livestock products to local, regional and international markets, to improve sustainable rural livelihoods and food security and to strengthen institutions in the livestock sub-sector.

Under the World Trade Organization (WTO) Agreement for the Application of Sanitary and Phytosanitary Measures (commonly called the SPS Agreement) member countries agreed to recognize areas pest- or disease-free areas and areas of low pest or disease prevalence as source of animals and animal products for the purpose of international trade, subject to assessment of risk. Resource-poor countries who are not able to eradicate trade-sensitive diseases in the whole country may create zones from where such diseases

will be eliminated to allow them participate in the international trade. The Office Internationale des Epizooties (OIE), also known as World Organization for Animal Health which is the technical advisor of WTO members on animal disease and zoonoses and SPS measures have developed guidelines on how to achieve zonal freedom from various diseases and how to assess disease risks in international trade. Potential importing countries conduct risk assessment in disease free zones in exporting countries after which they would buy animals or animal products. OIE is a reputable organization which also may be invited by exporting countries to conduct risk assessment and issue certificate of freedom from specific diseases in specific zones. Such certificate is generally recognized by importing countries.

1.3. Donors Coordination

The major donors in the Agriculture Sector are European Union (EU), Danish International Development Agency (DANIDA), Swedish International Development Agency (SIDA), United States Agency for International Development (USAID) and the German Development Agency (GTZ). They have formed a Donor Committee under the Agricultural Sector Coordinating Unit (ASCU) whose current Chair is GTZ. ASCU is the secretariat for Agricultural Sector Development Strategy which is implementing Kenya Vision 2030 in the sector. The other donors include the African Development Bank which is supporting ASAL-Based Livestock and Rural Livelihood Support Project (ALLPRO) and Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) in the Ministry of Livestock Development and the World Bank which has been supporting Arid Lands Resource Management Program (ALRMP).

II – PROJECT DESCRIPTION

2.1. Project objective and components

2.1.1 Programme Goal

The overall goal of the programme is to contribute to poverty reduction and food security at the national and household levels.

2.1.2 Programme Objective

The specific objectives of the programme are to facilitate access of livestock and livestock products to local, regional and international markets, to improve sustainable rural livelihoods and food security and to strengthen institutions in the livestock sub-sector.

2.1.3 Programme Components

The Programme will have the following components:

(a) Animal Health Improvement Component: The programme aims to progressively control and subsequently eradicate and confirm freedom for Foot and Mouth Disease (FMD) and Contagious Bovine Pleuropneumonia (CBPP) as well as confirm the presumed historical freedom from Bovine Spongiform Encephalopathy (BSE). The programme will also maintain the recently acquired freedom from Rinderpest. Control measures will also be instituted for 8 other diseases, i.e. Rift Valley Fever (RVF), lumpy skin disease (LSD), Brucellosis, Trypanosomosis, Tuberculosis, Sheep and Goat Pox, *Peste des Petit Ruminants* (PPR), Contagious Caprine Pleuropneumonia (CCPP). Disease-barriers will be established and will be patrolled in a structured manner. Implementation of this component will entail the following;

- i. Disease diagnosis and surveillance,
- ii. Vaccination, testing, slaughter and compensation
- iii. Livestock movement management,
- iv. Registration and identification of livestock in the zone,
- v. Staff recruitment as well as their training on zoning procedures, international or OIE sanitary standards, risk analysis and inspectorate services.
- vi. Improvement of slaughtering facilities and quality control - The success of the Programme will depend on achieving supply of quality meat, milk, hides, skins and their bi-products for local and international markets. Export abattoirs, both Kenya Meat Commission (KMC) and private ones will be assessed for biosecurity and corrective measures taken. An internationally recognized inspection, certification and quality assurance procedure will be developed and implemented. This will include development of capacity to carry out Hazard Analysis for Critical Control Points (HACCP) as well as tests for pests, diseases, disease-causing organisms, toxins, residues, prohibited substances, environmental contaminants and growth promoters.
- vii. Carrying out of measures to enhance animal and product traceability. This will involve producer registration and animal identification through modern technology including ruminal electronic devices.
- viii. Carrying out measures to provide animal welfare and conduct regular welfare audits.
- ix. Community engagement on disease control and other sanitary measures will also be undertaken so as to achieve ownership and compliance.

(b) Infrastructure Development Component: To facilitate establishment of disease free zones, the programme will rehabilitate and construct disease control, animal handling and marketing infrastructure. 4 quarantine stations will be erected at Karmale, Kurawa, Manyani (Ndi) and Lungalunga. A quarantine facility to serve Mombasa port will also be established. Strategic holding grounds will be established or rehabilitated as detailed in the Table 2.1.3 below:

Table 2.1.3: Proposed holding grounds per district

| District | Stations/Outspans | Number |
|------------|-------------------|--------|
| Garissa | Garissa | 2 |
| Ijara | Bothai | 1 |
| Tana River | Wenje | 1 |
| Lamu | Bargoni | 1 |
| Malindi | Sabaki | 1 |
| TOTAL | | 5 |

The Component will also erect a disease-barrier cordon-fence with gates (also called inspection points), construct office-blocks and also rehabilitate 6 laboratories which are the Central Veterinary Laboratory-Kabete, Foot and Mouth Disease Laboratory-Embakassi, Mariakani Regional Veterinary Investigation Laboratory (RVIL), Garissa RVIL as well as Witu and Ukunda satellite laboratories.

(c) Animal Productivity Improvement Component: Animals of lesser disease-status are not supposed to be introduced into a free-zone as that would lead to loss of the free status. Therefore the ideal and ultimate aim of the programme is for zonal farmers to breed and finish their own animals as this reduces risk of introduction of disease with new animal entrants. However, in the early years of the programme when disease eradication activities will be going on and freedom status will not have been achieved, fattening animals will be purchased by zonal farmers from the protection and infected areas and taken through a screening process to eliminate risk of diseases under consideration.

Zonal animals would have to be of good breed quality, with fast growth rates and heavy carcass weights. For example, cattle would have to be finished at 24-30 months and attain 200-240 kg Cold-Dressed Weight. To achieve these targets, breed improvement activities will be carried out, starting with the zone and extending later on to the protection and infected areas.

A Boran-breed promotion programme will be developed and implemented. This will include provision of subsidized artificial insemination services (AI) and other appropriate breeding practices and technologies. Multiplication centers will be rehabilitated to provide breeding bulls, rams and bucks. Zonal farmers not using AI would procure their genetic material from such breeding centres. Extension services will be revamped in order to empower producers to adopt and achieve improved animal productivity.

The current livestock multiplication centres will be rehabilitated, i.e. Bachuma, Mwatate, Matuga, Galana, Kiswani and Witu. Bachuma, Miritini and Sabaki holding grounds will be converted into breeding centres for AI and livestock multiplication and rehabilitated for that purpose:

The **Animal Productivity Improvement Component** will have a sub-component on **Improvement of Rangelands**. The programme will undertake activities geared towards

improving rangeland management. Such activities will include developing and instituting pasture and water development and conservation programs and encouragement of ranching. Seed production and bulking will also be undertaken. Producers and the community will be engaged on implementation of environmental conservation and rehabilitation programs within the zones. Drought mitigation measures will also be put in place including promotion of appropriate stocking rates and a structured off-take system.

(d) Livestock Marketing Improvement Component

Livestock marketing is a very under-developed system in Kenya. It faces constraints of poor structure with too many middle players, poor infrastructure including roads, telephone and ICT, poor information network, weak marketing associations, unethical practices, low value addition, low level of local and international advocacy and poor business acumen for traders especially with respect to exports. The Component will revamp livestock marketing so that it can take lead role in international meat trade and bring in the expected benefits to all value chain players. Activities in the Component will include training and capacity building of marketing value chain players and respective departments, development of marketing infrastructure, international marketing intelligence and international zonal publicity. Women and youth will be additionally be targeted for support in running marketing systems.

Each of the programme components will incorporate sub-component on **Sensitization and Community Engagement**. All methods of extension will be used including farmer-field schools, group training, mass media and handbills. The capacity of veterinary and animal production workers to offer extension services is limited and this will be improved through Training-of-Trainers courses on communication skills and methodologies.

The programme will incorporate a deployment on **Monitoring and Evaluation, Data Analyst, Socioeconomist** and other support staff in a **Programme Coordination Unit** based in the Department of Veterinary Services headquarters.

The table below summarizes the programme description by component:

| No. | Component name | Est. cost in Ksh million | Component description |
|-----|--|--------------------------|--|
| 1. | Animal Health Improvement & Quality Assurance Component | 5,210 | <ul style="list-style-type: none"> ▪ Zonal planning ▪ Eradication through OIE pathways of 2 diseases, i.e. Foot and Mouth Disease (FMD) and CBPP, ▪ Establishment of BSE status and subsequent monitoring ▪ Maintenance of Rinderpest freedom ▪ Suppression of 8 other diseases, i.e. Rift Valley Fever (RVF), lumpy skin disease (LSD), Brucellosis, Trypanosomosis, Tuberculosis, Sheep and Goat Pox, Peste des Petit Ruminants |

| | | | |
|----|--|--------------|---|
| | | | <p>(PPR), Contagious Caprine Pleuropneumonia (CCPP).</p> <ul style="list-style-type: none"> ▪ Training zonal technical officers (and stakeholders) on zoning procedures, animal identification and traceability and product quality assurance. ▪ 12 disease-specific contingency plans developed and annually reviewed. ▪ 1 annual technical audit of zone; ▪ Meat quality assurance services ▪ Residue monitoring plan developed and implemented. |
| 2. | Infrastructure Development Component | 3,449 | <ul style="list-style-type: none"> ▪ Establishment of 4 quarantine stations and rehabilitation of 6 holding grounds; ▪ Establishment of disease-barrier fence & gates; ▪ Rehabilitation of 4 main laboratories and 2 satellite labs, ▪ Rehabilitation of 13 zonal office blocks; ▪ Rehabilitation of veterinary infrastructure at ports of entry in Coast; ▪ Construction of 1 export abattoir |
| 3. | Improving Animal Productivity Component | 334 | <ul style="list-style-type: none"> ▪ 9 livestock multiplication farms rehabilitated; ▪ 1 (one) AI centre & run established; ▪ Training zonal animal producers on breed improvement; ▪ Re-establishment of carrying capacity of zonal pastures; ▪ Training zonal animal producers pasture development and range management; ▪ Promotion of range rehabilitation and ranching. |
| 4. | Improving Livestock Marketing Component | 102 | <ul style="list-style-type: none"> ▪ Training and capacity building of marketing value chain players and respective departments; ▪ Promotion of value addition activities for meat, hides and skins and other zonal products. ▪ Development of producer and marketing cooperatives and other organized groups (including women-led groups) as well as the necessary marketing infrastructure, ▪ International marketing intelligence and international zonal publicity ▪ Putting in place livestock marketing information system ▪ Linking of marketing groups to financial institutions and target markets. ▪ Establishment of cottage industries for processing of by products e.g biogas, tanneries |
| | Capacity building | 2,161 | <ul style="list-style-type: none"> ▪ Provision of 40 vehicles & 100 motor-cycles ▪ Provision of 32 office-blocks and 32 computers with internet; ▪ Recruitment of additional 953 technical and |

| | | | |
|--|-------------------------------|------------|---|
| | | | support staff to serve the zone. |
| | Research | 78 | <ul style="list-style-type: none"> ▪ Conducting and collaborating in research to address zonal challenges |
| | Legal improvements | 1.6 | <ul style="list-style-type: none"> ▪ To seal legal gaps on zoning |
| | Programme Coordination | 198 | <ul style="list-style-type: none"> ▪ Management, coordination, monitoring and evaluation of implementation of programme activities |

2.2. Technical solution retained and other alternatives explored

The Programme design involves identification of a zone based on epidemiological factors, the eradication of target diseases inside the zone, the establishment of disease-barrier and running a surrounding protection area. This Programme is designed in accordance with international standards as developed by OIE for WTO-member countries. Kenya is a member of both organizations and aspires to comply with all international sanitary standards in the whole territory. As the cost of country-wide eradication of target diseases is very costly and difficult, Kenya has decided to achieve the necessary standards on zonal basis. This will allow the country to participate in high-value international markets for commodities produced in the zones while providing room for structured enlargement of the zones to cover new areas and eventually the whole country.

The Programme conforms to the best practices in the development arena. The OIE is the ultimate international organization responsible for setting sanitary standards and has provided a guideline for zoning which will be adopted in the programme. The OIE freedom certificates for target diseases will be the measure of compliance with disease-free status while prime grades of meat will be the measures of nutritional quality.

There are no alternatives to the programme. The disease and quality status for zonal commodities are set by the market as assured by OIE standards. Any other alternative project which does not adopt the OIE guidelines or which does not provide equivalent standards as determined by the market would not sustainably guarantee Kenya's objective of accessing high-value markets for zonal commodities.

2.3. Project type

The programme is a budget support project, with this modality being identified as the most suitable for the country's budgeting procedures.

2.4. Project cost and financing arrangements

The overall cost of the programme is estimated as **Ksh 11.5 billion** which is spread out in 5 years. This period is the time it will take to eradicate foot and mouth disease, the main disease under consideration. The government is the lead financing agency and has pledged to roll-off the project with Sh 3 billion. The government will also source donors to support with the balance of the required monies. The government has been requested

to access Ksh 2.8 billion with the African Development Bank Group and considerations are going on. Arab Bank for the Development of Africa (BADEA) has also expressed interest to support part of the costs of the programme.

After the 5th programme year, **Sh 674 million** will be needed annually for maintaining the zonal freedom, which will be provided by the government and stakeholders.

The breakdown of programme costs and financial arrangements is summarized in Tables below:

Table 2.3: Project cost estimates by component (in million Ksh)

| Components | Foreign Exchange (F.E.) | Local Costs (L.C.) | Total | % F.E. |
|------------------------------------|-------------------------|--------------------|---------------|--------|
| Animal health & quality assurance | | | 5,210 | |
| Infrastructure development | | | 3,449 | |
| Animal productivity improvement | | | 334 | |
| Livestock marketing improvement | | | 102 | |
| Cross-cutting activities | | | | |
| • Capacity Building | | | 2,161 | |
| • Research | | | 78 | |
| • Legal and policy improvements | | | 1.6 | |
| • Programme coordination and M & E | | | 198 | |
| Total programme cost | | | 11,500 | |

Table 2.4: Sources of financing (in million Ksh)

| Sources of financing | F.E. | L.C. | Total | % total |
|--|------|------|---------------|---------|
| Government & development partners | | | 11,500 | |

Table 2.5: Expenditure schedule by component (in million Ksh)

| Components/Year | 2009/2010 | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 |
|---|--------------|--------------|--------------|--------------|--------------|
| Animal health & quality assurance improvement | 1,249 | 1,318 | 1,240 | 874 | 529 |
| Infrastructure development | 594 | 975 | 1,394 | 292 | 195 |
| Animal productivity improvement | 118 | 98 | 57 | 29 | 32 |
| Livestock marketing improvement | 34 | 17 | 17 | 17 | 17 |
| Cross-cutting | | | | | |
| ▪ Capacity building | 676 | 363 | 369 | 374 | 380 |
| ▪ Research | 5 | 23 | 22 | 23 | 5 |
| ▪ Legal improvements | 0.8 | 0 | 0.8 | 0 | 0 |
| ▪ Programme Coordination & M & E | 60 | 35 | 34 | 35 | 34 |
| Total cost | 2,736 | 2,828 | 3,135 | 1,643 | 1,192 |

2.5. Programme target area and population

2.5.1 Programme Area for Coastal Zone

The geographical area of the zone will be in the Coast. However, activities elsewhere in the country such as disease surveillance and testing will contribute toward zoning in the Coast.

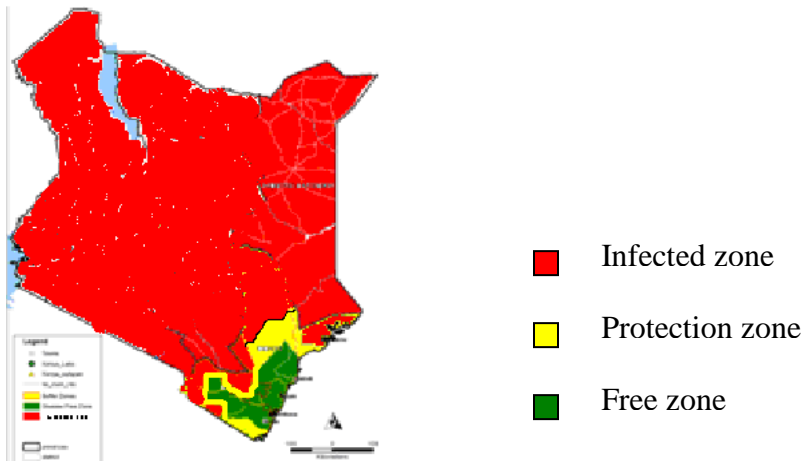
The livestock population in the proposed Coastal free zone is 608,871 cattle, 1,018,330 goats and 178,961 sheep while the human population is 2,764,040 million according to the 2009 National Census.

Table 2.5.1 below details the programme areas:

Table 2.5.1: Project Area: Coastal Zone

| Proposed free zone districts | Protection zone districts | Infected area districts |
|---|--|--|
| Kinango | Lungalunga division of Msambweni district | Tsavo National Park |
| Kwale | Part of larger Tana River district (i.e. Tana Delta) | Parts of larger Tana River All districts of former North Eastern Province |
| Msambweni (except Lungalunga Division) | | Lamu |
| Taita district (minus Tsavo National Park) | | Rest of the country |
| Kaloleni | | |
| Kilifi | | |
| Malindi | | |
| Mombasa | | |
| Kilindini | | |
| KMC Mombasa or any other approved export abattoir in the zone | | |

Figure 2.5.1 below is a proposed map of the Coastal Zone.



The proposed free zone area is estimated as 9 million hectares or 90,000 square kilometres. The actual survey and design of the Coastal Zone would be done during implementation of the zone. The general border of the zone will follow the boundary from the sea and between Vanga and Pongwe-Kidimu divisions, thence northwards along boundary of Segwa and Mwena locations, thence northwards along the boundary between Mwereni and Lungalunga ranches, thence eastwards between Chenze and Lungalunga ranches, thence southwards between Lungalunga and Kenya Triangle Ranch, thence northwards along the Kenyan edge of the no-man’s land along Kenya-Tanzania border, then westwards along the boundary between Tsavo National Park and Kenya Triangle Ranch, thence northwards along the western border of Tsavo National Park, thence westwards along the boundary of Tsavo National Park past proposed Manyani Quarantine Station at Ndiu up to proposed Karmale Quarantine Station, thence southwards past the proposed Kurawa Quarantine Station up to the sea.

2.5.3 Programme Beneficiaries

The ultimate beneficiaries of disease free zoning will be the livestock sub-sector operators, including livestock owners (pastoralists, agro-pastoralists, some dairy and mixed farmers), livestock traders, livestock transporters, associated operators, and chambers of commerce, public and private sector animal health service providers, and community based organizations engaged in the sub-sector. The zonal beneficiaries number 2.7 million while benefits will extend to another 6 million persons in the meat and hides value chain and in the protection and infected areas. The project will also facilitate the earning of foreign exchange for the country. In terms of employment, the project will create opportunities for professionals in veterinary medicine, agriculture, biological sciences and marketing.

2.5.4 Main project-related outcomes for the target group

| Outcome/benefit | Annual value in Ksh billions |
|--|------------------------------|
| Increased supply of meat locally and for export from reduced mortality and increased reproduction and growth rates, estimated as 48,000 MT of meat | 6.9 |
| 130,953 jobs, i.e. 953 public sector jobs, 30,000 private sector formal jobs and 100,000 private sector informal jobs | 5.3 |
| Rangeland improvement and environmental conservation, estimated 1,000,000 ha per year | 0.5 |
| Reduction in human deaths arising from human and animal diseases such as brucellosis, TB and Rift Valley fever through saving 50 lives per year. | 0.002 |
| Increased milk production for sale or household consumption, assumption 20,000,000 litres | 0.2 |
| Increased hides and skins value from increased off-takes and increased square-feet, estimate additional 160,000 high-value hides | 3.2 |
| Manure increase -30,000 tonnes from farms and abattoirs & also blood/bone meals | 0.08 |
| TOTAL OUTCOMES/BENEFIT | 16.2 |

Participatory process for project identification, design and implementation

The following participatory process has been followed in identifying the programme:

| PERIOD | PROCESS |
|-------------------------|--|
| 1995 | Kenya assented to the WTO-SPS Agreement and in so doing desired to implement sanitary measures (which includes disease-free zoning) to prevent the spread of diseases, toxins and contaminants in the world and also to assure food safety and human health. Resource-poor countries were given up to year 2000 to comply. |
| 2003-2004 | Stakeholder consultations held in identifying projects for the revitalization of agriculture. Disease-free zoning was identified as a project for implementation under the national Strategy for Revitalization of Agriculture 2004-2014. |
| 2004-2005 | Ministerial Task Force held stakeholder consultations for designing the project and identifying the geographical areas with potential for zoning. 4 potential areas identified as having the potential for zoning which were also prioritized and awareness campaigns started. |
| 2006-2007 | A stakeholder team was formed which drafted Kenya Vision 2030 as the national policy for poverty reduction and attainment of Millennium Development Goals. Disease-free zoning was identified as an economic flagship project. Provincial workshops were held to validate the draft. |
| 2007-2010 | Stakeholder workshops held in strategic areas for engagement on zoning and which included the private sector and community-based organizations. |
| January & February 2010 | Primary stakeholders buy-in achieved on zoning proposal |
| June 2010 | Parliamentary Groups buy-in achieved on zoning proposal |

2.8. Programme's performance indicators

2.8.1 Key Performance Indicators

The Key Performance Indicators for the programme will include:

- a) Prevalence of FMD reduced from 30% to 0% and of CBPP from 30-40% to 0%.
- b) Freedom from BSE confirmed and that of Rinderpest re-confirmed and documented;
- c) Attainment of the status for other diseases as follows:
 - (i) Regular serological tests confirms that the rate of bovine brucellosis infection does not exceed 0.2% of the cattle herds in the zone;
 - (ii) Annual serological survey confirms that 99.8% of the sheep and goats are qualified as officially free from caprine and ovine brucellosis;
 - (iii) *Mycobacterium bovis* infection was not present in at least 99.8% of the herds and 99.9% of the farmed cervidae in the zone for 3 consecutive years;
- d) Prevalence of lumpy skin disease, RVF, CCPP, SGP, PPR and trypanosomosis has been reduced by 99% in the zone.
- e) Average cold-dressed weight increased from 150 kg to 200 kg for cattle and 10 kg-30 kg for sheep or goats.
- f) Additional 48,000 MT of prime meat produced for the market.
- g) 130,953 new jobs created
- h) Size of hides increased from average 20 square feet to 30 square feet;
- i) Export value of hides increased by 20%.
- j) Livestock off-take increased from 5% to 20% in the zone.
- k) Productivity of zonal livestock breeds increased by an average of 35% and neonatal mortality reduced from an average of 25% to less than 5% in 5 years.

2.8.2 Tools for Measuring Progress

Progress toward achieving the main programme outcomes will be measured using the following tools:

- a) Field reports by zoning implementing units
- b) Annual reports
- c) Economic surveys
- d) Disease surveillance reports
- e) OIE evaluation reports and OIE freedom certificate for zones
- f) Certificates of trained officers
- g) Range assessment reports
- h) Completion of works certificates
- i) Physical verification of capital projects

2.8.3 Triggers to indicate progress

The main triggers to indicate progress during implementation will be:

- a) Results of surveillance for FMD
- b) Signing of agreements with importing countries recognizing the zones.

2.8.4 Sources of data

The sources of information and data in the programme will be as follows:

- a) Field reports by frontline implementation officials.
- b) Surveillance reports by Department of Veterinary Services
- c) M & E and technical audit missions by the Ministry of Livestock Development
- d) Risk analysis mission reports by DVS and importing countries.
- e) Impact assessment surveys by independent experts engaged by the programme.

The M&E Component will be an integral implementer of the programme and will conduct assessment in a structured following up on programme log frame, implementation schedules and work plans

III - PROGRAMME FEASIBILITY

3.1. Economic and financial performance

The benefit/cost as the ratio of the net present value of benefits to the net present value of costs is 1.83. This ratio is an indication that the project is worthwhile. The ration remained positive at 1.0 after sensitivity analysis indicating that the programme should remain attractive even when circumstances change. The key assumptions underlying the calculations of economic viability were as follows:

- a) That the community will continue to support disease-free zoning;
- b) That zoning will act as an incentive for appropriately stocking the ranches which are now under-stocked;
- c) That the prices of goods, services and products will be predictable and stable.
- d) That the export markets will continue to offer more attractive returns as compared to domestic market thereby assuring the value of local processing and value addition.

3.2. Environmental and Social Impacts

3.2.1 Environment

3.2.1.1 Major negative environmental impacts and mitigation

The programme implementation will involve increased use of veterinary medicines and poisons which have a negative effect on the environment. These drugs include dip and

other vector control chemicals, antibiotics, syringes, plastics, etc. To mitigate this effect, veterinary professionalism will be the foundation of service delivery while the use and disposal of veterinary medicines will be closely supervised according to the law. There will also be heightened producer awareness and improved animal farming management.

There will be restriction of free movement of large game especially buffaloes in cattle farming areas through erection of veterinary fences. There is an on-going game fencing being carried out by wildlife authorities along the boundaries of Tsavo National Park for the purpose of reducing inherent human-livestock-wildlife. The veterinary fence will be a reinforcement of the game-fence to achieve biosecurity and curb transmission of Foot and Mouth Disease between buffaloes and cattle. There will not be significant negative impact on biodiversity due to this restriction since the zone is adjacent to the Tsavo National Park which is a vast protection area for wildlife.

3.2.1.2 Major positive environmental impacts and costs of their enhancement

The major positive environmental impact of the programme is rangeland improvement and environmental conservation. This is a Component of the programme which in addition to assuring sustainability also improves the environment and its exploitation for human development. An estimated 2,000,000 ha in the free zone, protective zone and production areas will benefit at an enhancement cost of Ksh.500 per ha per year.

The programme will utilize positively the otherwise environmental contaminants of manure blood, bone, trimmings, hairs and other inedible products. Manure will be recycled for biogas production and crop agriculture while blood, bone and trimmings will be used for the manufacture of animal feedstuffs for feeding non-ruminant animals in the country and for export. This utilization will yield an added benefit from the programme of Sh 80 million per year. This will attract negligible additional enhancement costs as approved abattoirs would routinely provide this service.

3.2.2 Climate change

Climate change is a factor of poor management of the environment as well as pollution. It manifests in droughts, floods and epidemic diseases. Environmental concerns have been ingrained in the programme, including, pasture production and conservation, water harvesting and emergency preparedness, while pollution from waste products of livestock farming will be addressed through positive waste management.

3.2.3 Gender

The programme has no expected negative impacts on gender. Benefits will spread to the entire communities. There will be added benefits to women (and children) in increased milk production for domestic use as well as in support to their participation in livestock marketing.

3.2.4 Social

The programme will contribute to the achievement of the Millennium Development Goals of eradicating extreme poverty and hunger through improvement of incomes, employment creation and provision of food of animal origin. Beneficiaries will be able to afford quality life and therefore more effectively combat HIV/Aids, malaria and other diseases as their incomes will be uplifted while vulnerable groups would be better nourished. In addition to these social benefits, there will be other multiplier effects on education and social security. Spill over effects will spur development in the other sectors connected to livestock industry. Currently the country spends Ksh 10 billion on food relief and most of this food goes to the ASAL areas, part of which will be saved.

In the zonal areas as in other parts of the country, there are human deaths as a result of zoonotic diseases such as brucellosis, tuberculosis and Rift Valley Fever. These are among the 12 diseases for consideration in the zones and their suppression in the programme will directly save more than 300 human lives annually.

3.2.5 Involuntary resettlement

The programme will not displace people as it will generally not interfere with human settlement. Infrastructure development and identification of appropriate disease-barriers will be done through stakeholder consultation, technical evaluation and survey such that there is minimal interference with settlements and livelihoods.

An environmental and social impact assessment is been done at the moment through GOK funds.

IV– IMPLEMENTATION

4.1. Implementation arrangements

Disease-free zoning is recognized internationally as a public good programme. The details of the stakeholders and collaborators and their roles is provided in Table 4.1 below;

Table 4.1 Stakeholders in DFZ Programme

| Players/stakeholders | Roles |
|--|--|
| Central Government | <ul style="list-style-type: none">• Creation of enabling environment• Lead institution in financing the programme |
| Ministry of Livestock Development | <ul style="list-style-type: none">• The implementing agency for the programme |
| Ministry of Trade | <ul style="list-style-type: none">• Export market intelligence |
| Ministries responsible for Public Works, Roads and Housing | <ul style="list-style-type: none">• Construction and maintenance of infrastructure, houses, roads and physical barriers |

| | |
|---|--|
| Office of the President | <ul style="list-style-type: none"> • Security and law enforcement |
| Ministry of Cooperative Development and Marketing | <ul style="list-style-type: none"> • Marketing |
| Ministry of Lands, Ministry of Local Government and communities | <ul style="list-style-type: none"> • Land for zonal infrastructure |
| The Department of Veterinary Services | <ul style="list-style-type: none"> • Lead agency on zoning responsible for sanitary activities and controls and product quality assurance and certification |
| The Department of Livestock Production | <ul style="list-style-type: none"> • Range management, animal nutrition, animal management, animal husbandry and marketing |
| The Kenya Veterinary Board | <ul style="list-style-type: none"> • Assurance on quality veterinary clinical services |
| Kenya Agricultural Research Institute | <ul style="list-style-type: none"> • Collaboration in livestock research |
| KEVEVAPI | <ul style="list-style-type: none"> • Provision of vaccines • Collaborative research on FMD |
| Kenya Trypanosomosis Research Institute. | <ul style="list-style-type: none"> • Collaborative research in tsetse fly and trypanosomosis |
| Public universities | <ul style="list-style-type: none"> • Collaboration in diagnostics and quality analysis. |
| Kenya Wildlife Service | <ul style="list-style-type: none"> • Collaboration in disease surveillance in game. • Collaboration in physical barriers and patrols |
| Kenya Meat Commission (KMC) and other meat processors | <ul style="list-style-type: none"> • Processing of meat and meat products |
| Ministry of Northern Kenya and other Arid Lands/ALRMP | <ul style="list-style-type: none"> • Support to established of screening stations and rangeland development |
| Ministry of Environment and Mineral Resources | <ul style="list-style-type: none"> • Collaboration in environmental management |
| ALLPRO | Collaboration in disease control and capacity building |
| ASCU | Support for DFZ through policy review, planning & community engagement |
| Development Partners | <ul style="list-style-type: none"> • Technical and financial support |
| Agricultural Development Co-operation (ADC) | <ul style="list-style-type: none"> • Breed multiplication |
| Kenya Livestock Breeders Organization | <ul style="list-style-type: none"> • Breed development and recording |
| Judiciary | <ul style="list-style-type: none"> • Enforcement of the law |
| Ministry of Water and Irrigation | <ul style="list-style-type: none"> • Development of water for livestock |

| | |
|--|--|
| Livestock producers | <ul style="list-style-type: none"> • Registering their animals • Reporting disease outbreak to DVS • Presenting animals for vaccination, testing and identification • Source animal inputs on prescription and from reputable sources • Source animal health and production services from qualified persons • Implement sanitary measures; • Adopt appropriate livestock management |
| Private sector | <ul style="list-style-type: none"> • Livestock farming, marketing, provision of abattoirs, animal-farming inputs and veterinary private-good clinical services. |
| Livestock traders, middlemen, transporters | <ul style="list-style-type: none"> • Report disease outbreak to DVS • Implement sanitary measures; |
| Investors | <ul style="list-style-type: none"> • Invest in livestock finishing/fattening, export abattoirs, meat processing and other value addition plants • Invest in disease control and livestock holding infrastructure |
| Local Authorities/Counties | <ul style="list-style-type: none"> • Assist in enforcement of livestock movement control • Provision of animal marketing infrastructure • Plough back some percentage of revenue to support livestock marketing and disease control. |
| Civil society | <ul style="list-style-type: none"> • Mainstream livestock disease control in their activities |
| Financial institutions | <ul style="list-style-type: none"> • Provide credit |
| CBOs | <ul style="list-style-type: none"> • Bring together farmers to pool their resources and efforts to maximize their benefits. |
| Farmers' organizations | <ul style="list-style-type: none"> • Assist in gaining access to inputs, credit, markets and market information, production education, information and advocacy for their members. |
| Marketing associations | <ul style="list-style-type: none"> • Private sector livestock marketing |
| Regional development authorities | <ul style="list-style-type: none"> • Collaboration in animal multiplication |
| Consumers | <ul style="list-style-type: none"> • End users and beneficiaries |

The implementing institutions will be coordinated through national and technical steering committees as well as a programme coordination unit. The National Disease-Free Zoning Steering Committee will oversee zoning and be chaired by the Permanent Secretary, Ministry of Livestock Development with Director of Veterinary Services as secretary. The members will be drawn from the collaborating Ministries at national level as well as private sector national institutions. It will provide policy guidance and harmonize operations of the different implementing institutions. The Technical Steering will oversee implementation of workplans and will comprise technical institutions implementing zoning activities. The day-to-day coordination will be carried out by the Programme

Coordination Unit comprising Programme Coordinator, Component Managers for each component and the supportive staff. At the zonal level there will be a Zonal Coordination Committee which will harmonize frontline activities in all zonal counties and districts.

The collaborating and implementing institutions generally have very low SPS awareness and they will require structured training for their personnel.

4.2. Monitoring

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The following will be monitored: status of work being performed compared to the plan, volume of work being completed, quality of work being completed, costs and expenditures compared to the plan, attitudes of people working on the project and others who are involved with the project, including customers and management and the cohesiveness and co-operation of team members. Information on these aspects will be captured through beneficiary details, programme activity progress, quality checks, attendance records, finances, outputs, results and impacts. Stakeholders will actively participate in monitoring the programme and will include the programme team, the sponsors, programme beneficiaries, government and regulatory organizations. A Monitoring and Evaluation expert will be deployed to the Programme Coordination Unit to coordinate the service.

4.3. Governance

The risk associated with governance includes:

- a) Deterioration of security arising from local conflict and insurgencies from regional neighbours. Good management of range and water resources as envisaged by the programme will reduce causes of conflict.
- b) Loss of political commitment to implement the project. Advocacy for ASAL development will be encouraged through community associations.

- c) Corruption: Implementation of GoK and donor's regulations in procurement, accounting and financial management will offset possibility of fraud and corruption.

4.4. Sustainability

Kenya is committed to the programme as evidenced by its entrenchment in the Vision 2030 Policy. The lifespan of this Policy is long enough to guarantee the successful establishment of 7 zones, exceeding the targeted 5 zones. Stakeholder ownership will be assured through thorough and structured SPS awareness creation. Aware stakeholders will naturally develop self-regulating "good practices". The government will enhance these good practices through the current national legal framework which is generally adequate to implement zoning. International law will be invoked especially with respect to importation and exportation of livestock commodities and inputs as well as in food safety and public health assurance.

The programme will have recurrent costs for maintaining the disease-free zone after 5 years, estimated at Sh 674 million per year, which shall be financed by the government. While the cost of SPS compliance is perceived as high at the beginning, there is however longer-term pay-off in terms of continued market access and/or considerable growth in export revenues.

4.5. Management of risks to the programme

Other than Governance and Sustainability, the other major risks to the programme during and after implementation and their proposed mitigation measures are as follows:

- a) Incursion of disease from neighbouring countries of unknown or indeterminate disease status. This will be partly addressed through enhanced regional disease control initiatives and strengthened border-point surveillance. The risk will also be managed through enforcement of protection zones and disease-barriers.
- b) Adverse cyclic climactic conditions and drought and the resultant increased livestock and wildlife movement. This will be addressed by in-building optimal range utilization practices within operational protocols to limit pasture depletion mainly within the disease free zone and immediate protective zone as well as water harvesting. Commercialization of livestock farming will be promoted where producers off-take predictably and would be in a position to sell off unmanageable herds in the advent of threat of excessive or prolonged drought well before animals lose condition when their meat value can be salvaged.
- c) Entrenched negative cultural practices such as cattle rustling and non-commercial or sentimental animal farming. The necessary cultural re-engineering will be promoted through community engagement, policy and law.
- d) Negative shift of international trading protocols. The country will engage more with trading partners through membership to regional and international trade groupings and also anticipate emerging sanitary standards and implement them upfront to avoid disruption of trade.

4.6. Knowledge building

The implementation of the project will generate knowledge, competence and compliance with OIE, Codex Alimentarius and WTO sanitary measures and other international good practices. This knowledge will be captured in reports, institutions and in the human resource and spread out through formal meetings, technical circulars and in staff-exchange between zonal and non-zonal areas.

ANNEXES

I. Policy and Legal Framework for disease-free zoning

II. Procedures for attaining disease-free status in zones

III. Detailed Implementation and Coordination Arrangements

V Monitoring and Evaluation Plan

VI Implementation Plan

VII Gender analysis

IV. Detailed Project Costs

ANNEX I: POLICY AND LEGAL FRAMEWORK FOR DISEASE-FREE ZONING

The zoning process is aptly supported by the following policies and laws:

1. **Kenya Vision 2030:** This is the national policy of the government of Kenya which will guide development up to the year 2030. The policy institutionalizes the establishment of 4-5 zones between the years 2008 and 2030. The Vision provides the economic blue-print for development. It identifies 7 pillars of the national economy. In Chapter 4 (of Popular Version) six sectors are identified as key growth drivers including agriculture. The planning and creation of 4-5 disease-free zones is identified as one of the 7 flagship projects in the agricultural sector, the combined outcome of which should contribute additional benefits to the economy worth Ksh 80-90 billion.
2. **Agricultural Sector Development Strategy (ASDS):** Formerly called the Strategy for Revitalization of Agriculture before a review, this policy institutionalizes Kenya Vision 2030 in the agricultural sector ministries. Disease-free zoning is elaborated Section 4.5.7 and Annex 2-5.0 and Implementation Framework of ASDS in terms of implementation strategy, workplan, implementation plan, activities and indicative budgets. The technical part of the review is complete and the policy is awaiting ratification, printing and re-launching.
3. **National Livestock Policy:** The Sessional Paper for the National Livestock Policy was approved in December 2008 and it is in the print. With respect to disease-free zoning, the government through the policy undertakes the following:
 - a. To enhance the control of notifiable diseases including compensation of farmers where stamping out programmes are done, [Section 3.4.1];
 - b. To avail the necessary material and human resources for disease-control [Section 3.4.1, 3.4.6, 3.4.12 and 3.9.10];
 - c. To provide rapid response to check the effects of disease outbreaks [Section 3.4.10];
 - d. To develop and rehabilitate livestock marketing infrastructure in collaboration with the relevant stakeholders, including identifying and attracting the necessary support for infrastructural development, [3.6.3 and 3.6.13];
 - e. To facilitate the enforcement of the Sanitary and Phytosanitary Standards (SPS) as per the WTO Agreements of which Kenya is a signatory including developing and enforcing good practices which conform to national and international standards at all stages of production and marketing.
 - f. To installing the necessary animal production and processing mechanisms that are acceptable to both regional and international markets in line with WTO agreements.

4. **Animal Diseases Act:** This is Chapter 364 of the laws of Kenya. This law empowers the Minister and the Director of Veterinary Services to effectively manage animal diseases, including:
 - a. Declaring the range of animals whose disease threats the law addresses [s.2];
 - b. Gazetting diseases as notifiable [s.2];
 - c. Enforcing reporting and notification of diseases [s.4];
 - d. Providing and enforcing measures for management of disease outbreaks [s.5-7];
 - e. Destruction of infected animals and compensation of producers when animals are killed for disease-control purposes [s.10-13];
 - f. Regulating importation of animals, formites and biological products [s.8 and R.3-14];
 - g. Regulating movement of animals from place to place [s.9 and R15-28];
 - h. Enforcing mass vaccination and treatment of animals [s.9 and r.38-39];
 - i. Providing and enforcing animal health inspectorate system [s.14, 17-19];
 - j. Providing for the creation and enforcement of disease-barriers [s9 and r.35];
 - k. Providing for authorization by the Director of drugs and vaccines which may be used on the country [s.15];
 - l. Quarantine facilities and quarantine restriction [s.9 and r.31-33];
 - m. Enforcement of disinfection of infected premises, contaminated persons and formites as well as disposal of cadavers [s9, r.43, 45-47];
 - n. Empowering the Director or veterinary officers to take any measure he may consider necessary or advisable in order to prevent the spread of disease [s.9, r.30].

5. **Meat Control Act:** This is Chapter 356 of the laws of Kenya and provides for regulation of abattoirs, the meat inspection code and transportation of meat.

6. **Fertilizer and Animal Foodstuffs Act,** Chapter 345 of Laws of Kenya, which provides for sanitary controls of fertilizers of animal origin and animal feedstuffs.

7. **Food, Drugs and Chemical Substances Act,** Chapter 245 of Laws of Kenya, which regulates standards for foodstuffs, drugs and other chemical substances in food value chain;

8. **Pharmacy and Poisons Act,** Chapter 244 of Laws of Kenya, which provide for regulation of veterinary and human medicines;

9. **Veterinary Surgeons Act,** Chapter 366 of Laws of Kenya, which provides for regulation of animal health services providers;

10. **Pest Control Products Act,** Chapter 346 of Laws of Kenya, which provides for regulation of animal and plant pest control products;

11. **Branding of Stock Act,** Chapter 357 of Laws of Kenya, for provision of animal identification and traceability using marks on the skin of animals.

12. **Prevention of Cruelty to Animals Act**, Chapter 360 of Laws of Kenya which provides for measures to protect animal welfare.
13. **Standards Act**, Chapter 496 which regulates product and process standards.
14. **Cattle Cleansing Act**, Cap 358 which provides to vector control.
15. **Crop Production and Livestock Act**, Cap 321 which provides for regulation of animal breeding and stocking rates.

ANNEX II: PROPOSED DISEASE ERADICATION PROCEDURES FOR DISEASE FREE ZONING PROGRAMME IN KENYA

A. DISEASE MANAGEMENT

The Disease-Free Zoning Programme will achieve zonal “free” status and acquire OIE freedom certificate for **Foot and Mouth Disease, Contagious Bovine Pleuropneumonia** and **Bovine Spongiform Encephalopathy** as well as maintain the recently acquired free status for **Rinderpest**. These are the only 4 diseases which OIE officially recognizes the “free” status. However, zoning will “suppress” 8 other prevalent diseases which would otherwise impact negatively on trade or productivity, i.e. **Lumpy Skin Disease, Tuberculosis, Trypanosomosis, Contagious Caprine Pleuropneumonia, Brucellosis, Rift Valley Fever, Sheep and Goat Pox** and **Peste de Petit Ruminants**. Suppression in this context means effectively implementing OIE pathways for “free” status on these 8 diseases without the requisite OIE certificate. Such suppression procedure would pass risk assessment by potential importing countries and thereby facilitate market access.

1.0 FOOT AND MOUTH DISEASE

1.1 FOOT AND MOUTH DISEASE: Proposed Free Zone

The Coastal zone will be established as an *FMD-free zone-without-vaccination*. Animal products from this zone will target FMD-free-without-vaccination markets such as the European Union. As the zone is currently FMD-infected, it will be necessary to eradicate the virus first through vaccination or slaughter and thereafter sustain the freedom through surveillance, disease-barriers and electronic traceability data capture.

To eradicate the FMD virus currently prevailing in the zone, tri-annual vaccination of all zonal cattle will be done on free and compulsory basis for 3 consecutive years. Quadrivalent vaccine will be used taking cognizance of 4 serotypes prevalent in the area. All vaccinated cattle will be branded with an FMD brand. Vaccination will thereafter stop in Year 3 and the zone will be rendered free-without-vaccination. *It has also been suggested that, subject to favourable results of a prevalent survey, eradication of FMD may be achieved faster through test-slaughter-compensation. Prevalence survey will therefore be prioritized so that the results could advise on whether to vaccinate (if prevalence is high) or test and slaughter (if prevalence is low).*

Every year, routine cattle and wildlife active surveillance will be conducted. During the 3 vaccination years, pre-vaccination and post-vaccination sero-survey will be conducted to evaluate the effectiveness of vaccination. Field officers will conduct passive surveillance and send electronic and hard-copy reports regularly. This will include animal movement, stock-route and disease-barrier patrol reports. The on-going KWS programme of fencing the Tsavo Park will be reinforced to provide the disease-barrier and assure FMD-biosecurity. Game animals especially buffaloes will be driven from the ranches and into the Park or (where the buffaloes are free of FMD) have the few game ranches bio-secured

through electric double-fencing by their owners. Buffaloes are considered carriers of FMD virus and will not mingle with cattle during free zoning.

One year after the cessation of vaccination and in the event of negative surveillance reports for Foot and Mouth Disease Virus, the country will make a self-declaration of zonal freedom from the disease and invite OIE and the potential importing countries to verify. It is noteworthy that markets accepting meat from FMD-free-zones-with-vaccination can trade with Kenya in the 4th project year ahead of the certification of freedom-without-vaccination by OIE expected in Year 5. Such trading partners will be brought on board early in the FMD eradication process and include the Middle East countries.

An FMD Contingency Plan (CP) including a Livestock Movement Protocol will be developed early during implementation. There will also be de-gazettement of FMD vaccination fees, confirmation of rates for compensation when animals are killed for disease control purposes and development of other necessary zoning legislation. The CP will be reviewed every year after a process of self-assessment. Awareness creation and stakeholder engagement will be done to make compliance easy and implementation smooth.

Were FMD to break out inside the free zone, stamping-out will be done. This will involve establishment of containment areas with slaughter of infected and in-contact animals and compensation at the [rate of half the farm-gate market value for clinically sick animals and 75% for exposed animals which would not be exhibiting clinical signs.](#)

1.2 FOOT AND MOUTH DISEASE: Protection (Buffer) Area for Proposed Free Zone

Tri-annual free and compulsory vaccination with FMD branding will be undertaken in order to reduce the risk of re-introduction of disease in the free zone and also in preparation of upgrading the protection area into a free zone later on. This activity will be augmented by annual active cattle and wildlife surveillance as well as passive surveillance and stock movement controls by field officers.

One of the main activities in the protection zone is screening of animals intending to move into the free zone in the initial years of the programme. For the Coastal zone, Kurawa and Karmale holding grounds will be bio-secured and upgraded into quarantine stations for animal holding and screening purposes. Land will be sources for 2 other new quarantine stations to be constructed at Ndi, near Manyani and also at Lungalunga. The Country Council of Taita-Taveta has been requested to set aside land at Manyani for the purpose. Quarantine stations will have bio-secure double-fencing, a laboratory, offices, staff quarters, cold-chain facilities and animal holding, testing and cleansing facilities as well as an incinerator. Of essence, quarantine stations will be sited next to inspection points and gates of the veterinary fence. They will be designed, erected, approved and operated in accordance with OIE guidelines on quarantine stations.

Kurawa and Karmale Quarantine Stations will screen animals from Tana River, Tana Delta and North Eastern Province. Lungalunga will screen entrants from Lungalunga and Tanzania-side of the border. Ndiu will screen animal entrants from Kajiado, Makeni, Oloitokitok and beyond.

FMD-susceptible species will not be allowed into the free zone at all once freedom has been achieved, unless for immediate slaughter. Pursuant to OIE guidelines, all cattle intending to move into the free zone for slaughter will be held in an establishment at source where the establishment (including an area of 10km around it) has not had any report of FMD for 3 months or in a quarantine station. Holding Grounds for such isolation will be rehabilitated and developed in Garissa and Dadaab in Garissa, Bothai in Ijara, Wenje in Tana River, Bargoni in Lamu Lugh Kutulo, Wargadud and Takaba in Mandera, Lugh Bhogal, Habasweni, Khot Khot and Eldan in Wajir. They will then move on veterinary supervised and escorted truck to ensure they do not get into contact with zonal animals, such trucks being disinfected after offloading. When the abattoir is slaughtering animals from infected areas, it will not slaughter free-zone animals and such meat will not be for export. The abattoir will be closed and disinfected before reverting back to slaughter for zonal animals.

1.3 FOOT AND MOUTH DISEASE: Disease Control Area also called Infected Area for Proposed Free Zone

Strategic vaccination strategy will be employed in infected areas. This will be supported by stepped-up active and passive surveillance. This area is parts of Tana River, whole of Lamu and the whole of northern Kenya.

2.0 CONTAGIOUS BOVINE PLEUROPNEUMONIA (CBPP)

2.1: CBPP: Free Zone

Kenya's strategy on CBPP management is eradication and therapeutic treatment is not authorized. In the proposed free zones CBPP will be eradicated through a process of test-and-slaughter with compensation at 75% of farm-gate market value for clinically healthy animals and half market value for clinically sick animals. The test and slaughter activity will be repeated for 3 consecutive years after which all zonal cattle are expected to be clean. This activity will be supported by annual microbiological, pathological and serological surveillance. Abattoir surveillance will be instituted in the whole country. Members of the technical staff will be trained to recognize or suspect CBPP and to report the disease on passive and active surveillance.

A CBPP Contingency Plan will be developed early in the eradication process. The CP will be implemented and reviewed every year after a process of self-assessment.

Self-declaration of zonal freedom from CBPP will be done simultaneously with that of FMD in the Y5 and the OIE and potential importing countries invited to verify.

2.2 CBPP: Protection zone

In the protection zone, vaccination will be carried out bi-annually. Annual microbiological, pathological and serological surveillance will be carried out **throughout the country**. After 3 years, eradication of CBPP ahead of upgrading the protection areas into a free zone **may be** carried out using the test-and-slaughter strategy.

Cattle may be introduced from the protection zone into the free zone only in the first 3 years before freedom has been achieved. During that period, animals from the protection area intending to move into the free zone will have to undergo first and second tests (P1 and P2) 21-days apart at the quarantine stations and holding grounds as follows:

- (i) Cattle from Tana River protection area will undergo P1 test at Wenje Holding Ground and P2 at Kurawa or Karmale Quarantine Stations.
- (ii) Cattle from Lungalunga, Taveta, Oloitoktok and Makueni will be tested for both P1 and P2 at the proposed Lungalunga and Manyani Quarantine Stations respectfully.

Positive reactors will be slaughtered with **compensation at 75% of the market** value for clinically health animals and a half market value for clinically sick animals.

2.3 CBPP Control in Infected Area

In the infected areas, bi-annual vaccination will be done.

3.0 RINDERPEST

Kenya achieved nation-wide freedom from Rinderpest in May 2009. Activities in the zones will therefore involve active and passive surveillance to verify if the status quo remains and to keep documenting the freedom. A Contingency Plan is in place and will be processed for approval and funding and reviewed every year.

If Rinderpest were to break out in the country, a stamping-out policy would be adopted for eradication purposes.

4.0 BOVINE SPONGIFORM ENCEPHALOPATHY (BSE)

4.1 BSE: Proposed Free Zone and its protection and disease control areas

BSE has not been reported in the country. However scientific proof of its absence is required together with OIE declaration of freedom. The disease is spread through feeding cattle with ruminant protein from infected cattle. Feeding cattle with ruminant protein has been banned in Kenya in order to mitigate the risk. The disease has a long incubation period and a country aspiring for zonal freedom certificate should demonstrate it has carried out appropriate sanitary measures for a period of at least 11 years.

Activities for BSE management will hinge on prevention of introduction of the disease as well as implementing and documenting sanitary measures and reporting the same to OIE. Some of these measures are already being implemented including ban on importation and feeding of ruminant protein, awareness creation among meat inspectors and also surveillance.

Surveillance at ports of entry and international borders will be stepped-up to prevent introduction of suspect material or animal feed with ruminant protein. Capacity will be developed for that purpose, starting in the first 3 years with JKIA and Moi International Airport and Kilindini Seaport and thereafter with the rest of ports of entry in the country.

A Contingency Plan will also be developed, implemented and reviewed annually. Risk assessment will be conducted early in the process of eradication. Surveillance for freedom certification is abattoir-based and will be conducted regularly. For this reason, technical staff training will be carried out to equip them with skills to conduct passive and active surveillance for the disease. Initial training will be done overseas as the country upgrades its laboratories to handle and process BSE suspected and surveillance samples.

5.0 RIFT VALLEY FEVER (RVF)

A Draft Contingency Plan for RVF has been developed. It will be processed for approval and implemented and also reviewed every year. The disease in Kenya occurs generally in cycles of 5-15 years. The control strategy will involve putting in place early warning systems, emergency preparedness and carrying out mitigation activities ahead of the imminent outbreak.

In the inter-epidemic phase of the disease, the following activities will be carried out throughout high risk areas including those in the proposed disease free zones:

- a) Subscription to EMPRESS WATCH and other RVF Monitoring bodies;
- b) Establishment of sentinel herds;
- c) Bi-annual active surveillance missions, one after each of the 2 rainy seasons;
- d) Awareness creation;
- e) Training of animal health personnel in disease recognition and sample collection;
- f) Formation, training and drilling of Rapid Response Teams for disease and vector control;
- g) Enhancement of diagnostic capability for the disease;
- h) Development of strong linkages between national laboratories and regional or world reference laboratories through participation in relevant conferences and meetings;
- i) Strengthening of liaison with veterinary authorities in neighboring countries;
- j) Strengthen liaison with the ministries of Medical Services and Public Health and Sanitation;
- k) Establishment of an emergency fund;
- l) Annual vaccination.

When the disease is expected, an early reaction protocol will involve carrying out of the following activities:

- (i) Stepping-up of monitoring of rainfall amounts, flooding, vector populations, sentinel herds, passive surveillance and nation-wide active surveillance missions. Areas of high risk will be identified and risk maps developed.
- (ii) Stock-piling of vaccine and diagnostics strategic stocks;
- (iii) Mass vaccination campaigns for susceptible animals in predictive areas;
- (iv) Insect vector control especially insecticidal and larvicidal treatment of potential mosquito breeding sites;
- (v) Stepping-up public education;

When the disease has been confirmed, response activities will involve the following:

- a. Reporting to OIE, importing countries and neighbouring countries;
- b. Surveillance to defining the extent of infected area and target populations;
- c. Carrying out control measures including local awareness creation and supervision or enforcement of quarantine restrictions, ban on livestock movement and trade and slaughter, vector control and other mitigation measures;
- d. Monitoring of physical indicators of flooding to predict time scale for epidemic virus activity;
- e. Monitoring clinical disease through active and passive surveillance. Weekly update reports of disease by field staff on passive surveillance will be sent to the DVS. Through this activity, the actual date of last evidence of RVF virus activity will be determined and a final report sent to OIE.

6.0 LUMPY SKIN DISEASE (LSD)

In the Free Zone and its protection area, annual vaccination will be carried out. The LSD vaccination will be carried out concurrently with that of sheep and goat pox as the vaccine may cause outbreaks of the sheep and goat pox in susceptible herds.

7.0 TRYPANOSOMOSIS

Though trypanosomosis is not really a trade-sensitive disease, the Coastal area is heavily infested with the vector tsetse fly and the disease is prevalent. Trypanosomosis is a debilitating disease causing massive losses in production and productivity. In order to support vibrancy of the animal industry in the area, the programme will carry out activities to suppress tsetse fly and control trypanosomosis. Such activities will include:

- a) Annual trypanosomosis survey;
- b) Vector control using targets, traps and synthetic pyrethroid dips. Some seriously infested areas like Bothai in Ijara and Witu in Lamu may require limited aerial spraying with pyrethroids to reduce the problem to manageable levels and allow

utilisation of Bothai and Borgani Holding Grounds for animal trading and screening purposes.

c) Awareness creation and stakeholder engagement.

8.0 BRUCELLOSIS

8.1 Brucellosis in free zone

This animal and human disease is not yet notifiable in Kenya but it is highly trade-sensitive. It will be gazetted as notifiable. The strategy for addressing the problem will involve development and implementation of a Contingency Plan which will be reviewed annually. A baseline prevalence survey will be carried out in the free zone. Thereafter a test-and-slaughter for destruction of infected herds with compensation will be implemented for zonal cattle, camels, sheep and goats.

8.2 Brucellosis in protection area

In the protection area and subject to results of the prevalence survey, all pre-puberty cattle, sheep and goats will be vaccinated annually.

All cattle, sheep and goats intending to move into the free zone during the first 3 programme years will be tested for brucellosis at the quarantine stations. Positive reactors will be slaughtered for destruction while negative ones will be allowed to enter the proposed free zone.

9.0 TUBERCULOSIS

This is a trade-sensitive and notifiable disease. In the free zone a baseline survey will be carried out using tuberculin testing to establish the risk profile and inform development of a Contingency Plan which will be implemented and reviewed annually. It is desirable that all animal owners are fully trained on risk management measures like ranch boundary fencing, segregation, animal identification, paddocking, protection of feed-troughs and watering points, farm and human hygiene and the necessity of regular planned animal testing.

At the same time abattoir surveillance will be instituted all over the country, including re-training of meat inspectors for the purpose. All the cases discovered on abattoir surveillance will be traced-back to the area of origin where in-contact animals will also be tested. All positive reactors will be slaughtered with compensation.

Depending on the results of baseline survey, all animals in free zone will be tested for the disease. This will involve training veterinary officers who shall be provided with resources to test all animals, destroy positive reactors and administer compensation.

10.0 CONTAGIOUS CAPRINE PLEUROPNEUMONIA

10.1 CCPP in free zone

This is a trade-sensitive notifiable disease. A Contingency Plan will be developed, implemented and reviewed every year. A prevalence survey of the disease will be carried out in the proposed free zone and its protection and infected areas. This surveillance will combine survey for PPR as well as sheep and goat pox. In the free zone, the control strategy will be testing and slaughtering positive reactors with compensation.

10.2 CCPP in protection and infected areas

In protection and infected areas where the disease has been confirmed as endemic through surveillance, bi-annual vaccination will be done for 3 consecutive years after which vaccination will be strategic. Goats entering the free zone will be screened for CCPP in the quarantine stations and positive reactors slaughtered with compensation.

11.0 PESTES DES PETIT RUMINANTS (PPR)

This is a newly introduced highly communicable transboundary disease of sheep and goats. A Contingency Plan will be developed, implemented and reviewed every year. A prevalence survey of the disease will be carried out in the proposed free zone, the protection and infected areas and will be combined with the survey of CCPP and sheep and goat pox. An eradication strategy involving surveillance and free and compulsory vaccination for 5 consecutive years has started. Disease-barriers and screening of animal entrants into the zone in the quarantine stations will be used to sustain the free status. Strategic vaccination strategy will be adopted for protection and infected areas.

12.0 SHEEP AND GOAT POX

A Contingency Plan will be developed and reviewed every year. A prevalence survey of the disease will be carried out in the proposed free zone and its protection and infected area and will be combined with the survey of CCPP and PPR. Strategic vaccination will be carried out in infected areas as well as in areas where LSD vaccination has been done in cattle herds that mix freely with sheep.

DISEASE-BARRIERS

Disease-barriers are mandatory for the protection of the integrity of disease-freedom that is being sought or has been achieved. Three kinds of disease-barriers are recognized by OIE and importing countries, i.e.:

- physical barriers like cordon-fences and trenches;
- natural barriers like desserts, seas, oceans, [cliffs](#), [escarpments](#) and mountains;
- legal [measures](#), like gazettment and animal movement control.

A combination of these barriers will work best for Kenya. A veterinary disease control cordon fence will be erected in the public and trust land in the Coastal zone, based on a survey. The Indian Ocean will form part the natural barrier for Coastal. An effective disease-barrier would require that animals and hazardous commodities entering or leaving a zone pass through an inspection or check-point for the evaluation of the sanitary status and verification of the accompanying sanitary documents. These inspection points will be situated strategically across public roads and will be manned by veterinary personnel. The procedure will also include directing all animals entering or leaving the zone through quarantine stations where there will proper sanitary control.

B. EXPORT ABATTOIRS

Export abattoirs are themselves supposed to be disease-free and recognized as disease-free by OIE. To facilitate biosecurity, the free zone will have its own export abattoir at Mombasa mainland.

C. ANIMAL IDENTIFICATION AND TRACEABILITY

The disease management measures will be augmented by implementation of an animal identification and traceability system commensurate with international standards. Such a system, the Radio-Frequency Identification Device, has been piloted in Kenya and is awaiting legal framework to roll-off. The system is using electronic microchip-impregnated ruminal bolus with data-system able to capture animal husbandry, nutritional, disease-surveillance and management activities, movement and trade for individual animals.

D. CERTIFICATION SYSTEM

The zoning process will enhance a farm-to-fork meat safety certification process. To that end technical and laboratory capacity will be perfected, including the following:

- upholding of the present veterinary command structure;
- documentation and independent audit of industry-own good practises;
- quality verification and every level;
- ISO certification.

E. BASIS OF INTERNATIONAL MARKET ACCESS

Importing countries will be requested at the commencement of zoning to establish formal agreements with Kenya for the recognition of the zones based on the design and procedures to be applied. Upon implementation of zoning activities, Kenya will make a bid for participation in these high-value international markets based on the following scientifically tenable facts:

1. Results of regular risk assessment reports by Director of Veterinary Services;

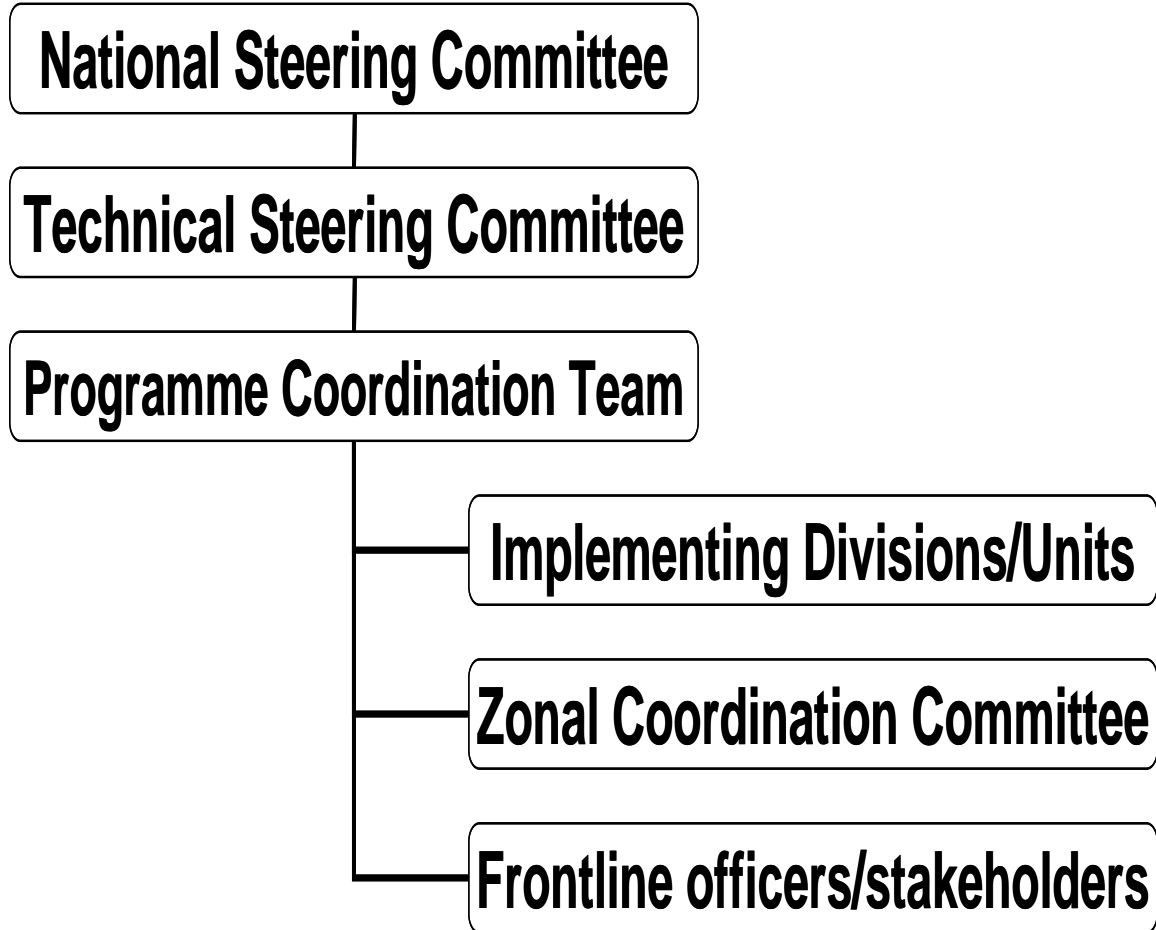
2. Official OIE recognition of freedom from Foot and Mouth Disease, Rinderpest, CBPP and BSE;
3. Provisional free status for the other 8 diseases for consideration, i.e. i.e. Lumpy Skin Disease, Tuberculosis, Trypanosomosis, Contagious Caprine Pleuropneumonia, Brucellosis, Rift Valley Fever, Sheep and Goat Pox and Peste de Petit Ruminants.
4. Compliance monitoring/audit reports for confirmation of the free status, the integrity of disease-barriers and the meat safety certification system;
5. Animal welfare audit reports;
6. Disease-free and HACCP-compliant export abattoirs;
7. Identification and traceability of zonal animals and products;
8. Provision of access to the importing country for inspection, testing and other relevant procedures for verification purposes.

ANNEX VI: GENDER ANALYSIS FOR DFZ PROGRAMME

1. **Involvement of the community in the management/governance of the disease free zones:** There will be structures in the community for involvement in participatory epidemiology, disease reporting, livestock movement management, entire planning process, management and ownership of holding grounds, outspans and other infrastructures within the zone.
2. **Safeguards to ensure pastoralists are not exploited:** Prices of animals are dictated by market forces at any particular time. However with envisaged range management, the livestock will be expected to be in good condition and they will be advised on the best time to sell when the animals would fetch better prices. Efforts will be made to commercialize livestock in the zone rather than maintaining numbers for prestige.
3. **Safeguards for taking care of the needs of women:** The programme is sensitive to the roles allocated to women and it follows the culture and norms of the community. The small stock belongs to the men but the women tend them. The programme caters for small livestock through management of diseases of small livestock such as CCPP, Sheep and Goat Pox and PPR. The women are represented in management committees.
4. **Safeguards for women livestock holders interest:** The interests of women livestock holders are taken care of in the following ways:
 - a. There are existing interest groups such as group ranches, user associations and livestock marketing cooperatives, most of whom are registered with social services.
 - b. Gender balance may not be in place but there be will be an effort to ensure the 30% will be put in place in the zoning process.
 - c. There will be controlled access of livestock into or out of the zone with registration, screening and cleansing;
 - d. Men and women do not have any discrimination of right of access in the programme.
 - e. Upgrading breeds is ongoing on a small scale. These services include introduction of new genes such as Dorper sheep, maintenance of pure lines of the local Maasai sheep breed and castration and culling for the unwanted traits.
 - f. The programme activities do not conflict with the gender roles and responsibilities.
5. **Changing unequal gender relations through the programme:** The programme will encourage large livestock among women such as camels and cattle. The project will work in conformity with the culture of the communities at the same time undertaking sensitization and mainstreaming gender in all activities. With improvement of the range lands, pastures and water, milk production will equally improve and quality of carcasses. This will lead to improved nutrition for the house holds.

6. **Sensitization on zoning:** Community sensitization is entrenched into the programme using frontline structures. Modest sensitization has started and will be fast-tracked after resources are availed.
7. **Gender disaggregated baseline:** This has not yet been done but there is room for the same during implementation and availing of resources. The programme proposes to include a socioeconomic expert in the Coordinating Unit. It is acknowledged that with better range management, there will be less transhumance. This will lead to better school enrollment and attendance, easier provision of basic services, reduced malnutrition, reduced child and maternal mortality. There will be reduced conflicts related to pastures and water in terms of injuries, deaths, loss of livestock wealth and displacements.
8. **Workload of women:** The work load of women will be reduced as they do not need

ANNEX III (A) COORDINATION ORGANOGRAM



ANNEX III (B) ORGANS OF DFZ COORDINATION

| ORGAN | MEMBERSHIP | OBJECTIVE | ROLES |
|-----------------------------|--|---|---|
| National Steering Committee | <p>PS's and CEOs of:</p> <ul style="list-style-type: none"> • Ministry of Livestock Development • Ministry of Finance • Ministry of Northern Kenya and other ASALs • Ministry of Cooperative Development & Marketing • Ministry of Public Works • Ministry of Lands • Ministry of Roads • Ministry of Housing • Ministry of Public Health and Sanitation • Ministry of Internal Security • Ministry of Environment and Forestry • Kenya Wildlife Service • National Environment Management Authority • Ministry of Regional Development • Ministry of Local Government • Ministry of Trade • Kenya Livestock Marketing Council • Kenya Chamber of Commerce • Ministry of Planning and Vision 2030 • Director of Veterinary Services • Director of Livestock Production <p>Chair: PS Livestock Development Secretary: Director of Veterinary Services Frequency of meetings: Twice a year</p> | To oversee proper implementation of DFZ Programme | <ul style="list-style-type: none"> • Reporting to Vision 2030 Secretariat • Provide policy guidelines • Create enabling environment for zoning • Mobilization of resources • Approve workplans and budgets for DFZ • Harmonize activities in zones • Review progress of implementation |
| Technical | <ul style="list-style-type: none"> • DVS | To oversee | <ul style="list-style-type: none"> • Report to |

| | | | |
|--------------------------------------|---|---|--|
| Steering Committee | <ul style="list-style-type: none"> • DLP • Chief of Implementing Divisions • Technical Heads of Implementing Ministries, i.e. <ul style="list-style-type: none"> ○ Ministry of Cooperative Development & Marketing ○ Ministry of Public Works ○ Ministry of Lands ○ Ministry of Roads ○ Ministry of Housing ○ Ministry of Public Health and Sanitation ○ Ministry of Internal Security ○ Ministry of Environment and Forestry ○ Kenya Wildlife Service ○ National Environment Management Authority ○ Ministry of Regional Development ○ Ministry of Local Government ○ Ministry of Trade <p>Chair: DVS Secretary: Programme Coordinator Frequency of meetings: 4 times a year</p> | proper implementation of workplans | National Steering Committee <ul style="list-style-type: none"> • Recommend Workplan, procurement plans and budgets to National Steering Committee for approval • Backstopping implementing officers • Providing guidance and supervision to PCU • Receiving progress reports from PCU • Support capacity building |
| National Programme Coordination Team | <ul style="list-style-type: none"> • Programme Coordinator • Component managers: Animal Health, Infrastructure, Productivity, Marketing • Other PCU staff; accountant, M&E officer, procurement officer, socioeconomist, | Coordinate day-to-day business of the programme | <ul style="list-style-type: none"> • Report to Technical Steering Committee • Prepare workplans, budget and |

| | | | |
|------------------------------|--|---|---|
| | <p>secretary</p> <ul style="list-style-type: none"> Chairmen of Zonal Coordination Committee | | <p>procurement plans</p> <ul style="list-style-type: none"> Disburse funds to the zones M&E Prepare and submit progress reports to Technical Steering Committee Organize training for implementers and stakeholders Awareness creation to collaborators and other stakeholders Prepare re-imbursements Prepare for review missions |
| Zonal Coordination Committee | <ul style="list-style-type: none"> County Veterinary Officer, County Cooperative Officers County Works Officers County Trade Officers County Development Officers County Drought Monitoring Officers County Lands Officer County Social Development Officer Chair to county agricultural committee OCPD | To coordinate and oversee implementation of zoning activities in the zone | <ul style="list-style-type: none"> Report to the National Implement workplans Programme Coordinator Prepare and submit progress reports to PCU Prepare statements of expenditure Supervise day-to-day activities in the zone |

