

REPUBLIC OF KENYA



MINISTRY OF LIVESTOCK AND FISHERIES DEVELOPMENT

NATIONAL STRATEGY ON TSETSE AND TRYPANOSOMOSIS CONTROL

DEPARTMENT OF VETERINARY SERVICES

KENYA TRYPANOSOMOSIS RESEARCH INSTITUTE (KETRI)

KENYA WILDLIFE SERVICES (KWS)

AU-FARMING IN TSETSE CONTROL AREAS (FITCA)

INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP (ITDG)

CEVA EAST AFRICA

AFRICAN UNION- INTERAFRICA BUREAU FOR ANIMAL RESOURCES (AU-IBAR)

NOVEMBER, 2004

DECISION ON THE REPORT ON THE PROGRESS MADE IN THE
IMPLEMENTATION OF SUMMIT DECISION ON THE
ERADICATION OF TSETSE FLIES FROM AFRICA

Council:

TAKES NOTE of the Report;

RECALLS Decision AHG/Dec.156 (XXXVI) urging Member States to rise collectively to the challenge of eliminating the scourge of tsetse-transmitted diseases from Africa and assigning the Secretary General the task of initiating and coordinating a Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) as well as Decision AHG/Dec.169 (XXXVII) endorsing a Plan of Action prepared by the Secretariat for the implementation of the Pan African Tsetse Eradication Campaign;

NOTES WITH SATISFACTION the establishment of the PATTEC Policy and Mobilisation Committee and **URGES** its members to actively seek ways of guiding and generating support for the PATTEC initiative;

COMMENDS the efforts of those African countries which had already embarked on tsetse eradication projects and **EXPRESSES ITS GRATITUDE** to the International Atomic Energy Agency for the support and assistance extended to Member States and the Secretariat in the implementation of the PATTEC initiative;

URGES all affected countries to include tsetse eradication in their national priorities, within the Poverty Reduction Strategy Papers so as to qualify for debt relief mechanisms or other forms of budgetary support to ensure its implementation;

APPEALS to the international community to lend technical and financial support to the efforts of Member States and the Secretariat in implementing the PATTEC initiative;

REQUESTS the Secretary General to continue reminding all Member States about their individual and collective obligations in the struggle to eliminate the scourge of tsetse-transmitted diseases from Africa, to monitor the progress made in this endeavour and to report on the issue every year;

CALLS UPON the Secretary General to include a budgetary provision in the Budget of the African Union to cater for the activities of the General Secretariat in coordinating the PATTEC initiative.

**DECISION ON THE IMPLEMENTATION OF THE PLAN
OF ACTION FOR THE ERADICATION OF TSETSE
FLIES IN AFRICA**

The Assembly:

RECALLS Decision AHG/156 (XXXVI) of the 36th Assembly of the Heads of State and Government which urged Member States to rise to the challenge of the campaign for eradication of tsetse flies from the continent of Africa;

ACKNOWLEDGES with satisfaction that the OAU Secretariat has prepared a plan of Action for the implementation of the Summit Decision on tsetse flies eradication;

URGES the OAU Secretariat and the relevant offices in the affected Member States dealing with health, agriculture, livestock production, rural development and poverty reduction to include the objective of the said Plan of Action among their priority programmes for implementation;

APPEALS to the international community to provide technical, financial and material support and assistance to Member States in their efforts to eradicate tsetse flies.

**DECISION ON PROPOSAL FOR ERADICATION OF
TSETSE FLIES ON THE AFRICAN CONTINENT
(CM/2152 (LXXII) ADD.2**

The Assembly:

TAKES NOTE of the report presented by the Government of Uganda, and
COMMENDS the efforts undertaken to highlight the problems caused by tsetse flies in Africa;

COMMENDS those African countries that have initiated the application of Sterile Insect Technology (SIT) for their pioneering effort;

RECOGNIZES the seriousness of the problem as one of Africa' s greatest constraints to socio-economic development severely affecting human and livestock health, limiting land use, causing poverty and perpetuating underdevelopment on the Continent;

URGES Member States to act collectively to rise to the challenge of eliminating the problem through concerted efforts in mobilizing the necessary human, financial and material resources required to render Africa tsetse-free within the shortest time possible;

ACKNOWLEDGES the trans-boundary nature of the problem, **WELCOMES** the establishment of the Pan-African SIT Forum as a mechanism through which sustainable area-wide tsetse eradication can be achieved and **CALLS UPON** the Secretary-General to provide support to the Pan African SIT FORUM;

DECLARES the year 2001 as the year of the control of tsetse fly, to mark the beginning of renewed efforts in the campaign for the eradication of tsetse flies in Africa;

REQUESTS the Secretary-General to undertake all necessary consultations with a view to initiating the campaign from all possible partners and seek their support and cooperation in the implementation of the Pan-African Tsetse Eradication Campaign. The Secretary-General should submit an annual Progress Report to the OAU Summit, through the Current chairman.

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ABBREVIATIONS AND ACRONYMS

AAT	African Animal Trypanosomosis
ASALs	Arid and Semi Arid Lands
AU/IBAR	African Union – Inter-African Bureau for Animal Resource
CBOs	Community Based Organisations
DLP	Department of Livestock Production
DVO	District Veterinary Officer
DVS	Director of Veterinary services
EAC	East African Community
FAO	Food and Agriculture Organization
FTCA	Farming in Tsetse Controlled Areas
GOK	Government of Kenya
HAT	Human Animal Trypanosomosis
HIV/Aids	Human Immuno Deficiency Virus/ Acquired Immune Deficiency
HMPLs	High and Medium Potential Lands
IAEA	International Atomic Energy Agency
GAD	Inter-Governmental Authority on Development
ITDG	Intermediate Technology Development Group
KETRI	Kenya Trypanosomosis Research Institute
KenVB	Kenya Veterinary Board
KenWS	Kenya Wildlife Services
LBDAA	Lake Basin Development Authority
M&E	Monitoring and Evaluation
MinENRW	Ministry of Environment Natural Resources and Wildlife
MinA	Ministry of Agriculture
MinH	Ministry of Health
MinLFD	Ministry of Livestock and Fisheries Development
MinV	Means of Verification
MTEF	Medium Term Expenditure Framework
NEPAD	New Partnership for African development
NGOs	Non Governmental Organizations
NATTC	National Tsetse and Trypanosomosis Control council
OIE	Office Internationale Epizooties
OVI	Objectively Verifiable Indicators
PAAAT	Programme Against African Trypanosomosis
PATTEC	Pan African Tsetse and Trypanosomosis Eradication Campaign
PIM	Participatory Impact Monitoring
PRSP	Poverty reduction Strategy Paper
SIT	Sterile Insect technique
SS	Sleeping Sickness
	Syndrome
T&TC	Tsetse and Trypanosomosis Control
WHO	World Health Organization

ACKNOWLEDGEMENTS

The National Steering Committee for the preparation and finalization of the Strategy on the Tsetse and Trypanosomosis Control in Kenya went for one week retreat in Nakuru and came up with this document.

The Steering Committee would like to thank the Permanent Secretary, Ministry of Livestock and Fisheries Development, Director of Veterinary Services (DVO), Director of African Union/Inter-Africa Bureau For Animal Resources (AU-IUBAR), Director Kenya Trypanosomosis Research Institute (KETRI), Director Kenya Wildlife Services (KWS) who made the exercise a success by their valuable human resource contributions.

Special thanks go to Africa Union/Inter-Africa Bureau For Animal resources (AU-IUBAR) for their financial contribution to support the retreat from 24th to 30th October 2004

The national Steering Committee members comprised of Mr. Anyumba Nyamwaya US/D MoLFD **Chairman** Dr. Samson Mirega (Veterinary), Dr. Pamela A Olet (Veterinary) , Francis Oloo (FITCA-AU/IBAR), Dr. Sospeter Nyamwaro KARI/TRC, Paul Mungai KWS, Seth Onyango MoLFD Planning Unit, Arnold Omondi the **Moderator** and Dr. Chong Director Veterinary Services who represented the Permanent Secretary MoLFD.

Other members included D.O Ongechi MoLFD Personnel Section, Dr. Akwimbi ACU/Finance and Duncan Mwaluma MoLFD Accounts, Dr. Michael K Cheruiyot DVO Nakuru, Ms Roda M. Kilonzo DLOs Office Nakuru

We were supported by the secretariat comprising of Mrs. Agnes W Mungai a secretary of the ACU section

The strategies contained in this document are the result of very healthy discussion among the members and were adopted as the agreed positions.

FOREWORD

The government is committed to develop the livestock sector by promoting disease control measures that encourage community and private sector participation in animal health service delivery. It recognizes that tsetse and trypanosomosis control and eventual eradication is more of a "Public" than Private good.

The strategic Plan (2004-2014) for tsetse and trypanosomosis control sets the goals and objectives that ensure the control of Tsetse and Trypanosomosis in the next 10 years. It will support initiative towards improved service delivery in line with the aspirations of the government, as outlined in the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) and the Kenya Ninth Development Plan (2002-2008).

The Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) lays basis for achieving recovery and growth through private sector led activities in order to generate employment opportunities in the rural areas and the ASALS. In relation to this, livestock development programmes will be implemented to improve the welfare of communities living in these areas in the following ways;

1. Addressing the legal and policy barriers to livestock trade such as livestock movement, quarantines and cess/taxation
2. Creating Strategic Disease Free Zones to facilitate export of live animals as well as strengthening disease control measures in partnership with regional animal programmes
3. Increase cross boarder disease surveillance and cross boarder conflict resolution and management mechanisms etc.
4. Mobilize resources and install an appropriate structure to coordinate the implementation and monitoring of programme activities at all levels
5. Capacity building at all levels including at the district and community levels to be able to provide strategic leadership, management and control of tsetse and trypanosomosis.

The Animal Industry being part of the wider Agriculture sector is core in the Poverty Reduction Strategy of the government and is deemed crucial for poverty alleviation in many ways i.e. food security, increased incomes to farmers and pastoralists and forex earning through enhanced meat trade.

The world is committed to the control of tsetse and trypanosomosis through the FAO/IAE/OAU/WHO Programme Against African Trypanosomiasis (PAAT).

In Africa the effort to control tsetse and trypanosomosis is through Pan African tsetse trypanosomosis eradication campaign (PATTEC). This National Strategy Paper borrows very heavily the ideas embraced in the two documents and has come up with a home-grown version of ways to eradicating tsetse and trypanosomosis menace in the country.

Eng. David Stower, FIEK, OGW
PERMANENT SECRETARY

EXECUTIVE SUMMARY

Tsetse-Transmitted trypanosomosis has a direct devastating effect in livestock due to increased mortality, reduced milk yield, low live weight gain, infertility, increased rate of abortion and increased susceptibility to other infections. The indirect effects include loss of animal draught power and lack of nutrient cycling through manure. A non-tsetse-transmitted trypanosomosis affects camels, and is a crucial constraint to the development of the rangelands where camels and donkeys are the main basis of the economy. The potential of human sleeping sickness outbreaks is high in the Lake Victoria and Lake Kyoga Basins with nearly 5 million people at risk.

Tsetse control in Kenya was based on the need to establish settlement schemes and most control methods made land available far more quickly than it could be effectively settled by the people. The increasing drug resistance due to usage of a limited number of drugs for a long time and improved tsetse control technologies has turned attention more on to tsetse control and eradication so as to recover the infested land. The tsetse and disease situation is compounded by competition for land for both human settlement and wildlife conservation.

The control of tsetse and trypanosomosis is a core function of the Department of Veterinary Services. The Government has been the major player in the control of Tsetse and Trypanosomosis since the 1940s however the approaches did not include community participation and allowed very little private sector involvement. Due to shift in the government policy towards privatization and community involvement in development programmes, there has been an increased move to shift the responsibility of vector control to the end users.

The major constraints hindering the achievements of effective tsetse and trypanosomosis control in the country include inadequate;

1. Policy, regulation and enforcement
2. Tsetse and trypanosomosis surveillance.
3. Trans boundary strategies for tsetse and trypanosomosis control
4. Emergency preparedness
5. Integrated livestock management approach
6. Domestic and wildlife conflict resolution
7. Human and financial resources for effective disease management.
8. Impact of HIV/AIDS on contro^l programmes.
9. Security especially in ASAL
10. Coordination of tsetse and trypanosomosis control

The strategic paper is structured in eight chapters as follows;

- a) **Chapter 1:** this gives the background on the effect of tsetse and trypanosomosis in Kenya, the species rampant and the areas that are most affected.
- b) **Chapter 2:** this provides the situation analysis and explains how severe the problem is in Kenya. It further states that 51 Districts in 7 Provinces are actually tsetse and trypanosomosis infested. It talks of the major pathogenic trypanosomes in Kenya and goes further to differentiate between human and animal trypanosomosis. The section briefly highlights the control methods, challenges and constraints, and talks of new initiatives towards the control of tsetse and trypanosomosis.
- c) **Chapter 3:** explains the rationale and justification for the control of tsetse and trypanosomosis control
- d) **Chapter 4:** this chapter is core to the document and explains the principles behind the strategies for tsetse and trypanosomosis control. It gives the strategic objective and the elements of each strategy besides it also talks of the vision and the mission of the strategy.
- e) **Chapter 5:** This deals with the programme management and control. It recognizes that the effectiveness of implementation of a programme to control T&T is key to its success. It recognizes that a new institutional arrangement needs to be put in place to efficiently implement the programme.
- f) **Chapter 6:** It has been realized that lack of monitoring and evaluation has led to the failures of many programmes and in this regard this section underscores the need to put in place a strong M&E for this programme. It suggests that it is important to have routine and regular monitoring and evaluation. In addition monitoring of inputs and processes in this programme will enhance accountability, transparency and efficient performance. It also mentions of instituting a process of monitoring corrupt practices while implementing the programme.
- g) **Chapter 7:** is about the implementation framework and explains the roles of stakeholders in the process. It has the implementation matrix for the programme.
- h) There are Annexes showing maps of the infested areas, the table for the implementation matrix and the proposed stakeholder relationship chart.

CHAPTER 1

1.0 BACKGROUND

Livestock production contributes significantly to the welfare of Kenyans. Current statistics show that livestock contributes up to 10% of the GDP and 30 % of farm-gate value of agricultural commodities of which a substantial portion of the income arises from trade, both local and international. Livestock sub sector also provides raw materials for the following local industries, diary, meat, hides and skins, wool and hair processing. Livestock production is carried out in high and medium potential lands and in arid and semi arid lands.

Tsetse-Transmitted bovine trypanosomosis is one of the most economically important diseases of man and domestic livestock in Africa. Tsetse flies (*Glossina*) infest 37 African countries, approximating 11 million km² of Africa. The disease has a direct devastating effect on livestock due to increased mortality, reduced milk yield, low live weight gain, infertility and increased rate of abortion increased susceptibility to other infections. The effect of trypanosomosis has been observed in herd sizes of sheep and goats. The disease can reduce calving, lambing and kidding rates. Live weight gain and milk production in cattle in tsetse infested areas is 20% less compared to those in tsetse free similar production systems. The indirect benefits include loss of animal draught power and lack of nutrient cycling through manure. Similarly the disease causes mortality and lethargy to man.

The total area of Kenya is 587,000 square kilometers of which 80% is Arid and Semiarid Lands (ASAL). According to 1999 census the country stands at 30 million people. Livestock is estimated as 60 million. This includes 13 million cattle out of which only 3 million is dairy, 18.3 million shoats, 1 million camels, 600,000 donkeys and 300,000 pigs.

Tsetse control in Kenya was based on establishment of settlement schemes distributed in all the affected districts that was meant to distribute the resources evenly and prepare rural communities for land development. Most tsetse control methods made land available far more quickly than it could be effectively settled during 1950s. With introduction of potent trypanocides, a critical number of cattle could be kept in tsetse infested settlements after partial bush clearing because the cost of removing the flies completely would be uneconomical. Until recently the management of the disease was fundamental and eradication of tsetse, where feasible considered only one of the options. Thus a policy was developed that active tsetse control was necessary in the sleeping sickness areas and partial bush clearing and strategic trypanocide use adopted for the rest of the country. The use of isomentamidium and diminazine aceturate as a sensitive pair was strictly enforced by the Department of Veterinary Services, the rest of trypanocides being zoned for use in specific districts according to challenge to minimise drug resistance.

Tsetse flies are the primary vectors of both African Animal Trypanosomosis (AAT) and Human African Trypanosomosis (HAT). Non-tsetse-transmitted trypanosomosis affects camels, and is a

crucial constraint to the development of the rangeland where camels and donkeys are the back bone of the economy. The impact of tsetse problem is the economic loss arising from both reduced livestock productivity and animal draught power. It impoverishes livestock farmers and threatens food security. Tsetse flies are probably the most important agricultural pests in Africa today and new strategies are called for to avert their debilitating effects.

The increasing drug resistance due to usage of the limited number of drugs for a long time, improved tsetse control technologies and increasing demand for land has turned more attention on tsetse control and eradication to recover the infested land for increased agricultural production.

1.1 Tsetse and trypanosomosis problem in Kenya

About one quarter of Kenya comprising seven out of eight administrative provinces including 60% of productive well watered rangelands are tsetse infested, reducing food security by about 40-50% and thereby enhancing poverty. According to 1989-1993 estimates, 23% of the cattle are found in tsetse infested parts of the country. The infested areas are grouped into seven tsetse fly belts including the North and South of Mt. Kenya, South Rift, Lake Victoria basin, Central Kenya, Trans Mara-Narok, and the Coastal belts. Eight species of tsetse including: *Glossina pallidipes*, *G. morsitans*, *G. austeni*, *G. swynnertoni*, *G. fuscipes*, *G. brevipalpis*, *G. longipennis*, and *G. fuscipleuris* have been recorded in Kenya with each species adapted to various habitats. The main socio-economic activities in the tsetse fly infested areas are both livestock and crop production, with the livestock production taking a bigger proportion. The challenge is so severe in some parts of the country that cattle cannot be kept economically even with use of trypanocides making the regions like coastal belt devoid of livestock. A herd of cattle in these areas become 100% infected within a period of 20 days. The disease limits production of livestock to the rangelands, which have reached optimal stocking rates and complements severe competition in the well-watered parts of the country between crops and settlements. The potential of human sleeping sickness outbreaks is high in the Lake Victoria and Lake Kyoga Basins with nearly 5 million people at risk of contracting the disease.

The tsetse and disease situation is compounded by competition for land for both human settlement and wildlife conservation. Over the last two decades, wildlife population decreased by one third, livestock numbers decreased by 10%, the steepest rates of decline which have been moderate since then were between 1970s and 1980s. One quarter of Kenyan wildlife lives within the protected areas and a further 25% are found within 20 km of these protected areas. Wildlife losses have been significantly higher outside the protected areas and un-adjudicated trust land. Their competition for pasture and water especially during dry seasons and periodical droughts in addition to predation of livestock and humans has the situation even worse. The prevailing competition for land resources can only increase in the coming years where livestock keepers blame wildlife for enzootic diseases affecting them and their domestic animals. From the previous trends, tsetse will persist wherever wildlife survives and suitable habitats exist and trypanosomosis will remain a serious constraint to livestock production in such areas in the foreseeable future.

Chapter 2

2.0 SITUATION ANALYSIS

2.1 Introduction

Tsetse and trypanosomosis problem is a severe challenge to the Kenyan economy. A quarter of Kenya's surface area is tsetse infested with 23% of the 13 million Kenyan cattle at risk. The disease leads to livestock losses due to mortality and morbidity. Sleeping sickness outbreak is also a reality especially at the tsetse-infested lake region. The impacts of tsetse and trypanosomosis include reduced food production in the affected areas, increased cost of livestock production, loss of livestock, loss of foreign currency at the national level as more drugs are imported and less animal products exported, all of which contribute towards aggravating poverty in the affected areas and to the nation at large. These are consequences of the tsetse problem.

It is estimated that about a quarter of Kenya comprising 60% of productive, well-watered rangelands are tsetse infested. In these areas cattle cannot be kept without costly investments in control of nagana. In some high potential areas of Western, Coastal and Nyanza Provinces, lack of draught power as a result of animal trypanosomosis has led to low acreage under crops posing a threat to food security. Animal draught power has the potential to move a family from subsistence to cash economy. Economic losses from livestock deaths cost of importation of trypanocidal and pesticides are enormous. Though human trypanosomosis is confined to limit foci in the Lake Victoria basin, the threat of the disease to productive sectors is real translating to surveillance and tsetse and trypanosomosis control costs. This problem is further compounded by the HIV/Aids pandemic in these areas

2.2 Tsetse Distribution

Eight species of tsetse are found in Kenya, transmitting nagana and sleeping sickness to livestock and people respectively (see tsetse distribution map). The species are *G. brevipalpis*, *G. fuscipleuris* and *G. longipennis* belonging to the fusca group, *G. pallidipes*, *G. austeni*, *G. swynnertoni* *G. morsitans submorsitans* of the morsitans group and *G. fuscipes fuscipes* in the palpails group. *G. pallidipes* and *G. palpalis* have been implicated in the transmission of human trypanosomosis in foci in Lake Victoria basin. Beyond the limits of tsetse distribution, various biting flies transmit camel trypanosomosis. Country wide tsetse survey was carried out in 1940s-50s and some information could have changed. KETRI has confirmed this through partial spot checks.

The current tsetse distribution shows that Lake Victoria and Kyoga (Malaba river system) comprise a large and continuous *G. fuscipes fuscipes* fly belt. The other expansive coastal belt extends from Somalia to Tanzania infested with *G. pallidipes*, *G. austeni*, *G. brevipalpis* and *G. longipennis* in the hinterland.

G. pallidipes has been reported recently in areas where it had been eliminated specially in the border districts of Siaya, Busia, Teso and Bungoma. The south-east Kenya tsetse belt in Kajiado and Narok comprises of isolated patches of *G. pallidipes*, *G. fuscipleuris* and *G. swynnertoni* that extend from the Mara into Tanzania. The only belt where *G. morsitans submorsitans* occur in the country is in the North West along the Kenya Uganda border.

The fly belt covers 51 districts in 7 out of 8 provinces as summarised below.

- **Lake Victoria- Kyoga fly belt: (Extending to Uganda and Tanzania).**

This covers Suba, Rachuonyo, Kisumu, Nyando Siaya, Bondo, Busia, Teso, Bungoma and Mount Elgon districts.

- **Narok - Kajiado fly belt: (Extending to Tanzania).**

This covers Migori, Kuria, Gucha, Bomet, Kajiado, Narok and Transmara.

- **Lake Bogoria - Baringo - Kerio Valley - Koibatek - Turkwell fly belt:**

This covers, West Pokot, Turkana (extending to Uganda), Keiyo, Nakuru (Solai) and Marakwet districts

- **The Central Kenya fly belt:**

This covers upper Tana River drainage system, Kangundo, Yatta, Masinga, Makueni, Mwingi, Thika, Embu, Mbeere, Meru south, Meru East, Nyambene, Lower Thika and Maragua districts.

- **Isiolo- Samburu fly belt:**

This covers Isiolo, Samburu and Laikipia districts

- **Coastal fly belt: (Extending to Somalia and Tanzania).**

This covers Taita Taveta, Kwale, Kilifi, Malindi, Lamu, Mombasa, Ijara and Garissa.

- **Isolated fly belts:**

Moyale, Wajir, and Mandera (Daua river system)

2.3 Trypanosomosis

2.3.1 Animal trypanosomosis

Animal trypanosomosis is widespread in Kenya and occurs both within the tsetse belts, where it is transmitted by tsetse flies and outside tsetse belts where it is transmitted by biting flies. The major pathogenic trypanosomes in Kenya are *Trypanosoma congolense*, *T. vivax*, *T. simiae*, *T. brucei brucei* and *T. evansi*. About 23% of the 13 million Kenyan cattle are found in tsetse infested parts of the country. The challenge is so severe in some parts of the country that cattle cannot be kept economically even with use of trypanocides making some regions such as coastal belt devoid of livestock. Surveys show that trypanosomosis infection rates in Kenya are highest in Coast Province.

Animal trypanosomosis is ranked third after notifiable and tick borne diseases. The disease often occurs in combination with other diseases. Chronic trypanosomosis predisposes affected animals to other infections and this is responsible for huge economic losses in terms of mortality and morbidity, low body weight and high

sterility. The disease increases both calf and adult animal mortality by about 2 to 10% and 1% respectively depending on disease severity. It also reduces calving by about 2 to 5% depending on the disease severity and reduces milk yield by about 10%. Loss in beef production is estimated at Mt. 2000 and that of milk 7 million litres annually. Economic loss to the country is estimated at Kshs.700 million annually from livestock mortality. The cost of importation of trypanocidal drugs and pesticides amounts to Kshs.200 million and Kshs. 40 million respectively in foreign exchange.

Tsetse and trypanosomosis have further contributed to crowding of humans and livestock into environmentally fragile tsetse-free areas, leading to overgrazing and land degradation. Due to trypanosomosis, use of draught animals for cultivation and transportation has been severely hampered, further contributing to low agricultural production and productivity.

2.3.2 Human Trypanosomosis

Sleeping sickness in Kenya has been reported since 1902 and became the main focus of tsetse control in the country. The disease was caused by *T. brucei rhodesiense*, which is endemic in Lake Victoria basin. It is characterized by localized outbreaks transmitted by *G. fuscipes* and *G. pallidipes*. Historically outbreaks have occurred in Suba, Bondo, Siaya, Busia and Teso districts.

The potential of human sleeping sickness outbreak occurring is high in the Lake Victoria basin with nearly 5 million people at risk. Once there is an outbreak, the rest of the country is also at risk due to tsetse flies movement. Through joint tsetse and trypanosomosis control programme of FAO, WHO and GoK, cases of sleeping sickness have reduced to nearly 5 million annually, although localised outbreaks could still reach 100 cases per year. There are, however some cases being diagnosed from the northern district of Bungoma for the first time raising fears that tsetse is advancing to higher altitudes. The government and other tsetse control projects have managed to contain this situation. Lambwe Valley in Suba district remains a focus for sleeping sickness that has a potential of extending to the Mara Game Reserve through movement of infected tsetse and livestock. This would adversely affect the tourism industry.

2.4 Tsetse and Trypanosomosis Control Methods

Tsetse control is a core function of the Department of Veterinary Services. The mandate of tsetse and trypanosomosis control is vested with the Director of Veterinary Services whereas the development of appropriate control tools is the responsibility of national research organisations and universities. The mandated international organisations also contribute to the national efforts. Whereas there are community based methods that could be used to reduce tsetse populations, the final eradication especially in conservation and sleeping sickness outbreak areas are a national responsibility.

2.4.1 Tsetse control

Several methods have been developed for tsetse control in the country.

1. Avoidance of tsetse infested high challenge areas by pastoralists and their livestock.
2. Bush clearing and habitat destruction followed by appropriate land use.

3. Ground or aerial spraying of tsetse habitats with insecticides where cost and environmental concerns are addressed.
4. Bait technology including traps, targets, application of insecticides on cattle and insecticide impregnated zero grazing fencing nets.
5. Sterile insect Technique (SIT) - Involves the release of laboratory bred and irradiated tsetse flies. Sterilization of flies using Insect growth regulators is being refined.

2.4.2 Trypanosomosis control

Traditionally, the farmers were responsible for meeting the costs of treating their animals whereas the Government, for a long time, was responsible for tsetse control as public a good. Treatment and control of both human and animal trypanosomosis is complicated by the fact that some wildlife species act as reservoirs of both diseases making it very difficult to break the transmission cycle.

Drugs that include diminazene aceturate, homidium chloride/bromide and isometamidium chloride have been used for over fifty years. However, due to lack of adequate supervision, cases of misuse of drugs and under dosing have been reported. Cases of resistance to the drugs are being reported especially from the coast where the disease challenge is very high. Other methods of controlling nagana include use of trypanotolerant breeds of livestock like Orma boran.

2.4.3 New Initiative

Due the shift in the government policy towards privatisation and community involvement in development programmes, there has been an increased move to shift the responsibility of vector control to the end users. Several development partners and NGOs have supported initiatives to empower affected communities to initiate and carry out control programmes within their localities. The strategy proposes use of farmer friendly approaches and increased involvement of other stakeholders, including local councils, Kenya Wildlife Services and community organisations. However, as the residual tsetse population remains in game parks and other conservation areas the strategy towards eradication of tsetse and trypanosomosis must be put in place to eliminate further reinvasion.

2.5 Challenges and constraints in Tsetse & Trypanosomosis control

Kenya relies heavily on livestock production to reduce poverty in the rural communities especially in the ASAL areas. The major challenge facing the livestock industry is the effective control of diseases and pests to increase production of high quality livestock and products as prescribed by the OIE for the international markets.

Constraints

The major constraints hindering the achievements of effective tsetse and trypanosomosis control in the country include inadequate:

1. Policy, regulatory and enforcement framework for T&T control
2. Tsetse and trypanosomosis surveillance.
3. Trans boundary strategies for tsetse and trypanosomosis control
4. Emergency preparedness
5. Integrated livestock management approach
6. Domestic and wildlife conflict resolution
7. Human and financial resources for effective disease management.
8. Impact of HIV/AIDS on control programmes.
9. Security especially in ASAL
10. Effective coordination of tsetse and trypanosomosis control

Chapter 3

3.1 RATIONALE AND JUSTIFICATION

3.1.1 Estimated losses due to tsetse and trypanosomosis problem.

Livestock production contributes significantly to Kenyan economy. It contributes up to 10% of GDP and 30% of the farm gate value of agricultural commodities. The sub-sector also contributes to dairy, meat, hides and skins, wool and hair processing industries. Lack of draught power as a result of animal trypanosomosis has led to low acreage under crops. Tsetse and non-tsetse transmitted trypanosomosis has severely limited livestock productivity and the disease is therefore a threat to food security. Food production is reduced by about 40-50% by animal trypanosomosis. The disease is ranked third after notifiable and tick-borne diseases. It often occurs in combination with other diseases especially East Coast Fever and worms. Chronic trypanosomosis predisposes affected animals to other infections and this is responsible for huge economic losses in terms of high mortality, low body weight, loss of draught power and high sterility. Direct economic loss to the country is estimated at Kshs.700 million annually from livestock deaths. The cost of importation of trypanocidal drugs and pesticides amounts to K Shs 200 million and K Shs 40 million respectively in foreign exchange. In addition, the drugs imported are beyond the reach of most the pastoralists who inhabit the areas infested by tsetse flies where poverty levels are usually very high. Control of tsetse and trypanosomosis allows for keeping of improved livestock with positive impacts on environmental conservation.

Lastly the tsetse infested rangelands have great potential for livestock production and biodiversity conservation for tourism development as they have not reached their maximum carrying capacity.

3.1.2 National intervention strategy

The Ministry of Livestock and Fisheries Development through the Department of Veterinary Services is reviewing the national policies for disease management with a view to increasing productivity in the livestock sub-sector. Much of the disease and pest management falls under the farmer, private sector and other stakeholders. The government retains its responsibility on regulatory and monitoring activities while sharing farmer training with the private sector. It also mobilises resources for its core functions, including tsetse control, especially where the problem is in national conservation areas. The country is committed to tsetse control and eradication under the PATTEC. Accordingly the Department and KETRI are strengthening their capacity to address their respective roles on tsetse and trypanosomosis control and eradication. Due to the trans-boundary nature of the problem, the programmes are organised in coordination with adjacent countries that share the fly belts with Kenya.

3.1.3 Stakeholder roles

The role of each stakeholder is defined and the community and the private sector is brought on board in the implementation of tsetse and trypanosomosis. It is recognized that the control of T&T is a public good and the government through the Veterinary services will play key role however its success will depend on devolving some of the activities to the end users. KETRI will continue to play its research role but will be strengthened to perform efficiently.

3.1.4 International Intervention strategy

At the global level the international organizations support and review strategies in tsetse trypanosomosis control. This has culminated in the formation of the FAO/IAEA/OAU/WHO committee called Programme against African Trypanosomosis (PAAT). This body is charged with promoting the development of integrated measures, which are economically sustainable and could lead to large-scale tsetse control that could create tsetse free zones. In Africa, there is urgent need to rid the continent of tsetse/trypanosomosis associated problems. The African Governments issued a declaration in 2000 in Lome to eradicate tsetse from the continent under the auspices of the AU- Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) framework. This was launched in Burkina Faso in September 2001. Currently, the Governments are expected to increase prioritized budgetary allocations to tsetse and trypanosomosis control in an integrated rural development strategy.

The strategic plan is designed for policy makers, planners, managers, researchers and stakeholders in both public and private sectors to focus and mobilize resources toward the identified priorities. The role played by NGOs, communities, private sector and donors in animal health delivery systems has been recognized.

This strategy paper is proposed to focus human and financial resources from all the affected stakeholders to manage tsetse and trypanosomosis to increase productivity in the affected areas. It is also intended to provide a legal framework for intervention in the country through which national and other development agency resources will be channeled and coordinated.

Chapter 4

4. STRATEGIC FRAMEWORK

4.1 Introduction

The basic principles underlying the approach taken in formulating these strategies are:

- **Embracing of inter-disciplinarity**, to address multisectoral issues through mobilization of contributions from all relevant disciplines within the Ministry of Livestock and Fisheries Development Headquarters and decentralized branches of the Veterinary Dept and,
- **Formation and strengthening of partnerships** with other Government ministries, Research Organizations, International organizations, the private sector and the civil society.

The strategies proposed for this framework mainly focus on human and financial resources from all affected stakeholders in order to manage tsetse and trypanosomosis cost effectively for increased and sustainable agricultural productivity in the affected areas. The strategies are also intended to provide legal frameworks in the country for interventions through which national and other development agency resources would be channeled and coordinated.

The strategic framework thus presents the vision and mission of the Department and sets out three overall strategic objectives with specific objectives as stated below:

VISION

A developed Kenya, free from tsetse and trypanosomosis, with a healthy and economically empowered population

MISSION

To increase agricultural and livestock productivity through, sustainable, cost-effective and environmentally acceptable trypanosomosis control approaches and policies.

Objective 1: Review of public policies and regulations

- To review policy, legislation and enforcement
- To mobilize resources and improve utilization
- To create awareness on integrity enhancement

Objective 2: Improve service delivery

- To generate data by effective epidemio-surveillance and adaptive research
- To promote integrated livestock health management
- Capacity building

Objective 3: Integration/coordination of stakeholders

- To establish information center / unit to increase dissemination, networking, collaboration and coordination
- To integrate HIV/AIDS and gender dimensions in livestock health management

The implementation of the strategies for this framework requires effective management and coordination of activities. This would assist in synchronizing the roles and participation of the diverse range of stakeholders that are preferably supported with legal frameworks. These would be achieved by a steering committee, which will later transform into a proposed council (National Tsetse and Trypanosomosis Control Council).

Inputs and processes will closely be monitored to ensure accountability, transparency and performance. The effectiveness of the program will be assessed through periodic internal and external reviews. Environmental impact assessment will be an integral part of the processes for sustainable development.

The implementing national institution will ensure good governance, accountability, and effective service delivery in accordance with the national guidelines. Any policies and strategies that may slow effective implementation will be reviewed, from time to time.

The Government will create an enabling environment for effective service delivery by both the public and private sector to provide synergistic effects.

The Implementation matrix will take ten years with reviews where necessary.

4.2 THE STRATEGIC OBJECTIVES

Three major objectives have been identified as stated above. Substantial work has been carried out in the identification of indicators. However the indicators will be more realistic at the level of the medium term plan in which projects with more specific time bound objectives will be defined.

4.2.1 REVIEW OF PUBLIC POLICIES AND REGULATIONS

(a) To review policy, legislation and enforcement

There is need to review or amend the animal health delivery legal framework to make it more appropriate and conducive for the enhancement of the community and private sector participation especially private vets and para vets. It will be necessary to harmonize laws that relate to animal health delivery, public health (CAP 242) and policies on trypanocide evaluation and registration (CAP 244) with attention to drug quality assurance. Specific policies and legislation other than the Cattle Cleansing Act (CAP 358) are required for tsetse and trypanosomosis control. Provide guidelines on legislation and on migration of displaced people and livestock. Provide an act of parliament on tsetse and trypanosomosis control. The general areas that require review include:

- Diagnosis / Identification
- Research

- Surveillance
- Control
- Extension
- Community participation
- Private sector providers
- Financial Support
- Capacity building
- PATTEC
- Regional harmonization
- International Conventions
- Environment
- Wildlife/Conservation

Key strategy elements:

The Ministry of Livestock and Fisheries Development through the Director of Veterinary Services to:

- facilitate/mobilize all relevant stakeholders to give views and influence the enactment of Tsetse and Trypanosomosis Policy that would allow direct participation of public-private sector linkages and partnership
- Create regulatory mechanisms to verify the compliance with the national acts on drug use
- Increase capacity for legislation/policy enforcement and supervision through enhanced capacity building in management training, sensitization and awareness creation among all stakeholders and enforcement of the Act.
- Provide guidelines for proper use of drugs / pesticides. Veterinary Drug Inspectorate to ensure that there are proper labels, leaflets (brochures) on packages and clear prescriptions, regular inspections of public health premises and personnel handling drugs/pesticides. These should also be accompanied with community education and training on procedures and processes of preparation and administration of the drug/pesticides
- Provide policy guideline on private sector involvement
- harmonize the existing legislation on drug use and delivery in the region, for instance, through East African Community
- Develop standard testing procedures

(b) To create awareness on integrity enhancement

Key strategy elements

- Prevent misappropriation of project funds

Methods

- Follow the laid down public procurement procedures and regulations and rules
- Provide adequate remunerations and incentives
- Prosecute offenders

- Create donor confidence in the projects

Methods

- Use the public procurement procedures in the acquisition of goods, services and works
- Provide comprehensive regular reports on activities and finances

4.2.2 IMPROVEMENT OF ANIMAL HEALTH SERVICE DELIVERY

(a) To generate data by effective epidemio-surveillance and adaptive research.

Key strategy elements

- Provide frequent updates of Tsetse and Trypanosomosis distribution Maps for timely intervention (s)
- Develop, evaluate and document T&TC technologies
- Improve linkages
- Provide demographic information to link literacy, affordability and poverty reduction through socio-economic surveys
- Install and strengthen a reliable epidemiological surveillance system
- National Council for Science and Technology to coordinate research on tsetse and trypanosomosis.
- Establish a reliable supply of standard biological materials from reliable laboratory facilities in Kenya. Given the interest of the private industry it should be possible to recover sizeable proportions of the running costs of a national breeding facility.
- Increase research efforts aiming at the identification of other strategies like use genetically modified tsetse vectors to stop disease transmission.

Partnerships

Information exchange amongst all relevant stakeholders will be intensified to promote identification, testing, and evaluation of promising approaches. In particular, private sector involvement and participation will be highly encouraged and given high priority in promotion.

(b) Promotion Of Integrated Livestock Health Management

Tsetse vector control measures will be geared towards creation of tsetse/trypanosomosis free zones under the Pan Africa Tsetse and Trypanosomosis Eradication campaign (PATTEC) framework. This will be achieved through systematic and sustained campaign to eliminate the flies from individual tsetse zones/belts and promote other land use activities while sustaining operations to prevent reinvasion from the tsetse infested areas. The tsetse species in a given area will be identified and appropriate integrated tsetse control methods put in place to rid the isolated belt of the flies. This will create ever-expanding tsetse-free zones to be used for increased livestock /crop production to fight poverty.

Key strategy elements:

- Create rural Animal health centers
- Strategic use of drugs (trypanocides)
- Provide water to animals in low tsetse challenge areas.
- Create tsetse and trypanosomosis free zones (Ranches, parks etc)
- Control non tsetse vectors of trypanosomosis
- Use appropriate technologies that blend into culture and traditions of the locals
- Involve private animal health service providers in T&TC programmes
- Promote practices that reduce conservation and settlement conflicts
- Incorporate security issues related to natural resource utilization and cultural practices
- Diversification of land use practices e.g. bee keeping and ecotourism

(c) Capacity building

Key strategy elements:

- Strengthen community mobilization and participation while recognizing culture, traditions, values, attitudes and roles.
- Test, evaluate and document indigenous knowledge – for effective utilization
- Establish relevant institutions provided with adequate staff with required training and skills.
- Strengthen monitoring and evaluation activities for efficiency and effectiveness of program
- Ensure standardization of materials, equipment, testing and training guidelines
- Monitor the adoption rate of technology
- Monitor disease prevalence for appropriate interventions
- Periodic evaluation to keep the program on course
- Increase capacity for data analysis
- Strengthen capacity building through training and provision of supplies
- Monitor the Quality of service delivered
- Increase capacity for Environmental Impact Assessment
- Develop user friendly M&E e.g. Participatory Impact Monitoring (PIM)

The above elements will be delivered through community and stakeholder empowerment:

- Provision of relevant information and knowledge (i.e. education and training)
- Diversification of income generating activities

4.2.3 INTEGRATION AND COORDINATION OF STAKEHOLDERS

(a) To establish information center (unit) to increase collaboration and Coordination

Stakeholders

- Government represented by:
 - Ministry of Agriculture
 - Ministry of Livestock and Fisheries Development
 - Ministry of Health
 - Ministry of Environment, Natural Resources and Wild life
 - Office of the President
 - Ministry of Finance
 - Ministry of Roads and Public Works
 - Ministry of Information & Tourism
- Livestock producers
- Private sector
- Local Authorities
- Pastoral Parliamentary Group from ASALs
- Local leaders
- CBOs
- NGOs
- Consumers
- Business persons
- Research organizations
- Donors/development partners
- Freelance journalists

Key strategy elements:

- Establish offices in Nairobi and tsetse-infested districts
- To create awareness among various stakeholders on tsetse and trypanosomosis control
- Initiate and promote collaboration among stakeholders
- Coordinate various sectors in tsetse control activities
- Clearly define roles of various stakeholders.

(b) To integrate HIV/AIDS and mainstream gender in livestock health management

Key Strategy elements

- Integrate HIV/AIDS related information into management and service delivery points
- Reduce the level of resources diversion to treatment of AIDS and other related diseases
- Reduce Poverty caused by AIDS and improve food security
- Reduce the number of orphans, widows and widowers
- Create awareness on the negative effects of Polygamy on service delivery and AIDS
- Identify Gender roles in delivery of services
- Influence laws on property ownership that are women friendly
- Affirmative action on female service providers
- Empower women to make decisions that concern livestock investments and property ownership to improve service delivery.

Chapter 5

5.1 PROGRAMME MANAGEMENT AND COORDINATION

Effective programme management and coordination is a key requirement for the success of tsetse and trypanosomosis control programmes. This section recognizes that tsetse and trypanosomosis control comprise only a component of the holistic approach and needs to be supplemented with land use packages that generate resources to sustain the control activities by the main stakeholders. There is need for a structure that recognizes public and private sector disciplines which support holistic approaches. This requires effective management and co-ordination to synchronize the roles and participation of the diverse range of stakeholders that is preferably supported with legal framework. The policies that support the private sector and farmers will be of paramount importance with the public sector comprising government ministries effectively regulating the operations.

5.1.1 Current arrangements

Responsibility of coordinating, mobilizing resources and implementation of tsetse and trypanosomosis control programmes is vested in the Department of veterinary services which to date is the implementing agency supported by Kenya trypanosomosis research institute (KETRI) on research activities. The department shall continue with this role but with more involvement of other players.

The implementation of district focus for rural development strategies brought with it coordination, staffing and financial problems as the number of districts multiplied. Planning and implementation at district level though appropriate for many development programmes limits coordination of the activities across district boundaries for a fast moving pest like tsetse. Thus the control efforts become too fragmented unless they are sustained and consolidated progressively.

5.1.2 Proposed National Tsetse and Trypanosomosis Steering Committee Members

- i. Ministry of Livestock and Fisheries Development
- ii. AU/IBAR
- iii. National Council of Science and Technology
- iv. Ministry of Agriculture (KARI-TRC)
- v. Ministry of Environment and Natural Resources
- vi. Ministry of Planning
- vii. Ministry of Finance
- viii. Ministry of Health
- ix. Ministry of Lands and Settlement

- x. Private Sector Representatives
 - ITDG

- Pastoralists Representatives (Parliamentary Pastoralist Group)
 - Kenya National Federation of Agricultural Producers
 - Livestock Breeders Association
- xi. Any other member co-opted by the steering committee

5.1.3. Roles of the National Tsetse and Trypanosomosis Steering Committee

- Policy formulation
- Development of guidelines and standards,
- Establishing linkages with relevant departments and sectors
- Providing strategic direction up to farmer level.
- Design its terms of reference for various activities to ensure correct utilisation of resources
- To oversee the activities of the Project Management Units
- Resource mobilisation, allocation and improve utilization
- To co-ordinate and work closely with regional blocks for cross-boundary problems while co-ordinating all the players in the use of appropriate technologies

5.1.4 Secretariat for the NTTSC

- i. Chairman: The Permanent Secretary from the Ministry of Livestock and Fisheries Development.
- ii. Secretary: The Director of Veterinary Services
- iii. Representative from the Ministry of Health
- iv. Representative from Ministry of Planning
- v. Representative from Ministry of Finance
- vi. Representatives from Private sector
- vii. KWS
- viii. Research Organizations (National and International)

5.1.5 Role

- Coordinating the activities of the NTTSC

5.1.6 Project Management Unit

The role will be to oversee the day to day running of the project.

Secretariat for the Project Management Unit

- i. Project Coordinator
- ii. Accountant

- iii. Procurement Officer
- iv. Technical Assistant
- v. Administrative officer

The management committees will be formed at all levels e.g.

1. Provincial Management Committees (7 Tsetse belts)
2. District Management Committees
3. Divisional Management Committees
4. Locational / Village Management Committees
5. Communities

5.1.7 Risk analysis and assumptions

The committee will ensure sufficient planning for proposed projects to ensure their successful completion. The areas of management including procurement and distribution, organization and administrative weakness in ministries will be addressed. Projects will only be undertaken if adequate funds, proper systems and sustainability mechanisms are in place. Thus detailed socio-economical, political and epidemiological context (poverty, trans-boundary nature) will be considered.

5.1.8 Programme sustainability

Sustainable rural livelihood strategies are the targets of most development agencies. These may be defined as those that comprise the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the resource base.

Dependence on handouts represents vulnerability in terms of programme sustainability

There is need for in built mechanisms for sustainability instead of wholly relying on donor support.

Increase government funding for intervention programmes and their sustainability.

The NTTCC will mobilize resources for implementation (cost sharing, paying for services, cess fees).

Increasing involvement of the private sector will be promoted. Beneficiary communities are expected to contribute in managing and financing farmer-based programmes. The existence of adequate infrastructure and markets for products should be seen as pre-requisite for sustainability of initiated development activities. There will be need to develop and sustain internal capacity of NTTCC management unit and all its supported programmes for optimal results. Skills in policy formulation, strategic development, programme management and coordination as well as monitoring and evaluation will be required. Additional skills will be required in data analysis, advocacy and budgeting.

5.1.9 Capacity Building

The management will ensure that effective personnel are retained developed and deployed for their effective production.

Upward mobility

The following structure was proposed to absorb and retain well-qualified staff.

EXISTING STRUCTURE	J/G	PROPOSED STRUCTURE	J/G
Chief zoologist	N	Chief zoologist	Q
Senior zoologist	M	Senior Deputy Chief zoologist	P
Zoologist I	L	Deputy Chief zoologist	N
Zoologist II	K	Senior Zoologist II	M
		Zoologist I	L
		Zoologist II	K

The tsetse section should be upgraded to a division in order to carry out effectively the core function of the Ministry and implement programs for PATTEC. This enhancement will also enable the Department to retain well-qualified staff.

STAFF ESTABLISHMENTS

Summary

Cadre	Required	In-post	Vacancies
Chief zoologist	1	1	0
Senior zoologist	15	5	10
Zoologist I & II	59	8	51
Tsetse officer	49	1	48
LHA	101	1	100

Note: The tsetse officers are being re designated as Assistant Livestock Health Officers (ALHO). About 54 ALHO and Livestock health Assistants (LHA) have been trained on tsetse and trypanosomosis management. They will be officially deployed for tsetse control to support PATTEC.

STAFF DISTRIBUTION PER STATION

	Cadre	Required	In-post	Vacancies
Headquarter	Chief Zoologist	1	1	0
	Senior zoologist	3	2	1
Province				
Nyanza	Senior zoologist	1	1	0
	Zoologist I & II	12	5	7
	Tsetse officer	10	0	10
	LHA	22	0	22
Western	Senior zoologist	1	0	1
	Zoologist I & II	3	0	3
	Tsetse officer	4	0	8
	LHA	8	0	8
Rift Valley	Senior zoologist	1	1	0
	Zoologist I & II	13	0	13
	Tsetse officer	12	0	12
	LHA	24	0	24
Central province	Senior zoologist	0	0	0
	Zoologist I & II	2	0	2
	Tse tse officer	2	1	1
	LHA	4	0	4
Eastern	Senior zoologist	1	0	1
	Zoologist I & II	12	0	12
	Tse tse officer	10	0	10
	LHA	20	0	20
North Eastern	Senior zoologist	1	1	1
	Zoologist I & II	5	0	5
	Tse tse officer	4	0	4
	LHA	8	0	8
Coast	Senior zoologist	1	1	0
	Zoologist I & II	9	0	9
	Tse tse officer	7	0	7
	LHA	14	0	14

Chapter 6

MONITORING AND EVALUATION

Monitoring is a procedure for checking the effectiveness and efficiency in the implementation of the strategic objectives by identifying strengths and shortcomings and recommending corrective measures to optimize the intended outcomes of the plan.

Monitoring of inputs and processes ensures accountability, transparency and performance.

A monitoring methodology must of necessity consider the fact that there are two major areas of monitoring i.e. the compliance test and the performance test. These are:

- a) The compliance test will involve determining whether and to what extent the strategic objectives whose implementation is being measured have achieved their intended effectiveness and impact.
- b) The performance test will involve comparing the schedule of activity completion and their associated costs with the planned activity schedule and associated budget parameters.

Objectively Verifiable Indicators (OVI) and Means of Verification (MoV) will be contained in every project activity log frame. Monitoring will involve the following:

- Tracking use of programme inputs.
- Tracking planned and approved programme activities.
- Assessing the quality of service provided and quality of products.

National tsetse and trypanosomosis control council (NTTC) will be responsible for monitoring. Since monitoring is a critical and continuous process there will be need for regular internal and external monitoring exercises. Representation in the NTTC for monitoring purposes should incorporate grass root project implementers.

The monitoring methodology will address the following pertinent issues:

- a) Identify flaws in the strategic plan implementation matrix
- b) Ensure that the correct milestones, as planned, are being followed
- c) Continually review the assumptions of the implementation matrix thereby assessing risks and mitigating against any identified risks
- d) Act as an early warning system in cases where targets are unlikely to be achieved.
- e) Establish the likelihood of output achievement as planned
- f) Verify that the outputs continue to support the objectives of the strategic plan
- g) Identify recurrent problems in the implementation that need attention
- h) Recommend changes to the implementation process
- i) Identify supplements required to enhance the effectiveness of the implementation
- j) Provide regular information to all stakeholders on progress of the implementation and an informed basis for any reviews

6.2 EVALUATION

Evaluation is concerned with establishing measures of the achievements of the strategic objectives and the contribution of the strategic objectives in addressing the strategic issues of the Department. To sustain implementation of the strategic plan the Department must put in effort to evaluate the cost-effectiveness of the strategic plan. This is also a continuous cyclic activity that needs to be done regularly.

There will be periodic internal and external reviews. Data will be gathered from the various reports including consultancies. The indicators that will assist in measuring programme effectiveness include:

- Timeliness within which desired results are achieved.
- Reduction in tsetse densities.
- Reduced incidence of trypanosomosis.
- Healthy and more productive livestock.
- More prosperous and healthy populace.
- More harmonised and well coordinated control approaches.

Evaluation of the benefits of the strategic plan provides useful information such as

- a) Feedback on the quality of the strategic plan
- b) Assessment of the strategic plan towards Department's improvement in service delivery
- c) Feedback to staff on performance of their respective roles in implementation of the plan
- d) Motivation of staff to work hard to ensure the successful implementation of the plan

6.3 Corruption Monitoring

Corruption monitoring will ensure that the programme is implemented in an accountable and transparent manner which will in turn enhance the integrity of the programme. Both internal and external auditing will form an integral component of the programme. Strict corrective measures and penalties for cases of corruption in the programme as prescribed by the Kenyan Anti-corruption Authority will be enforced and adhered to.

Chapter 7

7.0 IMPLEMENTATION FRAMEWORK

7.1 Introduction

To achieve the objectives of the National Policy and Strategy for Tsetse and Trypanosomosis control, a clear implementation procedure for effective implementation, monitoring and evaluation will be established. The implementing national institution will ensure good governance, accountability, and effective service delivery in accordance with the national guidelines. Attention will be given to assessment and achievements of the primary beneficiary stakeholders that are at the end of the service delivery system because their empowerment and effective adoption will ensure sustainability. The implementation will use existing stakeholders that may form structures that fill capacity gaps and encourage feedback to improve overall performance. Any policies and strategies that may slow effective implementation will be reviewed.

7.2 Stakeholder Implementation matrix

The strategy plan has addressed current key areas for tsetse and trypanosomosis control while empowering the community to demand and provide quality service with a view to fighting poverty. A number of priority activities have been outlined whose implementation will require partnership between communities, government ministries/departments, NGOs, development partners and private sector. Micro-financing agencies will play an important role in facilitating stakeholder investment.

The government through the Ministry of Livestock and Fisheries Development will be responsible for regulation, policy enforcement, coordination, and provision of animal health services by creating an enabling environment for private practice. Whereas the farmer friendly technologies are applicable, the department will explore the possibilities of eradication to reduce settlement/conservation area conflict. The ministry will liaise closely with and involve Kenya Wildlife Services, private game sanctuaries, Forestry Department and other protected areas where tsetse foci may be found to implement eradication strategy. Where eradication may not be immediately addressed, they could be involved in barrier and disease management.

Livestock farmers, traders and related CBOs are responsible for productivity and marketing. They will take responsibility of animal health as a part of inputs from their resources to support production. A part of levy on animal sales by the Councils, farmer associations and CBOs could be invested on animal health. NGOs and other development partners also provide entry point for awareness creation and tsetse and disease management.

7.3 National Tsetse and trypanosomosis Control Council (NTTC)

Initially, a committee comprising key stakeholders will be established by the Permanent Secretary of Ministry of Livestock and Fisheries Development with Director of Veterinary Services providing the secretariat. Key members will be Ministries responsible for Agriculture, Health, Environment and Natural Resources, Tourism and Wildlife, Finance and Local Authorities. The committee may co-opt the research organizations, private sector and development partners involved in the implementation of programmes. To give authority for the committee to operate, the Minister for Livestock and Fisheries will propose National Tsetse and trypanosomosis Control Council through legislation to become the entry point for local and international development partners.

7.4 Role of the Government

The Government will create an enabling environment for effective service delivery by both the public and private sector to provide synergistic effect. They will provide policies that regulate the involvement of the private sector in provision of drugs and quality services and contract tsetse control to private companies with acceptable expertise once the monitoring procedures are in place. Efforts will be made to assess the efficacy and registration of new products while monitoring to remove ineffective and counterfeit brands. They will support private animal health providers with a provision for clear monitoring and regulation procedure and utilize their reports as a part of the national database. Special attention will be given to Para-vets in ASAL areas where 80% of livestock is based with poor infrastructure for service delivery. The Ministry and the Department responsible for animal health will create and revise policies and strategies as necessary. They will also liaise closely with national budgeting cycles and development partners to mobilise resources required in achieving the laid objectives, as agriculture ranks high in the PRSP/MTEF budgeting process. The Government will address the issues of taxation and subsidies to make drugs and pesticides affordable to poor farmers.

The Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) that was endorsed by the African heads of state aims at eradication of tsetse flies from the continent. Being a new approach, the government will create awareness on all stakeholders in tsetse control programmes to operate with eradication in the background. They will also map out residual tsetse populations, especially in conservation areas, for eradication.

7.5 Role of the private sector

A greater benefit of the strategy paper will only be realized if the sector is empowered to play more active role in provision of services. They will take advice from the Government and the industry on acquisition of new knowledge in animal health and changes in national policies to improve their service delivery including use of new products. However, the economic impact of the farmer and end users must be raised to enable them to pay for the services. Many of the indicators of tsetse and

trypanosomosis impact will be at community and community based organizations levels. They are expected to be ethical and operate above the profit motive while executing their duties. Mechanisms to enable contractual arrangements with private companies involved in tsetse and trypanosomosis control service delivery will be put in place.

7.6 Research linkage and adoption of new technologies

To keep up with changes and innovation in tsetse and trypanosomosis control technologies, there is need for demand driven research. The stakeholders through the Director of Veterinary services who is in charge of tsetse control function can direct research on demand. The department will also have the capacity to validate the information on new innovation and take lead with private sector to increase the knowledge of other stakeholders. Coordination with the National Council for Science and Technology will be important. The established baseline data will be used to compare the efficacy of drugs and pesticide during subsequent monitoring and the feedback given to the other stakeholders. The farmers and CBOs must be clearly informed where the research and investigations are involving them. The national extension will be similarly involved.

7.7 Land use planning and environment

The removal of tsetse allows for introduction of development activities that reduce the suitable habitat and increase productivity. This calls for reduction of livestock numbers that degrade the environment and development of forest vegetation that is not suitable tsetse habitat. Effective environment monitoring is necessary for sustainable development.

3

VE I: REVIEW OF PUBLIC POLICIES AND REGULATIONS

	ISSUES	ACTIONS	RESPONSIBILITY	TIME FRAME
ation ment	<ul style="list-style-type: none"> Inadequate relevant /policy Enforcement of guidelines for proper use of drugs / pesticides 	<ul style="list-style-type: none"> Establish council 	DVS/Stakeholders	2004- 2006
		<ul style="list-style-type: none"> Review current policies 	DVS/KVB Stakeholders	Continuous
		<ul style="list-style-type: none"> Periodic review policies Inspectorate active 	DVS/KVB	
		<ul style="list-style-type: none"> Draft, consolidate and Disseminate 	Steering committee/KVB/PCPB	2005- 2014
	<ul style="list-style-type: none"> Inadequate legislation & policy on private sector 	<ul style="list-style-type: none"> Formulate, Disseminate, Legalise partnership through MoUs 	Steering committee /DVS	2005- 2006
	<ul style="list-style-type: none"> Harmonisation of standard testing procedures 	<ul style="list-style-type: none"> Formulation of guidelines Disseminate 	Steering committee /PCPB	Continuous
	<ul style="list-style-type: none"> Enforcement of livestock movement permit into tsetse infested areas 	<ul style="list-style-type: none"> Isolation screening both people and livestock Screening and treatment at isolation centres 	DVS & MoH. NGOs	Continuous
			DVS/Stakeholder	2004 - 2006
	<ul style="list-style-type: none"> Absence of steering committee 	<ul style="list-style-type: none"> Form a steering committee 	DVS/stakeholders	2004 - 2006
and	<ul style="list-style-type: none"> Inadequate motivation Inadequate resource (human, finance) Inappropriate budgetary allocation High prevalence of HIV/AIDS 	<ul style="list-style-type: none"> Review scheme and terms of service 	DVS, DPM	2005 - 2006
		<ul style="list-style-type: none"> Formulate project proposals on T &TC 	Stakeholders	2005- 2014
		<ul style="list-style-type: none"> Collect baseline data and information Participatory budgeting 	Stakeholders	2005- 2014
		<ul style="list-style-type: none"> Establish transparent procurement and purchase procedures 	Stakeholders	2004
			Stakeholders	
it	<ul style="list-style-type: none"> Misappropriation of project funds Loss of donor confidence 	<ul style="list-style-type: none"> Enforce audit procedures 	Steering committee	2004- 2014
		<ul style="list-style-type: none"> Steering committee to recommend deterrent measures 	Steering committee	2004- 2014
		<ul style="list-style-type: none"> Create awareness 	Stakeholder	2004- 2014
ulation	<ul style="list-style-type: none"> Inadequate enforcement 	<ul style="list-style-type: none"> Supervise and monitor 	Inspectorate/KVB/ DVS/...	Continuous

4

WE 2: IMPROVE ANIMAL HEALTH SERVICE DELIVERY

ives	Issues	Actions	Responsibility	Time frame
a by no- adaptive	<ul style="list-style-type: none"> Insufficient information on on tsetse and trypanosomosis planning and control 	<ul style="list-style-type: none"> Update map of tsetse/trypanosomosis distribution and conservation areas 	KETRI/DVS	2004 onwards
		<ul style="list-style-type: none"> Continuous development, evaluation and documentation of T&T technologies 	KETRI, Extension and community	Continuous
		<ul style="list-style-type: none"> Improve linkages with other service delivery systems 	DVS & other stakeholders	Continuous
		<ul style="list-style-type: none"> Increase role of private sector in service delivery 	DVS	2004 onwards
ropriate land reclaimed crease	<ul style="list-style-type: none"> Baseline land use data Tsetse distribution Livestock census Disease situation (trypanosomosis) Demographic information Identify key verifiable data 	<ul style="list-style-type: none"> Socio-economic surveys Integrated T & T management 	DVS, KETRI, NGOs, CBOs	2004-2014
		<ul style="list-style-type: none"> Promote improved productivity 	DVS, DLP, NGOs, CBOs, DAO	2004-2014
		<ul style="list-style-type: none"> Promote diversification of land use practices e.g. bee keeping, eco-tourism etc 	DLP/DA, NGOs CBOs, KWS	2004-2014
		<ul style="list-style-type: none"> Improve T & T management around conservation areas 	KWS, Forest dept, Private conservationists, CBOs, DVS	2004-2014
ng	<ul style="list-style-type: none"> a. Community • Awareness creation • Culture • Tradition & values • Attitude change • Community roles b. Staff • Staff shortage • Specialized training 	<ul style="list-style-type: none"> Document indigenous/ local knowledge (ILK) 	DVS, DLP, CBOs, NGOs, KETRI	2004-2014
		<ul style="list-style-type: none"> Increase knowledge of communities 	DVS, DLP, CBOs, NGOs, KETRI	2004-2014
		<ul style="list-style-type: none"> Establish clear baseline information 	DVS, DLP, KETRI, CBOs NGOs	2004-2014
		<ul style="list-style-type: none"> Develop user friendly monitoring and evaluation techniques e.g participatory impact monitoring 	DPM, DVS, KETRI, NGOs, CBOs	2004-2014
		<ul style="list-style-type: none"> Recruit personnel Provide training for personnel 	DVS, KETRI, NGOs, CBOs	2004-2014

in ASALs on areas	<ul style="list-style-type: none"> • Lack of integrated pest management • Improper use of drugs • Use of counterfeit drugs • Therapeutic & prophylactic treatment • Tsetse free zones • Insecurity in ASAL areas 	<ul style="list-style-type: none"> • Assess impact of tsetse transmitted disease in dry season grazing areas 	DVS, KETRI	2004-2014
		<ul style="list-style-type: none"> • Assess impact of non tsetse vectors of trypanosomosis 	KETRI , DVS	2004-2014
		<ul style="list-style-type: none"> • Develop and use appropriate tools and technologies that blend into cultures and traditions of the locals for T & T 	KETRI, NGOs CBOs , DVS	2004-2014
		<ul style="list-style-type: none"> • Create enabling environment for optimal operations of PAHPs and other stakeholders 	DVS, KVB	2004-2014
		<ul style="list-style-type: none"> • Improve practices that reduce conservation/settlement conflicts 	All stakeholders	2004-2014

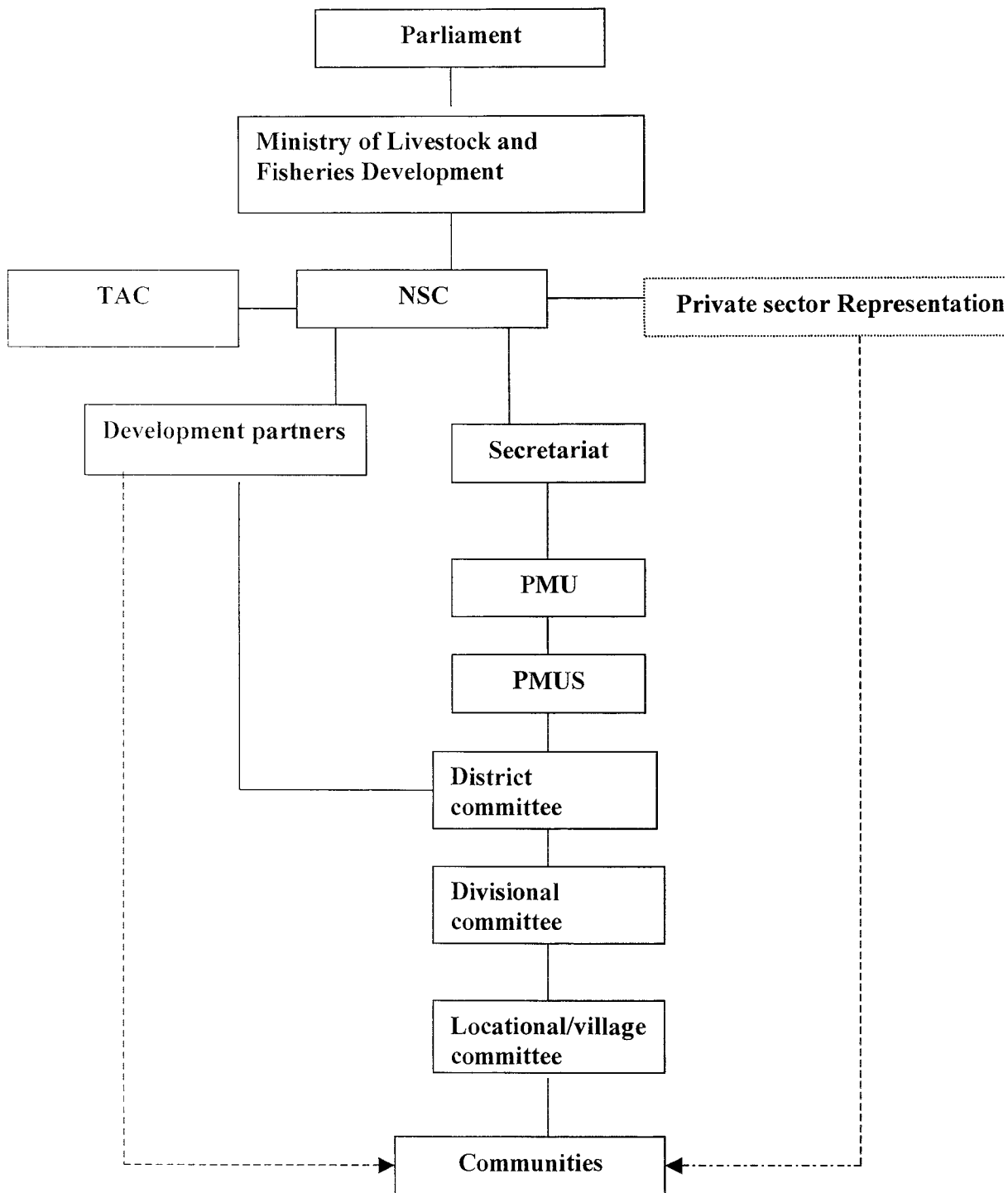
• Address security issues related to natural resource utilisation and cultural practices	All stakeholders	2004-2014
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	ISSUES	1.1 ACTIONS	1.2 RESPONSIBILITY	
ment of centre/units	<ul style="list-style-type: none"> Lack of awareness among various stakeholders on tsetse and Trypanosomosis control 	<ol style="list-style-type: none"> Establishment of an information centre (Library, Website) <ol style="list-style-type: none"> Identify and refurbish / construct office space in Kabete/district headquarters with tsetse problem and source for funds for renovation Equipping the facility with computers photocopiers, periodicals/papers, telephones, e-mails etc Data collection and collation Information dissemination Capacity building (Training) <ol style="list-style-type: none"> Workshops Seminars Barazas Field days Technical training 	<p>Steering committee</p> <p>Steering committee</p> <p>Secretariat</p> <p>secretariat</p> <p>secretariat</p> <p>Stakeholders</p>	<p>2004 – 2006</p> <p>2005 – 2006</p> <p>2005 – 2006</p> <p>2006 - 2014</p> <p>2006- 2014</p> <p>2004- 2014</p>

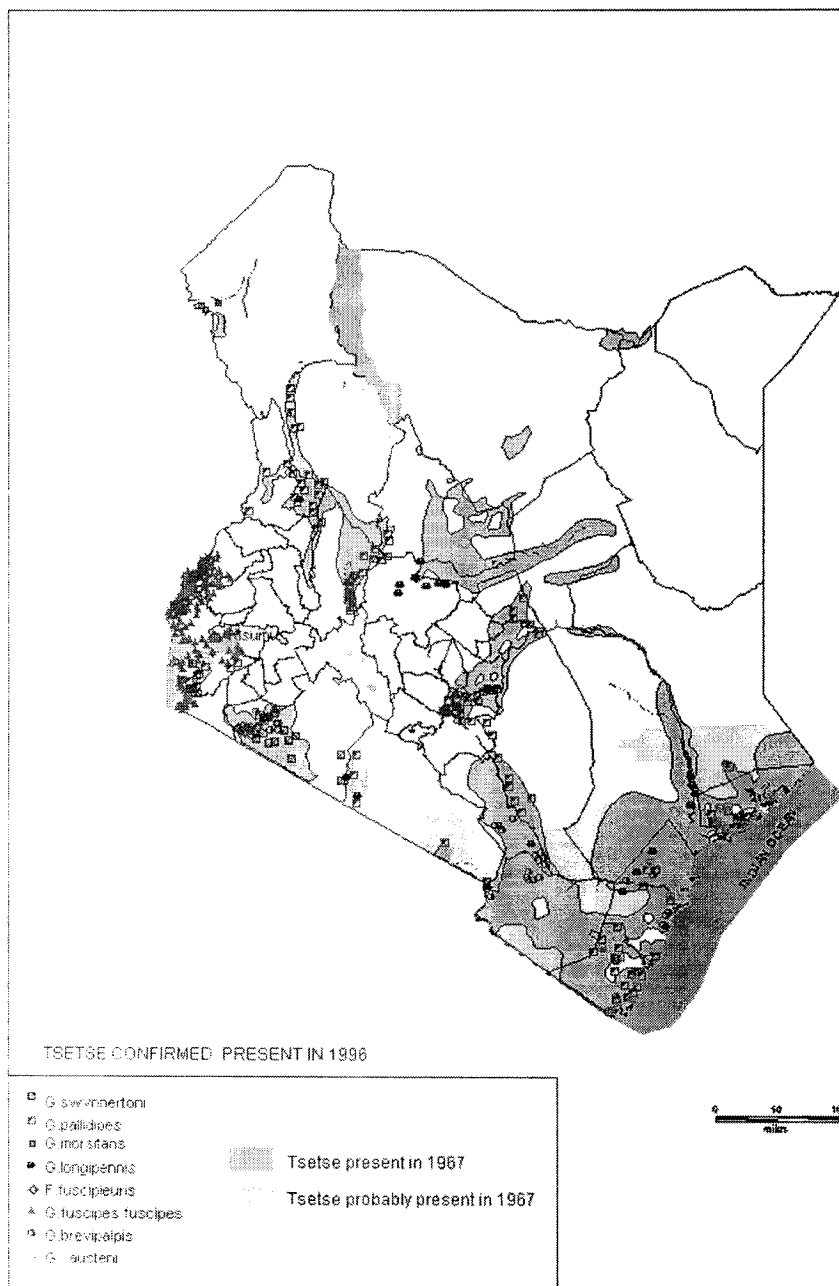
collaboration ination of	<ul style="list-style-type: none"> • inadequate coordination among various stakeholders in tsetse control activities • Lack of clearly defined role of various stakeholders 	<ul style="list-style-type: none"> • meetings: <ol style="list-style-type: none"> a. First meeting b. Annual meetings 	Steering committee Steering committee	October 2004 2004 – 2014
		<ul style="list-style-type: none"> • Exchange programmes • Stakeholders analysis • Formation of networking task force • • Regional meetings 	All Stakeholders All Stakeholders Steering committee All Stakeholders Regional stakeholders	2004 – 2014 2004 – 2014 2004 – 2006 2004 – 2006 2004 – 2014
		<ul style="list-style-type: none"> • Collection of feedback from stakeholders 	M & E Unit	2004 - 2014

	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Data consolidation and analysis • Sending feedback to the stakeholders • Programme reviews 	<p>M & E Unit</p> <p>M & E Unit</p> <p>External reviews</p>	
7/AIDS into T	<ul style="list-style-type: none"> • High HIV/AIDS prevalence countrywide • Diversion of resources to treatment and care • Food security • High number of orphans, widows and widowers • Polygamy • Poverty affecting service delivery 	<ul style="list-style-type: none"> • Creating awareness • Counselling, testing and treatment • Training / Workshops • Provide prevention materials • Establish income generating activities 	<p>G.o.K</p> <p>Consultancies</p> <p>NGOs</p> <p>CBOs</p> <p>Institutions</p>	2004- 2014
gender issues activities	<ul style="list-style-type: none"> • Gender roles in delivery of services • Property ownership • Bias towards male service providers • Domination of decision making by males • Polygamy 	<ul style="list-style-type: none"> • Identify correct players • Seminars / Workshops • Exposure tours • Education to change attitudes (men) • Affirmative action in recruitment of women in service delivery • Empower women to make decisions • Engage in income generating activities 	<p>G.o.K</p> <p>Consultancies</p> <p>Churches</p> <p>NGOs</p>	2004- 2014

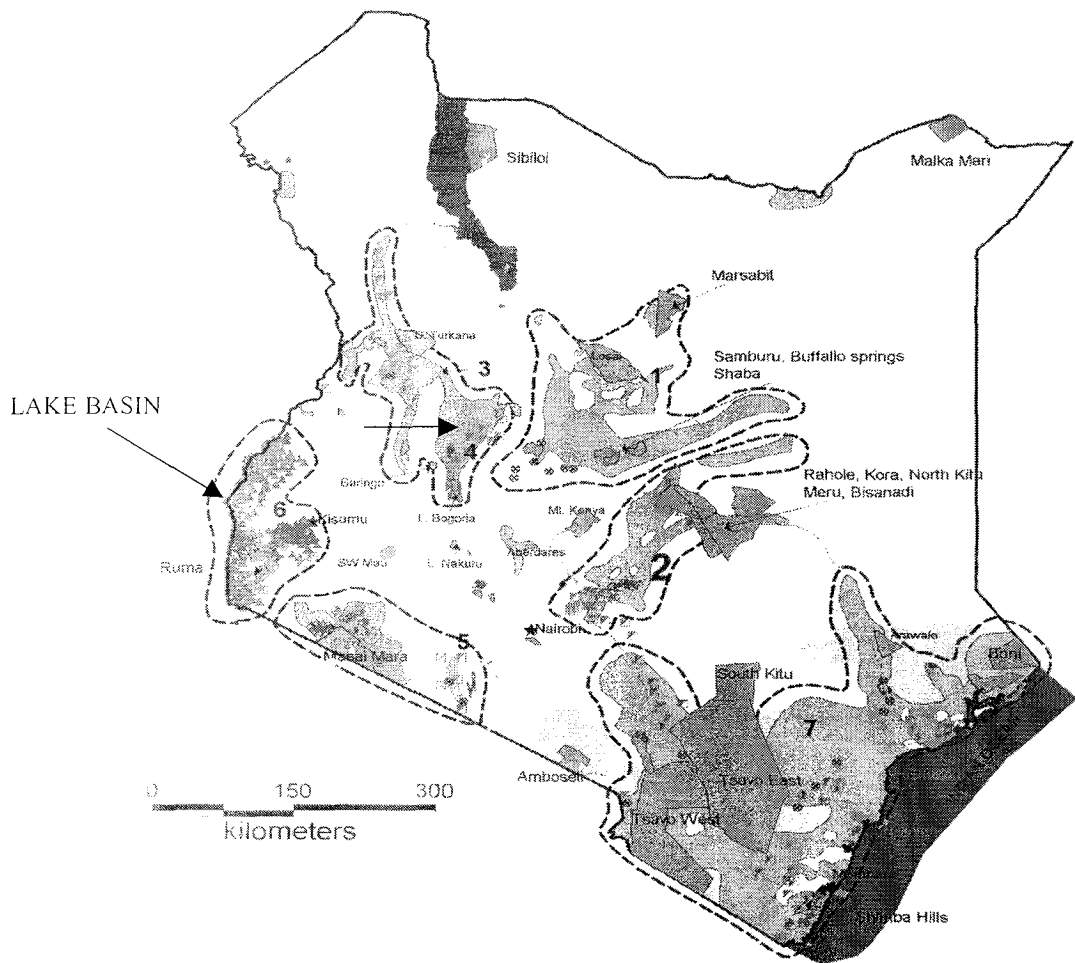
1 STAKEHOLDER CHART



Tsetse distribution in Kenya



ANNEX 4: TSETSE MAP WITH CONSERVATION AREAS



TSETSE CONFIRMED PRESENT IN 1966

- a. *G. swynnertoni*
- b. *G. palpalis*
- c. *G. morsitans*
- d. *G. longipennis*
- e. *G. fuscipleuris*
- f. *G. fuscipes fuscipes*
- g. *G. brevipalpis*
- h. *G. austeri*



Tsetse present in 1967

Tsetse probably present in 1967

1. ASALs North of Mt. Kenya
2. Central Kenya belt
- 3 & 4. North and South Rift belts
5. Transmara-Narok-Kajiado belt
6. Western Kenya & L. Victoria belt
7. Coastal belt