



NATIONAL POLICY FOR THE ERADICATION OF TSETSE FLIES AND ELIMINATION OF TRYPANOSOMIASIS

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UGANDA TRYPANOSOMIASIS CONTROL COUNCIL
MINISTRY OF AGRICULTURE ANIMAL INDUSTRY AND FISHERIES

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Foreword

Since the beginning of the 20th century to date, the tsetse and trypanosomiasis problem has continued to inflict losses to the nation in terms of lives; due to sleeping sickness (Human African Trypanosomiasis) and Nagana (Animal Trypanosomiasis). These losses go alongside those associated with production and productivity. Approximately, 11 million people are at risk of contracting sleeping sickness. In addition, approximately 70% of livestock (8 million cattle, 8.6 million goats, 2.2 million pigs, and 2.4 million sheep) is exposed to the risk of contracting Nagana. It is further estimated that 3, out of 10 cattle in Uganda are infected with Nagana.

Tsetse flies are vectors of both Sleeping sickness and Nagana and occupy over 70% (140,000 Sq. km) of Uganda's land surface. Areas which were once known to be free from tsetse have disappointingly become infested as well thus increasing the spread of the disease.

Over the last 100 years, efforts have been made to control tsetse flies and trypanosomiasis using various methods with considerable successes in intervention areas. However, these successes have always been reversed due to a number of factors including; insufficient sustainability mechanisms, problems associated with the approaches used as many of them have been focussing on control rather than eradication of tsetse flies and elimination of trypanosomiasis. In addition, there has been lack of a guiding, coherent and robust policy on the tsetse and trypanosomiasis problem.

In order to address the constraints facing Tsetse and Trypanosomiasis control efforts, MAAIF in consultation with Stakeholders; including Local and Central governments, NGOs, Development Partners, the private sector, has formulated the **“National Policy for the Eradication of Tsetse flies and Elimination of Trypanosomiasis”**.

This policy is intended to guide the National and sub-national coordination, management and eradication of Tsetse and elimination of Trypanosomiasis in Uganda. The policy will contribute to MAAIF's Development Strategy and Investment Plan (DSIP), MoH's Health Sector Strategic and Investment Plan and the National Development Plan (NDP). In addition, this Policy will contribute towards creating an enabling environment for the fulfilment of Uganda's obligation in the implementation of the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC).

I am therefore, deeply gratified to note that, finally, a lasting solution can be achieved through the guidance of this policy.

FOR GOD AND MY COUNTRY.

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MINISTER OF AGRICULTURE, ANIMAL INDUSTRY AND FISHERIES

1.0 INTRODUCTION

1.1 Back ground

The Ugandan economy is dominated by the agricultural sector which accounts for; 20% of Gross Domestic Product (GDP), 48% of the export earnings, 73% of employment (MAAIF-DSIP 2010) and provides most of the raw materials to the agro-based industrial sector. Eighty five percent of Uganda's population of 33 million, most of whom are women and young people who live in rural areas and depend mainly on agriculture for their livelihood. The national Livestock sub-sector, which estimates the national herd at 11.4 million cattle, 12.5 million goats, 3.4 million sheep, 3.2 million pigs and 37.5 million chickens, contributes about 17% of the Agricultural GDP. The tsetse transmitted trypanosomiasis is one of the major constraints to improved livestock production and productivity in Uganda. The disease affects both humans and livestock.

1.2 The History of Tsetse and Trypanosomiasis in Uganda

The first recorded epidemic of sleeping sickness in Uganda occurred along the shores of Lake Victoria at the beginning of the 20th century (1901 onwards). During this epidemic, an estimated 250,000 people died. Another outbreak occurred from Jinja (Eastwards) to the border with Kenya between 1939 and 1945 (2,432 cases, 274 deaths). In 1976, there was an outbreak of sleeping sickness whose magnitude continued to increase from 52 cases to 8,465 cases in 1980. Another outbreak occurred in South Eastern Uganda (1987-1988) where over 9000 cases of sleeping sickness were reported.

This situation resulted in the introduction of an integrated approach to Tsetse and Trypanosomiasis control. This was based on community participation using insecticide impregnated pyramidal traps, application of insecticide (Deltamethrin) on livestock, selective bush clearing, application of residual insecticides(Dieldrin) on tsetse breeding and resting sites (ground spaying), limited aerial spraying and hot fogging. These tsetse control operations were undertaken concurrently with active and passive screening of human populations and treatment of cases by Medical teams. This reduced the sleeping sickness incidence rate in South Eastern Uganda progressively by 63% in 1988 and by 95.9% in 1993. The tsetse fly densities were also reduced by 94% in the intervention areas. North Western Uganda also experienced several outbreaks of sleeping sickness with 12 cases recorded in 1957, 30 in 1959, 27 in 1981, and 1457 in the mid-1990s.

Despite efforts to control sleeping sickness in the country, the epidemic is still continuing and expanding to new areas. This is due to a number of reasons like lack of sustainability, failure to apply Area-Wide approaches which were targeting control rather than eradication of the vector and elimination of the disease.

1.3 Past Tsetse and Trypanosomiasis control efforts

Over the last 100 years efforts have been made to control tsetse flies using various methods that included, selective bush clearing, selective game elimination, preventing movement of game animals into certain areas, temporary evacuation of cattle and people from tsetse infested to tsetse free areas, burning of vegetation to reduce the tsetse fly habitat, establishment of tsetse pickets (to de-fly the pedestrians, cyclists and motorists) and establishment of Human settlement schemes on land freed from tsetse infestation to prevent tsetse re-invasion. These methods could not achieve total tsetse eradication because they were not relatively efficient and effective.. Furthermore, they were localized and could not address the problem on an Area-Wide basis.

Given the magnitude of the Tsetse and Trypanosomiasis problem, a regional approach has been considered in the National policy framework strategy.

2.0 SITUATION ANALYSIS

2.1 Policy context

2.1.1 Policy Framework

The Government of Uganda recognizes Tsetse and Trypanosomiasis as a major hindrance to increased agricultural productivity and rural development. The National Development Plan, 2012 and the Agricultural Sector Development Strategy and Investment Plan (DSIP) set out priority policies that support an enabling environment for the implementation of programs intended to eradicate Tsetse and eliminate Trypanosomiasis in Uganda.

This policy addresses constraints facing control efforts and is intended to guide the National and sub-national coordination, management and eradication of Tsetse and Trypanosomiasis in Uganda. The policy will contribute to MAAIF's Development Strategy and Investment Plan (DSIP), MoH's Health Sector Strategic and Investment Plan, the National Development Plan (NDP). In addition, this Policy will contribute towards creating an enabling environment for the fulfilment of Uganda's Obligation in the implementation of the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC).

2.1.2 Legislative Framework

The coordination of all Tsetse and Trypanosomiasis control activities is conducted under the Uganda Trypanosomiasis Control Council (UTCC) Act of 1992. The Tsetse and Trypanosomiasis control activities have been regulated using (i) The Sleeping sickness Act of 1929 Chapter 282 and (ii) The Tsetse fly control Act (1948) Chapter 283. Under the present circumstances of environmental concerns, increased population and improved technologies, these Acts have been rendered inapplicable. Worse still, there is no Animal Trypanosomiasis Act to regulate disease control interventions.

This policy will enable the UTCC to advise Government on the proper management and co-ordination of all aspects of T&T programmes at all levels. In addition, it will also create an appropriate environment for revisiting the Tsetse and Trypanosomiasis control approaches to enable Government undertake an Area-Wide Tsetse eradication and Trypanosomiasis elimination.

The implementation and realization of this Policy will be based on and supported by existing legislation embedded in policies like;

- a) The National Policy for the Delivery of Veterinary Services, 2001
- b) The National Veterinary Drug Policy, 2002
- c) National Drug Policy and Authority Act 1993
- d) The Meat Policy
- e) Development Strategy and Investment Plan(DSIP)
- f) National Development Plan (NDP)
- g) The Second National Health Policy (NHP II 2010/19)
- h) Health Sector Strategic and Investment Plan (2010/11-2014-15)
- i) National Environment Act 1995
- j) The National Environment Policy

2.2 The Tsetse and Trypanosomiasis problem

2.2.1 The burden of Tsetse fly infestation

Tsetse infestation negatively impacts on livestock production and productivity, human, animal health and limits land utilization. There are 11 species and sub-species of tsetse belonging to the Genus of *Glossina* in the country. The most predominant tsetse fly is *Glossina fuscipes fuscipes*. This is currently the known vector responsible for both animal and human Trypanosomiasis i.e. Nagana and Sleeping sickness, respectively. Other important

species responsible for the transmission of Nagana include; *Glossina pallidipes*, and *Glossina morsitans submorsitans*.

Over 70% (140,000Km²) of the land surface of the country is infested with tsetse flies; ranging from low, medium and high levels of infestations. Areas of high tsetse fly infestation include; Kalangala and Buvuma Islands; where an average of 200 tsetse flies, per trap per day have been recorded. Similar situations exist in the districts located along the shores of Lake Victoria. Inland, in the South Eastern region, high fly populations are confined to the river banks of the Nile and its tributaries; around the Lake Kyoga area in the Teso and Lango sub-regions. The high tsetse populations follow the River Nile course up to South Sudan. The whole of the Northern, the North West and Karamoja have high infestations as well. Tsetse catches of between 60 and 160 flies per trap per day are quite common. The situation was made worse by the insurgency that led to growth of vegetation ideal for tsetse. The Mid central and parts of South Western Uganda have low populations of tsetse flies but higher infestations of other nuisance livestock biting flies which may also transmit animal trypanosomiasis mechanically. The Kabale and the Sebei regions are currently the only known areas not having any tsetse infestation on record. This is largely due to the intensive land uses and unfavourable cold climate.

2.2.2 The burden of Sleeping Sickness

Sleeping sickness is mainly a disease of the rural and poor populations who primarily depend on land for their livelihood. The disease affects all age groups especially the most productive age group (15-45 years) and is 100% fatal if not treated. However, a significant proportion of children is also affected. Many of these children even after successful treatment will have a considerable delay in their mental development. This in turn, impacts negatively on their school results and professional performance. Infected individuals are weakened often for many years, which sink them into further poverty.

The World Health Organization (WHO, 2002) estimates that in Africa 300,000 – 500,000 people are infected with sleeping sickness annually and according to a WHO report (2012), 70 million people are at risk of contracting the disease. In Uganda, the tsetse transmitted sleeping sickness presents two clinical manifestations, namely; the acute and chronic forms. The acute form of the disease is caused by *Trypanosoma brucei rhodesiense* and is found in South-Eastern and North-Eastern Uganda, while the chronic form is caused by *Trypanosoma brucei gambiense* and is found in North Western and Northern Uganda. There is an eminent danger that the two foci might overlap in the near future and cause mixed infection among the human populations in the two sleeping sickness areas. This will further complicate medical treatment of affected individuals with mixed infection.

The human population at risk of contracting sleeping sickness in Uganda is 11 million. The number of sleeping sickness patients detected and treated in both foci is high and worrying. On average 300-350 cases of sleeping sickness are reported annually. There is a high level of under-reporting of up to 40%. Unreported cases are not treated and certainly result in death and it is estimated that for every one reported death of HAT case, 12 deaths (92%) are unreported (Odiit et al 2005). The average cost of managing a HAT patient per household is estimated at US \$163. This cost represents 43% of the annual revenue of a household (estimated US \$384) and is based on agricultural production and small scale trade. Livestock movement across regions has also contributed to the spread of the disease.

2.2.3 The burden of African Animal Trypanosomiasis (Nagana)

Nagana is one of the most significant constraints to livestock production in Uganda. It is widespread throughout the tsetse infested areas of the country with an average prevalence of 30% recorded in cattle in the Trypanosomiasis endemic areas. Three out of every ten cattle carry Trypanosomiasis infections. Areas like Karamoja, which have been previously considered low risk, have now been confirmed to have Nagana with prevalence rates of up

to 10% in some areas. Approximately 70% of the livestock (8 million head of cattle, 8.6 million goats, 2.2 million pigs and 2.4 million sheep) is exposed to the risk of animal trypanosomiasis with about 40% of these in the high-risk areas. Trypanosomiasis has both direct and indirect losses to the livestock owners. The direct costs include: cost of insecticides for application on livestock by dipping, spraying, pour-ons; and deployment of traps to reduce tsetse fly infestation levels and cost of veterinary drugs and services. The indirect losses include: deaths of affected livestock, increased rates of abortion, infertility, reduced yields of meat and milk, loss of draught power and poor quality of hides and skins

2.3 Emerging issues

2.3.1 Cross border movements of People and Livestock

The uncontrolled movement of people and livestock across borders is a key risk factor for the spread of the Tsetse fly vector and Trypanosomiasis disease. This requires strong surveillance mechanisms along the common borders. This policy will enable the establishment of appropriate measures to mitigate the spread of the tsetse fly vector and Trypanosomiasis across borders as a result of these movements.

2.3.2 Drug resistance in humans and livestock

The types of drugs for treatment of Trypanosomiasis (Nagana and Sleeping sickness) are limited in number. There have been reports of drug resistance in 13 countries in Africa. Under this policy regular studies will be conducted to quantify and qualify the status of drug resistance across the country to support decision making.

2.4 Policy justification

The Ugandan economy is chiefly agricultural-based and employs about 73% of its population: most of whom are women and children living in rural areas where the tsetse flies abound. This makes them more vulnerable to contracting sleeping sickness which together with animal trypanosomiasis have adverse socio-economic effects not only on the rural population but also on the National economy. At the National level Tsetse and Trypanosomiasis control would result in an estimated increased income from milk and beef production by USD 20 million annually (Shaw et al 2013).

As humans exploit more land, water, and other natural resources the accompanying environmental changes lead to serious public health concerns amongst which, is the increased risk and spread of vector borne diseases like sleeping sickness and animal trypanosomiasis.

The effects of these threats are more felt amongst communities who are more vulnerable due to their limited access to resources, lack of formal and informal support networks, location in areas with poor infrastructure and other underlying factors such as social status, gender and ethnicity.

Attempts have been made to avert the impacts of the tsetse fly vector, sleeping sickness and animal Trypanosomiasis on the health and well-being of the most vulnerable communities in Sub-Saharan Africa, with limited success. The limited success has been attributed to several factors including weak coordination mechanisms, lack of proper collaboration between key actors. In addition there has been insufficient adoption and utilization of existing technologies in an integrated and Area-Wide manner.

The removal of African animal trypanosomiasis disease from Uganda could generate direct economic benefits in the range of US\$400 million in a 20-year period.

The eradication of tsetse flies will remove constraints to both human and animal health leading to better livelihoods and rural development. Recent advances in technology have demonstrated that tsetse flies can be eradicated and trypanosomiasis eliminated. However

this may be an uphill task under the current legislation. It is thus necessary to have a comprehensive policy on Tsetse eradication and Trypanosomiasis elimination.

3.0 GUIDING PRINCIPLES

The implementation of the Tsetse eradication and Trypanosomiasis elimination policy will be guided by the following principles:

- a) Promotion of Integrated and Environmentally friendly Area-Wide approaches.
- b) The eradication of Tsetse flies and elimination of Trypanosomiasis
- c) Timely interventions whenever outbreaks occur or when risks are anticipated
- d) Professionalism and upholding of the health and safety standards for persons administering drugs and chemicals while implementing this Policy
- e) Promotion of partnerships and multi-sectoral collaboration with stakeholders.
- f) Consideration of sustainability aspects before embarking on any intervention.
- g) Promotion of research related to Tsetse fly eradication and Trypanosomiasis elimination.
- h) Gender Mainstreaming in Tsetse fly eradication and Trypanosomiasis elimination activities; taking into consideration, the concerns and interests of vulnerable groups especially women, children, old people and people with disabilities.

4.0 POLICY OBJECTIVES AND STRATEGIES

4.1 Goal

To contribute to increased agricultural production and productivity in addition to improving the health of the population.

4.2 Vision

A healthy and wealthy people in a Uganda free from Tsetse and Trypanosomiasis.

4.3 Mission

To eradicate Tsetse flies and eliminate Trypanosomiasis from Uganda

4.4 Objectives and strategies

This National Policy on Tsetse eradication and Trypanosomiasis elimination in Uganda aims at implementing the most effective and efficient strategies. The initial stage will target the eradication of *Glossina fuscipes fuscipes*, *G. pallidipes* and *G. morsitans sub-morsitans* species in a phased approach. The Tsetse and Trypanosomiasis problem has a continental and trans-boundary perspective which makes it imperative that it becomes well-coordinated at central level. A number of strategies will be instituted in order to realize the Vision and Objectives of this policy and to ensure its efficient and effective implementation. These are detailed below:

Objective 1: To build and strengthen capacity to eradicate tsetse flies and eliminate trypanosomiasis.

Strategies:

- a. Establish and improve or re-arrange existing infrastructure, surveillance, diagnosis, monitoring and evaluation.
- b. Design and implement a phased, integrated Area-Wide Tsetse eradication and Trypanosomiasis elimination plan.
- c. Facilitate and equip staff to perform their duties during Tsetse fly eradication and Trypanosomiasis elimination operations
- d. Provide adequate financial and human resource for Tsetse eradication and Trypanosomiasis elimination

- e. Strengthen multi-sectoral coordination and collaboration for National and cross-border Tsetse and Trypanosomiasis programmes
- f. Apply integrated and environmentally friendly technologies in a One Health and EcoHealth approach to eradicate Tsetse flies and eliminate Trypanosomiasis

Objective 2: To establish and strengthen the institutional framework for effective management of Tsetse flies and Trypanosomiasis programmes.

Strategies

- a. Strengthen the coordinating institutions and mechanisms for Tsetse eradication and Trypanosomiasis elimination through regular stakeholder meetings
- b. Set up and regularly convene an expert group to think and advance the approaches in the policy
- c. Establish and network regional Tsetse eradication and Trypanosomiasis elimination focal points in key institutions
- d. Identify mechanisms and ways to institutionalize Tsetse eradication and Trypanosomiasis elimination approaches

Objective 3: To promote early case detection and response to tsetse flies and Trypanosomiasis outbreaks

Strategies:

- a. Multi-sectoral team to develop a contingency plan in line with the One Health and Eco-Health approaches
- b. Strengthening sustainable monitoring systems for tsetsefly infestations
- c. Strengthen sustainable and surveillance systems for Trypanosomiasis
- d. Mobilize and sensitize communities on clinical signs and early reporting
- e. Carry out regular screening and treatment of sleeping sickness
- f. Carry out screening, spraying and mass treatment of livestock against Trypanosomiasis in endemic areas
- g. Implement activities as recommended by the multi-sectoral team in a research and evidence based approach

Objective 4: To strengthen cross-border and Regional collaboration in Tsetse fly eradication and Trypanosomiasis elimination

Strategies

- a. Ensure placement of Tsetse eradication and Trypanosomiasis elimination on the agenda of Regional and International Organizations
- b. Adequate representation in Regional and International agencies and meetings on Tsetse and Trypanosomiasis
- c. Collaborate and share approaches and innovations with regional bodies working on Tsetse and Trypanosomiasis

Objective 5: To Create and maintain awareness about the Tsetse fly and Trypanosomiasis among stakeholders at all levels

Strategies:

- a. Design appropriate information education and communication materials
- b. Develop and implement an integrated communication plan
- c. Increase public awareness on Tsetse and Trypanosomiasis
- d. Popularize the policy guidelines among stakeholders.
- e. Highlight and nurture innovations in Tsetse eradication and Trypanosomiasis elimination

Objective 6: To promote commitment among stakeholders at all levels about Tsetse fly eradication and Trypanosomiasis elimination

Strategies

- a. Increase lobbying and advocacy for Tsetse eradication and Trypanosomiasis elimination among stakeholders
- b. Mobilise adequate financial and human resources for Tsetse eradication and Trypanosomiasis elimination
- c. Health promotion and advocacy in order to increase National, Regional and International awareness among Tsetse and Trypanosomiasis stakeholders
- d. Identify and promote champions for Tsetse eradication and Trypanosomiasis elimination approaches among key stakeholders.

Objective 7: To promote research on Tsetse fly and Trypanosomiasis

Strategies:

- a. Ensure that through established research agencies, academic institutions and collaborating partners, there is relevant research that benefit programs for eradication of Tsetse flies and elimination of Trypanosomiasis
- b. Through MAAIF & MOH, promote and disseminate technological innovations in Tsetse eradication and Trypanosomiasis elimination

Objective 8: To promote and maintain community empowerment regarding Tsetse flies eradication and Trypanosomiasis elimination activities.

Strategies:

- a. Strengthen and support community initiatives aimed at Tsetse eradication and elimination of Trypanosomiasis
- b. Develop and implement a community based capacity building plan.
- c. Regulate and monitor livestock movements in relation to the spread of Tsetse and Trypanosomiasis

5.0 POLICY ACTIONS

The following will be the policy actions;

- a. Review and update existing Acts and Regulations on Tsetse and Trypanosomiasis
- b. Enact the Animal Trypanosomiasis Control Act
- c. Formulate regulations guiding the elimination of animal Trypanosomiasis as is the case with HAT

6.0 INSTITUTIONAL FRAMEWORK AND POLICY IMPLEMENTATION

6.1 Institutional Linkages

The Area-Wide Tsetse and Trypanosomiasis implementation programme mainly hinges on MoH, MAAIF, MoLG, Development partners and Private sector working closely with other institutions that are concerned with the regulation of the inputs used during interventions and those over-seeing the impact that these actions have on the ecosystem in general.

Because of the multidisciplinary nature of the T&T program, there is need for a strong coordination mechanism to effectively implement this policy. The coordination functions will be undertaken by UTCC Secretariat (COCTU) at five levels which are; National, Regional, District, Sub-county and Community through multidisciplinary committees. Through democratization and decentralization, local authorities and a wider range of community members are gaining a stronger voice in setting priorities for government actions. Communities shall form interest groups and associations to ensure that their voices and

demands are firmly expressed for the Tsetse eradication and Trypanosomiasis elimination to ensure that they are integrated into the National Area-wide Tsetse eradication and Trypanosomiasis elimination Programme.

6.2 Administration and Coordination:

The National programme shall be developed by national technical teams in collaboration with Local governments and other stakeholders under the coordination of the UTCC secretariat. UTCC shall have a guiding role in the implementation of the policy through approval of the strategic plans and budgets. The staff working on Tsetse and Trypanosomiasis programme at various levels of implementation, management and coordination shall handle management of technical and administrative activities. They will be accountable to their respective ministries which will maintain constant communication with the UTCC through its secretariat COCTU. In addition, the technical teams at the national level shall be coordinated by the secretariat during the development and implementation of sector national Tsetse eradication and Trypanosomiasis elimination plans, while those at the district level shall be coordinated by the respective technical departments.

6.3 Provision of services

The programme for the eradication of Tsetse flies and Trypanosomiasis elimination shall take recognition of the variety of organizations/agencies that can potentially participate in funding and or execution. There will be an adequate team of competent professionals with desired skills to: plan, supervise, monitor and evaluate the effective and efficient implementation of Tsetse and Trypanosomiasis activities at all levels. . The involvement of various public and private institutions in the execution of activities shall allow the human resource and skills available for tsetse eradication and Trypanosomiasis elimination to be increased and efficiently enhanced by matching scientific skills with needs. Service providers will therefore have to organize and position themselves to serve the demands and interests of the primary stakeholders for efficient, effective and progressive implementation of Tsetse eradication and Trypanosomiasis elimination activities.

6.4 Funding mechanisms

Government, with support from Development partners, shall provide adequate resources for the Tsetse eradication and Trypanosomiasis elimination. Efforts shall be made by UTCC to explore alternative to fund the activities and to ensure equity, efficiency, transparency and accountability in resource allocation and utilisation.

Various strategies can be used to ensure that resources are available and Government shall:

- (a) Increase budgetary allocation to MAAIF, MoH and UTCC for Tsetse eradication and Trypanosomiasis elimination activities.
- (b) Ensure that public resources at local government prioritise financing of Tsetse and Trypanosomiasis activities to ensure quick risk detection and timely interventions.
- (c) Implement financing mechanisms that promote private sector growth in the supply chains that benefit Tsetse eradication and Trypanosomiasis elimination, for example through generous tax breaks to enhance public private partnerships in this effort.
- (d) Strengthen programming of external funding for Tsetse and Trypanosomiasis activities through improved reporting.

6.5 Institutional roles and responsibilities

	Institution	Roles and responsibilities
1	Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)	<ul style="list-style-type: none"> • MAAIF will ensure proper planning of all aspects, availability of adequate staff at all levels to ensure efficient and effective implementation of the Tsetse eradication and Trypanosomiasis elimination program. It will be in charge of formulation and ensuring approval of policies that are needed to address the Tsetse eradication and Trypanosomiasis elimination and any emerging issues. • MAAIF will undertake capacity building, training, support supervision, implementation of applied research including tsetse mass rearing; and ensure central government commitment and ownership of the Tsetse eradication and Trypanosomiasis elimination programme. • In collaboration with the National Drug Authority, MAAIF will regulate and undertake quality assurance of trypanocidal drugs, insecticides and chemicals. In addition, MAAIF will undertake creation of awareness to help stakeholders especially farmers identify priorities plus monitoring and evaluation of the Tsetse eradication and Trypanosomiasis elimination activities.
2	Ministry of Health (MoH)	<ul style="list-style-type: none"> • MoH will ensure availability of adequate staff at all levels to undertake HAT surveillance and treatment in addition to formulation of policies that ensure proper implementation of the Trypanosomiasis elimination program. • MoH will undertake capacity building, training in sleeping sickness management. In collaboration with NDA, MoH will ensure sustainable availability and quality assurance of drugs used for treatment of Human African Trypanosomiasis (HAT). • In addition to promoting implementation of applied research and support supervision, MoH will undertake activities to increase awareness of HAT and carry out monitoring and evaluation of the human Trypanosomiasis elimination activities.
3	Ministry of Finance, Planning and Economic Development (MoFPED)	<ul style="list-style-type: none"> • MOFPED will be responsible for the financial resource mobilisation and programme support including ensuring timely financial disbursements. • Monitor activity outputs of the program
4	Ministry of Energy and Mineral Development (MoEMD)	<ul style="list-style-type: none"> • MoEMD will ensure linkage with International Atomic Energy Agency (IAEA) to enable the promotion and safe use of nuclear energy in the Tsetse eradication activities.
5	Parliament	<ul style="list-style-type: none"> • Parliament will approve Acts and Regulations on Tsetse and Trypanosomiasis and approve budgets for Tsetse eradication and Trypanosomiasis elimination programme. • Monitor implementation of policy activities
6	Uganda Trypanosomiasis Control Council (UTCC) and its Secretariat Coordinating Office for Control of Trypanosomiasis in Uganda (COCTU)	<ul style="list-style-type: none"> • The Uganda Trypanosomiasis Control Council (UTCC) shall be the National apex body made up of representatives from the different stakeholders of the public and private sector, political and policy analysts, and the wider community. • The Council shall advise government on human and financial requirements and solicit for grants / loans under government guarantee for supporting Tsetse eradication and Trypanosomiasis elimination. The Minister responsible for Agriculture shall have political responsibility for the Council.

		<ul style="list-style-type: none"> • The UTCC through its secretariat; Coordinating Office for Control of Trypanosomiasis in Uganda (COCTU) will ensure Inter- Institutional coordination of the Tsetse eradication and Trypanosomiasis elimination programs, development of any other needed policy guidelines, determine priorities, in relation to the economic and social policies of government, ensure efficient and effective implementation of all aspects of T & T programme, submission of timely activity reports by the technical ministries, supervision and monitoring, organize and convene meetings, seminars and workshops. • COCTU will develop, maintain and regularly update a National GIS/Data bank for T and T programs. • COCTU will enhance sharing of resources, networking including electronic conferences for exchange of information on Tsetse and Trypanosomiasis. It will be crucial that communities and private sector are empowered to become part of the battle against Tsetse and Trypanosomiasis for involvement and sustainable action. • COCTU will also have to coordinate the review and update previous Acts and Regulations on Tsetse, Sleeping sickness and Nagana to be compliant with the new policy.
7	Non-government Organisations (NGOs)	<ul style="list-style-type: none"> • NGOs will assist communities in identifying income generating activities, training and sensitization of communities, mobilisation of resources, undertake advocacy and of necessity be required to provide feedback to the UTCC and other government Institutions involved in Tsetse eradication and Trypanosomiasis elimination program.
8	International Agencies such as OIE, Atomic Energy Agency (IAEA), FAO and WHO)	<ul style="list-style-type: none"> • These agencies will be involved in technology development and transfer, provision of expert missions, training of national experts and provision of equipment.
9	Local Governments	<ul style="list-style-type: none"> • Local governments will be responsible for creation of community awareness in liaison with the central government, provision of extension services, community mobilization and sensitization through the Local council system, print and electronic media. LGs will also monitor field activities, guide and participate in implementation of field activities and prioritize Tsetse and Trypanosomiasis activities in their work plans and budgets.
10	National Agricultural Research Systems (NARS)	<ul style="list-style-type: none"> • NARS in collaboration with technical departments will: conduct adaptive research and training, undertake insecticide field trials, conduct epidemiological studies and carry out other studies on various aspects of Tsetse and Trypanosomiasis.
11	Continental and Regional Organisations	<ul style="list-style-type: none"> • These will help with mobilisation of financial resources, coordination of regional and continental Tsetse eradication and Trypanosomiasis elimination programme in addition to drumming up campaign for African Governments to come on board, develop and own the Programmes.
12	Development Partners;	<ul style="list-style-type: none"> • The Development Partners will provide funding and expert advice.
13	National Environment Management Authority (NEMA)	<ul style="list-style-type: none"> • NEMA will be responsible for, clearance of environmental impact assessment reports, and will support the monitoring of Environment impacts of Tsetse and Trypanosomiasis interventions.
14	Uganda Wildlife Authority (UWA)	<ul style="list-style-type: none"> • UWA will collaborate with the technical departments during implementation of Tsetse eradication and Trypanosomiasis elimination

		programmes with regard to the protected wild life reserves
15	Private Sector	<ul style="list-style-type: none"> The private sector will be responsible for availability of inputs, drugs and chemicals as specified by MAAIF, participate in awareness creation, undertake corporate social responsibility and promote entrepreneurial activities that benefit Tsetse and Trypanosomiasis interventions to ensure sustainability.
16	Universities	<ul style="list-style-type: none"> Universities will be responsible for development of the needed human resource, conducting collaborative Research and community outreach and report to UTCC.
17	Farmer and Rural Communities;	<ul style="list-style-type: none"> These will be required to actively participate in Tsetse eradication and Trypanosomiasis elimination program and dissemination of information through any available channels.
18	Uganda National Council for Science and Technology (UNCST)	<ul style="list-style-type: none"> UNCST will be responsible for clearance and supervision and quality control of any research undertaking.
19	National Drug Authority (NDA)	<ul style="list-style-type: none"> NDA will be responsible for registration of new chemicals and drugs, clearance of imported drugs, authorization of importation of drugs and chemicals for experimental purposes and undertaking quality control activities.
20	Uganda Bureau of Statistics (UBOS)	<ul style="list-style-type: none"> UBOS will be responsible for providing the needed data that is vital for Tsetse eradication and Trypanosomiasis elimination activities.
21	Agricultural Chemicals Board (ACB)	<ul style="list-style-type: none"> ACB will be responsible for registration of the needed chemicals.
22	Civil Aviation Authority (CAA)	<ul style="list-style-type: none"> CAA will be responsible for clearance of flight operations and use of their facilities during Tsetse eradication and Trypanosomiasis elimination operations

7.0 MONITORING AND EVALUATION

The Monitoring and Evaluation of Tsetse eradication and Trypanosomiasis elimination interventions requires a harmonized and well-coordinated monitoring and evaluation (M&E) system to track performance, progress and measure impact during and after the programme implementation. It involves tracking and reporting of outcomes using standard formats and approaches. The Government shall establish a robust, comprehensive, fully integrated Monitoring and Evaluation system to provide an effective means of identifying implementation challenges and emerging issues as well as documenting lessons and good practices. Clear indicators shall be developed for different aspects of control interventions to facilitate effective monitoring. Periodic performance reviews will be conducted jointly with key stakeholders including: relevant sectors, local governments, agencies, Civil Society Organizations, private sector, international organisations and Development Partners.