

## **FOREWORD**

Tanzania like the rest of the world is alarmed by alert messages which indicate that Avian influenza has moved from Asia to Europe, is spreading to the rest of the World and has already arrived in Africa. This disease is continuing to kill both domestic and wild birds, is causing huge economic and ecological losses and has a potential to inflict pain through sickness and deaths to our people if it acquires the capacity to spread from man to man. I am told that this is likely to be the case if the present strains of Avian Influenza (AI) virus acquire capacity to spread easily among human beings and become a conventional human infection.

Tanzania is also concerned that the introduction and spread of Avian Influenza could be a social, economic, ecological and health disaster because of its impact of food safety and security, cash income especially for the rural poor who depend on chicken as a means of livelihood, human health and wildlife development. In areas where it has been recorded more than 200 million domestic poultry have died or have been killed. I am saddened by reports that this disease has claimed peoples' lives in Cambodia, China, Indonesia, Iraq, Thailand, Turkey and Vietnam.

This disease could have more devastating effects to people that are already suffering from HIV and AIDS and could also overburden our health system which is trying to cope with other conventional human diseases.

Tanzania has been following closely the evolution of AI and has taken note of alternative measures for controlling AI that have been proposed at several meetings and international conferences. This Emergency Preparedness and Response plan is Tanzania's attempt to operationalise many of the proposed measures and it supplements other actions so far taken by the Government to prevent this disease.

The objective of the plan, to safeguard human health and protect the socio-economic welfare of those involved in poultry farming is in line with the overall Government agenda for improving the quality of life for all Tanzanians. The Government will therefore give priority to this plan in terms of financial and political support it deserves. However, it must be realised that requirements for prevention or containment of this disease are of the magnitude that require cooperation of many actors including local and international institutions and development partners. Tanzania therefore takes this opportunity to invite such institutions and development partners to join hands and fight this disease whenever it is found.

**Hon. Edward N. Lowassa (MP)**  
**Prime Minister**

## EXECUTIVE SUMMARY

*This National Integrated Avian Influenza (AI) Emergency Preparedness and Response Plan is intended to articulate measures for prevention of introduction or spread of Highly Pathogenic Avian Influenza (HPAI) in Tanzania. This disease may come to Tanzania through movement of poultry and poultry products, movement of people or their belongings from infected countries, movement of wild birds especially migratory birds that come from as far as Siberia to winter in Tanzania.*

*There is growing evidence that the fatal avian influenza type H5N1 which has been responsible for serious disease outbreaks in poultry and humans in several Asian countries since 2003 has arrived and is bound to spread to many parts of Africa and that Tanzania needs to prepare for it.*

*The overall objective of the Plan is to safeguard human health and protect the socio-economic welfare of those involved in poultry farming by preventing the introduction and spread of HPAI in Tanzania. While it's specific objective is to prevent the introduction and spread of HPAI in Tanzania, and the consequent economic and ecological disaster. This plan will concentrate on five key areas:*

- I. Capacity for early detection and reporting improved*
- II. Capacity to Contain AI problem at source is established*
- III. Opportunities for human infection are reduced*
- IV. Tanzanian Public awareness against HPAI improved*
- V. Improved understanding of Avian Influenza epidemiology*

*The total cost of the National Avian Influenza Emergency Preparedness and Response Strategic Plan is estimated at USD 25,294,188 with surveillance activities being allocated USD 4,625,520, laboratory diagnostic capacity building being given USD 2,447,900, reducing opportunities for human infection being allocated 6,189,000 and public & technical awareness creation being allocated USD 3,232,600. Other details are as shown in Table 1.*

The plan will be under the overall management of Prime Ministers office, but day to day implementation will be coordinated by the Ministry of Livestock Development. Implementation of day to day activities will be directed by senior staff from Ministry of Livestock Development, Ministry of Health and Social Welfare and the Ministry of Natural Resources and Tourism. At Regional and District Level, the plan will be executed using the existing Government structures. The Regional and District Disaster Management Committees will be Local Command Centres

Table 1-Budget Estimate Summary

Output Component	Investments Costs in US\$			
	Year 1	Year 2	Year 3	Total
Epidemio-surveillance of Avian Influenza	1,815,940	1,431,940	1,377,640	4,625,520
Improvement of Lab diagnostic capacity	1,078,800	852,300	516,800	2,447,900
Capacity to Contain the problem at source	2,446,500	1,863,000	1,879,500	6,189,000
Reducing opportunities for Human infection	1,192,000	1,762,000	1,062,000	6,962,000
Increasing Public Awareness on AI	1,366,400	1,044,200	1,044,200	3,232,600
Research Studies	400,000	400,000	400,000	1,200,000
Management and Coordination	354,556	138,056	144,556	637,168
<b>Total</b>	<b>8,654,196</b>	<b>7,491,496</b>	<b>6,424,696</b>	<b>25,294,188</b>

## **ABBREVIATIONS**

ACP	Africa-Caribbean-Pacific
ADRI	Animal Disease Research Institute
AfWC	African Waterbird Count
ASDS	Agriculture Sector Development Strategy
AI	Avian Influenza
AU-IBAR	African Union-Inter African Bureau of Animal Resources
CDC	Centre for Disease Control
cELISA	Competitive Enzyme Linked Immunosorbent Assay
COSTECH	Commission for Science & Technology
CVL	Central Veterinary Laboratory
DED	District Executive Director
DVO	District Veterinary Officer
DVS	Director of Veterinary Services.
DWS	Director of Wildlife Services
EAC	East African Community
ELISA	Enzyme Linked Immunosorbent Assay
FAO	Food and Agriculture Organisation of the United Nations
GIS	Geographical Information System
HPAI	Highly Pathogenic Avian Influenza
MLD	Ministry of Livestock Development
ND	Newcastle Disease
NIMR	National Institute for Medical Research
NPC	National Project Coordinator
NVLS	National Veterinary Laboratory System
OIE	World Organization for Animal Health
PACE	Pan African Programme for the Control of Epizootics
PCU	Project Coordinating Unit
RALG	Regional Administration and Local Government
SADC	Southern African Development Community
SUA	Sokoine University of Agriculture
TADs	Transboundary Animal Diseases
TANAPA	Tanzania National Parks
TAWIRI	Tanzania Wildlife Research Institute
TBAP	Tanzania Bird Atlas Project
TSH	Tanzanian Shilling
USAID	United States Agency for International Development
VIC	Veterinary Investigation Centre; Ministry of Livestock Development
WD	Wildlife Division; Ministry of Natural Resources & Tourism
WHO	World Health Organization of the United Nations
WI	Wetlands International
YR	Year

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## **ACKNOWLEDGEMENTS**

This National Integrated Avian Influenza (AI) Emergency Preparedness and Response Plan is the product of initiatives taken by the National Avian Influenza Task group that sought to set up strategies for control of this disease, the Tanzania Disaster Reduction Commission that saw the enormity of the problem and agreed to initiate efforts for funding.

The proposal preparation team came from the Ministry of Livestock Development, Ministry of Health and Social Welfare and Ministry of Natural Resources and Tourism, and their Institutions including Animal Diseases Research Institute, National Institute for Medical Research and Tanzania Wildlife Research Institute, respectively.

The work was facilitated by the Ministry of Livestock Development, Ministry of Health and Social Welfare and Ministry of Natural Resources and Tourism.

## **1.0 INTRODUCTION**

Tanzania is alarmed by alert messages from OIE, FAO and WHO which indicate that Avian influenza H5N1 is continuing to kill both domestic and wild birds, is causing huge economic and ecological losses, and is causing both sickness and deaths among people and that it may progress to become a world-wide human pandemic.

The alarm is compounded by the fact that this disease is transmissible through means that could make it reach anywhere and that the causative virus could “jump” from one host species to the next, and in some hosts, it can re-assort and become even more dangerous. By February 2006 the disease was already on the African continent in Egypt, Niger and Nigeria. In March it was reported in Cameroon and Ethiopia.

Tanzania is taking measures to prevent its entry into the country or to contain it and eliminate this disease before it gets a chance to spread and becomes entrenched. The Government has formed a Multi-sectoral Task Force to constantly assess the situation and give advice on actions to be taken as the problem continues to unfold. Members of the task group are: Director of Veterinary Services, Director of Preventive Services, Director of Wildlife, Director of Disaster Management and Director of Regional Administration and Local Government from the Ministries for Livestock Development, Health and Social Welfare, Natural Resources and Tourism and Prime Ministers Office, respectively. Other members are representatives from Ministry for Public Safety and Security, Vice Presidents Office (Poverty & Environmental Management Issues) and Ministry for Agriculture and Food Security.

It also has formulated this Emergency Preparedness and Response Plan, which has five key intervention areas:

- Strengthening early warning through surveillance and reporting
- Reducing opportunities for virus introduction
- Containment of the problem at source
- Reducing opportunities for human infection
- Commissioning research to improve understanding of the pandemic

In addition to this poultry and poultry products importations from infected countries have been banned, exports of wild birds have been suspended and surveillance activities on both domestic and wild birds have been initiated.

However, experience with occurrence and management of Avian Influenza in countries like Nigeria and Turkey indicate that, this disease is more efficiently managed if coordinated, multisectoral, multilayered interventions are planned, resources for their implementation are identified and set aside and command structures are known.

The next sections of this document will give the background information and justification, situation analysis and problems to be addressed, intervention logic and activities to be undertaken. Other sections will give exposition on project area and beneficiaries, overall goal and objectives, project Logframe and detailed description of

activities. Other sections describe implementation arrangements, project Organization Structure, and project Costs, detailed budget, Work Plan Schedule, Critical Assumptions and conclusions. This Emergency Preparedness and Response Plan is anchored in managing risk areas towards the introduction and spreading of Avian Influenza to avert development of the pandemic at scientifically possible intervention areas depicted in Figure 1 and also towards minimising devastating effects if the disease is ever introduced.

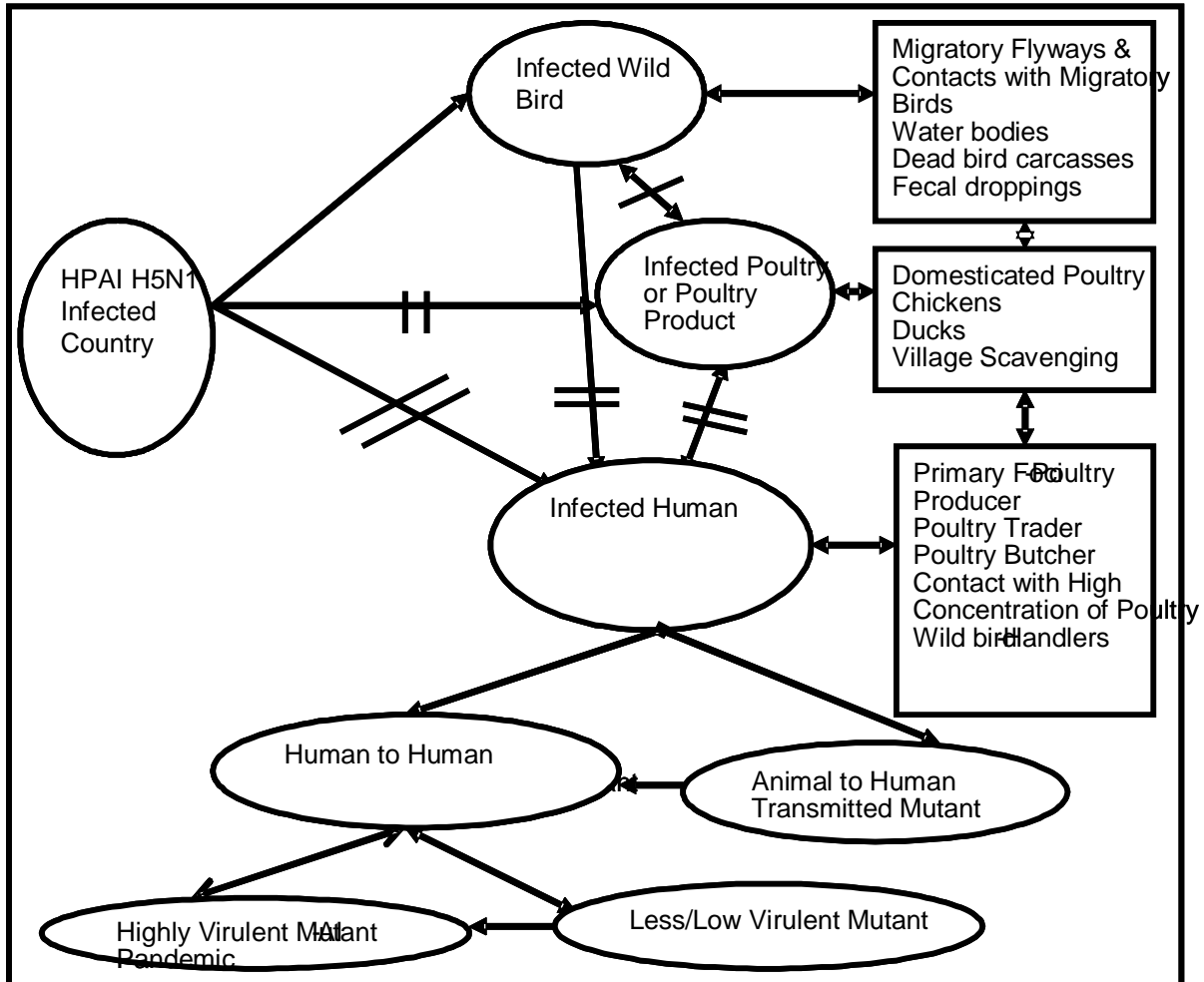


Figure 1-Avian Influenza routes of introduction from an infected country and scene of pandemic evolution.

## **2.0 BACKGROUND**

### **2.1 Background information**

This National Avian Influenza Emergency Preparedness and Response Plan has been designed to give direction to Tanzania's efforts to strengthen emergency preparedness against the eventuality of Avian Influenza being introduced into this currently presumed free area. There is growing evidence that the fatal avian influenza type H5N1 which has been responsible for serious disease outbreaks in poultry and humans in several Asian countries since 2003 has arrived and is bound to spread to many parts of Africa. Laboratory tests of the virus responsible for the recently reported outbreaks in Nigeria indicate that the causative virus is similar to those found in Turkey and the ones found in Asian countries.

The disease is spread through a number of sources that include movement of domestic or wild birds and bird products through legal or illegal trade, travelers returning from affected countries in Asia, Middle East or other African Countries, and, although unproven, it is suspected that the virus could possibly be carried over long distances along the migratory bird flyways to regions previously unaffected. Tanzania may get the disease from any of the above means of transmission.

What is more worrying is that Tanzania's poultry farming systems are open, free range, systems with poor biosecurity and with lots of mixing between wild animals, domestic animals and human beings. Moreover, poultry marketing and subsequent slaughtering in Tanzania is carried out in a manner that can be conducive to rapid spread of infectious viruses. Therefore, this calls for early detection rapid response and eventual containment of the disease before it is entrenched within the country.

H5N1 has recently been reported in Nigeria, Bulgaria, Germany, Italy, Iran, Romania, Turkey, Egypt and Niger (February 2006) and Cameroon and Ethiopia (March 2006). The thinking that H5N1 is confined to the far east, was overturned since late 2004 when H5N1 strain H5N1 was diagnosed in a variety of captive and wild bird species and continued to progress in north-westerly direction from Hong Kong (January 2004) via Japan, Korea, China, Mongolia to Kazakhstan, Russia and Turkey (August 2005).

Nigeria is of special significance to Tanzania because of its trade links in poultry with eastern and central African countries. Turkey and Egypt are also of special significance because of their location of the flyway for migratory wild birds from Europe. Kenya is even more special because of its being the next door neighbour. As a result, introduction of avian influenza from the presently identified foci of infection seems highly possible.

### **2.2. Biology of Influenza Viruses**

Avian Influenza (AI) or Bird flu is an infection caused by avian influenza viruses. These viruses are among many types of influenza viruses that are grouped together in the family called Orthomyxoviridae. This family has four genera namely, influenza Virus type A, B, C, and Thogotovirus. Type A is a multi-host genus whereas B and C are for humans. Influenza viruses are further categorized into subtypes according to the antigens of the hemagglutinin (H) and neuraminidase (N) projections on their

surfaces. There are 16 H and 9 N protein types and consequently, many different combinations of H and N proteins are possible. Presently Highly Pathogenic Avian Influenza (HPAI) viruses in birds are from subtypes H5 and H7. There were only three known influenza A subtypes that affect humans (H1N1, H1N2, and H3N2) and it is likely that some genetic parts of these viruses came from birds. Now although the virus is not very efficient in being transmitted between humans H5N1 seems to have joined the list of influenza Viruses that also affect man. The capacity of this virus to also infect humans, has led to a reassessment of the classification and management of such infections.

In general AI virus is infective for almost all, domestic and wild avian species. Infections in monkeys, pigs, ferrets, horses, cattle, cats, seals and whales have been reported. However, although the significance of non-avian species in spreading HPAI viruses is not well understood, the role of these animals appears to be minimal except for pigs.

Pigs have special significance in the biology of Avian Influenza. They can be infected by H1N1, H3N2, and H1N2 that are also infectious to humans and H4N6 and H5N1 that are infectious to Birds. In this regard these animals can facilitate development of new types of viruses.

AI virus occurs, in one or a number of its many serotypes, in all continents where research has been carried out. Internationally, 12 outbreaks of HPAI were recorded to between 1955 and 1994 following the recognition in former year that fowl plague, or HPAI, was caused by an influenza virus. Since 1994, there have been 25 further outbreaks, most of which occurred from 2000 onwards. Table 2 shows the dates and locations of these outbreaks.

**Table 2 Outbreaks of highly pathogenic avian influenza, 1995–2006**

LOCATION	DATE	VIRUS SUBTYPE	HUMAN INFECTION
Pakistan	1995, 2004, 2006	H7N3, H5N1	Recorded
Mexico	1995	H5N2	Not recorded
Italy	1997, 1999	H5N2, H7N1	Not recorded
Hong Kong	1997, 2001, 2002,2004	All H5N1	Recorded 1997
Australia (NSW)	1997	H7N4	Not recorded
Chile	2002	H7N3	Not recorded
Netherlands	2003	H7N7	Recorded
Germany	2003	H7N7	Not recorded
Belgium	2003	H7N7	Not recorded
South Korea	2003	H5N1	Not recorded
Japan	2004, 2006	H5N1	Not recorded
Vietnam	2004	H5N1	Recorded
Thailand	2004	H5N1	Recorded
Laos	2004	H5N1	Not recorded
Cambodia	2004, 2005, 2006	H5N1	Recorded
Indonesia	2004	H5N1	Not recorded
China	2004,2005, 2006	H5N1	Recorded
Malaysia	2004	H5N1	Not recorded
United States (Texas)	2004	H5N2, H7N2, H2N2	Not recorded
Canada	2004	H7N3	Recorded
South Africa	2004	H5N2	Not recorded
Egypt	2005	H5N2	Not recorded
Philippines	September 2005	H5N1	Not Recorded

Russia (Siberia)	2005, February 2006	H5N1	Not recorded
Turkey	February 2006	H5N1	Recorded
Egypt	February 2006	H5N1	Not recorded
Nigeria	February 2006	H5N1	Not recorded
Japan	January 2006	H5N1	Not Recorded
Iraq	February 2006	H5N1	Recorded
Russia	February 2006	H5N1	Not Recorded
Romania	March 2006	H5N1	Not Recorded
Albania	March 2006	H5N1	Recorded
Azerbaijan	March 2006	H5N1	Not Recorded
France	March 2006	H5N1	Not Recorded
India	March 2006	H5N1	Recorded
Malaysia	March 2006	H5N1	Not Recorded
Myanmar	March 2006	H5N1	Recorded
Zimbabwe	February 2006	H5N2	Not Recorded
Egypt	March 2006	H5N1	Not Recorded
Niger	March 2006	H5N1	Not Recorded
Nigeria :	March 2006	H5N1	Not Recorded
Cameroon	March 2006	H5N1	Not recorded
Ethiopia?	March 2006	H5N1	Not recorded

Avian influenza can come and spread in Tanzania through a number of sources including poor bio-security measures at poultry farms, movement of poultry and poultry products through trade, illegal and legal trade in wild birds and as explained below wild birds may have a significant role to play.

### **2.3. Role of Wild Birds**

It has long been known that wild birds are a reservoir host for avian influenza viruses worldwide. In these birds, especially the waterfowl, particularly ducks, geese and swans, influenza Viruses occur naturally as low-pathogenic avian influenza (LPAI) viruses. Prevalence of AI infection in these birds has ranged from 0.6% to 26%.

However these viruses can infect domestic birds and can become highly pathogenic. Outbreaks of HPAI originating from low-pathogenic avian influenza (LPAI) viruses transmitted by wild birds to domestic poultry were infrequent during the last 40 years but, recent surveillance studies in Europe have isolated several H5 and H7 influenza A viruses from dead wild birds and illegally imported live wild birds and this has illustrated the potential of getting HPAI from this source.

Research also suggests that the huge pool of viruses in wild birds, especially waterfowl, in which the virus replicates in the intestines, provides the opportunity for new combinations of H and N subtype viruses that give arise to new viruses through genetic reassortment.

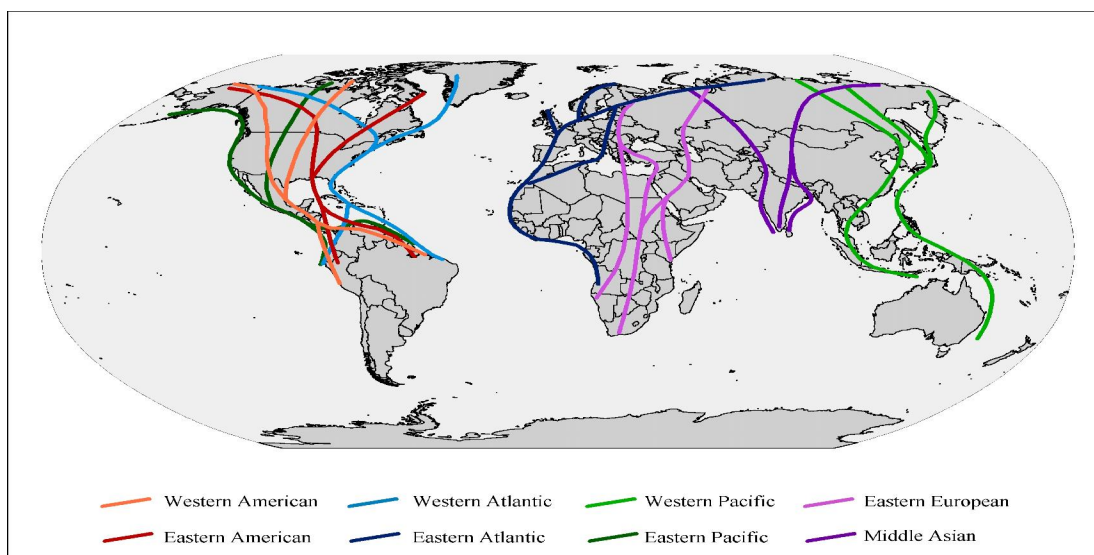
Migratory birds are considered to be one of the means by which the disease travels across and between continents.

**Table 3 Reported cases of HPAI in wild birds in 2004/2005**

COUNTRY	SPECIES	TYPE AI	DATE
Hong Kong SAR	Peregrine Falcon, Grey Heron, Black headed gull, little egret, captive greater Flamingo	H5N1	Jan-2004
Cambodia	Wild birds in a zoo collection	H5N1	Feb-2004
Japan	Crows	H5N1	Mar-2004
Republic of Korea	Magpies	H5N1	Mar-2004
Thailand	Pigeons, Open-Bill Storks, Little Cormorant, Red-collar Dove, Scaly Breasted Munia, Black Drongo	H5N1	Dec-2004
China	Grey Heron	H5N1	Dec-2004
China	Bar-headed geese, Great black-headed gulls, Brown-headed gulls. Ruddy Shelducks and Great cormorants	H5N1	Apr-2005
Mongolia	Bar-headed geese and Whooper swan near lake.	H5	Aug-2005
Russia (Siberia)	Wild birds	H5N1	Aug-2005
Kazakhstan	Wild birds	H5N1	Aug-2005

Sources: OIE, country reports, GPHIN, ProMED

Wild birds may have special significance with regard to spread of Avian Influenza viruses. They may harbour the viruses without clinical manifestations of the disease. They may move with the virus from the Far East to Siberia, from Siberia in the North to as far as Namibia in the south and from Eurasia to northern America including the United States and Canada. Major migratory routes for these birds are shown in figure 2



*Figure 2-World Map Showing Wild bird Major Flyways*

For Tanzania, wild birds that until recently were nesting in the affected areas of Novosibirsk and Altai are now in the 2006 winter migration grounds in many of its wetlands. It is conceivable that if the birds were infected Influenza Virus type H5N1 could be in Tanzania, being brought in by these birds from Siberia.

Normally there are an estimated 15 million water birds utilizing Tanzania for a significant part of their life cycle. The majority of these birds avoid contact with humans but are not averse to feeding and bathing alongside domestic poultry when the two are in proximal contact. Many of these wild birds also utilize water bodies shared by humans who often depend on surface water for bathing, irrigation, watering livestock and even drinking and other domestic activities.

Bird families most likely to carry the H5 virus strain are the Anatidae, the ducks and geese. Tanzania is the southern limit of the three most common Palearctic ducks wintering in sub-Saharan Africa.

It may well be that birds presently wintering in Tanzania have no pathogenic avian influenza virus. However, these may be making regular addition of new viruses to the diverse domestic poultry virus pool which may one day play a role in the avian influenza cycle and could be the prototype for HPAI viruses passing from resident water fowl to domestic fowl, particularly domestic ducks. Improved wild birds surveillance, including migratory birds as well as captive birds and exotic poultry, could only serve to increase the understanding of the epidemiology of avian influenza for the current H5N1 situation. It may also give further information on migratory species potentially involved in the spread of HPAI instead of making simple associations of wild bird flyways with outbreaks of AI that may be confounded.

Raising public awareness and strengthening surveillance and laboratory diagnostic services are important components to be addressed. With the information provided, sound risk analysis will then feed into developing realistic, science-based emergency preparedness procedures with contingency action plans to strengthen early warning and early reaction to HPAI introduction in case of an incursion.

#### **2.4. Effect of Avian Influenza in Domestic Birds**

All recent outbreaks of HPAI in eastern Asia, Turkey and Nigeria have revealed that avian influenza strikes with devastating effects on birds, household economies for families that depend on poultry production, processing and marketing. In areas where it has been recorded, 140 million domestic poultry have died or have been killed. Economic losses associated with these losses are estimated at USD 10 billion.

Signs of the disease at farm level, in susceptible populations are short incubation period of 3 to 7 days and sudden deaths of many birds without premonitory signs or with minimal signs of depression, in appetite, ruffled feathers and fever. Some birds may show weakness and a staggering gait. Alternatively hens may at first lay soft-shelled eggs, but soon stop laying. Sick birds often sit or stand in a semi-comatose state with their heads touching the ground.

Profuse watery diarrhoea is frequently present and birds are excessively thirsty. Respiration may be laboured. The mortality rate varies from 50 to 100% for some strains of AI

In broilers, the signs of disease are frequently less obvious with severe depression, in appetite, and a marked increase in mortality being the first abnormalities observed. Swelling of the face and neck and neurological signs such as torticollis and ataxia may also be seen.

The disease in turkeys is similar to that seen in layers, but it lasts 2 or 3 days longer and is occasionally accompanied by swollen sinuses. In domestic ducks and geese the signs of depression, in appetite, and diarrhea are similar to those in layers, though frequently with swollen sinuses. Younger birds may exhibit neurological signs. Birds that die of peracute disease may show minimal gross lesions, consisting of dehydration and congestion of viscera and muscles.

In birds that die after a prolonged clinical course, petechial and ecchymotic haemorrhages occur throughout the body, particularly in the larynx, trachea, proventriculus and epicardial fat, and on serosal surfaces adjacent to the sternum. There is extensive subcutaneous oedema, particularly around the head and hocks. The carcass may be dehydrated. Yellow or grey necrotic foci may be present in the spleen, liver, kidneys and lungs. The air sac may contain exudates. The spleen may be enlarged and haemorrhagic.

## **2.5. Avian influenza in humans**

The first case H5N1 virus to of spread from a bird to a human was seen during an outbreak of bird flu in poultry in Hong Kong, Special Administrative Region in 1997. The virus caused severe respiratory illness in 18 people, 6 of whom died. Since that time, there have been other cases of H5N1 infection among humans. Recent human cases of H5N1 infection that have occurred in Cambodia, Thailand, and Vietnam have coincided with large H5N1 outbreaks in poultry. The World Health Organization (WHO) also has reported human cases in Indonesia. Most of these cases have occurred from contact with infected poultry or contaminated surfaces. However, the spread of avian influenza viruses from one ill person to another has been reported very rarely, and transmission has not been observed to continue beyond one person.

Symptoms of bird flu in humans although not pathognomonic have ranged from typical flu-like symptoms (fever, cough, sore throat and muscle aches) to eye infections, pneumonia, severe respiratory diseases (such as acute respiratory distress), and other severe and life-threatening complications. The symptoms of bird flu may depend on which virus caused the infection.

Treatments for H5N1 influenza has been attempted using oseltamavir and zanamavir. H5N1 infections have been found to be resistant to two other antiviral medications namely amantadine and rimantadine that are commonly used for influenza treatment.

There is currently no commercially available vaccine to protect humans against the H5N1 virus that is being seen in Asia and Europe. However, vaccine development efforts are taking place. Research studies to test a vaccine to protect humans against H5N1 virus are continuing.

**Table 4. Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO by 13 March 2006**

Country	2003		2004		2005		2006		Total	
	cases	deaths	Cases	deaths	cases	deaths	cases	deaths	cases	deaths
Cambodia	0	0	0	0	4	4	0	0	4	4
China	0	0	0	0	8	5	7	5	15	10
Indonesia	0	0	0	0	17	11	12	11	29	22
Iraq	0	0	0	0	0	0	2	2	2	2
Thailand	0	0	17	12	5	2	0	0	22	14
Turkey	0	0	0	0	0	0	12	4	12	4
Viet Nam	3	3	29	20	61	19	0	0	93	42
Total	3	3	46	32	95	41	33	22	177	98

## 2.6. Role of Ducks and geese

Ducks and geese are susceptible to infection with all AI virus strains. AI virus is commonly isolated from these species in endemic areas, but only some very virulent viruses produce clinical disease.. These birds may therefore act as potential reservoirs for poultry and humans. Presently, the spreading AI subtype H5N1 is causing widespread deaths to these birds as it is doing to chickens wherever it has been detected.

## 2.7. AI in other birds

Guinea fowls, quails, pheasants and partridges are susceptible to infection and clinical disease. In quails infection appears to spread slowly AI has been associated with a syndrome characterized by respiratory signs, enteritis, weakness and death in ostriches. Mortality in young ostriches may be 30% or higher. An outbreak of HPAI due to a highly pathogenic H5N2 subtype virus occurred in ostriches in South Africa in 2004. AI viruses have not been isolated from caged birds, including psittacines and canaries.

AI viruses are readily recovered from free-flying aquatic birds throughout the world. No significant disease problems due to AI are known to occur in these birds. Crows have become infected with and died from H5N1 subtype virus infection. Indian crows have a very significant presence along the coastal line especially Tanga, Dar-es-salaam and Zanzibar and in case of an AI outbreak would be one of the mechanical carriers to watch for in the containment and control of the disease.

## 2.8 Role of pigs

Tanzania has a pig population of 1.2 million. The husbandry of these animals ranges from free ranging in rural areas to confinement in peri-urban settings. Pigs have special significance in the biology of Avian Influenza. They can be infected by H1N1, H3N2, and H1N2 that are also infectious to humans and H4N6 and H5N1 that are infectious to Birds. In this regard these animals are considered to be mixing vessels, which can facilitate development of new types of viruses.

## **2.9 Wetlands of Tanzania**

There is a close association between the wild birds that are suspected to be carriers of Avian Influenza and wetlands. Tanzania holds some of the most significant wetlands in the world that support internationally important biodiversity species of plants and animals, and are a vital source of livelihood and water for many societies within and outside the country.

The Rift Valley lakes of Tanganyika and Nyasa hold some of the most significant wetlands in the world. They support internationally important assemblages of plants and animals, which are a vital source of livelihood and water. The area is about seven million km<sup>2</sup> of which 4.5 percent is open water/wetlands. A large variety of resident and migratory wetland birds frequent the Rift Valley lakes and scattered local wetlands.

Lake Tanganyika is among the most biodiversity freshwater ecosystems in the world. It also provides freshwater for domestic, agricultural and industrial use and up to 200 000 tons of fish annually. Burundi, Democratic Republic of Congo, Tanzania and Zambia have already embarked on a process to sustainably manage Lake Tanganyika's resources, in order to ensure local livelihoods and the conservation of the biodiversity. The Ruvuma river marks the international boundary between Tanzania and Mozambique.

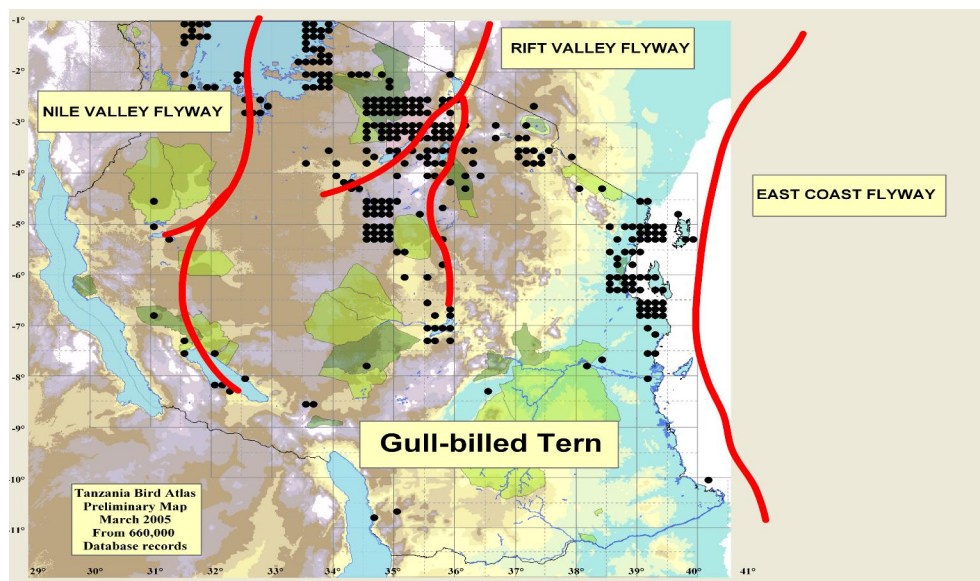
The Ruvuma drains an area of about 155 400 km<sup>2</sup> on either side of the border. The Ruvuma basin marks the interface between the Eastern and Southern Africa biogeographical regions and includes lowland coastal forest, diverse types of woodlands, important wetlands and mangrove forests. The Rufiji river basin in southern Tanzania is the largest in the country, covering 20 percent of the total land surface. The Rufiji Basin contains half of all mangroves in Tanzania, and the floodplain, forests and woodlands are home to a rich floral and faunal diversity of national and international importance. The Rufiji features a dozen lakes, dotted along the northern shores of the river, which not only support a productive fishery but help keep the lowland coastal forests green and moist all year round.

## **3.0 RISK ANALYSIS**

This National Avian Influenza Emergency Preparedness and Response Plan has been designed to provide direction to Tanzania's efforts strengthen its emergency preparedness against the eventuality of Avian Influenza being introduced into this currently presumed free area. The disease is spread through a number of sources that include movement of domestic or wild birds and bird products through legal or illegal trade.

Tanzania has 42 official ports of entry that include airports, sea ports, lake ports and dry land entry ports. Government officers from the Ministries of Health and Social Welfare, Livestock Development, Agriculture and Food Security, Home Affairs, Public Safety and Security and Natural Resources and Tourism supervise many of these entry and exit ports. These officers will need to understand the threat of avian influenza and increase vigilance in preventing entry of this disease to Tanzania.

There are six high risk areas for the possible introduction of Avian Influenza through wild bird migration. These include Lake Victoria basin; areas contiguous with Lakes Manyara, Natron, Eyasi and Nyumba ya Mungu Dam; Lake Rukwa and Usangu plains complex; the Indian Ocean coast ; the Great Ruaha river basin including Mtera Dam, and Lakes in the in western Rift Valley system.



**Fig 3 Migratory flyways for Tanzania**

Tanzania is a relatively large country with a total area of 945,200 square Kilometres of which 59,100 km<sup>2</sup> is covered by inland water and 46,000 km<sup>2</sup> is occupied by national parks. About 56% of Tanzania’s land area is used for agriculture production, with crop farming using 6% and grazing and forest products supply making up 50%. With a size larger than the combined area of England, Netherlands, Belgium, Germany and Italy, Tanzania is estimated to have a population of 36.8 million inhabitants, growing at the rate of 2.92% per year. Other key socio-economic indicators for this country are in Table 5.

**Table 5. Tanzania Population characteristics and socio-economic indicators**

Indicator	Figure
Total population (in 2005 in millions)	36.76
Urban population (per cent)	12.45
Rural population (per cent)	87.55
Population growth rate (per cent)	2.92
Birth rate (per cent)	3.82
Death rate (per cent)	1.67
Life expectancy at birth males(years)	44.56
Life expectancy at birth females(years)	45.94
Infant mortality rate (per cent)	9.85
Adult illiteracy rate (per cent)	32.20

(Source: Planning Commission Report 2005)

The administrative set up for Tanzania is such that the country is divided into twenty one administrative regions with each region headed by the Regional Commissioner, and these regions are each further subdivided into districts with each district being headed by the District Commissioner. There are 124 districts in Tanzania mainland. Regional and district commissioners are responsible for supervision of implementation of emergencies and management of disasters.

The central government has sector ministries responsible for policy formulation, monitoring and evaluation, institutional capacity building, regulation and emergency preparedness for those situations that are within their mandates and can be accommodated within their budget envelopes.

Avian influenza is a special problem in that it is a cross cutting issue involving the Prime Ministers Office, Ministry of Health and Social Welfare, Ministry of Livestock Development, Ministry of Natural Resources and Tourism.

Tanzania is a country of inhabitants that depend on mixed farming livelihood systems. They are therefore vulnerable to diseases and infections that “jump” species barrier. Poor farmers in villages and food vendors in towns depend on poultry estimated at 50 million (Table 6) at national level as means of livelihood. One of the problems to be addressed is how to increase our ability to get messages to the farmers including those in remote locations on how to identify sick birds, get the information back to a relevant authority and how to protect themselves from being infected.

Other problems to be addressed are the weak institutional and physical infrastructure for building rapid response systems. They also include weak laboratory and disease surveillance capabilities that are essential for monitoring animal diseases that could burst into human populations.

Tanzania is already experiencing severe effects of HIV/AIDS. Pandemic influenza could have devastating effects to the already vulnerable populations which experience high infant mortality, child mortality, and maternal mortality, and also live with chronic health problems and diseases like malaria and diarrhoea. Other key obstacles to these populations are high health care charges, long distances to health facilities, inadequate and unaffordable transport systems and poor quality care of patients. Presently, Tanzania is experiencing food shortage that is drawing resources from the national budget. Failure to contain Avian Influenza may bring additional burden to the already strained nation.

## **POLICY AND STRATEGY FRAMEWORK**

The overall objective of this National Avian Influenza Emergency Preparedness and Response Plan is to safeguard human health and protect socio-economic welfare of those involved in livestock farming from the effects of emerging diseases. The specific objective is to prevent the introduction and spread of HPAI in Tanzania.

The plan has been conceived within the context of three major settings. Firstly it is in line with the National Strategy for Growth and Reduction of Poverty (NSGRP) document. This document is intended to guide poverty reduction efforts for five years starting 2005/06 and it forms part of Tanzania's guidelines for achieving the millennium goals.

In this strategy document control of AI is identified with two of three major clusters of poverty reduction outcomes namely, growth and reduction of income poverty and improvement of quality of life and social well-being of people. The third cluster is Good Governance. AI being health related problem is also one of the impoverishing factors that has been identified in the NSGRP document, others being shocks from weather extremes (e.g. floods, drought), stresses from gradual degradation of forest, soils, fisheries and pastures; health effects and loss of confidence in future wellbeing. The document also recognises that agriculture is the source of food and raw materials for industries and that it also provides livelihoods to 82 percent of the population. It therefore identifies agricultural productivity as a major source of growth through increase in factor productivity. It also identifies agriculture, together with industry, and trade as some of the areas to address in stimulating value-added activities, promoting flow of investments and increasing the capacity to diversify the "export basket".

It therefore has several intervention areas where AI control is fitting and is slated to play a significant role in poverty reduction and therefore in helping to achieve millennium goals. These, among others, include improving access to veterinary services and strengthening capacity for timely control of livestock pests and disease outbreaks.

Secondly, this plans being contemplated during the time when the livestock sector is being guided by the Tanzania Livestock Policy 2005 (in final preparation). According to this policy, Tanzania's Livestock Sector Development vision is that "by the year 2025 there should be a livestock sector, which to a large extent shall be commercially run, modern and sustainable, using improved and highly productive livestock to ensure food security, improved income for the household and the nation while conserving the environment."

The Tanzania Livestock policy has several policy statements with which this plan is fitting and is stated to play a significant role. As it is with the specific objective of this plan the main aim of these policy statements is to improve the national capacity and contain, minimize or eradicate trans-boundary and other animal diseases with a view of protecting animal health, improving productivity and increasing access to international markets for livestock commodities.

The policy statements include:

- Developing capacity on early warning and rapid response system to deal with animal diseases.
- Strengthening sustainable and appropriate disease control approaches,
- Strengthening animal disease surveillance, monitoring and diagnosis

- Developing and implementing national master plans for control and eradication of TADs
- Striving to obtain international recognition with regard to specified animal disease free status.
- Strengthening animal diseases reporting system
- Harmonization of national and regional policies, strategies and control programmes on TADs.

Thirdly, Tanzania is getting increased income from wildlife. The natural resource sectors have contributed on average 5.7 percent of the National GDP. Thousands of tourists visit national parks and game reserves annually for wildlife viewing and trophy hunting respectively. Government revenue generated through the industry amounts to USD 733.00 million annually (wildlife viewing) and around USD 10 million (trophy hunting). Thus; outbreak of the AI disease may seriously undermine these benefits.

Several meetings and international conferences have been held to provide alternative measures for controlling AI. The FAO/OIE/WHO Joint Technical Experts have provided guidelines for development of emergency preparedness plans. There is a general consensus from these meetings that prevention, containment and elimination of AI is a public good function, that the management of this disease requires a multisectoral approach with ministries responsible for veterinary services acting as the lead agencies and that this disease must be controlled at source before it spreads to affect human beings.

Many of the meetings recommendations and the FAO/OIE/WHO guidelines have alluded on the activities to be done but they all fall under five key intervention areas:

- Strengthening early warning through surveillance and reporting
- Reducing opportunities for virus introduction
- Containment of the problem at source
- Reducing opportunities for human infection
- Commissioning research to guide response measures

The first two are recommended during the pre-pandemic phase, the next one is for the emergence of a pandemic virus and the last two are for the pandemic phase when the disease is spreading internationally.

## **DESCRIPTION OF THE PLAN**

The National Avian Influenza Emergency Preparedness and Response Plan description is summarized in the planning matrix in Annex 2.

This description embraces multi-sectoral and multidisciplinary approaches that cover both human and animal health aspects. Since avian influenza is fundamentally an environmental, economic and health problem, the National Avian Influenza Emergency Preparedness and Response Plan is also building capacity to work across sectors and to coordinate responses that can confine the virus to animal populations

and prevent its crossover into humans. The Plan strives to implement **Essential Elements** contained in the WHO Checklist for Avian Influenza Preparedness Planning (WHO/CDS/CSR/GIP/2005.4)

### **5.1. Overall Objective**

The overall objective is to safeguard human life and protect socio-economic welfare of those involved in livestock farming from the effects of emerging diseases. Indicators for achievement of this objective are that Tanzania maintains or quickly regains its freedom from exotic and emerging diseases.

### **5.2. Specific Objective**

The specific objective of the National Avian Influenza Emergency Preparedness and Response Plan is to prevent the introduction and spread of HPAI in Tanzania. The key indicator for this objective is that HPAI does not become endemic in Tanzania

### **5.3 Expected Outputs**

National Avian Influenza Emergency Preparedness and Response Plan Expected Outputs are:

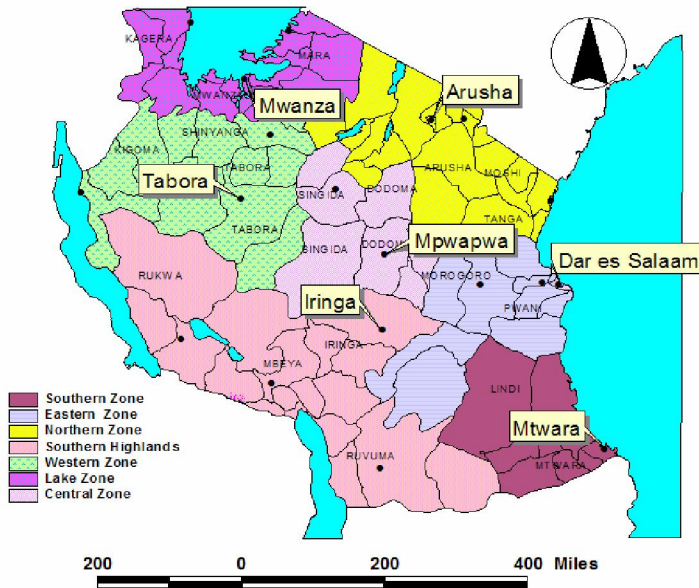
- Capacity for early detection and reporting improved
- Capacity to Contain AI problem at source is established
- Opportunities for human infection are reduced
- Tanzanian Public awareness against HPAI improved
- Improved understanding of Avian Influenza epidemiology
- Command structure for disease emergencies is strengthened

#### **5.3.1. Capacity for early detection and reporting improved**

Realization of this output will depend on many actors whose activities relate to veterinary medical and wildlife services. For Veterinary services it is anticipated that signs of this disease shall be detected by poultry farmers, traders and processors or just the general public. These people are required by law to report any suspicious case of avian influenza to the nearest Veterinary staff who shall in turn report to the district Veterinary officer. The district Veterinary officer shall investigate the case and if he finds that there are grounds for suspecting AI he shall report the matter to the Veterinary investigation centre and to the Epidemiology Unit of the Ministry of Livestock Development. This plan provides for facilitation of the DVO to carry out investigation of suspected cases and to report to the VICs.

VIC in Tanzania are strategically placed in such a way that they can reach any site with suspected cases within 12 hours. Location of VICs and areas of operations are in figure 2 below.

**Map Areas of Operation for Veterinary Investigation Centres**



The epidemiology unit shall have an emergency report desk that shall be manned for 12 hours a day and 7 days per week but shall maintain contact for 24 hours.

For medical services Avian Influenza is likely to be detected in health service facilities. In these facilities health staffs are likely to be the first people to detect the disease. However, the Ministry of health and social welfare has the administrative infrastructure that can help to detect and report this disease. It also has adopted the WHO Regional Integrated Disease Surveillance and Response (IDSR) strategy to detect and respond to diseases of epidemic potential, or of public health importance, and those targeted for elimination/eradication. In this strategy the district is the focus for integrating infectious disease surveillance functions. Under the IDSR strategy, health workers detect and report infectious diseases to District medical officers. These in turn report infectious diseases to ministry headquarters every Friday, to the Epidemiology Unit of Ministry of Health and Social Welfare.

If the AI patient is suspected at any health facility that is not the District hospital, he shall be referred to the District Hospital for further investigation and management. Provisions shall therefore be made to protect medical staff from being exposed to AI from sick patients, procure necessary diagnostic kits, medical supplies for patient management.

The DMO shall take measures to, make diagnosis of AI, treat the patient collect and submit specimens for further testing and report AI occurrence to the Ministry headquarters. All AI specimens shall be submitted to ADRI which is the National reference laboratory for AI. Provisions shall be made to design standard operating procedures for sample submission.

For AI occurrence in wildlife, the disease is likely to be detected by tourists or tourist guides, researchers and game scouts. These people shall report occurrence of the disease to the game warden, wildlife ecologist, or any other senior staff who shall in turn report to the wildlife veterinary officer who shall in turn report the matter to the District Veterinary of the district where the site of occurrence is located. The wildlife veterinary officer or District Veterinary of the district where the site of occurrence is located shall take measures to ascertain the suspicion, collect specimens for laboratory diagnosis and report to the VIC and to the Director of wildlife.

### **5.3.2. Capacity to Contain AI at source is established**

Under this emergency preparedness and response plan, when the Disease is confirmed or there are sufficient grounds to suspect occurrence of the disease in domestic poultry, the district veterinary officer shall impose a quarantine restricting movement of poultry or poultry products from the infected area, collect specimens for laboratory testing and order and supervise destruction or disposal of all poultry within the radius of not more than five kilometres from the focus of infection. The DVO shall order and supervise disinfection or fumigation of infected premises where appropriate. Since this work entails a lot of mobilization of teams and equipment, provision of transport facilities shall be made.

When the disease is confirmed or there are sufficient grounds to suspect occurrence of the disease in wild birds the wildlife veterinary officer or the District veterinary officer of the district where the focus of infection is situate shall impose a quarantine restricting movement of wild birds or their products by human activity, from the infected area, collect specimens for laboratory testing, order and supervise destruction or disposal of all dead birds and report the matter to the District Veterinary Officer.

When the disease is confirmed or there are sufficient grounds to suspect occurrence of the disease in poultry or wild birds, the District veterinary officer of the district where any focus of infection is shall report the matter to the District commissioner who shall activate the district disaster management committee.

When the information of occurrence of AI is received by the Epidemiology Unit and there are sufficient grounds to suspect occurrence of the disease in poultry, wild birds or human beings the epidemiology unit shall inform the Director of Veterinary services who shall activate the National Animal Disease emergency committee and constitute the national command centre. He shall also call the meeting of the expert group on avian influenza which in turn shall propose actions to be taken up by the national task force.

Functions of the National command centre are ordering additional disease control measures, coordination of containment measures, monitoring and evaluation, customization of standard operating procedures. The functions of the expert group on avian influenza are as set out in Appendix 4. Those of the National task group are in Appendix 5.

### **5.3.3. Opportunities for human infection are reduced**

For purposes of reducing opportunities for human infection, the medical staff at border posts with assistance of immigration officers shall identify persons that are coming from infected countries and advise them on measures to take to mitigate AI in case they are infected. Provision is thus made to provide them with training and for making leaflets and brochures for supply to travellers.

The Ministry of health and social welfare has an established Port Health Unit whose main objective is to monitor, prevent and control communicable and non communicable diseases at ports of entry/exit. There are 42 official ports of entry including airports, seaports, lake-ports and dry ports. Eighteen (18) ports serve directly under the Ministry of Health and the rest under Regional Administration and Local Government. They all perform their responsibilities based on both national and international regulations. Hence, the major roles played by ports include disease control across borders which may spread globally, by inspecting imported and exported food, vector and vermin control, treatment of conveyances especially when found to visit or pass from any affected areas, to ensure safe water supply at ports and regular taking water samples for laboratory analysis, etc.

Also for purposes of reducing opportunities for human infection and suffering, the referral system within MHSW shall be strengthened. In this regard 4WD vehicles shall be provided to ten Districts with greatest need for transport. In addition clinical management guidelines for patients including admission criteria, treatment and infection control measures shall be produced for distribution to health workers. Provisions shall also be made to purchase of drugs and other supplies including disinfectants and antiseptics, protective gears for clinical experts and to establish a clinical working group of experts (private & government).

Procurement and stockpiling antiviral drugs for prophylaxis in people at high risk will also be carried out. The activity will involve development of criteria for identifying priority groups for antiviral prophylaxis use, distribution of available drugs based on priority criteria.

Procurement of human vaccines shall be carried out as soon as vaccines become available Administration of vaccines shall be determined by the level of risk to infection. Thus health care workers, veterinarians, farmers in infected areas, wild bird handlers shall be considered for vaccination. Storage, distribution and safe administration of pandemic and routine influenza virus shall be based on the existing plans for other immunization programmes

### 5.3.4. Raising Public awareness on HPAI

Raising Public awareness on HPAI shall aim at providing knowledge the main routes of transmission, methods of preventing spread of the disease and how to implement these preventive measures. Activities under this output shall include improvement of mass communication and development, production and distribution of extension materials. In this regard mass rallies and campaigns shall be supported together with provision of information to mass media staff so that these are communicated to general civil society.

### 5.3.5. Improved understanding of the epidemiology of AI

To improved understanding of the epidemiology of AI efforts shall be made to identify risk factors associated with AI and undertake descriptive studies in poultry, wild birds, swine, wild pigs and humans. The role of the Indian crows in the dissemination of AI will be investigated. Studies to explore the possibility of establishing a vaccination program against Avian Influenza and will monitor antiviral drug use, adverse effects & resistance shall be undertaken. Attempts shall also be made to validate diagnostic tests for AI.

**Table 6 Tanzania Livestock Population 2005**

Species	Number in Millions
Cattle	18.5
Goats	13.5
Sheep	3.5
Pigs	1.2
Cats	0.20
Chicken Total	50.0
Chicken Rural	30.0
Chicken Commercial	20.0

Source-Budget Speech Ministry of Water & Livestock Development 2005

## 6 BUDGET COSTS

The total cost of the National Avian Influenza Emergency Preparedness and Response Strategic Plan is estimated at USD 25,294,188 with surveillance activities being allocated USD 4,625,520, laboratory diagnostic capacity building being given USD 2,447,900, reducing opportunities for human infection being allocated 6,189,000 and public & technical awareness creation being allocated USD 3,232,600. Other details are as shown in Table 7. The comprehensive detailed budget is in **Annex 1**

**Table 7: Budget Summary of the National Avian Influenza Emergency Preparedness and Response Strategic Plan in USD**

Output Component	year 1	year 2	year 3	Total
Epidemio-surveillance of Avian Influenza	1,815,940	1,431,940	1,377,640	4,625,520
Improvement of Lab diagnostic capacity	1,078,800	852,300	516,800	2,447,900
Capacity to Contain the problem at source	2,446,500	1,863,000	1,879,500	6,189,000
Reducing opportunities for Human infection	1,192,000	1,762,000	1,062,000	6,962,000
Increasing Public Awareness on AI	1,366,400	1,044,200	1,044,200	3,232,600
Research Studies	400,000	400,000	400,000	1,200,000
Management and Coordination	354,556	138,056	144,556	637,168
<b>Total</b>	<b>8,654,196</b>	<b>7,491,496</b>	<b>6,424,696</b>	<b>25,294,188</b>

**Table 8-Budget Summary by Sector Components in USD**

COMPONENT	PUBLIC HEALTH (MOH)			ANIMAL HEALTH (LIVESTOCK)			ANIMAL HEALTH (WILDLIFE)		
	YR 1	YR 2	YR 3	YR1	YR2	YR3	YR 1	YR 2	YR 3
Surveillance of Avian Influenza in Human, Livestock & Wildlife improved	595,400	508,920	487,200	1,021,590	744,990	717,840	199,030	178,030	172,600
Lab diagnostic capacity improved	-	-	-	1,078,800	852,300	516,800	-	-	-
Capacity to Contain AI at source is established	-	-	-	2,446,500	1,863,000	1,879,500	908,840	908,840	908,840
Opportunities for Human infection are Reduced	1,192,000	1,762,000	1,062,000	-	-	-	-	-	-
Increase Public Awareness on AI	546,560	417,680	417,680	683,200	522,100	522,100	135,640	104,420	104,420
Improved understanding of AI epidemiology	160,000	160,000	160,000	200,000	200,000	200,000	40,000	40,000	40,000
Emergency Management and Coordination	141,822	55,222	57,822	177,278	69,028	72,278	35,456	13,806	14,456
TOTAL FOR EACH YEAR	2,635,782	2,903,822	2,184,702	5,607,368	4,251,418	3,908,518	1,318,966	1,245,096	1,240,316
SECTOR TOTAL	7,724,507			13,767,304			3,804,377		
OVERALL TOTAL	25,294,188								

## 7.0 FINANCIAL PLAN

This Avian Influenza Emergency Preparedness & Response Strategic Plan will be financed along the lines recommended at the World Bank sponsored Beijing International Pledging Conference for Avian Influenza (16-18 January 2006).

The conference earmarked sources of funds for National Integrated Avian Influenza Strategic Plan to be (a) government own sources (b) bilateral grants (c) multilateral grants and, (d) soft loan window.

Government funding will be channelled through the Ministries of Health & Social Welfare, Livestock Development and Natural Resources and Tourism Strategic Plans Medium Term Expenditure Framework (2006/07-2008/09) for long term capacity building needs while disaster management emergency funding source will be sought to cater for immediate emergency preparedness and response needs.

**Table 9-Proposed Sources of Funds for the Tanzanian AI Strategic Plan**

Source	%	Amount US\$	Remarks
Government own resources	5	1,265,000.00	A request has been lodged
Bilateral Grants from Countries	5	1,265,000.00	Requests will be sent to countries with Embassies in Tanzania and made pledges in Beijing
Grants from International Development Agencies (USAID/GTZ/DANIDA/SIDA/JICA/SWISSAID/DFID)	10	2,530,000.00	A request has been lodged to USAID
Grants from Regional Development Banks (ADB)	5	1,265,000.00	ADB has expressed interest to fund regional initiatives
Multilateral Grants from European Commission Emergency Assistance	10	2,530,000.00	The EC has expressed interest to fund regional initiatives (PACE/AU-IBAR)
World Bank Multilateral Donor Financing Grant (Regional FAO/OIE/WHO)	5	1,265,000.00	FAO/WHO/OIE – Technical Cooperation Programmes
World Bank Multilateral Donor Financing Grant (National)	55	13,915,000.00	Beijing Pledges
World Bank Multilateral Donor Financing (Soft Loan)	5	1,265,000.00	Beijing Pledges
<b>Total</b>	<b>100</b>	<b>25,300,000</b>	

## **8.0 RATIONALE AND JUSTIFICATION**

Justification for an emergency assistance to Tanzania is fourfold: (a) the potential human health hazards resulting from an AI virus transmission chain from migratory birds-to-poultry-to-humans, as it has taken place with several human fatalities in Southeast Asia, (b) the potential impact on livelihoods of local communities, economic losses to the poultry sector caused by deaths, culling, and marketing bans, and also to avian wildlife-generated tourism, and (c) veterinary infrastructure unfamiliar with addressing migratory bird-domestic poultry interactions and (d) potential scientific identification of species of migratory birds spreading or not spreading HPAI to design prevention strategies in this and other regions.

Tanzania is at a risk which encompasses a substantial poultry sector, and poultry meat is one of the principal sources of dietary animal protein. The emergency assistance is designed to be preventive as well as proactive. Where required, National Action Plans for the Prevention and Control of HPAI will be developed, as has been done in projects covering other regions. Experience indicates that the veterinary services in Tanzania are not well-structured to meet the challenge of controlling epidemic emerging diseases. Early warning networks, emergency response, timely reporting and feedback, the epidemiology of wild bird-domestic bird interactions and diagnostic capacity in the face of an emerging epidemic are often weak.

Government compensation for losses is spelt out under part IV of the Animal Diseases Act Number 17 of 2003 in section 40 which states that the Minister shall order compensation to be paid to an owner of animal where physical evidence is provided that the animal is slaughtered or destroyed as a consequence of a disease. In the event of an incursion of Avian Influenza and a consequent onset of a pandemic farmers are likely to suffer serious economic losses and hence likely to be affected by poverty and health hazards.

The Minister for Livestock Development may specify the amount to be compensated according to market value. Obtaining clear and concise baseline data and information on migratory flyways, the role of wild bird species, disease mapping, and the epidemiology of AI are matters of basic importance need to be addressed and strengthened in preparation for potential outbreaks.

### **SENSITIVITY**

This plan is sensitive to financial shocks. Tanzania is currently facing its worst drought over twenty years that has been compounded by extended elections all of which has involved drawing considerable financial resources. Famine relief efforts demands significant resources from the national coffers that are not adequate. The government has appealed to the Donor Community and the Civil Society to contribute towards famine relief efforts. An outbreak of Avian Influenza at this time will find the country ill equipped and severely constrained with resources.

Tanzania thus further calls upon the Development Partners including the World Bank and Regional Development Banks such as Africa Development Bank to extend their generosity to Tanzania to ensure this Emergency Preparedness and Response Plan gets resources envisaged and are implemented.

Failure to respond to this appeal Tanzania will not be capable to handle this threat of Avian Influenza Pandemic.

### **10.0 CRITICAL PATH**

The achievement of the expected outputs of this Emergency Preparedness and Response Plan will depend upon the sequential implementation of Disaster Management Cycle Strategies that starts with (i) prevention and mitigation measures ,(ii) early warning and detection (iii) rapid response measures , (iv) prompt recovery and rehabilitation depends upon Early Warning and Detection measures that include surveillance ,laboratory diagnosis and public awareness of the disease are critical path areas which must be funded now and implemented otherwise the disease may be introduced unaware and spread .This will increase the chances of pandemic development .

Another critical area is the provision of Compensation Fund for the birds that will be destroyed .Experience in infected countries have shown without compensation poultry farmers' default in reporting disease incidences which again favour the spreading of the disease. In view of this the FAO/OIE/WHO recommends compensation be included in Avian Influenza Control Response measures .In this regard this plan has set aside funds for compensation during stamping out that shall be used only when there is a disease outbreak.

## **LIST OF ANNEXES**