



**The Global Framework
for the Progressive Control of
Transboundary Animal Diseases
(GF-TADs)**

Version approved as basic text

by FAO and OIE

The 24 May 2004

Food and Agriculture Organization of the United Nations
Viale delle Terme di Caracalla - 00100 Rome - Italy - tel: 39 06 57051 - fax: 39 06 570 53152 - www.fao.org

World Organisation for Animal Health (OIE)
12, rue de Prony - 75017 PARIS - France - tel: 33 (0)1 44 15 18 88 - fax: 33 (0)1 42 67 09 87 - www.oie.int

List of contents

EXECUTIVE SUMMARY	3
I. INTRODUCTION	5
II. GOALS, OBJECTIVES, AND STRATEGIES	7
III. SOCIO-ECONOMIC CONSIDERATIONS FOR THE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES IN DEVELOPING COUNTRIES	10
IV. STRENGTHS AND WEAKNESSES	11
V. STATE OF THE ART	13
EXISTING INTERNATIONAL WARNING SYSTEMS FOR DISEASES.....	13
DISEASE MONITORING, TRACKING AND INTELLIGENCE.....	14
DIAGNOSIS (DIAGNOSTICS, GENOMICS, AND PROTEOMICS).....	14
VACCINES.....	16
INFORMATICS AND EPIDEMIOLOGY	17
VI. BUDGET	17
VII. ORGANISATION AND IMPLEMENTATION	17
A. GLOBAL GUIDANCE	19
<i>The Global Steering Committee</i>	19
<i>Regional Commissions:</i>	20
<i>FAO and OIE Regional Representations</i>	20
<i>Regional Steering Committees</i>	20
B. IMPLEMENTATION	20
<i>Management Committee</i>	20
<i>GF-TADs Secretariat</i>	21
<i>North-South and South-South Partnerships</i>	21
<i>Regional Specialised Organisations</i>	22
<i>Sub-Regional Support Units (RSU)</i>	22
<i>Networks of OIE-FAO Reference Laboratories and Collaborating Centres and National-Regional Laboratories</i>	24
<i>Network of National-Regional Epidemiology Units and OIE-FAO Collaborating Centres</i>	25
<i>The Global Early Warning System (GLEWS)</i>	25
<i>FAO and OIE Country Representations</i>	26
C. ADMINISTRATION OF FUNDS	26
VIII. CONCLUSION	26
ANNEX 1 : BUDGET – GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF FMD AND OTHER TADS	27
ANNEX 2: GLOBAL EARLY WARNING AND RESPONSE SYSTEM FOR MAJOR ANIMAL DISEASES	29
1. BACKGROUND INFORMATION AND JUSTIFICATION	29
2. EXISTING INTERNATIONAL EARLY WARNING SYSTEMS FOR ANIMAL DISEASES	30
3. A JOINT INITIATIVE	31
4. COMMON OBJECTIVES AND DEFINITIONS	32
5. SPECIFIC TASKS	36
6. DESCRIPTION OF COMMON ACTIONS	37
7. PROCEDURES TO MANAGE	37
8. STANDARD OPERATING PROCEDURE FOR DISEASE ALERT INFORMATION SHARING BETWEEN FAO-OIE-WHO IN THE CONTEXT OF THE GLEWS SYSTEM	37
9. LIST OF PRIORITY ANIMAL DISEASES LIST OF COMMON INTEREST	38

The Global Framework for the Progressive Control of Transboundary Animal Diseases (TADs)¹

Executive Summary

The Global Framework for Progressive Control of Transboundary Animal Diseases (GF-TADs) is a joint FAO/OIE initiative, which combines the strengths of both organisations to achieve agreed common objectives. GF-TADs is a facilitating mechanism which will endeavour to empower regional alliances in the fight against transboundary animal diseases (TADs), to provide for capacity building and to assist in establishing programmes for the specific control of certain TADs based on regional priorities.

Devastating economic losses to livestock farmers the world over from major outbreaks of transboundary animal diseases (TADs) such as foot-and-mouth disease (FMD; 1997-2003), classical swine fever in the Caribbean and Europe (1996-2002), rinderpest in the Somali ecosystem (2001), *peste des petits ruminants* in India and Bangladesh, contagious bovine pleuropneumonia in Zambia, Angola, Namibia and Eritrea in 2000-2003, as well as Rift Valley fever in the Arabian Peninsula (2000) were the main stimulus for the initiative to create a Global Framework for Progressive Control Transboundary Animal Diseases. In early 2004, the reporting of Highly Pathogenic Avian Influenza (HPAI) virus throughout 10 Asian countries, with mortalities in exposed humans, underlines the pressing need for improvement of disease management at its inception before TADs spreads to devastating proportions and early detection, reporting and reaction. Several international fora and institutions have emphasised the need to prevent and control TADs due to their strong impact on livestock agriculture, trade and food security. The World Food Summit (1996), the International Committee of the World Organisation for Animal Health (OIE, 2002), the 31st Session of the FAO Conference (2001), and the World Food Summit: five years later (WFS:*fyL*, 2002) all recognised the widespread and increasing impact of epidemic animal diseases like FMD, and stressed the need to combine efforts to combat the disease at the national, regional and international level involving all relevant stakeholders.

There is ample evidence from various studies that the spread of TADs will increase unless a concerted international action is put into place for effective prevention and progressive control, as currently shown in the HPAI outbreak that FAO, OIE, and WHO are attempting to contain with their available resources. This conclusion is predominantly based on predictions of an unprecedented growth of the livestock sector and of the consumption of livestock products, particularly in TAD-endemic developing countries. The predicted livestock sector growth is expected to take place in tropical and sub-tropical zones, with trends towards larger farm units and more intensive, often industrial production, and with strong increase in trade of livestock and livestock products through informal and formal markets regionally and internationally.

Even prior to the current HPAI crisis, FAO and OIE have examined the problem of transboundary animal diseases from the perspective of the complexity of environment, market access, food chain and human welfare, as well as considering the international public good goals of Social Equality, Sustainability of Natural Resources Use, and Veterinary Public Health. Thus the GF-TADs proposes the effective prevention and progressive control of major TADs as an

¹ Transboundary animal diseases are defined as: those that are of significant economic, trade and/or food security importance for a considerable number of countries; which can easily spread to other countries and reach epidemic proportions; and where control/management, including exclusion, requires cooperation between several countries.

effective contribution to the achievement of the Millennium Development Goals by providing assistance and guidance to member countries through existing regional specialised organisations and their regional representation offices. To achieve this objective, it is suggested that focussed efforts for the control of the major TADs must be at the source of infection and prior to the spread of the disease. The GF-TADs programme will be developed along four main thrusts:

- (1) A regionally led mechanism, to operationally address and implement action against priority diseases as agreed by relevant stakeholders;
- (2) The development of Regional and Global Early Warning Systems for major animal diseases;
- (3) The enabling and application of research on TADs causing agents at the molecular and ecological levels for more effective strategic disease management and control; and,
- (4) The completion of the Global Rinderpest Eradication Programme² set for achieving global declaration of freedom by the year 2010.

The Outputs and Outcomes for the six-year programme (2004-2009) are:

- Country-based surveillance and disease reporting enhanced through capacity building of epidemiology units and of laboratory personnel.
- Concerted animal disease control programmes developed through the establishment of regional support units within ongoing regional specialised organisations and/or Regional Commissions. These regional support units will be in a position to assist in the direction of animal disease surveillance, and to provide mechanisms to meet specific regional needs.
- Regional and Global Early Warning Systems for TADs established with the collaboration of FAO, OIE and WHO, connected to regional epidemiological systems.
- Internationally verified global freedom from rinderpest - The Global Rinderpest Eradication Programme, GREP secured.
- Animal populations where primary endemic circulation of FMD and other selected TADs occur identified and characterised.
- International, regional, and national early response capacities for prompt and authoritative disease diagnosis and for targeted local disease control to limit the spread of new outbreaks of TADs established.
- Referral diagnostic and molecular biological capacity of OIE-FAO Reference Laboratories and Collaborating Centres strengthened and technology transfer provided to National Agricultural Research Systems (NARS), primarily through the established system of networks of national and Regional laboratories supported by the FAO/IAEA Joint Division and through North-South/South-South laboratory partnerships including the network of OIE-FAO reference laboratories.
- Assistance in the development of TAD research programmes provided through FAO and OIE Collaborating Centres and other advanced research institutes (ARIs) as appropriate.

² Rinderpest – also known as cattle plague - once a disease that expanded from Mauritania to Indonesia and from Europe to southern Africa (with one outbreak each in Brazil and Australia) is now likely to be limited to a small primary endemic area known as the Somali pastoral ecosystem. Global eradication is planned for 2010. This major and unique undertaking of global eradication of an animal disease offers learning opportunity for good disease management practices in general.

Preamble

The present document should be permanently amended by common agreement of both parties.

I. Introduction

The livestock sector represents almost half of the world's agricultural economy. Recent animal health emergencies have highlighted the vulnerability of the livestock sector to serious damage by epidemic diseases and its reliance on efficient animal health services and practices, at all levels. The significance of animal diseases (including zoonoses³) for human health and welfare is also increasingly recognised.

Recent studies by several international organisations⁴ indicate that during the next 15 to 20 years the demand for livestock products will double. This development, termed '*Livestock Revolution*' is driven by urbanisation, increased income and a shift from cereal-based to more animal protein-based diets; this demand-led increase will be met primarily by livestock producers in the developing world. It is estimated that by 2015, 60% of meat and 52% of milk will be consumed in developing countries, which will account for two-thirds of the global meat production and more than half of global milk. About 75% of the poor live in rural areas in the developing world and 66% of these people keep livestock. The *Livestock Revolution* provides a significant opportunity for livestock farmers in the poorer regions to partake in economic activity and may provide a way for many of them to escape poverty. However, for this to occur there is a need for an increase in the quantity and quality of animal products for trade at a local level and for a significant improvement in the livestock sector complying with the rules of the international trade of animals and animal products. At both local and international levels, the presence of animal diseases has a significant negative impact on opportunities for trade.

In developed countries, the trends of the livestock industry have been an increase in scales of operation, a reduction in the number of holdings and a substantial increase of the importance of livestock and livestock product markets, and higher frequency and speed of movement of animals and animal products. As a consequence, the introduction of infectious diseases to susceptible animals causes increasingly heavy losses in both developed and developing countries. With increasing globalisation, the persistence of transboundary animal diseases anywhere in the world poses a serious risk to the world animal agriculture and food security and jeopardises international trade. Furthermore, animal production and marketing under formal trade schemes tend to institutionalise and protect systems which are increasingly demanding in both quality and sanitary product innocuity.

³ Those diseases that are transmissible between man and animals (i.e., Rift Valley fever, rabies, tuberculosis ...).

⁴ Delgado, C. L., Rosegrant, M. W. and Meijer, S (2001). *Livestock to 2020: The revolution continues*. Paper presented at the annual meetings of the International Agriculture Trade Research Institute (IATRC). Auckland, New Zealand. IFPRI (International Food Policy Research Institute), Washington, DC.). 38 pp.

Delgado, C., Rosegrant, M., Steinfeld, H., Ehui, S., and Courbois, C. (1999). *Livestock to 2020: The next food revolution*. Food, Agriculture, and the Environment. Discussion Paper 228. (International Food Policy Research Institute). FAO (Food and Agriculture Organization of the United Nations), and ILRI (International Livestock Research Institute). IFPRI (International Food Policy Research Institute), Washington, DC, USA, Washington, D. C., 72 pp.

DFID. (2000). Halving world poverty by 2015, economic growth, equity and security. Strategies for achieving the international development targets. DFID Strategy Paper. www.dfid.gov.uk/public/what/pdf/tsp-economic.pdf

FAO. (2002a). Improved Animal Health for Poverty Reduction and Sustainable Livelihoods. Animal Production and Health Paper No. 153, FAO, Rome

FAO (2002b). World Agriculture: towards 2015/2030. FAO, Rome

World Bank. (2001). *World Development Report 2000/2001: Attacking Poverty*. Oxford University Press, New York, USA. 335 pp.

In recognition of these circumstances, the World Food Summit⁵ (WFS, 1996) stressed the pivotal, constraining role of transboundary animal diseases on food security, sustained animal agriculture and trade. The Heads of State and Governments pledged, under the Commitment No. 3 of the WFS Plan of Action to: *«Seek to ensure effective prevention and progressive control of plant and animal pests and diseases, including especially those which are of transboundary nature, such as rinderpest, cattle tick, foot and mouth disease and desert locust,..... »*. In July 1996, seventeen Ministers of Agriculture or their representatives from the Americas had signed the Declaration of Brasilia which included: *"Request FAO, OIE and PAHO to develop technical orientations towards the progress of FMD global eradication as well as the prevention of other important animal diseases in the world"*, and further asked FAO to draw the attention of the World Food Summit to the problem of transboundary animal diseases.

In the wake of the 2001 FMD epidemics in Europe, South America, Africa and Asia, the OIE International Committee, through Resolution XIII⁶ of its 69th General Session, in 2001, and Resolution No XXI⁷ of its 70th General Session, in 2002, called on both the OIE and FAO to pursue an international concerted effort against a certain number of diseases having significant effects on food security, poverty alleviation, food safety, public health and access to formal markets. The report of the *Temporary Committee on Foot and Mouth Disease* of the European Union Parliament (3 October, 2002)⁸, concluded: *"In view of the intensification of world trade and global warming, a thorough analysis of the existing and likely future threats arising from the introduction of animal diseases into the EU which could cause major economic damage is urgently needed at European level"*; and, *"Lasting success can be achieved in efforts to control FMD worldwide only if it proves possible, through close international cooperation, to curb the disease decisively in areas where it is still endemic. The Commission should therefore do more to assist the countries concerned in their efforts to control or eradicate FMD and seek to improve cooperation with regard to information (early warning systems)"*.

The global nature of the problem of FMD and other TADs was also highlighted during the Ministerial Meeting on the occasion of the 31st Session of the FAO Conference (2001). The Conference recognized the widespread and increasing impact of epidemic animal diseases, like FMD, on agricultural development, trade and food security; and stressed the need to continue the work at the national, regional and international level to combat the disease by involving all relevant stakeholders. The World Food Summit: five years later (WFS:fyL, 2002) reiterated the 1996 commitment and called for specific action and voluntary financial contribution to the FAO Global Trust Fund to facilitate food security programmes and combat TADs.

The increasing importance of trade and expanded access to world markets by developing countries has also received high attention at the Doha Ministerial Meeting of WTO in November 2001, the UN Conference for Development in Monterrey in March 2002 and the World Summit on Sustainable Development in Johannesburg in September 2002. Enhanced trade in agricultural products in the South-to-North direction as well as among developing countries themselves is increasingly seen as a major factor in poverty reduction strategies. However, in order for developing countries to participate in formal trade in livestock products it is imperative that a concerted international effort be made for these countries to be able to fulfil the basic elements of the SPS Agreement. Central to this will be the effective prevention and progressive

⁵ World Food Summit Plan of Action, Rome, November 1996: http://www.fao.org/wfs/index_en.htm

⁶ ftp://ftp.oie.int/69SG_2001/a_reso_2001.pdf

⁷ ftp://ftp.oie.int/70SG_2002/a_reso_2002.pdf

⁸ European Parliament: Temporary Committee on Foot and Mouth Disease. Draft Report. Provisional 2002/2153(INI). 3 October 2002. <http://www.europarl.eu.int/meetdocs/committees/fiap/20021107/475314en.pdf>

control of transboundary animal diseases in livestock production systems by these countries. Thus, developing countries also require increased and sustained support in their efforts to be more fully integrated in the setting of animal health and food safety standards. Improvement in animal health and food safety status is bound to have a beneficial impact not only on the ability to participate in external trade but also on internal trade and the market integration of poor communities.

The Global Framework for Transboundary Animal Diseases (GF-TADs) is a joint FAO/OIE initiative which combines the strengths of both organisations to achieve more than would be feasible by separate efforts. GF-TADs is a facilitating mechanism meant to empower countries and regional alliances in the fight against TADs, to provide capacity building and to assist in the establishment of programmes for the targeted control of certain TADs based on their regional priorities. The proposal presented here has been drawn up after extensive consultation, over a period of 18 months, with inputs from stakeholders throughout the world.

II. Goals, Objectives, and Strategies

The goals of GF-TADs are:

- To safeguard the livestock industry of developed as well as developing countries from repeated incursions of infectious disease epidemics,
- To improve food security and economic growth of developing countries through the reduction of the damaging effects of epidemic animal diseases,
- To promote safe trade in livestock and animal products at national, regional and international levels.

The overall objective of GF-TADs is to limit the ravages of animal diseases on the livelihoods of livestock dependent people around the world and to promote safe and healthy trade through strengthening local and national capabilities. Foot-and-mouth disease (FMD) was identified as the principal animal disease of global concern in all the consultations carried out during the preparation of this programme. To obtain the necessary information for the promotion of early prevention and early reaction, close interaction among national animal health services for achieving a sound regional understanding of disease occurrence is required. GF-TADs will rely on the action of countries' veterinary service and those of the regional specialised animal health organisations. Since international animal health monitoring is able to single out geographical dynamics of disease occurrence only when countries report disease presence, GF-TADs intends to contribute to the strengthening of national structures and mechanisms to fulfil such reporting functions effectively.

GF-TADs has an initial six-year horizon which will allow initiation of a self-sustaining process to be carried on by the implementing partners. It is recognised, that the GF-TADs initiative will not command all the resources needed to implement all programmes deemed important in the framework, but will prompt them. Donors or consortia of donors may be addressed to support regional initiatives identified through the coordinated efforts of countries in particular regions; GF-TADs will be supportive in developing such programmes and in seeking support from donors.

The GF-TADs initiative is designed to initiate and support strategic regional cooperation for the control of transboundary animal diseases, such as FMD, Rinderpest, African and classical swine fevers, *peste des petits ruminants*, caprine and bovine pleuropneumonia, Rift Valley fever,

Newcastle disease of poultry, avian influenza, haemorrhagic septicaemia, sheep and goat pox, among others by:

- (1) improving national knowledge and information/data retrieval systems on disease surveillance in support of early warning, on animal production, on land use, on animal and product movement, and related factors that affect or threaten animal health;
- (2) strategic use of quality vaccines – where such vaccines exist and enabling research where they do not;
- (3) improved diagnostic laboratory performance at national level and support for reference laboratories through technology transfer, and internal and external quality control;
- (4) technical guidance in the establishment of regional initiatives ensuring collaboration across borders; and,
- (5) implementation of national Good Emergency Management Practices that include early detection, reporting and counter-epizootic measures.

The above objectives can only be achieved if the major TADs are controlled at source of infection.

The interdependent strategies pursued are:

- Collaboration and cooperation with regional specialised organisations in animal health⁹ by direct personnel inputs to member countries in ensuring coordinated strategies and transboundary disease control programmes, to sustain regional reference laboratories and institutes, to host and guide meetings, workshops, capacity building in technologies and understanding of mechanisms of disease spread and disease prevention measures. It is recognised that some of the existing regional structures are notably weak and require revitalization or strengthening.
- Development of Regional and Global Early Warning Systems for major animal diseases co-managed by FAO, OIE and WHO, to include tracking of rumour diseases occurrences and formation of regional support units in charge of epidemiological data collection linked with GLEWS. In these Systems, the utilisation of geo-referenced information is promoted to better define primary endemic areas where focussed action is required, risk factors are identified (e.g., refugee and other migration patterns, climatic changes that influence disease or disease-transmitting vectors, price differentials across borders), and information on marketing and trade routes is enabled down to the village level. The proposed systems will complement but not duplicate the existing OIE Animal Health Information System and will support the established obligations of member countries in international official disease reporting.
- Enabling preparation and use of molecular diagnostic techniques that identify and characterise disease-causing agents efficiently, effectively and rapidly; and of analytical epidemiological tools that, in conjunction with comprehensive databases, can establish relationships in time and space between identified agents and ecological, biological and physical factors, that allow them to affect animal agriculture. Efforts for enhancing the depth and breadth of the necessary databases are suggested. A further important component of GF-TADs is to stimulate innovative research to produce more efficacious vaccines, better diagnostic tools, or approaches to epidemiology through the interaction with OIE-FAO

⁹ African Union/Inter African Bureau for Animal Resources; the Southern African Development Community; the FMD centre in South America of the Pan American Health Organisation, the Inter-American Institute for Cooperation on Agriculture, Organismo Internacional Regional de Sanidad Agropecuaria for Central America and Mexico; Animal Production and Health Commission for Asia and the Pacific; the Economic Cooperation Organisation in Central Asia; OIE Sub-Commission for FMD in South-East Asia; and the EU Commission for the Control of FMD are some notable examples.

reference laboratories and collaborating centres and other centres of excellence (research institutes, universities).

The specific aims for GF-TADs are:

- Establish Regional Support Units, with a cadre of epidemiologists (and support personnel) and initially funded through the GF-TADs, integrated in relevant regional bodies. Support of the development of regional strategies and their implementation. Support of a programme for the deployment and upgrading of young professionals, integrated in the regional support units, with opportunity for rotation among regions.
- Establishment of regional early warning nodes in Regional Support Units, to collect better quality epidemiological information and feed into the FAO/OIE/WHO Global Early Warning Systems. The core team of which will be located in FAO Headquarters.
- Establishment of early response capacity at national, regional and intercontinental levels for targeted disease control, based on prompt and authoritative disease investigation and diagnosis, in order to limit the spread of outbreaks of regional priority TADs. Organise and manage a network of national and regional Epidemiology Units, with OIE-FAO Collaborative Centres alliances.
- Strengthening of referral diagnostic and molecular biological capacity of OIE-FAO Reference Laboratories and follow-up technology transfer to National Agricultural Research Systems (NARS), primarily through establishing a system of networks of OIE-FAO Reference Laboratories and Collaborating Centres and national and Regional laboratories enhanced through the coordination of the FAO/IAEA Joint Division.
- Securing the global status of internationally verified freedom from rinderpest (declaration planned for 2010).
- Definition of primary endemic areas (sources) for FMD and other selected TADs for focused efforts for the reduction of disease occurrence.
- Provision of emergency contingency funds to countries that require immediate assistance in containment of an outbreak until other sources can be mobilised.
- Identification of research programmes in support of GF-TADs goals in collaboration with OIE-FAO Reference Laboratories and Collaborating Centres, other advanced research institutes and national and regional laboratories and epidemiology units.
- Promotion of North-South and South-South collaboration.

In addition to these objectives and strategies, and when the sources of diseases are defined but countries among the least developed countries do not have the capacity and resources to control the problem, GF-TADs will design specific national programmes on disease control. They will be prepared with the National Authorities and submitted to the donors.

This will particularly apply to the countries where:

- The source of the disease has been confirmed
- Control is achievable
- After the countries have maximised their own resources it is clear that additional resources are needed
- There are regional and global benefits from control of the TAD at source.

The RSU will also assist in the preparation of any bankable project in the countries and the region to address priority requirements.

III. Socio-economic Considerations for the Control of Transboundary Animal Diseases in Developing Countries

Transboundary animal diseases (TADs) impose major social and economic costs and risks to infected countries, their neighbours, and trading partners. The impact of the 2004 avian influenza crisis in Southeast Asia has cost Thailand many millions of US dollars (USD) in lost trade, and cost many local producers their source of livelihood; the impact of foot and mouth disease (FMD) in Asia in 1996 in terms of loss of feed sales alone has been estimated at more than USD 500 million; persistent contagious bovine pleuropneumonia and African swine fever continue to cause high economic damage to ruminant producers in Sub-Saharan Africa. The varying impact of TADs among stakeholders and the threat to existing and potential trade in wealthier countries complicates the question of appropriate control. This section addresses those issues and the nature of economic analysis that can shed light on appropriate approaches to reducing the risk of TADs.

Stakeholders: Economics and Social Issues

For all livestock producers, the threat of TADs increases the risk of lost production and impacts on livelihood, increasing vulnerability to poverty particularly for small scale producers. The impact of TADs and of their control varies depending on the pathogenicity of disease, number of animals at risk, dependency on livestock for livelihood, and method of control. For example, small scale producers in Thailand with 500 chickens probably are at much greater risk of complete loss of livelihood during an outbreak of highly pathogenic avian influenza than a poorer producer with five birds who also engages in small scale vegetable farming. By the same token, a highly virulent strain of classical swine fever can devastate pig herds in an entire village, destroying many families' source of cash used for the purchase of agricultural inputs, food, and clothing.

On the contrary, the perspective of a small scale beef producer Zimbabwe to the cost of FMD vaccine, assuming the producer's experience of FMD is that there is lower risk of impact on income, is quite different than that of the intensive producer interested in expanding export opportunities. The range of impact on producers thus is dependent on many factors, only one of which is scale of production.

On the consumption side, domestic consumers are concerned with the zoonotic potential of TADs, such as porcine nipah virus, and the increased cost of livestock products resulting from disease outbreaks. When disease does break out, there is inevitably an erosion of consumer confidence in food security. This translates into heightened demand for safer products and stricter border controls, often meaning tougher standards for international trade. Apart from trade, investment in TADs control protects a vital and ready food resource -inexpensive animal protein on which consumers depend.

Trade issues

Certainly the protection of trade interests is a major incentive for many countries to invest in prevention and control of TADs. Exporting countries are concerned with maintaining or expanding market share and importing countries are concerned with protection of their domestic livestock populations. Those countries that can meet agreed upon standards of disease related to trade are in a better position to access markets; in short, ability to meet and demonstrate adherence to international standards regarding TADs increases a country's competitiveness in the regional and international markets for livestock products. Importers value reduced risk of TADs, transmitting this through higher sanitary and phyto-sanitary standards.

The impact of transboundary disease can devastate national plans. In terms of exports, Vietnam for example plans to export 80,000 tonnes of pork annually by 2005, increasing to 100,000 tonnes annually by 2010. Whether or not the infrastructure will support this is of less immediate interest to potential importers and investors than the presence of TADs, particularly FMD and CSF.

On the topic of international trade, there is also an economic perspective associated with the perception the international community has of a country's disease free status. Countries or zones that are certified disease free are seen as progressive, well developed, technologically advanced regions deserving of foreign investment. Capturing the value of this international "good will" is difficult. For a lesser developed country, it may well be that the net value of capital inflow to the light manufacturing sector outweighs the costs of the impact of a disease such as FMD, warranting control of the disease which otherwise would not be a high priority for control. This phenomenon has not been addressed in economic assessment of a country's reason to engage in disease control.

Economic analysis and policy formulation

Identification and prioritization of the steps to address control of TADs requires a detailed assessment of the costs and benefits of alternatives. It is critical then that this information is current and accurate, that it is in a form amenable to use in a control program, and that it involves the appropriate livestock industry personnel from both public and private institutions.

Clearly, the exercise is complicated. Three main points make the exercise more difficult than simply evaluating the costs of control and the value of prevented losses and generating a benefit:cost ratio. These points are: non-tangibles (immeasurables) such as good will, and valuation of disease threat in unaffected areas; impact on livelihoods of small scale producers; and the value of consumers and producers perceptions regarding risk. Numerous techniques exist to address these points, but the task will require time and effort in data gathering which is often difficult in developing countries.

For the purposes of this document we assume that the protection of domestic markets and expansion of regional and international markets are options.

Livestock policy formulation should follow economic analysis, to address TADs control and prevention. The role of public and private institutions and the question of what deliverables or animal health inputs can be delivered by whom, and who bears what costs, including general cost of prevention by surveillance and local early warning and response, should be clearly outlined. Policy should address the beneficial linkages between livestock development (TADs prevention and control) and poverty alleviation, as well as the benefits to domestic and international trade.

IV. Strengths and Weaknesses

The GF-TADs will depend on strong institutional partnerships at the international, regional, and national levels which will support the necessary action, facilitated by the Regional Support Units (RSU) in relevant bodies. This proposal is intended to facilitate the development of the RSUs, the GF-TADs Secretariat, and the development of an early warning system and response for transboundary animal diseases.

The capacity building component of GF-TADs will build on the complementary strengths of FAO and OIE . Included in this component are the competences of the Joint (FAO/IAEA) Division, and OIE-FAO Collaborating Centres and Reference Laboratories, with their cadres of specialists. Technical expertise will be made available to guide and participate in regional training programmes, as required by the Regional needs.

The GF-TADs will further depend on strong complementary partnerships between the relevant public and private sector institutions as well as those of the civil society. Such partnerships ought to be instrumental in designing new modes of sharing responsibility in and of rationalising national veterinary tasks. Responsible involvement of private industry and commercial interests in key veterinary services delivery also contribute to more a sustainable environment for sector development.

The recent updating of the Agreement between FAO and OIE signals the determination of these Organisations for a collaborative, synergistic effort in support of the programme and the regional specialised organisations at the frontline of the intended action. The GF-TADs will also be able to draw on complementary internal linkages within both FAO and OIE, such as the work of the FAO Investment Centre and the Agricultural Policy Analysis Divisions, the Commodity Analysis Division, of the agricultural databases, the GIS facilities, the Global Information and Early Warning System for Crops, the Emergency Operations Division and the decentralised structures of FAO and OIE to operate multi-donor programmes (i.e., the Global Rinderpest Eradication Programme, Southeast Asia FMD programme, etc.). In addition, the GF-TADs initiative is to be complemented by and contribute to other programmes coordinated and influenced by FAO (the Pro-Poor Livestock Policy Initiative [PPLPI]¹⁰, the multi-donor livestock, environment and development (LEAD) initiative¹¹, the World Bank's NEPAD [New Partnership for Africa's Development] and the African Livestock Initiative ("ALive")¹², and OIE/WTO's Standards and Trade Development Facility¹³ or several animal health and livestock research organisations (i.e., CGIAR system, CIRAD ...).

The greatest risk for the success of the proposed GF-TADs is inadequate financial resource and inadequate commitment by FAO-OIE member countries where the targeted TADs control should take place (priority endemic areas). FAO and OIE will encourage other international bodies, such as Regional development Banks, the International Monetary Fund and the World Bank to maintain their investments on coping with the TADs threat to achieving the International Development Goals. Through the various consultations carried out by OIE and FAO in the preparation of GF-TADs, ample evidence was assembled of the general desire from member countries for a concerted international action against TADs¹⁴. To be successful in the control of TADs, it will be indispensable that a substantial commitment at the national level, in terms of both financial resource and political will, be obtained to sustain and strengthen national veterinary service systems dedicated to their public good mandate. The adoption of national policies for effective animal disease surveillance and control and, where appropriate, for the

¹⁰ <http://www.fao.org/ag/againfo/projects/en/pplpi/home.html>

¹¹ <http://www.lead.virtualcentre.org/en/frame.htm>

¹² <http://www.touchtech.biz/nepad> and <http://alive-online.org>

¹³ The Standards and Trade Development Facility (STDF) is a global programme in capacity building and technical assistance to developing countries in trade and standards. Funding has been initially provided through the World bank's Development Grant Facility, along with support from the Doha Development Trust Fund of the WTO <http://www.standardsfacility.org>

¹⁴ FAO/OIE regional consultations were held in Pakistan for South Asia (June, 2003), in Thailand for Southeast Asia with APHCA (August, 2003), and Southern Africa with SADC (August, 2003) though an ongoing FAO project in the Region. In addition, the Second FMD Round Table Meeting (October, 2003) held in Cairo, for countries of the Near East and North Africa, made a recommendation for a regional approach as provided by GF-TADs.

incorporation of such policies into the national poverty reduction strategy, is an indicator for the purpose achievement of GF-TAD.

FAO's current expertise, and activities in similar agricultural and food production information and dissemination systems is a strength. Early warning activities, which incorporate FAO's databases on land use, production systems, monitoring of climate change through satellite imagery, depth and expertise in geographical information systems (GIS), data management, livestock population density dynamic records, seasonal variations of pasture use, trade statistics and trends would be invaluable to the official reporting of epidemic disease occurrence. As a UN organisation, FAO would be in a position to tap into other epidemiological significant factors that likely relate to disease spread - such as the movement of refugees and temporal migratory workers - and those of WHO, a partner in this initiative and whose concerns are zoonotic and food-borne diseases. Multidisciplinary skills and tools on data management, communication, policy, sociology, economy (sector analysis of agriculture at the macro and micro-scale), modelling disease dynamics and biostatistics in general have not been made fully available to the concerned world audience. The addition of the official animal disease reporting system provided by the OIE delegates and currently undertaken by the OIE, with information from the WHO, would undoubtedly be a base on which to construct better analysis and impart benefit to the world.

In proposing the GF-TADs programme, FAO and OIE have taken into account of the key lessons from the experiences gained in other global programmes, e.g. for rinderpest, smallpox and polio eradication, as well as in the programmes on FMD control in the Americas, Europe, parts of Asia and Africa.

V. State of the Art

Existing International Warning Systems for Diseases

The OIE has an information system that includes the dissemination of early warning messages whenever epidemiologically significant events are officially reported to its Central Bureau within hours of their receipt. This alert system is aimed at decision-makers, enabling them to take any necessary preventive measures as quickly as possible.

In order to improve transparency and animal health information quality, the OIE has also set up an animal health information search and verification system for non-official information from various sources on the existence of outbreaks of diseases that have not yet been officially notified to the OIE.

FAO, through the EMPRES priority programme established in 1994, developed an early warning and response system aimed at disease containment, based on official OIE data, ground information stemming from field projects and collaborators, consultancy missions or personal contacts and provides analyses of the situation, disseminated through bulletins, electronic messages and other reports.

WHO has developed an outbreak tracking and verification system for human diseases, which, for zoonotic diseases, such as Rift Valley fever, brucellosis, tuberculosis, rabies and food borne diseases, will be shared with OIE and FAO in GF-TADs.

Disease monitoring, tracking and intelligence

Disease intelligence and active data search make use of information sources which go beyond those used for passive disease reporting systems. Such disease reporting and screening systems are developing and could be tapped to develop an animal disease early warning systems and the identification of emerging pathogens.

- The Global Public Health Intelligence Network (GPHIN) developed by Health Canada is used by WHO in the Global Alert and Response Network and by FAO's Animal Health Service programme of EMPRES. This network gathers and disseminates relevant public information from global media sources (websites, newspapers, list-services, etc). Information is used by the global public health community in its efforts to mitigate health risks by developing appropriate risk management and control measures
- The Programme for Monitoring of Emerging Diseases (ProMed) is an initiative of the Federation of American Scientists (FAS) calling for global monitoring of emerging diseases. ProMed is an Internet-based reporting system dedicated to rapid and global dissemination of information about outbreaks of infectious diseases that affect human health.
- The US Department of Agriculture's Center for Epidemiology and Animal Health, an OIE Collaborating Centre, has developed a system to screen international information using key words, similar to GPHIN, and subsequently analyses the information for relevance to its needs.

Diagnosis (diagnostics, genomics, and proteomics)

Early detection and confirmation of suspect cases of disease is essential to ensure proper control and containment. Numerous assay methods are available for animal disease diagnosis. These range from pathogen isolation and identification, serology, to RNA or DNA-based systems. Pathogen isolation, although usually regarded as "the gold standard technique", is not always easy to be implemented and is not rapid. Therefore, it is not adequate for an "early warning and early reaction" system. The same drawback is valid for the classical virus neutralisation test, another gold standard, which also needs working under sterile conditions. With the advent of new reagents, such as monoclonal antibodies, peptides, selective expression of proteins (recombinant antigens), the ELISA format developed in the late 1970s can be adapted for highly specific and sensitive identification of pathogens. DNA-based technologies are widely used even in many developing countries. These diagnostic tests have been dramatically improved not only in rapidity but also in specificity and sensitivity, but many still require validation to international standards. Still many of these assays are for use by well-trained technicians in well-equipped laboratories that remain few in number in developing countries and consequently, most of these new assays are rarely used in these countries outside a university system. Thus one of the challenges for managing TADs in developing countries is to have an effective disease diagnostic strategy which is built on three inter-linked levels:

- improved diagnostic capabilities within the country with rapid diagnostic tests, and upholding the assay systems and procedures described in the OIE *Manual of Standards for Diagnostic Tests and Vaccines*.
- establish reference laboratories at national/regional level with trained scientists and required equipment.
- Improved field investigations, sample collection and dispatch, and timely analysis.

This strategy requires the combination of simple test kits in a ready to use format and ready access to reasonably sophisticated laboratories where more complex and complete tests can be performed. "Dip stick" type tests, or those based on agglutination and immunochromatography,

have expanded in the last few years to diagnose human conditions within minutes (i.e., drug residues, cardiac enzymes, or liver function tests). In infectious diseases, the progress has been slower, but such assays do exist for diseases of human or veterinary importance. One major drawback is on the cost of applying the technology.

The Joint Division of FAO and the International Atomic Energy Agency has delivered ELISA-based technology widely, and such technology has become common practice by national veterinary laboratories. The FAO field programme has benefited from such technology and assists in sustaining laboratories in the purchase, availability of reagents, instrumentation, and quality testing.

An ideal rapid diagnostic assay (RDA), also called “pen-side” assays, should have the following characteristics:

- easy to use after only minimal training,
- applicable to the unprocessed specimens, which is easy to collect (exudates, discharges, swabs, faeces, blood)
- relatively rapid to obtain results (i.e. a few minutes)
- long shelf life at ambient temperatures (1-2 years)
- limited, or no need for expensive equipment
- affordable

In general, RDAs are qualitative tests, i.e. giving *yes/no* answers. Accordingly, they have to be regarded as a means for detection in the field with diagnostic confirmation to be followed by a laboratory assay which may be more specific and/or more sensitive.

Analysis of specific target sequences of a suspect pathogen from its RNA or DNA has been in use for several decades. The advent of the technique known as polymerase chain reaction (PCR) was quickly adopted by the medical diagnostic community for its specificity and extremely high sensitivity. This high sensitivity was also considered a draw back because of the ease for contamination. In the past decade, newer protocols and laboratory supplies have been developed to diminish the chances for contamination, but these supplies add to the cost of each analysis. The recent adaptation of PCR to *real-time* format, especially with the ancillary portable units to conduct testing, is an advantage to early detection, but, due to cost, reagents and instruments are likely to have limited use in developing countries.

Genetic sequencing did lead to the advent of a new biomedical specialisation, molecular epidemiology. Molecular epidemiology is now a well-established powerful method to trace the international and national spread and the relationships of viral diseases such as FMD, classical swine fever and rinderpest. Since TADs can be introduced from anywhere to anywhere, by global trade and travel, the method relies upon having an up-to-date repository of sequences from strains representative of all antigenic or genetic types of a pathogen that are circulating in the world and also vaccine master seeds. This has proved very difficult to achieve, and has limited the predictive value of the technique. At present, genetic characterisation of pathogens is limited which has led to inadequately utilised molecular epidemiology (only a small number of countries carry out analyses on isolated FMD viruses or submit them to the OIE-FAO FMD World Reference Laboratory (WRL) for such analyses). The significant cost of sending viruses to the WRL is a serious constraint.

GF-TADs will encourage the strengthening of national laboratory capabilities and those of Regional Reference Laboratories to perform advanced tests for disease diagnosis in accordance with the OIE Manual for Diagnostic Tests and Vaccines, including PCR, and nucleic acid

analysis, and sequencing facilities. A quality assurance system, as promoted by the FAO/IAEA Joint Division and detailed in ISO 17025 standards, and published by the OIE is the prerequisite for accreditation of such reference work.

Vaccines

Current vaccines commercially available against infectious diseases are of 2 categories:

- Inactivated vaccines formulated with adjuvant.
These vaccines have a relatively short shelf life (1 to 2 years, if maintained under proper refrigeration) and have poor thermal stability. Most of these vaccines confer a relatively short-lived protection (maximum 12 months, for oil adjuvanted preparations). For some vaccines, such as FMD, the protection conferred is largely serotype (and sometimes subtype) specific and therefore multivalent vaccines are often needed. FMD vaccines do not induce a sterile immunity and clinically protected animals may still support FMD virus replication, albeit reduced, after challenge. Likewise, HPAI vaccines require accurate knowledge of circulating viruses and anticipatory preparation to protect poultry and decrease the likelihood of human infections.
- Attenuated live vaccines.
In most cases, these vaccines provide good protective immunity (life long for rinderpest, for example). Others, such as CBPP vaccine or classical swine fever, do not generate more than one-year immunity. In general, they are also heat sensitive and must be stored in freeze-dried form at -20°C or maintained at $+4^{\circ}\text{C}$. Immediate use and refrigeration after reconstitution is an important factor for their efficacious use. Some, such as pox vaccine, are thermotolerant. Other attenuated vaccines are known to produce adverse effects (such as Rift Valley fever in pregnant animals).

In most developing countries, the relevant infrastructure is poor; therefore to maintain an intact cold chain from production of vaccine through to its administration to animals is seldom guaranteed. There is an urgent need for a new generation of vaccines, which are more or entirely independent of temperature fluctuations. Furthermore, the ideal vaccines should have the following characteristics:

- Protection against multiple variants (i.e., FMDV isolates) in all susceptible livestock species and able to prevent virus carriage and virus shedding.
- Able to induce a rapid onset of immunity.
- Able to stimulate a broad T-cell immunity for an effective and long lasting antibody response (duration).
- Able to protect against disease and infection.
- Inexpensive to manufacture and administer (e.g. via a nebuliser or in feed).
- Have a long shelf life and be stable without refrigeration.
- Would not give rise to vaccine-induced disease/outbreaks.
- Would allow discrimination between vaccinated and infected animals (marker vaccines).
- Would give good levels of maternal immunity.
- Safe for use in pregnant animals.

The GF-TADs does not suggest a strategy of blanket mass vaccination, but an epidemiology-based approach which respects the precepts of risk-based surveillance and disease control oriented towards risk mitigation. Such an approach is intended to be highly focused and cost-effective. Funding of the National Programmes/Projects will remain the responsibility of the concerned governments; yet GF-TADs envisions assistance in regional programme coordination,

in reference laboratory support, in commissioning/enabling research, in support for regional consultation, and in provision of information.

Informatics and Epidemiology

No major new technologies are anticipated to revolutionise epidemiology and informatics over the next 5-10 years. However, it is anticipated that increased integration of known technologies in the areas of remote sensing, GIS and modelling, and greater attention to field data capture, reporting, standardisation, management and analysis, as well as to organisational issues and cooperation will have a major bearing on the successful implementation of programmes against transboundary animal diseases.

It is also noted that miniaturisation of diagnostics, increasing internet connectivity and widespread use of electronic mail in developing countries, and continued fall of prices in handheld and other digital information capture, storage and transmission devices will have a major bearing on the use of informatics and epidemiology.

VI. Budget

The provisional budget is given in Annex 1.

Funding is sought for the establishment of:

- (1) sub-Regional Support Units;
- (2) a Joint FAO/OIE Secretariat of GF-TADs;
- (3) a Joint FAO/OIE /WHO *GLobal Early Warning System* (GLEWS);
- (4) support system and network for the National and Regional Laboratories and Epidemiology Units, and OIE-FAO Reference Laboratories and Epidemiology Collaborating Centres;
- (5) provision of funds for targeted and short term research programmes and
- (6) the establishment of a FAO/OIE emergency / contingency fund to support countries in confronting emergency situations, carrying out response investigations in the field or preparing projects for the containment of disease spread from primary endemic areas to other regions around the globe.

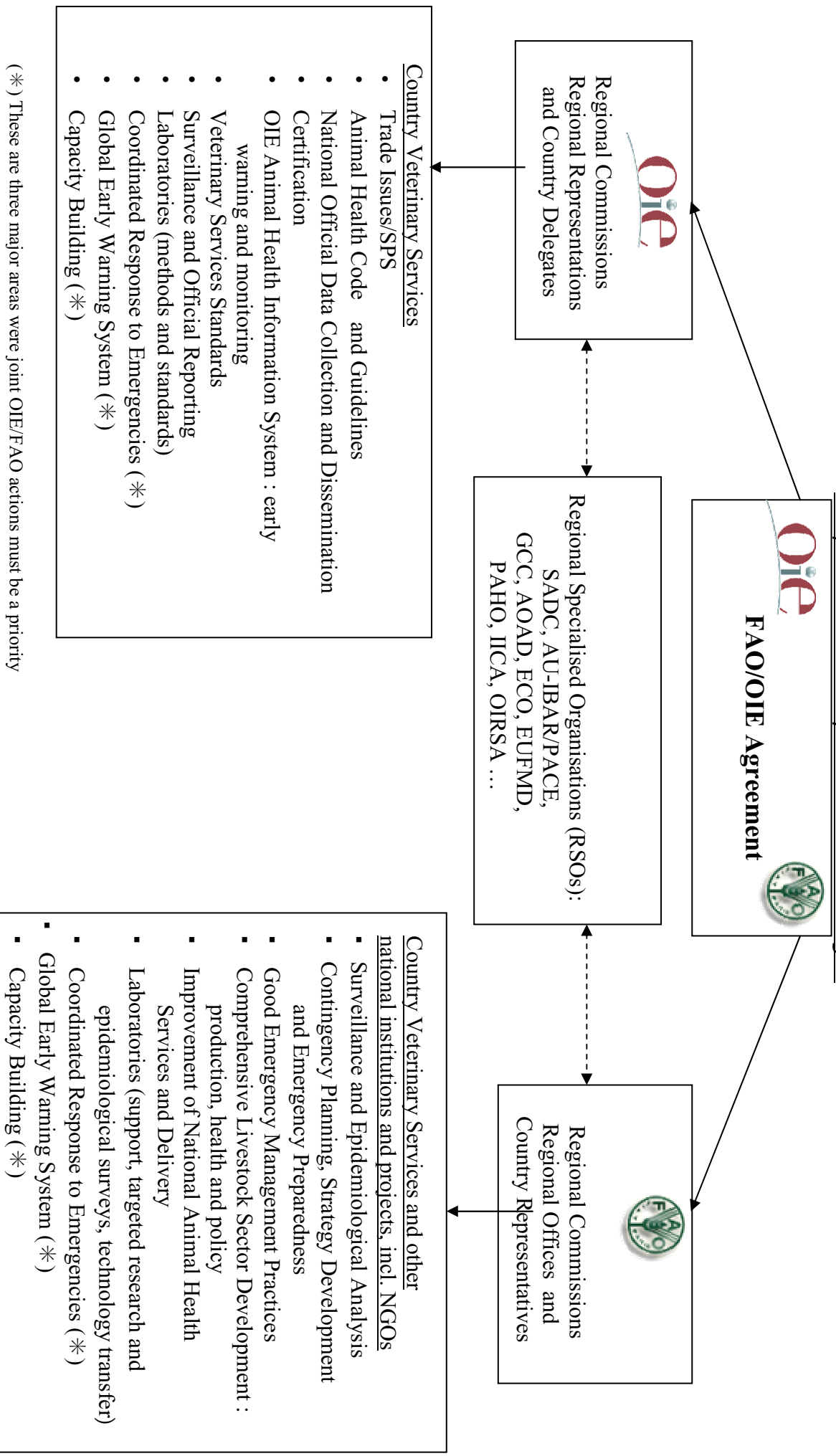
The US\$ 79.4 million budget is based on a six-year programme plan. A FAO or OIE Trust Fund mechanism is suggested in support of the programme; the Trust Fund will be administered by the GF-TADs Global Steering Committee.

GF-TADs will identify and design the necessary national programmes on disease control. They will be prepared with National Authorities and submitted to donors. These national control programmes are mentioned here but they are not part of the GF-TADs budget.

VII. Organisation and Implementation

The organigramme of the GF-TADs is given in Chart 1 and Chart 2, showing the linkages of FAO-Animal Production and Health Division (Rome) and the OIE Central Bureau (Paris), through their regional structures and to the national level, showing global, regional and national strategic and implementation components. In both charts, the involvement of the Regional Specialised Organisations of both the public and private sectors are highlighted. The Charts also indicate the supervisory and reporting relationships of the GF-TADs components.

Chart 1 : Regional Cooperation and Joint Implementation Components
Cooperation and Implementation Linkages

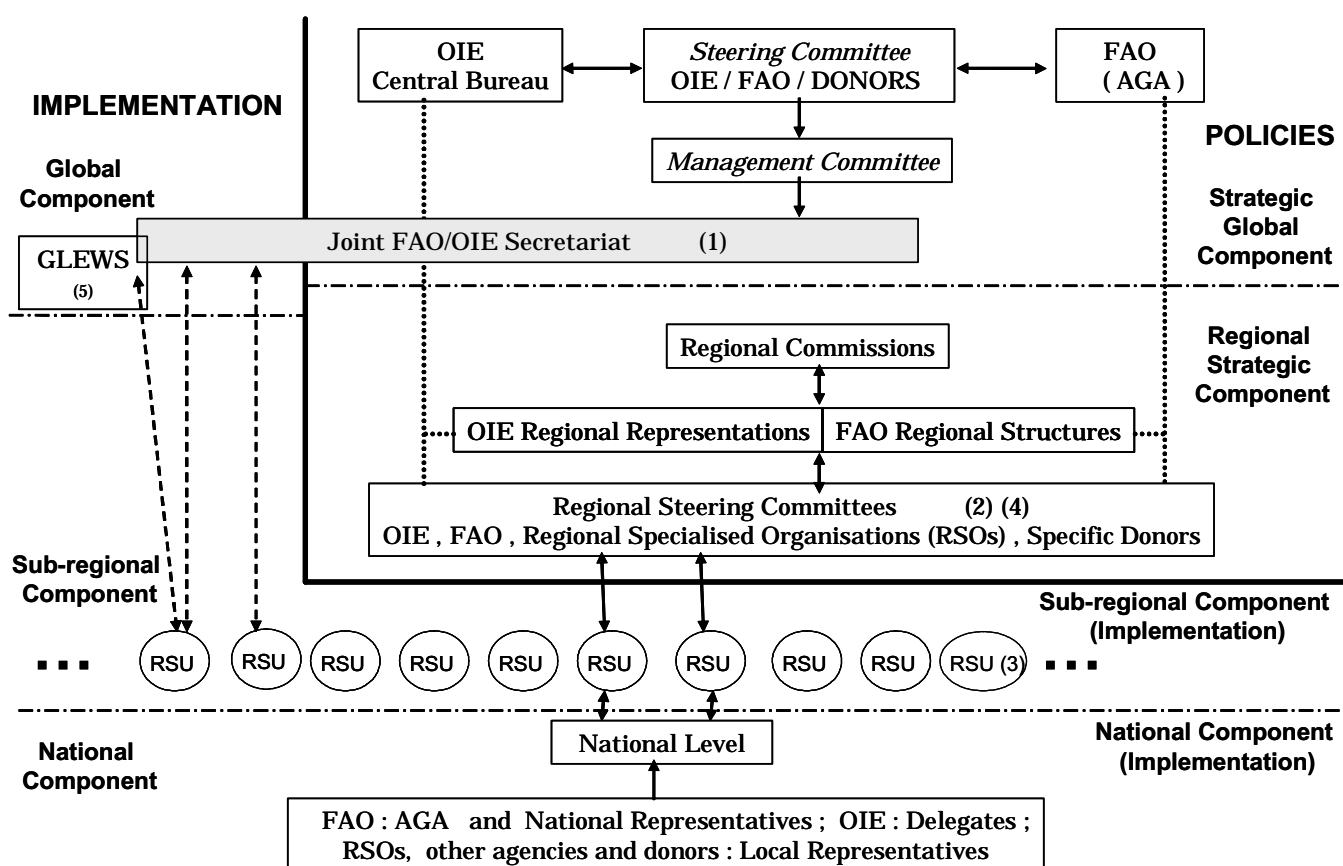


- Country Veterinary Services**
- Trade Issues/SPS
 - Animal Health Code and Guidelines
 - National Official Data Collection and Dissemination Certification
 - OIE Animal Health Information System : early warning and monitoring
 - Veterinary Services Standards
 - Surveillance and Official Reporting Laboratories (methods and standards)
 - Coordinated Response to Emergencies (*)
 - Global Early Warning System (*)
 - Capacity Building (*)

(*) These are three major areas were joint OIE/FAO actions must be a priority

- Country Veterinary Services and other national institutions and projects, incl. NGOs**
- Surveillance and Epidemiological Analysis
 - Contingency Planning, Strategy Development and Emergency Preparedness
 - Good Emergency Management Practices
 - Comprehensive Livestock Sector Development : production, health and policy
 - Improvement of National Animal Health Services and Delivery
 - Laboratories (support, targeted research and epidemiological surveys, technology transfer)
 - Coordinated Response to Emergencies (*)
 - Global Early Warning System (*)
 - Capacity Building (*)

Chart 2 : Regional Cooperation and Joint Global Programme Components



- (1) Hosted at FAO Headquarters
- (2) Permanent Secretariat hosted by OIE Regional Representation
- (3) Regional Support Units hosted/located in sub regional ad hoc bodies
- (4) In the initial stage Regional Animal Health Steering Committees will be those for Africa; the Americas; Far East; Asia and Oceania; Europe; and Middle East
- (5) Core team hosted at the joint secretariat in Rome Headquarters

A. Global Guidance

Strategic planning and general oversight of GF-TADs is by the Global Steering Committee and the Management Committee that monitors implementation through its Joint Secretariat (Chart 2). In the regions, OIE and FAO Regional Commissions and Representations will advise and give recommendations to the Regional Specialised Organisations and the Regional Support Units for the implementation of regional and national programmes and development of project proposals.

The Global Steering Committee

A Global Steering Committee provides the oversight of GF-TADs; it is co-chaired by FAO and the OIE and includes GF-TADs donor(s). The Global Steering Committee guides the GF-TADs Management Group; it decides, upon proposal by GF-TADs Secretariat and the Management Group, on the allocation of the Trust Fund resources.

Global Steering Committee		
<ul style="list-style-type: none"> • FAO (co-chair) • OIE (co-chair) • WHO <p><i>- permanent committee -</i></p>	donor(s)	<ul style="list-style-type: none"> • NGO representatives • Pharmaceutical industry representatives • Representatives of Regional Specialised Organisations <p><i>- observers to meet ad hoc needs -</i></p>

Regional Commissions:

Regional Commissions with animal production and/or health mandates are to be engaged in obtaining country support and commitment to promote GF-TADs concepts and are encouraged to participate in planning and strategy development.

FAO and OIE Regional Representations

The FAO Regional representations (Regional Offices) and OIE Regional Representations will be requested to promote political will and commitment of the relevant Ministries (i.e., Agriculture, Livestock, Rural Development, Planning, Finance, Foreign Affairs...) of the countries that they oversee. As with the Regional Commissions, the FAO and OIE representations will be critical to participate in overseeing or advancing the implementation of the GF-TADs objectives and developing additional financial support.

Regional Steering Committees

The Regional Steering committee ensures sub-Regional coordination of the clusters and monitors progress and determines, with the Secretariat, performance indicators for effective field, laboratory, epidemiological evaluation of disease events and control efforts.

Regional Steering Committees are composed of representatives of Chief Veterinary Officers, representatives of the Regional Specialised Organisations involved with animal health, specific donors, and representatives of centralised and regional structures of the FAO and OIE. The permanent secretariats of the Regional Steering Committees are hosted by the OIE Regional Representations.

B. Implementation

Management Committee

The *Management Committee* is composed of senior officers from FAO and OIE. It supervises the work of the GF-TADs Secretariat as guided by the Global Steering Committee. The Management Committee empowers the Secretariat to perform activities agreed in GF-TADs for implementation in association with the regional bodies and members countries. Therefore, the Management Committee has the responsibility to assist the GF-TADs Secretariat in developing the regional strategies and work plans, and to report on progress to the Global Steering Committee.

GF-TADs Secretariat

The Joint FAO-OIE Programme *Secretariat*, under the leadership of the Management Committee, would oversee the RSU Lead Officers' work, and engage with Regional Specialised Organisations and the Regional Steering Committee(s), as well as be represented at regional meetings and required backstopping missions.

The Secretariat, based at FAO's Headquarters in Rome, is in charge of global coordination of the GF-TADs together with the RSUs; it is lead by a Programme Coordinator. FAO will provide office facilities and will dedicate additional staff time from professionals within the Animal Health Service to the implementation of the GF-TADs activities. Additional posts, funded through the GF-TADs programme, are suggested to be based at FAO and OIE headquarters to manage the agreed activities. FAO will provide for the routine headquarters administrative and incidental expenses of the GF-TADs Secretariat

The Secretariat of the GF-TADs programme will have dedicated staff¹⁵ with the following functions:

- Facilitate the preparation, implementation, and use of the FAO-OIE-WHO Global Early Warning System, building on the official data of the OIE as well as on other sources of data described in Section D of the Annexes and Background Information.
- Provide technical backstopping to the regional organisations participating in the GF-TADs, the RSUs, and provide technical guidance in information management, structures for reporting, risk analysis, and disease / infection search, and trade related issues.
- Undertake epidemiological analysis and advice on intervention and disease control strategies.
- Assist with formulation and fund mobilisation of regional strategies and programmes for surveillance, prevention, and progressive control of TADs.
- Cooperate with relevant OIE-FAO Reference Laboratories and Collaborating Centres as well as other international research establishments.
- Facilitate the definition of project proposals by the collaborating institutions and assist in seeking international funding for a proposed enabling research programme.
- Facilitate expert meetings and reviews.
- Monitor progress of programme.
- Present, publish and disseminate reports

Applied and targeted short-term research projects, to be financed by the GF-TADs programme (i.e., delivery schemes for vaccines and promotion of new diagnostic tests that will advance disease control programmes, early detection or their prevention) as well as more basic research (i.e., new generation of vaccines pilot projects,...) are to be evaluated by the programme Secretariat in dialogue with institutes where these are developed for their potential use within GF-TADs objectives. The Global Steering Committee would further promote such coordination.

North-South and South-South Partnerships

In addition to the proposed investments made by donors, technical guidance and inputs made by GF-TADs, the GF-TADs programme has the underlying viewpoint that promoting of North-

¹⁵ Included in the FAO Headquarters will be partial time of Professional and General Service staff of the Animal Production and Health Division already engaged in transboundary animal disease control and contingency planning, epidemiological analysis, economic and policy legislative matters, and capacity building, as specific needs arise.

South partnerships to strengthen capacities of animal health structures in the developing countries and those in transition must be enhanced and opportunities sought. Likewise, there are research institutes, diagnostic laboratories, and groups of professionals in epidemiological units in the developing countries that would be instrumental in sharing their capacities and knowledge under similar constraints – hence, the promotion of a South-South partnership. Since 1978, FAO and other United Nation organisations have developed a system to use professionals from the developing countries and those in transition (technical cooperation among developing countries, or “TCDC” experts) for such a purpose¹⁶. In GF-TADs, such inputs – both by individuals and institutes – would be fortified.

Regional Specialised Organisations

Key actors in the implementation of GF-TADs are the Regional Specialised Organisations (RSO) which in interaction with FAO, OIE, their respective Regional Commissions, national veterinary services and technical specialists strategize and prioritize activities for disease control, information reporting, surveillance, and risk mitigation. The sub-Regional Support Units (RSU) will be hosted by RSO. The Lead Officer of the RSU will liaise with the GF-TADs - Secretariat and Regional Steering Committees to ensure action against priority diseases is maintained. The relevant Regional bodies will promote the engagement of private industry, producer associations, cooperatives and civil society at large, and is envisioned at each opportunity and considered as part of the overall GF-TADs strategy, to gain such participation for a better understanding of disease dynamics.

In an effort to promote sustainability and depth in the Region, it is envisaged to institute a system of inviting young animal health professionals to spend a year with the RSUs. This system is expected to expand relevant experience in coordination, technical capacity building, project design and implementation, and strategy development.

Sub-Regional Support Units (RSU).

Geographical areas, based on agro-ecological and traditional animal production practices, have been identified in conjunction with the importance of TADs for livestock production and trade and of their significance for the maintenance of the most important infectious agents with potential for spread between countries and regions.

Through a process of regional consultation, countries sharing similar epidemiological and ecological status with respect to the major TADs were asked to evaluate their TAD status and prioritise situations they considered to be particularly pressing and needing attention. Two diseases emerged as being of global or trans-regional significance (FMD and BSE¹⁷), and a third – rinderpest – should be incorporated as it is now so close to extinction that support for the Global Rinderpest Eradication Programme is indicated to ensure timely accreditation of freedom on a national, regional and global basis. FMD was identified in all regions as a priority disease, a consideration which coincides with that of both the industrialised and developing nations.

The regional groupings tentatively identified with proposed RSU, with the priorities identified by constituent countries are given in following table:

¹⁶ See <http://www.fao.org/vn/partnerE.htm> and <http://tcdc.undp.org/HLdocs/TCDC-13-3.pdf>

¹⁷ BSE is included of global import from the perspective of compliance and surveillance not due to its global occurrence.

Clusters	Constituent Countries (tentative)	Relevant Regionalised Specialised Organisations (RSOs)
The Americas		
Andean cluster	Colombia, Bolivia, Peru, Venezuela, Ecuador	PAHO, IICA, Andean Pact (with Chile)
Southern Cone	Argentina, Brazil, Chile, Paraguay, Uruguay	PAHO (Panaftosa), IICA, Mercosur (Comité Veterinario Permanente)
Mesoamerica and Caribbean	Cuba, Dominican Republic, Haiti, Jamaica, Mexico, Costa Rica, Nicaragua, Guatemala, Panama, El Salvador, Belize, Honduras, Suriname, Guyana, French Guyana, other island countries and protectorates of the Caribbean	PAHO, IICA, OIRSA
Asia		
East Asia	Cambodia, Laos, Vietnam, Thailand, Myanmar, Indonesia, Malaysia Philippines, PR China, Taiwan Province of China, PDR Korea, DR Korea, Mongolia	ASEAN, (APHCA), ...
South Asia	India, Bangladesh, Sri Lanka, Nepal, Bhutan	SAARC, (APHCA) ...
Central Asia	Afghanistan, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Tajikistan, Pakistan	ECO, (APHCA) ...
Middle East	Turkey, Iran, Syria, Iraq, Jordan, Lebanon, Palestine, Israel, Egypt	ECO, , EU-FMD (APHCA, AHCNENA) ...
Arabian Peninsula	Saudi Arabia, Oman, Yemen, UAE, Qatar, Kuwait, Bahrain	GCC, AOAD (AHCNENA) ...
Africa		
North	Morocco, Algeria, Tunisia, Libya	AMU, AOAD, (AHCNENA) ...
West and Central	Senegal, Gambia, Mauritania, Côte d'Ivoire, Guinea Conakry, Guinea Bissau, Equatorial Guinea, Sierra Leone, Liberia, Mali, Togo, Benin, Burkina Faso, Ghana, Nigeria, Niger, Chad, CAR, Cameroon, Gabon, Congo Brazza	AU-IBAR,
Horn of Africa	Ethiopia, Eritrea, Sudan, Somalia, Djibouti, Kenya, Uganda	AU-IBAR,
Southern Africa and Indian Ocean	South Africa, Namibia, Zambia, Botswana, Mozambique, Swaziland, Lesotho, Angola, Rwanda, Burundi, Tanzania, Congo Kinshasa, Malawi, Madagascar, Island countries of the Indian Ocean	SADC, AU-IBAR ...
Eastern Europe		
	Russia, Belarus, Ukraine, Balkan Countries (Serbia-Montenegro, Kosovo, Moldova, Macedonia), Albania, Bulgaria, Armenia, Georgia, Azerbaijan	EU-FMD

Under the leadership of the GF-TADs Steering Committee and the direction of the GF-TADs Secretariat, the RSU will be responsible for:

- facilitating the work of the relevant regional bodies in support of the agreed priority agenda in the progressive control of TADs.
- Support and advice to Epidemiology Units and national laboratories
- Assessment and development of capacity training needs, their organisation and delivery.
- Support data collation, analysis and dissemination at the national, sub-Regional and Regional acting as the regional focus to feed into international reporting and the Global Early Warning System for TADs
- Reporting to the GF-TADs Secretariat
- Monitoring progress of capacity building and intervention programmes.
- Engaging the private sector.

Tentatively, 13 sub-Regional Support Units (RSU) are proposed to facilitate the implementation of priority work identified in the GF-TADs in support of regional specialised animal health organizations and relevant bodies. Each RSU will be composed of a Lead Officer, preferably from the Region, with a strong background in epidemiology and project management; an assistant veterinary officer, administrative clerk, and a temporary junior officer from a participating country. It is expected that the regional relevant bodies and/or involved member countries will assign staff, full professional as well as rotational training positions intended for enhancing long-term sustainability of the actions undertaken.

The principal activities of the RSU are:

- Conduct needs assessments in epidemiology units, and laboratories; assess gaps in legislation and compliance with trade regulations; and organise capacity building in priority subjects.
- Identify the main sources of diseases and prepare national programmes to control the problem
- Advise and support national priority activities identified in the GF-TADs; assist in the preparation of bankable project in the region to address priority requirements
- Assist in activities for disease surveillance and reporting
- Report and liaise with Regional Specialised Organisations, regional FAO and OIE offices and Commissions, and the GF-TADs Secretariat.
- Arrange and participate in national and regional workshops.
- Prepare briefs

Each RSU will require operational funds to initiate its core activities through their host Regional Specialised Organisations and/or relevant bodies and to work with country epidemiology units, assess specific needs (i.e., laboratory, legislation), and to prepare the necessary project documents.

Networks of OIE-FAO Reference Laboratories and Collaborating Centres and National-Regional Laboratories

The Lead Officer of the Sub-Regional Support Units will promote and establish links between field findings and laboratory diagnosis with timely reporting, so as to capture a body of animal health information for analysis by in-country epidemiological units.

National veterinary diagnostic laboratory administration will not be directly affected by GF-TADs, but will benefit by capacity building and participating in regional proficiency testing for specific diseases and the implementation of quality assurance initiatives, with assistance from FAO/IAEA Joint Division and other experts.

It is expected that the Joint FAO/IAEA Division will continue to provide transfer of new diagnostic technologies to developing countries as they become available, building on its 30 year experience of Co-ordinated Research and technical co-operation programmes. In addition capacity building (e.g. to comply with ISO 17025 standards), quality control of laboratories and inter-laboratory proficiency testing will be promoted.

Representatives of laboratory will establish networks and meetings with the aid of FAO/IAEA and other specialists to promote quality assurance and proficiency testing for specific diseases with OIE-FAO reference laboratories.

It is possible that the Global Steering Committee would envisage a system to sub-contract arrangement with FAO and OIE World and Regional Reference Laboratories in order to enhance their capacity for rapid and co-ordinated provision of authoritative diagnosis of epidemiologically important outbreaks, characterisation and analysis of the genetic and antigenic make up of causal agents, monitoring of regional and global trends in pathogens and the capacity building in national and regional laboratories. These national-regional laboratories and OIE-FAO Reference Laboratories and Collaborating Centres will also be involved in applied and basic research programmes, financed by GF-TADs funds or additional funds.

Network of National-Regional Epidemiology Units and OIE-FAO Collaborating Centres

The national epidemiology unit capabilities will be enhanced through the support by the RSUs in information gathering and analysis and transmission to the Global Early Warning System. RSUs will also support the national efforts to identify investigation needs in the determination of primary endemic areas for transboundary animal diseases nationally and regionally and to develop proposals for strategic disease control as coordinated by the Regional Steering Committee.

As with the Regional Laboratory Networks, the Global Steering Committee would be in a position to enter into contract arrangements with FAO and OIE Collaborating Centres or other relevant institutes in epidemiological intelligence and analysis for the determination of regional and global trends in pathogens and the capacity building in national and regional epidemiology units.

The Global Early Warning System (GLEWS)

The Global Early Warning System (See Annex 2) will be an integral aspect of the GF-TADs in improving epidemiological intelligence in the realm of infectious agent dynamics and factor that favour their spread. Its core team will be located in FAO-OIE Joint Secretariat in Rome. Strengthening disease reporting mechanisms and laboratory networks will enable a truer geographical distribution of disease occurrence - when combined with GIS instrumentation and better authoritative diagnosis overlaid with marketing patterns, pastoral migratory routes, areas of civil strife, climate alterations, price differentials across borders – for an improved information base for risk awareness and risk mitigation.

FAO and OIE Country Representations

In-country representations of FAO (the representative) and the OIE delegate (likely the Chief Veterinary Officer) will be requested to promote political will and commitment of the relevant Ministries (i.e., Agriculture, Livestock, Rural Development, Planning, Finance, Foreign Affairs...). As with the Regional Commissions, the FAO and OIE representations will be critical to participate in overseeing or advancing the implementation of the GF-TADs objectives and developing additional financial support.

C. Administration of Funds

FAO and OIE will be held responsible for the management of all funds remitted to FAO or the OIE in the GF-TADs programme, according to their respective rules and will account for them as per the standard agreements with donors. The Global Steering Committee will determine how the funds are to be used. The regional portfolios will be implemented through regional organisations with oversight by the FAO-OIE Secretariat, and assisted by FAO (Rome) and the OIE (Paris), and by the Regional Representations or Offices.

VIII. Conclusion

The GF-TADs programme is an ambitious programme. It is a programme in response to repeated calls by countries, regions, and international fora. GF-TADs adopts the approach of regional coordination while at the same time advancing concerted action from a global perspective; it takes into account the epidemiological links between disease, infection, livestock raising practices, land use, marketing schemes, pastoralist communities, molecular biology and information technology. GF-TADs focuses on identifying the primary endemic areas that harbour disease agents and on eliminating the micro-organism at the source of their circulation, using targeted vaccination and other appropriate tools or methods.

The Programme aims at better coordination between countries and at synergising institutional agendas and at strengthening national and regional institutions involved in animal health management. In doing this, close linkages are maintained with stakeholders responsible for related areas, such as trade in animals and animal products, food safety as affected by animal agriculture, legislation on animal agriculture and the environment-livestock nexus, etc. The GF-TADs outputs and outcome are to the benefit of both the developing world and the developed world, where the threat of disease incursion will be minimised by the progressive control of the disease causing agents in the areas of endemicity of the former.

ANNEX 1 : Budget – Global Framework for the Progressive Control of FMD and Other TADs

1. FAO/OIE Secretariat

Personnel	FAO	OIE		Base	Extended (p.a.)	6 Years	Percent of TOTAL	
Coordinator	x		1	\$141,624	\$141,624	\$849,744		
Socioeconomic Analyst/Vet Services	x		1	\$130,020	\$130,020	\$780,120		
Epidemiology/Surveillance/GIS/RA	x		1	\$114,204	\$114,204	\$685,224		
Epidemiology/Data Management		x	1	\$92,508	\$92,508	\$555,048		
Geographical Information System	x		1	\$114,204	\$114,204	\$685,224		
WTO/SPS/Vet Services		x	1	\$114,204	\$114,204	\$685,224		
Clerk/Secretary - G6	x		1	\$65,196	\$65,196	\$391,176		
Clerk/Secretary - G4		x	1	\$48,648	\$48,648	\$291,888		
			<i>Sub total Personnel</i>	8	\$820,608	\$820,608	\$4,923,648	6.2%
Other								
Travel				\$65,000	\$65,000	\$390,000		
Expert Consultations & Steering Committee				\$100,000	\$100,000	\$600,000		
			<i>Sub total Other</i>		\$165,000	\$165,000	\$990,000	
			<i>Sub total</i>		\$985,608	\$985,608	\$5,913,648	
			<i>Support Costs - Secretariat (6%)</i>		\$59,136	\$59,136	\$354,819	
			Total		\$1,044,744	\$1,044,744	\$6,268,467	7.9%

2. FAO/OIE Regional Support Units

Personnel	FAO	OIE		Base	Extended (p.a.)	6 Years	Percent of TOTAL	
Lead Officer - P4			13 ^(a)	\$114,204	\$1,484,652	\$8,907,912		
Technical Assistant - P3			13	\$92,508	\$1,202,604	\$7,215,624		
Associate Officers - P2			26	\$69,211	\$1,799,486	\$10,796,916		
Clerk/Secretary - G4			13	\$48,648	\$632,424	\$3,794,544		
OIE Associate - P2		X	6	\$69,211	\$415,266	\$2,491,596		
			<i>Sub total Personnel</i>		\$393,782	\$5,534,432	\$33,206,592	41.8%
Other								
Equipment and Network			13	\$45,000	\$585,000	\$3,510,000		
Travel			13	\$55,000	\$715,000	\$4,290,000		
Expert Consultations & Regional Steering Committee			13	\$40,000	\$520,000	\$3,120,000		
			<i>Sub total Other</i>		\$140,000	\$1,820,000	\$10,920,000	
			<i>Sub total</i>		\$533,782	\$7,354,432	\$44,126,592	
			<i>Support Costs - RSUs (6%)</i>		\$32,027	\$441,266	\$2,647,596	
			Total		\$565,809	\$7,795,698	\$46,774,188	58.9%

3. Networks of Diagnostic Laboratories ^(b) and Epidemiology Units ^(c)

Personnel* (excludes Secretariat, Consultant inputs)	FAO	OIE		Base	Extended (p.a.)	6 Years	Percent of TOTAL	
Good Laboratory Practices/Technology transfer/Quality Control Activities - P4			2	\$114,204	\$228,408	\$1,370,448		
			<i>Sub total Personnel</i>		\$114,204	\$228,408	\$1,370,448	1.7%
Inputs								
Programme Operation led by FAO/IAEA for assisting Laboratory Networks			13	\$15,000	\$180,000	\$1,080,000		
Laboratory Operation led by World/Regional/National Labs			13	\$60,000	\$720,000	\$4,320,000		
Supporting Regional Networks/Laboratory, Epidemiology and Investigation			13	\$20,000	\$260,000	\$1,560,000		

<i>Sub total Regional and National Support</i>				\$95,000	\$1,160,000	\$9,700,896	
<i>Sub total</i>				\$209,204	\$1,388,408	\$11,071,344	
<i>Support Costs - IAEA and Regional Labs (6%)</i>				\$12,552	\$83,304	\$664,281	
Total				\$221,756	\$1,471,712	\$11,735,625	14.8%
Total							
4. Research							
Commissioned Research - Global Steering Committee/Management (FAO, OIE, ARIs, CGIAR, others)				\$50,000	\$600,000	\$3,600,000	
<i>Sub total Research</i>				\$50,000	\$600,000	\$3,600,000	
<i>Support Costs - Research (6%)</i>						\$216,000	
Total						\$3,816,000	4.8%
Total							
5. Emergency Contingency Fund				\$6,000,000	\$6,000,000	\$6,000,000	
<i>Support Costs - Contingency Fund (6%)</i>				\$360,000	\$360,000	\$360,000	
Total				\$6,360,000	\$6,360,000	\$6,360,000	8.0%
6. Global Early Warning System (core team hosted in FAO)							
Personnel							
Veterinary Analysts and Modelling/GIS P4	x	x(d)	2	\$114,204	\$228,408	\$1,370,448	
IT Specialist P3	x	X	2	\$92,508	\$185,016	\$1,110,096	
<i>Sub total Personnel</i>				\$206,712	\$413,424	\$2,480,544	3.1%
Other					Extended		
Contracts - Software integration and development				\$570,000	\$570,000	\$570,000	
Consultants				\$350,000	\$350,000	\$350,000	
Equipment				\$250,000	\$500,000	\$500,000	
<i>Sub total Other</i>				\$1,170,000	\$1,420,000	\$1,420,000	
<i>Sub total</i>				\$1,376,712	\$1,833,424	\$3,900,544	
<i>Support Costs GLEWS (6%)</i>				\$82,603	\$110,005	\$234,033	
Total				\$1,459,315	\$1,943,429	\$4,134,577	5.2%
7. National programmes on disease control (e)							p.m
8. Ancillary Needs							
GOE/Publications				\$300,000	\$300,000	\$300,000	
<i>Sub total</i>				\$300,000	\$300,000	\$300,000	
<i>Support Costs - Ancillary (6%)</i>				\$18,000	\$18,000	\$18,000	
Total				\$318,000	\$318,000	\$318,000	0.4%
GRAND TOTAL						\$79,406,856	

(a) Tentative – 13 RSU's for work within the clusters

(b) National, Regional and OIE/FAO Reference Laboratories and collaborating Centers

(c) National, Regional and OIE/FAO Collaborating Centres

(d) Potentially seconded to work at FAO HQ

(e) One of the main objective of GF-TADs is the design of national programmes on disease control, which will be prepared with national authorities and submitted by the GF-TADs Steering Committee to donors

ANNEX 2: Global Early Warning and Response System for Major Animal Diseases

1. Background information and justification

Early, accurate warning of new outbreaks of epidemic livestock diseases, and the capacity for prediction of spread of such diseases to new areas, is an essential pre-requisite to the effective containment and control of the disease. As experienced recently throughout much of the globe, weaknesses of disease surveillance systems and the inability to control major diseases at their source, along with the globalisation of trade, has been held responsible for the spread of diseases such as foot-and-mouth disease and classical swine fever (CSF). Other diseases continuously threaten the livestock sector on a world-wide basis, some with public health implications.

The concepts of Early Warning and Early Reaction, which are at the core of the objective of effective prevention and progressive control of TADs, are based on the concept that dealing with a disease epidemic in its early stages is easier and more economical than having to deal with it once it is widespread. In the light of the recent events such as the FMD epizootic in the UK and the spread of other major transboundary animal diseases (TADs) in developing countries, it is the responsibility of the international community to implement a Global Early Warning System (GLEWS) for TADs aiming at providing national animal health authorities with epidemiological information enhanced by an in-depth analysis on the occurrence and spread of major diseases and an adequate response in order to limit a disastrous impact; not only for the livestock that perish but also for the human population that depend on animal production for sustenance and commercial enterprise.

The GLEWS is defined as an instrument to be developed by FAO/OIE/WHO for the international community and stakeholders alike to assist in predicting and preventing livestock animal disease threats through epidemiological analysis and the integration of additional factors that might have an impact on the occurrence and spread of such diseases (e.g., economic factors, civil unrest, climatic changes, etc.).

The need for such a system is increasingly being recognised by many countries as well as regional and international organisations:

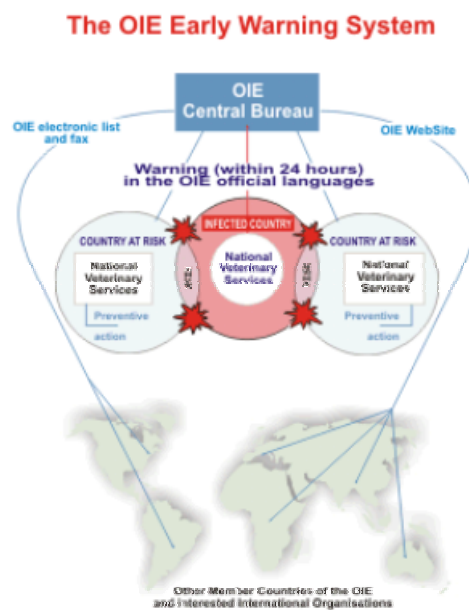
- Resolution XIII of the 66th General Session of the International Committee of the OIE :
"Member Countries, the OIE and the WHO collaborate with the FAO to progressively develop a hierarchical global early warning system, including pilot projects to be carried out on a regional basis, which complements, but does not duplicate or replace, the existing reporting obligations to the OIE." (*Paris, 25-29 May 1998*)
- the Royal Society Inquiry into Infectious Diseases of livestock:
"*The threat of importing disease is high because of: high global demand for meat and meat products; extensive international travel and transport of meat and other foods around the world; improved transport routes; and climate change. A more recent risk is that of deliberate release of pathogens - bioterrorism. To forestall and meet the threat of importing disease, the UK must work with its international partners, both in Europe and more widely, to strengthen the present surveillance and early warning systems managed by the OIE and Food and Agriculture Organisation*" (UK, 2002)

- The European Parliament Temporary Commission for FMD:
“79. Lasting success can be achieved in efforts to control FMD worldwide only if it proves possible, through close international cooperation, to curb the disease decisively in areas where it is still endemic. The Commission should therefore do more to assist the countries concerned in their efforts to control or eradicate FMD and seek to improve cooperation with regard to information (early warning systems).” (Brussels, 2002)

2. Existing international early warning systems for animal diseases

In order to improve transparency and animal health information quality, the OIE has set up an animal health information search and verification system for non-official information from various sources on the existence of outbreaks of diseases that have not yet been officially notified to the OIE.

OIE has an Early Warning System (see figure below) to warn the International Community of exceptional epidemiological events in its Member Countries. This alert system is aimed at the decision-makers, enabling them to take any necessary protective measures as quickly as possible.



The current OIE System relies on the capacity of Member Countries and on their capabilities to detect exceptional epidemiological events occurring in their countries.

FAO, through its special EMPRES priority programme established in 1994, developed an early warning and response system. The system benefits from the official information furnished by the OIE and combines other sources of information such as those generated by technical projects, consultancy missions or personal contacts and provides an analysis of the situation through bulletins, electronic messages and reports for better on ground disease containment and control.

WHO also developed an outbreak tracking and verification system for human diseases, which for zoonotic diseases, such as Rift Valley fever, brucellosis, tuberculosis, rabies and food borne diseases, should be shared with OIE and FAO.

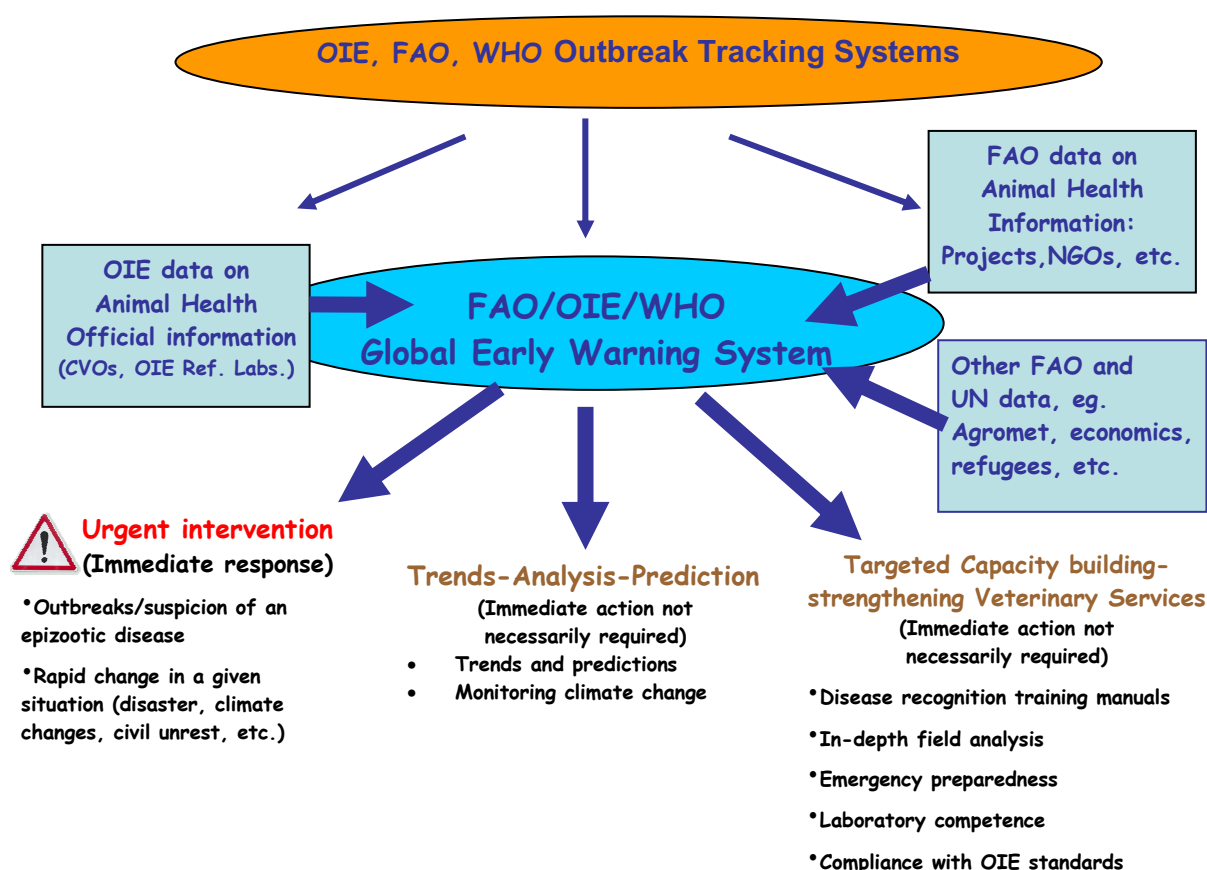
3. A joint initiative

OIE, FAO, WHO disease information tracking: results of disease tracking systems should be shared between the organisations. An action plan should be developed on a case by case basis in order to search for additional information for verification purposes (field verification, Chief Veterinary Officer confirmation to the OIE, laboratories, etc). Different levels of confidentiality in the exchange of information between the three organisations have to be defined and respected. The use of this information is to be done with all the needed precautions so not to destroy these relationships.

FAO/OIE/WHO GLEWS for major animal diseases:

Develop a tool for the international community and stakeholders alike to assist in predicting and preventing livestock animal disease threats through epidemiological analysis and the integration of additional factors that might have an impact on the occurrence and spread of such diseases (e.g. like economic factors, civil unrest, climatic changes, etc.).

The chart below summarises the basic concept for the proposed FAO-OIE-WHO Global Early Warning System for major animal diseases.



Form a management group through a joint structure, with a representative from each partner of the GLEWS to work towards complementarity and avoid duplication.

This would require substantial improvement in the resources available at the international and national levels.

The Activities and expected Outputs for the GLEWS can be summarised thus:

- Development of the web-based FAO/OIE/WHO GLEWS, as per the above chart ;
- Utilisation of designated FAO-OIE Collaborating Centres/Laboratories for specific analysis and modelling of trends;
- Disseminate information that complements the OIE Information System;
- Early Warning messages would concentrate on predicting livestock animal disease threats, through epidemiological analysis and the integration of additional factors that could have an impact on the occurrence and spread of such diseases (such as economic factors, civil unrest, climatic changes, etc.).
- Designing control strategies;
- capacity building;
- Develop coordinated responses to animal health emergencies. If in consultation between the three partners there is clear value for onsite assessment of the situation, an urgent joint field mission could be considered. This joint mission would engage the country authorities, especially those of the Ministry of Health and Agriculture, for obtaining a better appreciation of the situation and offer assistance in the formulation of urgent intervention strategies. The joint mission/experts would be responsible to brief supervisors and suggest a course of action.

4. Common objectives and definitions

The Global Early Warning and Response System, for major animal diseases is a tool for the international community and stakeholders alike to assist in predicting and preventing livestock animal diseases threats, including zoonoses, through epidemiological analysis and the integration of additional factors that might have an impact on the occurrence and spread of such diseases (e.g. economic factors, civil unrest, climatic changes, etc.). An essential output is the response and intervention, which includes contingency planning and joint field assessment missions, whenever needed.

4.1 Global objectives

- Allow member countries to better prepare themselves to prevent incursion of animal diseases/infection and enable their rapid containment
- Improve field animal health information quality in near real time
- Improve the detection of exceptional epidemiological events at the country level
- Improve national surveillance and monitoring systems through capacity building (including laboratories)
- Improve transparency among countries
- Improve the early warning capacity of the three sister Organisations for the benefit of the international community

- Improve co-ordinated response capabilities and mechanisms

4.2 Definitions and common specific objectives

4.2.1 Sanitary information

Information on the animal health and disease status of a country's food animal production, population (livestock, poultry, aquatic animals, and bees), wildlife, or that of companion animals.

4.2.2 Data collection (official – non official)

Official data collection for the OIE:

The OIE Early Warning System (emergency and follow-up reports) is based on ad-hoc and weekly reports to the OIE of any exceptional epidemiological event occurring in an OIE Member Country.

The OIE monitoring system is based on monthly and annual information submitted by Member Countries using the OIE Monthly Reports and the Annual Questionnaires.

For the OIE, official data is the data originating from the Delegates of its Members Countries and Reference Laboratories. For non OIE Member Countries, FAO/AGA and WHO public domain information is considered official for these countries.

Official data collection for FAO/AGAH:

Information from the OIE plus country or regional project reports, field mission reports, verified information from partner NGOs, surveillance data received from cooperating institutions, government Ministries of Agriculture and Health, transmissions from FAO-representations or other UN parties.

Official information for OIE, FAO/AGA and WHO:

For OIE: Information submitted by Delegates of Member Countries and from OIE Reference Laboratories. For non OIE Member Countries FAO/AGA/ WHO public domain reports.

For FAO: Same as in official data above.

For WHO: Information reported to WHO under the International Health Regulations which is currently limited to Yellow Fever, Plague and Cholera but will soon be expanded to include any disease of potential international significance.

Non official data/information for OIE, FAO/AGAH and WHO:

For OIE: All data/information of sources not listed above (papers, newspapers, internet, ProMed, etc.) is considered as non official. This data information, with the set-up of the active search and verification is used to improve OIE's data provided by OIE Member countries

For FAO/AGAH:

All the *data/information* taken on printed reports, internet sources, publications or network services (via the resources we have at our disposal) before verification.

For WHO: This includes information obtained through daily tracking of all sources including media, ProMed, and GPHIN regarding human health events and may include concurrent animal diseases resulting from the same pathogen.

Common objectives that could be achieved to improve data collection through the GLEWS:

- Improve transparency
- Compliance with reporting obligation to the OIE
- For non OIE member countries, use FAO/AGA public domain information to cover animal health information for these countries (project reports, surveillance etc.)

4.2.3 Search (Disease Tracking)

Use of different tools, relations and networks that the three organisations have in order to actively identify animal health information including zoonosis.

The most important action is to share the information on animal health/zoonosis in humans between the three organisations. OIE, through its information verification system, would verify it with the Delegate of the Member Country. This will improve the quality of the official information.

FAO/AGA, through project and activities in its member countries, would also verify the reliability of the information and work toward improving transparency by encouraging countries to report officially the information if verified.

For WHO, disease tracking is conducted primarily by the Global Alert and Response Team, however, relevant animal health information may also come to the attention of others working in the area of zoonotic diseases and veterinary public health. Information is verified through the WHO Regional offices and country representatives.

Different levels of confidentiality in the exchange of information between the three organisations have to be defined and respected. The use of this information is to be done with all the needed precautions so not to jeopardize these relationships. A standard operating procedure on information sharing is referred to in section 4 and outlined in Annex 1.

Search for information must be conducted in as many languages as possible.

4.2.4 Verification

Verification refers to the actions undertaken by the different organisations (OIE, FAO, WHO) in order to validate the accuracy of the data they find or receive.

For the OIE: Verification is the confirmation (validation) or denial of the information by the OIE Delegate. For non OIE member countries, the confirmation provided by FAO/AGAH, on these countries (FAO/AGAH public domain information). OIE Reference laboratories results are also used to verify the information.

For FAO/AGAH: Verification/validation

Seek factual knowledge or proof from FAO Representatives, Regional Specialised Organisations, in country contacts, ongoing projects, expert missions, laboratories and collaborating centres.

For WHO: Verification involves the validation of information by the competent authority in the country where the event is said to be occurring. This is done through the WHO Regional Office or WHO country representative who will consult with the national Ministry of Health.

Common objectives that could be achieved through information search and verification:

- Improve transparency and data quality.
- Compliance with reporting obligation to the OIE
- Early warning tool for focussed rapid intervention and containment when necessary

4.2.5 Dissemination

Definition:

Dissemination is the one way transmission of information to the public. In this context, it is not the exchange of information or data (non official, official data) between the three sister organisation. Sharing of information between the latter groups is described in Annex 1.

For the OIE:

OIE is responsible for the dissemination of the official information about animal diseases in the three OIE official languages.

The dissemination of emergency messages and follow-up reports (as per the OIE Early Warning System) is done using different tools: faxes, electronic distribution lists and the OIE website. Also, Animal Health Information, from the OIE monthly and annual monitoring system is disseminated using the OIE website and in hardcopy (World Animal Health publication).

For FAO/AGA:

The dissemination of bulletin, reports, descriptive and analytical early warning messages. The tools used to disseminate information are: FAO/AGA web site and electronic distribution lists. The EMPRES bulletin is also distributed in hardcopy.

For WHO:

Information is distributed through a restricted e-mail list, the WHO web site and information bulletins, as appropriate. The Weekly Epidemiology Record is available in hard copy and electronically.

For the GLEWS:

The Global Early Warning System will describe the possible implications of disease spread in the context of regional/continental circumstances.

Dissemination will be done through a joint web application and electronic distribution list.

5. Specific tasks

5.1 Specific tasks of the OIE

The OIE will continue to work toward promoting transparency of the world-wide animal health status as per its mission through its Animal Health Information System.

For the OIE, the GLEWS is meant to complement the OIE Early warning System, through the inclusion of additional factors that might have implication on the occurrence of animal diseases or infection.

The OIE, as a key partner of the GLEWS, will take part to a joint structure yet to be defined and implemented in the spirit of complementarity.

5.2 Specific tasks of FAO/AGA

The FAO will continue to promote national and regional disease surveillance and monitoring systems, the development of contingency plans, good emergency management practices, and technology transfer.

For FAO/AGA, the task is to bring the integration of other data and information (climatic factors, price differential across borders, displacement of people and their livestock) to the GLEWS that might have an implication on the occurrence of animal diseases or infection for better control and prevention.

5.3 Specific tasks of WHO

WHO will continue to track the evolving infectious disease situation, sound the alarm when needed, share expertise, and mount the kind of response needed to protect human populations from the consequences of epidemics, whatever and wherever might be their origin.

For WHO, the GLEWS will provide a venue for improved communication and collaboration with OIE and FAO. The task is to ensure efforts to track zoonotic diseases are maintained and information shared.

6. Description of common actions

OIE/FAO/WHO Disease information tracking:

- Results of disease and outbreak tracking systems should be shared between the organisations.
- A standard operating procedure (SOP) for communication of unofficial or sensitive information between the 3 sister organisations should be developed.
- An SOP for search and verification mechanisms to be offered by the sister organisations using their channels and contacts within their respective mandates should be developed.
- A web - based application for the Global Early Warning System should be developed.
- A priority list of diseases of common interest has been defined (see annex 2)
- An SOP for joint field assessment missions and co-ordinated responses should be developed.
- Funds for the project should be sought jointly.

7. Procedures to manage

- ***Relationship with member countries***

No change to the current relationships existing between the three organisations and their Member Countries.

- ***Relationship at regional level***

To be defined as per results of task forces B & C.

- ***Relationship with other international organisation***

Not applicable.

- ***Common actions between FAO/AGA, the OIE and the WHO at the central level***

Put in place a management group through a joint structure, with a representative from each partner of the GLEWS to work towards complementarity and avoid duplication.

To develop a co-ordinated emergency response system for animal health .

Additional resources to develop this programme will be pursued jointly.

8. Standard Operating Procedure for disease alert information sharing between FAO-OIE-WHO in the context of the GLEWS System

- Each organization must identify a primary and a back-up focal point for communications. The contact information for these people must be shared and updated regularly.
- Information sharing will pertain to the joint disease list in annex 2, but will not be restricted to the list. As new diseases emerge, the focal points should use their professional judgement

in deciding what additional diseases may be of interest to the sister agencies. Annex 2 should be updated accordingly if it is agreed that a new disease is of common interest for surveillance.

- Communications could be verbal or by e-mail. The communications should ideally be tracked in a joint data base with the originator of the information responsible for entering the information.
- When communicating an alert or seeking validation of an alert, the focal point should clearly indicate the level of confidentiality of the information. If deemed confidential, the information can be shared with others within each organization on a need to know basis, but not with outside parties.
- Messages should include: disease being reported; country or location; source of information; time limited follow-up, if needed.
- If one of the sister organizations feels information that has been deemed confidential must be shared with outside parties, explicit permission must be obtained from the originator of the information.

9. List of Priority Animal Diseases list of Common Interest

- Foot and Mouth Disease*
- Rinderpest – stomatitis/enteritis
- Peste des Petits Ruminants
- Contagious Bovine Pleuropneumonia*
- Rift Valley Fever*
- Sheep pox*/Goat pox*
- Highly Pathogenic Avian Influenza
- African Swine Fever
- Classical Swine Fever
- Brucellosis (*B. melitensis*)
- Rabies
- Anthrax
- Q fever
- Bovine Spongiform Encephalopathy
- Tularemia
- Japanese Equine Encephalomyelitis
- Venezuelan Equine Encephalomyelitis
- West Nile Virus
- Old world Screwworm
- New world screwworm
- Nipah virus
- Crimean Congo Hemorrhagic Fever
- Ebola Virus
- Marburg Hemorrhagic Fever
- Foodborne diseases

*diseases for which trend analyses and predictions will be emphasized