E

February 2011

منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных | Organización de las Naciones Unidas para la Agricultura y la Alimentación

PROGRAMME COMMITTEE

Hundred and Sixth Session

Rome, 21 - 25 March 2011

SUSTAINABLE ANIMAL HEALTH AND CONTAINED ANIMAL-RELATED HUMAN HEALTH RISKS - IN SUPPORT OF THE EMERGING ONE-HEALTH AGENDA

Applying Lessons Learned from Highly Pathogenic Avian Influenza in the Prevention and Containment of Major Animal Diseases and Related Human Health Risks

Executive Summary

Following the Programme Committee guidance[1], a Strategic Action Plan was prepared to extend FAO's six-year response to the H5N1 Highly Pathogenic Avian Influenza (HPAI) to other animal and animal-related human health threats, which is outlined in a prioritized and sequenced medium-term (2011-2015) plan of work. The Action Plan emphasizes FAO's comparative advantage in taking a broad, multidisciplinary approach and building on investments and lessons learned by the HPAI programme in cooperation with national governments, subregional, regional and global organizations, and with donor agencies.

The strategic vision guiding the Action Plan is *a world in which risks to animal and animal-related human health due to a wide range of high-impact emerging and re-emerging zoonotic and non-zoonotic diseases, and their associated impacts on food security, livelihoods, trade and economic development are minimized through prevention, early detection, rapid response, containment and elimination.* The main goal of the strategy is *to establish a robust global animal health system that effectively manages major animal health risks, paying particular attention to the animal-human-ecosystem interface, and placing disease dynamics into the broader context of agriculture and socio-economic development and environmental sustainability.*

This goal will be achieved through an approach underpinned by seven key strategic elements, including: (i) building robust animal health management systems at national and subnational levels; (ii) addressing the concerns of poor farming communities by emphasizing attention to actual rather than potential disease problems; (iii) adopting an 'upstream' approach to disease prevention and control by understanding and managing the drivers of disease emergence, persistence and spread;

[1] CL 140/8 para. 19

(iv) building disease risk management capacity on cross-sectoral and multidisciplinary approaches using the best available analysis; (v) developing the capacity of national and regional institutions to coordinate cross-country and cross-regional disease control efforts; (vi) identifying opportunities for, and strengthening partnerships with a range of stakeholders; and (vii) strengthening the international capacity for emergency response.

The Action Plan proposes a programme in five Technical Work Areas: (1) Understanding the cross-sectoral nature of health hazards; (2) Fostering collaboration between animal, human and environmental health sectors; (3) Promoting animal health strategies that are socially acceptable and economically viable; (4) Strengthening capacity of health systems for policy and strategy formulation; and (5) Developing core technical capacities of animal health systems to deal with diseases at national, regional and global levels.

The Action Plan is upheld by three Functional Work Areas: (A) Ensuring adequate human resources; (B) Communicating the Action Plan appropriately; and (C) Establishing robust mechanisms for monitoring and evaluation. The Action Plan proposes to assist FAO member countries, in particular **least developed countries**, to build their capacities in early warning, early detection and rapid response to disease outbreaks.

The actions recommended are **risk-based** and tailored to the local context engaging the people involved through participatory processes. The plan promotes a **proactive** approach to disease risk management. All actions of the Plan aim at **sustainability and ownership by countries and regions** and range from immediate to long-term actions with a developmental perspective. The Action Plan builds on **HPAI-programme investments and adds value to existing structures and mechanisms** such as FAO's Food Chain Crisis Management Framework, including the Emergency Centre for Transboundary Animal Diseases (ECTAD) and its regional operational platforms in support of FAO's decentralized offices. Identifying opportunities for reinforcing and sustaining ECTAD regional units as part of the joint FAO/OIE Regional Animal Health Centres (RAHC) is one of the five priorities identified by the Action Plan.

The Action Plan is coherent with FAO's Strategic Framework which also encompasses the Impact Focus Area (IFA) - Emergency Prevention System (EMPRES). The funding requirements for five years are projected at USD 193.8 million in addition to existing funds under the Regular Programme and voluntary contributions in support of the HPAI programme (2006-2008) still under implementation. The Action Plan will be fully integrated for reporting and review in FAO's Medium Term Plan and Programme of Work and Budget cycles.

Suggested action by the Programme Committee

The Programme Committee is invited to take note of the proposed Action Plan (2011 to 2015) and to provide guidance on follow-up. In particular, the Committee may wish to:

i) Agree that the Action Plan is in line with the guidance provided on its preparation in the 104th Session of the Committee, reflecting the lessons learned during FAO's HPAI programme.

ii) Stress the importance of the broad, multidisciplinary and multisectoral collaborative approach adopted by the Action Plan in attending the health risks at the animal-human-ecosystem interfaces as agreed in the FAO/OIE/WHO tripartite agenda.

iii) Endorse the proposed Action Plan for immediate implementation and engage in periodic monitoring of performance towards effective animal disease risk management at international, regional and country level.

iv) Encourage allocation of new and additional voluntary resources for FAO to provide technical and the operational capacities in order to effectively implement the Action Plan, in particular through the Impact Focus Area EMPRES (Transboundary threats to production, health and environment).

Queries on the substantive content of this document may be addressed to:

Mr Samuel Jutzi, Director, Animal Production and Health Division

Tel. +39 (06) 570-53371

I. Introduction

1. Considering that:

a) Animal diseases have major impacts on public health (zoonoses), national and regional economies (high-impact diseases), households (endemic diseases) and, in some cases, global societal stability and security such as pandemics and major public health hazards.

b) High- and low-income countries have differing priorities. In low-income countries, endemic diseases strongly impinge upon progress towards the Millennium Development Goals (MDGs), and their control is an integral component of their developmental requirements[2]. Context-specific approaches are therefore needed for effective disease prevention and control.

c) Emerging and re-emerging animal diseases have increased over the past decades with over 75 percent of emerging diseases affecting humans having their origin in animals (livestock and wildlife)[3]. Therefore, managing and coping with the unpredictability of infectious disease events is imperative.

d) The increased threats to human, animal and environmental health through existing and emerging pathogens is triggered by multiple, often inter-related factors driven by global development trends (population growth, urbanization, increasing demand for animal products, intensifying farming systems, land use change, increased human mobility, trade liberalization, etc.).

e) Current approaches to animal disease prevention and control are based on disruption of pathogen transmission. While these have proven to be effective in some cases (e.g. in the global eradication of rinderpest), they have been less successful in others (e.g. the persistence of H5N1 highly pathogenic avian influenza despite significant elimination efforts). There is increasing recognition that, in isolation, conventional approaches may be insufficient and that the root causes of disease emergence and maintenance need to be addressed for more efficient and sustainable prevention and control of infectious diseases.

f) Epidemic and pandemic events such as Human Immunodeficiency Virus (HIV), severe acute respiratory syndrome (SARS), HPAI, and pandemic H1N1 are difficult to predict. They arose through complex interactions of factors at the animal-human-ecosystem interface. Therefore, there is a need to broaden the current predominantly reactive approaches to health protection to proactive measures of disease risk mitigation.

g) Current disease control approaches are driven by the public health (medical) or veterinary sector, each working in isolation. This ‘silo behaviour’ excludes important fields such as forestry, wildlife, environment, economics, sociology, anthropology, ecology etc., and the lack of integrated practices impairs necessary synergistic action. This shortcoming needs to be redressed not only, but particularly in the case of zoonotic diseases.

h) The prevention of animal diseases is, in most cases, far more cost-effective than their control - the economic impact of a moderate influenza pandemic could reach USD 3 trillion, preventive action addressing root causes is therefore highly justified.

i) Most of the high-impact diseases affect humans and are transboundary in nature; their prevention and control is therefore central to preserving public health, and protecting this Common and Global Public Good is at the core of the mandate of the Food and Agriculture Organization of the United Nations (FAO) and its partners, including the World Organization for Animal Health (OIE) and the World Health Organization (WHO).

2. The international community is converging towards a holistic approach to addressing the threats and reducing risks of emerging and other high-impact diseases. This approach is termed *"One Health"* in this document and denotes a collaborative, cross-sectoral, multidisciplinary mode of

[2] In endemic settings, animal disease burdens can account for 25-33% of productivity reduction.

[3] King L.J. 2004. “Emerging zoonoses and pathogens of public health significance.” *Rev. sci. tech. Off. int. Epiz.*, 23 (2), 429-433

addressing threats of infectious diseases at the animal-human-ecosystem interface (animal to be understood as a combination of livestock and wildlife)[4].

3. FAO, OIE and WHO recently agreed on a tripartite concept note entitled "*The FAO/OIE/WHO Collaboration - Sharing responsibilities and coordinating global activities to address health risks at the animal-human-ecosystems interfaces*"[5] which was submitted at the International Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) meeting in Hanoi, Viet Nam (April 2010). This agreement is the conceptual basis for the preparation of corporate strategies, which map out each Organization's responsibilities, in compliance with their respective mandates.

4. The Action Plan submitted in this document:

a) Builds on the two real-time Evaluations of the FAO H5N1 HPAI programme implemented since 2004 and is inspired by the major actions in the Management Response to these recommendations.
b) Responds to the request made by the Programme Committee at its 104th Session (25-29 October 2010) for the preparation of a medium-term follow-up plan of work to FAO's HPAI programme.
c) Builds on the tripartite concept note and represents FAO's contribution to this joint agenda, while involving the wide range of expertise and resources available within FAO.
d) Builds on the *One Health* approach referred to above and represents FAO's contribution to a One Health Global Action Plan, as outlined in the Winnipeg (2009)[6] and Stone Mountain (2010)[7] meetings and upholds the Manhattan Principles (2004)[8].
e) Supports fully FAO's corporate Strategic Framework, in particular, Strategic Objective B - *Increased sustainable livestock production*, Strategic Objective I - *Improved preparedness for, and effective response to, food and agriculture threats and emergencies*, and the IFA-EMPRES.

II. Strategic framework for the Action Plan

Vision and Goal

5. The Action Plan supports FAO's Animal Health Strategy vision which calls for a world where risks to animal and public health due to a wide spectrum of high-impact emerging and re-emerging, zoonotic and non-zoonotic diseases, and their associated impacts on food security, livelihoods, trade and economic development are minimized through prevention, early detection, rapid response, containment and ultimately their elimination. This vision, shared with OIE and WHO, is in line with the 2007 Independent External Evaluation report recommendation for FAO to deal with "animal health, addressing implications for the poor, the national economies of developing countries, and global risks to both the livestock sector and human health".

6. The main goal of this strategy is to establish a robust, global animal health system that effectively manages major health risks that arise from and affect animals, paying particular attention to

[4] This approach was presented in a multi-agency (FAO-OIE-WHO-United Nations System on Influenza Coordination [UNSIC]-United Nations Children's Fund [UNICEF] - World Bank) document '*Contributing to One World, One Health: A strategic Framework for the control of emerging infectious diseases at the animal-human-ecosystems interface*' at the IMCAPI, Sharm El Sheikh, October 2008.
[5] www.fao.org/docrep/012/ak736e/ak736e00.pdf
[6] An international meeting held in March, 2009 in Winnipeg, Canada on "One World, One Health: from ideas to action".
[7] An international meeting held in May 2010 in Atlanta on: One Health: A policy perspective - Taking stock and shaping an implementation road map.
[8] An international meeting held in September, 2004 in Manhattan, New York for a symposium on "One World, One Health: Building Interdisciplinary Bridges to Health in a Globalized World". The product—called the "Manhattan Principles" lists 12 recommendations for establishing a more holistic approach to preventing epidemic/epizootic disease and for maintaining ecosystem integrity for the benefit of humans, their domesticated animals, and the foundational biodiversity that supports all health domains.

the animal-human-ecosystem interface using the emerging *One Health* approach, and placing disease dynamics into the broader context of sustainable agriculture, socio-economic development, environment protection and sustainability, whilst recognizing that adequate nutrition is essential for health.

Guiding Principles of the Action Plan

7. The Action Plan will be guided by the following key principles:

a) The actions recommended are **risk-based** and tailored to the local context engaging people involved through participatory processes.

b) Adoption of a **proactive** approach to disease risk management that combines a number of interlocking elements: (i) foresight, (ii) prevention, (iii) impact mitigation, (iv) early detection, and (v) swift and effective reaction.

c) All actions need to be **socially acceptable, technically feasible** and **economically viable** within the context of their application, and to pursue a developmental perspective.

d) **Building on, and adding value to existing structures and mechanisms**[9], both within and outside FAO.

e) All actions of the Plan build on horizontal and vertical **coordination and collaboration**, and aim at **sustainability and ownership by countries and regions**.

8. Regional work programmes, adapted to (sub)regional settings and priorities and in close association with Regional Economic Communities (REC) and Regional Specialized Organizations (RSO) are constituent elements of this Action Plan, as guided by the agreed Strategy.

Strategic Approach and Elements

9. The above goal will be achieved through an approach underpinned by the following strategic action elements which build on lessons learned in efforts to fight HPAI over the past six years:

i) Building more robust animal health management systems at national and subnational levels with a particular focus on low-income countries:

10. Generally, low income countries, in which small-scale, extensive farming systems with minimal disease control prevail, are least able to deal with high-impact and emerging diseases. The capacity of animal health systems in these countries varies considerably and ranges from lacking the basic elements of animal health management to having an adequate capacity and being free from major animal health problems, but remaining vulnerable to shocks due to emerging and re-emerging zoonotic and non-zoonotic diseases. As global disease control is largely determined by the 'slowest mover', enhancement of animal health management systems is urgently needed in these countries.

ii) Addressing the concerns of poor farming communities emphasizing attention to actual rather than potential disease problems, and to the drivers of a broader range of locally important diseases:

11. Identification of 'priority livestock diseases', as well as of the capacities and mechanisms to appropriately manage these are context-specific and, to be successful, require stakeholder engagement leading to 'local' solutions supported by a majority of livestock keepers. As livestock keepers, particularly the poor, are mainly concerned with current versus potential disease problems, the Strategy places very high importance on support to and buy-in by these most vulnerable groups. As low-income countries reach the basics in animal health management, there are immediate opportunities to define progressive control pathways, drawn-up as regional road maps, and progressing towards disease elimination in the livestock sector addressing concerns of poor rural farming communities.

[9] These structures encompass the Food Chain Crisis Management Framework (FCC) including the Emergency Centre for Transboundary Animal Diseases Operations (ECTAD), , the Crisis Management Centre for Animal Health (CMC-AH), the Food Chain Crisis Emergency Management Unit (FCCEMU), and joint initiatives such as the FAO/OIE Regional Animal Health Centres, the FAO/OIE/WHO Global Early Warning System (GLEWS), the OIE/FAO network of expertise on animal influenza (OFFLU) and the Global Framework for the Progressive Control of Transboundary animal diseases (GF-TADs).

iii) Adopting an 'upstream' approach to disease prevention and control through understanding and management of the drivers for diseases emergence, incursion, persistence and spread:

12. The emergence, maintenance and spread of diseases are determined by complex interactions among dynamic factors at the animal-human-ecosystem interface. These comprise land use change, transformation of livestock production systems, growing trade in livestock and livestock products, increasing human-livestock-wildlife contacts, climate change, etc. Consequently, response to disease emergence moves beyond strengthening of veterinary-public health systems and encompasses efforts to maintain and restore healthy and sustainable practices in animal agriculture, ecosystem management and global food supply. An understanding of the interactions between human, livestock and wildlife pathogens is the essential basis for sound and cost-effective risk management that does not unduly constrain the development potential of the livestock sector and associated improvements of people's livelihoods.

iv) Building disease risk management on cross-sectoral and multidisciplinary approaches using the best available analysis and science:

13. Given the complexities of disease ecology and the fact that human behaviour is a major driver in enhancing, as well as mitigating disease risks, it is essential to draw on the full repertoire of scientific advances in medical and veterinary sciences, but also in non-medical disciplines such as wildlife, social sciences, fisheries, forestry, and natural resource management, as well as in rapidly progressing information technologies to operationalize socially acceptable and cost-effective disease risk management systems.

v) Developing the capacity of national and regional institutions to coordinate cross-country and cross-regional disease control efforts:

14. Increased economic interconnectedness through trade and human mobility results in rapid regional and international spread of highly infectious diseases of animals and humans. No country can adequately address such a problem in isolation and thus control of highly infectious diseases requires international collaboration. This necessitates regional coordination with support from the international community for harmonization of policies and legislation and enhancement of response capacity.

vi) Forging partnerships with a range of stakeholders including the private sector, farming communities, regional organizations, international organizations and the donor community:

15. The control of high-impact diseases is a multidisciplinary exercise, addressing the complex interactions between technical, institutional, policy, political and socio-economic issues, all of which necessitate engagement of a large number of partners at local, country, regional and international levels. Private Public Partnerships (PPP) will require strong coalitions among a wide array of stakeholders. The key stakeholders in these partnerships include various ministries, non-governmental organizations (NGOs), extension workers, input suppliers at the village level to larger feed producers and the pharmaceutical industry, traders and, foremost, livestock keepers themselves. All of these actors have their own priorities, and the Strategy and The Action Plan will seek to identify specific incentives for different stakeholders and how they can contribute to the strengthening of the overall animal health systems without compromising the interests of the poorer sectors of the community.

vii) Strengthening the international capacity for emergency response support:

16. The experience of the last six years has shown that while significant funds were focused on the single crisis due to HPAI, a number of new and known diseases emerged in many developing countries requiring emergency responses. FAO in partnership with OIE and WHO provided emergency response and technical advice to affected countries. FAO will continue to engage with donors to ensure that adequate funds are available for an international capacity in support of national emergency response to high-impact diseases at national, regional and global levels.

Focus and Scope of the Strategy

17. The above strategic approach will address a range of diseases that limit or threaten the development of the livestock sector and threaten human health. Priority goes to the highly infectious

diseases that spread widely across regions and continents and cause significant economic losses. Other diseases need also to be addressed in accordance with their impact on animal productivity, public health and/or socio-economic development.

III. Areas of work

18. The Action Plan describes in a sequenced and prioritized manner the key actions to deliver major progress toward the strategy vision and overall goal. The expected results of the Action Plan, as well as the deliverables in short and medium terms are outlined in *Annex 1*.

19. The Action Plan proposes a programme in five Technical Areas of Work (TAWs) supported by three Functional Areas of Work (FAWs).

20. The five TAWs are the core of the Action Plan, representing multi-pronged, long-term and integrated sets of actions. While several of these actions are already part of FAO's current animal health and HPAI programmes, they may need a slight change in scope and direction to more effectively tackle the drivers of disease risk and reinforce inter-sectoral and multidisciplinary approaches:

- TAW 1. *Understanding the cross-sectoral nature of health hazards*

21. The drivers of disease emergence and pandemic risks need to be fully clarified for the responsible actors to be able to prevent health threats and ensure sustainable and safe animal agriculture and associated feed and food supplies. This implies understanding the dynamic evolution of pathogens of animal origin circulating in livestock and wildlife, the modalities of their transmission and the underlying agro-ecological and socio-economic factors favouring their emergence, spread, and persistence.

- TAW 2. *Fostering collaboration between animal, human and environmental health sectors*

22. The *One Health* agenda goes beyond the veterinary and medical disciplines; it involves efforts for sustainable agriculture and rural development, environmental protection and equitable socio-economic development. The agenda calls for cross-sectoral and multidisciplinary collaboration involving many actors. Partnerships between medical, veterinary and environmental agencies are to be pursued, engaging at the global level FAO, OIE, WHO but also the United Nations Environment Programme (UNEP) and specialised regional organizations and regional economic communities, as well as civil society.

- TAW 3. *Promoting strategies to preserve and enhance animal health that are socially acceptable and economically viable*

23. The generation of accurate and timely information and advice for governments and donors is at the core of this area of work. The collection of data on the incidence and socio-economic impact of the animal diseases supported by studies to estimate their dual disease burden on people and on livestock, differentiated by target systems and/or communities and groups at risk will allow the identification of both vulnerabilities and opportunities for priority actions. In addition, exploratory work to understand the objectives and motivations of male and female farmers, traders, consumers and service providers is a prerequisite to provide policy advice that meets the needs of key stakeholders and increases the chance that these will comply with essential disease prevention and control measures. Such information is required for the design of cost-effective prevention and control tools, as well as of support systems, including compensation and insurance schemes and the establishment of emergency funds.

- TAW 4. *Strengthening the capacity of animal health systems for policy and strategy formulation to address existing diseases and respond to unpredictable health risks*

24. This implies the reinforcement of sector institutions directly or indirectly dealing with the prevention and control of major health hazards. Of key importance is the capacity building of veterinary services in animal health policy and strategy formulation, which need to be well resourced and based on clear governance principles. Investments need to be guided by systematic veterinary

systems analysis (e.g. OIE PVS[10] and Gap Analysis, FAO Country Programming Framework[11]) and corresponding decisions on addressing identified gaps.

- TAW 5. *Developing core technical capacities to deal with animal diseases at national, regional and global levels*

25. The Plan proposes to use both conventional approaches for the disruption of disease transmission - capitalizing on lessons learned in HPAI, rinderpest and foot-and-mouth disease (FMD) control - and new risk-based approaches, based on the analysis of the drivers of the emerging threats to human, animal and environmental health (TAW 1). This includes strengthening of national, regional and global disease control programmes and effective emergency response systems. An important element of this capacity development is the building of skills and experience in communication (including risk communication, advocacy and social mobilization).

26. Three FAWs allow the actions to be properly delivered through the availability of quality human resources, a communication strategy, a sustained approach and the set-up of a strong monitoring and evaluation (M&E) mechanism.

- FAW A. *Ensuring the adequate human resource to implement the Action Plan*

27. Given that most known and emerging disease dynamics occur at the eco-regional level and are mostly driven by economic factors, and given the options for applying economies of scale and scope, the Action Plan suggests a key role for the ECTAD units at regional level as the operational arms for field programme support and capacity development in close coordination with the (sub)regional offices under their regional strategies. At headquarters level, the availability of adequate expertise and the strengthening of the FCC and ECTAD are key to the delivery of the Action Plan.

- FAW B. *Communicating the Action Plan appropriately*

28. A communication strategy will be important to ensure effective information sharing and activity planning linkages between operational areas of FAO (cross divisional at headquarters and regional and country levels), global and regional institutional partners, private sector, governments, and local communities.

- FAW C. *Establishing a robust monitoring and evaluation (M&E) system*:

29. Regular monitoring and evaluation is essential for effective animal health management. Periodic review of local, national, regional and international efforts ensures that progress remains targeted. Such an effort provides the opportunity for revision of strategies, adjustment of priorities, as the operational context evolves, and better data becomes available. A strong monitoring and evaluation system is also an important tool for accountability to Member States and donors. Performance monitoring is required to address delivery against objectives by all programme partners. FAO will use its established performance assessment framework (results-based management) to guide progress towards achieving the expected results of the Action Plan.

IV. Implementing the Action Plan

30. Design, evolution and implementation of the Action Plan is a corporate responsibility as it contributes to one of the priority elements agreed in the Organization's Strategic Framework. Lead responsibility is with FAO's Chief Veterinary Officer as the head of the Animal Health Service (AGAH) in AGA in close liaison with the FCCEMU in TCE and within the FCC framework.

31. The Action Plan is an integral element of FAO's Livestock Sector Strategy (SO-B), envisaging normative and operational work on the Organizational Result B-2 in close association with SO-I. Cross-organizational support is sought from all related strategic objectives of the Strategic Framework both at headquarters and in the regions.

[10] Performance of Veterinary Services (OIE)
[11] Country Programme Frameworks: former National Medium Term Priority Frameworks (FAO)

32. As with all Strategic Objectives, SO-B relies on the inputs of relevant units across the Organization at headquarters and in the regions. Cross-organizational support to the Action Plan is sought from all related SOs of the Strategic Framework.

33. Normative work is conducted under the leadership of the Chief Veterinary Officer in his capacity as the convenor of the Organizational Result B2 who relies for this function on special Working Groups set-up under each Area of Work. These Working Groups will be inter-departmental where required.

34. The operational work (field Programme) is carried out by the FAO regional/subregional/ country offices together with ECTAD regional and country units, where present. The two structures work in synergy based on an agreed regional programme in support of the Action Plan.

35. The Action Plan will be implemented over five years (2011-2015), fully integrated for reporting and review in FAO's Medium Term Plan and Programme of Work and Budget (PWB) cycles.

V. Funding requirements

36. The Action Plan, while led and supported by human and financial resources of the Regular Programme, requires the additional and new funding which is estimated at USD 193.8 million over the next five-years (2011-2015). This estimated budget is in addition to the current voluntary funding for the ongoing HPAI programme. An indicative annual budget (USD million) by area of work is shown in the table below:

	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Percentage
Technical Areas of Work							
(1) Understanding the cross-sectoral nature of health hazards	5	5	3.5	3.5	3	20	10.3
(2) Fostering collaboration between animal, human and environmental health sectors	2	3	3	2	2	12	6.2
(3) Promoting strategies to preserve and enhance animal health that are socially acceptable and economically viable	5	5	5	5	5	25	12.9
(4) Strengthening the capacity of animal health systems for policy and strategy formulation	6	6	5	5	5	27	13.9
(5) Developing core technical capacities to deal with animal diseases at national, regional and global levels	20	20	15	15	15	85	43.9
Subtotal	*38*	*39*	*31.5*	*30.5*	*30*	*169*	*87.2*
Functional Areas of Work							
(A) Ensuring the adequate human force to implement the Action Plan	5	5	5	1.5	1.5	18	9.3
(B) Communicating the Action Plan appropriately	1	1	1	1	1	5	2.6
(C) Setting up a robust M&E system	0.3	0.3	0.3	0.4	0.5	1.8	0.9
Subtotal	*6.3*	*6.3*	*6.3*	*2.9*	*3*	*24.8*	*12.8*
Total	**44.3**	**45.3**	**37.8**	**33.4**	**33**	**193.8**	**100**

Annex 1. Expected results and deliverables of the Action Plan

Technical areas of work	Expected results/ deliverables	
	Short-term (1-2 years)	**Medium-term (3-5 years)**
(1) Understanding the cross-sectoral nature of health hazards (converting knowledge into action)	Epidemiological studies and risk analysis of the maintenance and spread of priority diseases Risk maps, predictive models and ranking system of the respective prevailing animal production systems and interfaces at regional and national levels Priority list of target high risk disease pathogens at the animal-human-ecosystem interface	Risk factors of emergence, spread and persistence of diseases and transmission between domestic, wild animals and humans are better understood and used to define "hotspots" and identify critical points for disease control Risk based approaches for prevention and control of priority diseases developed and made implemented in high risk countries and regions Evidence-based and risk-based decision making is used to define "hotspots" and identify critical points for disease control Information at national and regional levels is augmented using systematic scientifically defensible methods.
(2) Fostering collaboration between animal, human and environmental health sectors	Models of One Health packages available for implementation at community levels Report of joint assessment (veterinary and public health laboratories Joint epidemiological data analysis	Support provided to countries and regions is based multisectoral normative standards and field programs to achieve One Health goals
(3) Promoting animal health strategies that are socially and economically acceptable	Framework and criteria for assessment of disease impact Socio-economic tools for cost-effectiveness assessment of the prevention and control plans Recommendations and criteria for sustainable contingency and compensatory funding arrangements for animal disease control	The veterinary services have the capacity to use socio-economic data to leverage resources and for targeted interventions Priority disease control programmes are livelihood-sensitive and protect the most vulnerable members of society Appropriate indicators for disease impact assessment available Capacity for socio-economics enhanced in selected countries to inform and influence animal health policy decisions appropriate for poor farmers

Technical areas of work	Expected results/ deliverables	
	Short-term (1-2 years)	**Medium-term (3-5 years)**
(4) Strengthening capacity of health systems for policy and strategy formulation	Framework and criteria for sector analysis and data collection Framework and criteria for livestock policy developed Recommendations on policy and institutional requirements to support veterinary legislation and animal health strategies Recommendations and criteria for developing communication strategies	Countries and regions have institutional capacities to develop and implement national policies and strategies in animal health National governments enact and apply appropriate legislation and recommendations to support disease preparedness, prevention and control Countries adopting effective and long-term Public-Private Partnerships in animal health Investment plans for animal health systems developed in selected countries
(5) Developing core technical capacities to deal with animal diseases at national, regional and global levels	Assessment reports for preparedness and response plans to emerging animal health treats in selected countries National and international standard operating procedures for emergency response to specific diseases A critical mass of individuals in partner countries trained for conducing animal disease surveillance and risk analysis Replicable models on surveillance and alternative early warning systems Guidelines and procedures for surveillance and diagnosis of high-risk disease pathogens Recommended best biosecurity and hygiene practices for small and medium size commercial producers	Countries and regions are better prepared for prevention and control of specific diseases of international, regional or national priority. National governments have technically sound plans for preparedness, prevention and control of HPAI and specific diseases of international, regional or national priority (particularly within the identified high-risk clusters) Greater integration of field and laboratory data from human, animal and environmental health sectors A worldwide network of laboratories provides technical information on pathogens and facilitates technology transfer National and regional epidemiological and laboratory networks functioning and adopting standardized guidelines for diagnosis of high-risk pathogens