

Document of  
The World Bank

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Report No: 34623-KG

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF SDR 2.8 MILLION  
(US\$ 4.0 MILLION EQUIVALENT)

TO THE

KYRGYZ REPUBLIC

FOR AN

AVIAN INFLUENZA CONTROL AND HUMAN PANDEMIC PREPAREDNESS AND  
RESPONSE PROJECT

IN SUPPORT OF THE FIRST PHASE

OF THE US\$500 MILLION

GLOBAL PROGRAM FOR AVIAN INFLUENZA CONTROL AND HUMAN PANDEMIC  
PREPAREDNESS AND RESPONSE (GPAI)

FOR ELIGIBLE COUNTRIES UNDER THE HORIZONTAL APL

January 18, 2006

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective January 12, 2006)

Currency Unit = Kyrgyz Som (KGS)  
41.30 Som = US\$1  
US\$1.445 = SDR 1

## FISCAL YEAR

January 1 – December 31

## ABBREVIATIONS AND ACRONYMS

AI	Avian Influenza	MOH	Ministry of Health
AO	Aiyl Okmotu (local self-government body)	NAPA	National advance purchase agreements
APL	Adaptable Program Loan	NCB	National Competitive Bidding
APIU	Agricultural Projects Implementation Unit	NGO	Non Governmental Organization
ASSP	Agricultural Support Services Project	Oblast	Administrative region
CC	Component Coordinator	OFFLU	OIE/FAO Avian Flu Network
CDC	US Centers for Disease Control and Prevention	OIE	World Organization for Animal Health
CQ	Consultants' Qualifications	PFD	Program Framework Document
EU	European Union	POM	Project Operational Manual
ERA	Emergency Recovery Assistance	PP	Procurement Plan
ERL	Emergency Recovery Loan	PRA	Participatory Rapid Appraisal
FAO	Food and Agricultural Organization	QCBS	Quality and Cost Based Selection
FMD	Foot and Mouth Disease	O&M	Operation & Maintenance
FMR	Financial Monitoring Report	Raion	Administrative district
GDP	Gross Domestic Product	REAAC	Republican Emergency Antiepidemic and Antiepzootic Commission
GIS	Geographically Referenced Information System	RMIS	Republican Medical Information Services
GPAI	Global Program for Avian Influenza and Human Pandemic Preparedness and Response	SARS	Severe Acute Respiratory Syndrome
HIS	Health Information System	SES	Sanitary-Epidemiological Service
HPAI	Highly Pathogenic Avian Influenza	SIDA	Swedish International Development Agency
H5N1	Influenza A virus	SVD	State Veterinary Department
ICB	International Competitive Bidding	TA	Technical Assistance
ILI	Influenza-like illness	TACIS	Technical Assistance for the Commonwealth of Independent States
LVPRI	Livestock, Veterinary and Pasture Research Institute	TCP	Technical Cooperation Program
MAP	Multi-country APL	TF	Trust Fund
MAWRPI	Ministry of Agriculture, Water Resources, and Processing Industry	TOT	Training of Trainers
M&E	Monitoring & Evaluation	UNDP	United Nations Development Program
MEF	Ministry of Economy and Finance	VS	Veterinary Services
MES	Ministry of Emergency Situations	WP	Work Program
		WB	World Bank
		WHO	World Health Organization
		WTO	World Trade Organization

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Task Team Leaders:	Götz Schreiber & Betty Hanan

**KYRGYZ REPUBLIC**  
**Avian Influenza and Human Pandemic Preparedness and Response Project**

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**KYRGYZ REPUBLIC**

**AVIAN INFLUENZA CONTROL & HUMAN PANDEMIC PREPAREDNESS &  
RESPONSE PROJECT**

**PROJECT APPRAISAL DOCUMENT**

**EUROPE AND CENTRAL ASIA**

**ECSSD**

Date: January 17, 2006 Country Director: Dennis N. de Tray Sector Manager/Director: Jürgen Vögele	Team Leaders: Götz Schreiber & Betty Hanan Sectors: General agriculture, fishing and forestry sector (50%); Health (50%) Themes: Natural disaster management (P);Other communicable diseases (P);Rural policies and institutions (S) Environmental screening category: Partial Assessment
Project ID: P099453	
Lending Instrument: Emergency Recovery Loan	

<b>Project Financing Data</b>			
[ ] Loan [ ] Credit [X] Grant [ ] Guarantee [ ] Other:			
For Loans/Credits/Others: Total Bank financing (US\$m.): 4.00 Proposed terms:			
<b>Financing Plan (US\$m)</b>			
<b>Source</b>	<b>Local</b>	<b>Foreign</b>	<b>Total</b>
BORROWER/RECIPIENT	0.30	0.00	0.30
IDA Grant	1.20	2.80	4.00
JAPAN: MINISTRY OF FINANCE - PHRD GRANTS	0.27	0.73	1.00
CO-FINANCING FROM AGRICULTURE SERVICES SUPPORT PROJECT	0.27	0.73	1.00
OTHER CO-FINANCIER (tbc)	0.04	0.06	0.10
Total:	2.08	4.32	6.40
<b>Borrower:</b> Kyrgyz Republic			
<b>Responsible Agency:</b> Ministry of Agriculture, Water Resources and Processing Industry (MAWRPI) 96 A, Kievskaya Street Bishkek, Kyrgyz Republic			
Ministry of Health (MOH) 148, Moskovskaya Street Bishkek, Kyrgyz Republic			

Estimated disbursements (Bank FY/US\$m)									
FY	2006	2007	2008	2009	2010				
Annual	0.30	0.90	1.20	1.10	0.50				
Cumulative	0.30	1.20	2.40	3.50	4.00				
Project implementation period: Start March 31, 2006 End: December 31, 2009									
Expected effectiveness date: May 31, 2006									
Expected closing date: June 30, 2010									

Does the project depart from the CAS in content or other significant respects? <i>Ref. PAD para. 16, pg. 5</i>	[ ] Yes [X] No
Does the project require any exceptions from Bank policies? <i>Ref. PAD para. 98, pg. 27</i>	[ ] Yes [X] No
Have these been approved by Bank management?	[ ] Yes [ ] No
Is approval for any policy exception sought from the Board?	[ ] Yes [X] No
Does the project include any critical risks rated “substantial” or “high”? <i>Ref. PAD pp. 19-20</i>	[X] Yes [ ] No
Does the project meet the Regional criteria for readiness for implementation? <i>Ref. PAD D.7</i>	[X] Yes [ ] No

<p>Project development objective <i>Ref. PAD para. 20, pg. 6</i></p> <p>The overall objective of the Project is to minimize the threat in the Kyrgyz Republic posed to humans and to the poultry industry by Highly Pathogenic Avian Influenza (HPAI) infection and to prepare for, control, and respond to an influenza pandemic. To achieve this, three areas will be supported: (i) prevention, (ii) preparedness and planning, and (iii) response and containment. Achieving these goals will contribute to diminishing the burden of disease and loss of productivity, limiting the regional spread of HPAI, and enhancing economic and social prospects at the national, regional, and global levels.</p>
<p>Project description [<i>one-sentence summary of each component</i>] <i>Ref. PAD Annex 6</i></p> <p><b>Component I Animal Health.</b> This component will support national prevention and control strategies to cover the country’s needs in the short, medium or long term. It will support activities for: (i) enhancing HPAI prevention and preparedness capability, (ii) strengthening of veterinary services, disease surveillance, diagnostic capacity and applied research, (iii) strengthening HPAI control programs and outbreak containment plans, and improving bio-security in poultry production and trade. This component will also provide resources for a Compensation Fund to compensate poultry owners for the loss of assets caused by mandatory destruction (culling) of their poultry.</p> <p><b>Component II Human Health.</b> This component targets the reduction of the impact of a pandemic influenza virus through: (i) year-round surveillance; (ii) effective and accurate methods of diagnosis; (iii) social distance interventions; (iv) vaccines (once they become available); (v) anti-viral drugs; and (vi) strengthened medical services. It will support activities for: (i) enhancing public health program planning and coordination, (ii) strengthening of the national public health surveillance system, and (iii) strengthening health system response capacity.</p> <p><b>Component III Public Awareness and Information.</b> This component is designed to promote awareness and improved coordination of the execution of the national action plan for avian influenza control. Information and communication activities to increase the attention and commitment of government, the private sector and civil society organizations and raise awareness, knowledge and understanding among the general population about the risk and potential impact of a pandemic. It will also support the Republican Emergency Antiepidemic and Antiepzootic Commission in its roles of triggering emergency responses by the Ministry of Agriculture, Water Resources and Processing Industry and the Ministry of</p>

Health, monitoring the actions taken by them, coordinating public statements to the media, and executing project evaluation activities.

**Component IV Implementation Support and Monitoring and Evaluation.** This component will support costs associated with project management and coordination and monitoring and evaluation.

**Component V Emergency Imports.** In case of a declared influenza pandemic, this component will finance emergency imports identified as necessary under a well-defined preparedness and response program to be prepared as part of project implementation. These imports are likely to include: (i) pharmaceuticals and vaccines, (ii) medical and veterinary supplies and equipment, (iii) communication equipment, supplies and information campaigns, (iv) food and water containers, and (v) protective gear and clothing.

Which safeguard policies are triggered, if any? *Ref. PAD pg. 27*

Only the Environmental Assessment safeguard is triggered by the Project. Since the Project is being processed under emergency procedures and is assessed as a B-category project, Environmental Management Plans will be prepared during Project implementation under both the animal health and human health components and implemented with Project support.

Significant, non-standard conditions, **if any**, for:

*Ref. PAD para. 77, pg. 21*

Board presentation:

The key conditions needed to minimize the risks to the Project have been addressed by the Kyrgyz Republic meeting the eligibility requirements for participating in the Global Program for Avian Influenza.

Loan/credit effectiveness:

No non-standard conditions

Covenants applicable to project implementation:

**Conditions of Effectiveness** of the Grant will be: (i) the Project Operational Manual, satisfactory to the Association, has been prepared and adopted by the Recipient and (ii) the work program for the first year of the Project, satisfactory to IDA, has been adopted by the recipient.

**Conditions of Disbursement** are: (i) for expenditures under Category (5) -- Compensation Fund -- , the Compensation Fund Manual, satisfactory to the Association, has been adopted by the Recipient; (ii) for expenditures under Category (2) – civil works --, the Environmental Management Plan, satisfactory to the Association, has been adopted by the Recipient; and (iii) expenditures under Category (6) – Eligible Imported Goods and Commodities -- , a national emergency on avian influenza has been declared by the Recipient and a well-defined preparedness and response program has been prepared.



## A. STRATEGIC CONTEXT AND RATIONALE

### 1. Global, regional and national issues

#### (a) Introduction

1. The continuing outbreaks of highly pathogenic avian influenza (HPAI), which begun in late 2003 in several Southeast Asian countries and have occurred more recently in Europe, have been disastrous to the poultry industry in the two regions and have raised serious global public health concerns. Rapid increases in the number of known cases of avian influenza (AI) transmission have raised concerns over the potential emergence of a human pandemic, which could have devastating effects on human health and livelihoods. As discussed in the Program Framework Document for the Global Program for Avian Influenza Control and Human Pandemic Preparedness and Response (GPAI), it is important to emphasize that there are many uncertainties about whether and when a pandemic might occur as well as about its potential impact. While humans are highly sensitive to the H5N1 strain (high mortality rates), humans are not very susceptible to the disease. To date, over 140 million domestic poultry have either died or have been destroyed. As shown in the Table below, 148 people have contracted the infection and at least 79 of them have died. The geographical spread of HPAI, the human dimension, and the potential enormous social and economic impact are unprecedented. Economic losses to the Asian poultry sector alone are already estimated at around \$10 billion. Despite control measures the disease continues to spread, causing further economic losses and threatening the livelihoods of hundreds of millions of poor livestock farmers, jeopardizing smallholder entrepreneurship and commercial poultry production, and seriously impeding regional and international trade, and market opportunities. The rural poor, who rely for a larger share of their income on poultry, have been particularly hard hit with income losses.

**Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO\***  
(as of January 14, 2006)

Date of onset	Cambodia		China		Indonesia		Thailand		Turkey		Viet Nam		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
2003	0	0	0	0	0	0	0	0	0	0	3	3	3	3
2004	0	0	0	0	0	0	17	12	0	0	29	20	46	32
2005	4	4	8	5	16	11	5	2	0	0	61	19	94	41
2006	0	0	0	0	1	1	0	0	4	2	0	0	5	3
Total	4	4	8	5	17	12	22	14	4	2	93	42	148	79

\* Total number of cases includes number of deaths; WHO reports only laboratory-confirmed cases.

2. While it is impossible to anticipate when the next influenza pandemic may occur or how severe its consequences may be, the World Health Organization (WHO) and other international organizations have warned that an influenza (flu) pandemic is both “inevitable” and “imminent.” Such warnings have been fueled largely by the persistence of the highly virulent strain of avian flu in Asia that experts fear could trigger another influenza pandemic. In the 20<sup>th</sup> century, pandemics occurred in 1918, 1957 and 1968. The pandemic of 1918 is estimated to have killed almost 50 million people in eighteen months, with peak mortality rates occurring in people aged 20-45 years. The pandemics of 1957 and 1968 were milder, but many countries nevertheless experienced major strains on health care resources. Even with modern advances in medicine, if a major pandemic were to appear again, unparalleled levels of illness and death could result. Air travel could hasten the spread of a new virus, and decrease the time available for preparing interventions. Countries’ health care systems could be rapidly overwhelmed, economies strained, and social order disrupted. Experts estimate that the global death toll could range from between 2 million

to over 50 million. Studies by the US Centers for Disease Control and Prevention (CDC) reduce that range to between 2 to 7.4 million world-wide. Narrowing the range, however, cannot be done with any confidence until the pandemic is under way. The level of preparedness in each country will also influence the final death toll.

***(b) Global and regional implications***

3. Episodes of emerging zoonoses are continuing to increase around the world and the confluence of people, animals and animal products today is unprecedented. Emerging zoonoses of public health concern are a sobering reminder of the tremendous socio-economic and trade damage that such diseases can cause to both developed and developing countries.

4. East Asia is the region most affected by HPAI to date, with Cambodia, China, Indonesia, Thailand, and Vietnam all reporting human infections. The number of countries affected by HPAI is increasing and now also includes Japan, Lao PDR, Mongolia, and South Korea.

5. Since the current strain of avian influenza emerged in 2003, most of the reported outbreaks have been in East and Southeast Asia. However, since 2005, the avian flu virus has been spreading across several countries in the ***Europe and Central Asia*** Region as a result of transmission by migrating wild birds infecting local poultry. HPAI has officially affected six countries in ECA to date (Croatia, Kazakhstan, Romania, Russia, Turkey, and Ukraine). Preliminary assessments of preparedness and potential needs have now been conducted in most countries of the region. While thousands of poultry have been culled to prevent infection in humans in Eastern Turkey, the H5N1 virus has claimed two lives in the past two weeks, and about 20 people are currently hospitalized with bird flu-like symptoms. Five of them are confirmed to have the H5N1 virus. The Russian outbreak of HPAI has affected seven administrative regions, beginning in the Ural Mountains and moving West to within 200 km of Moscow. On November 22, Russia reported new outbreaks of bird flu when 250 wild swans died from an H5-type flu in the Volga River delta. Five villages in Ukraine in the Crimea Peninsula were placed under quarantine and all poultry in the affected regions slaughtered. Health experts investigating the death of 1,600 domestic birds in the area confirmed the presence of a strain of the H5N1 virus. With HPAI reported in Croatia, other countries in the Balkan peninsula and the Caucasus are at risk due to their proximity to two main flyways, the East Africa-West Asia Flyway, which crosses Turkey, and the Central Asia Flyway. Both flyways cross areas in northeastern Europe, where avian influenza in wild and domestic fowl has been diagnosed.

6. In August 2005, outbreaks in poultry of HPAI H5N1 were reported in four regions of northern and central Kazakhstan. The epidemic has severely affected poultry production in the country, with the death or culling to date of about 15,000 birds. Central Asian countries have become exposed to HPAI by migratory birds, spreading the disease from infected neighboring countries. Central Asian countries represent a vast area in which introduction of AI is likely to occur, and where the capacity for early detection of HPAI is low. In close coordination with WHO, FAO and bilateral agencies the Bank is actively engaged with affected countries in the region, several of which have already made formal requests for Bank support.

***(c) The Kyrgyz national dimension***

7. As noted above, in 2005 the virus spread from Southeast Asia towards the Northwest. In July 2005, outbreaks were registered in domestic poultry and fowl in seven regions of Russia. In August 2005, outbreaks in poultry of HPAI were reported in four regions of neighboring Kazakhstan. These outbreaks were linked geographically with the outbreaks in Russia. Outbreaks in China have occurred in regions close to Kyrgyzstan. Seasonal migration of birds constitutes an effective transmission mechanism of new strain variations to different geographical regions. The Kyrgyz Republic is located at the cross-roads of migration routes of migratory birds, including water fowl, from Southeast Asia to the Urals, the Caspian

basin and Western Siberia. This intensifies, in the Kyrgyz Republic, the importance of epidemiologic monitoring of the situation with the flu virus in wild birds.

8. While the Kyrgyz Republic has not experienced any recorded outbreak of avian influenza, a number of poultry died in October in Sokuluk District (raion) near the capital Bishkek. Lack of diagnostic capacity did not allow confirmation of the presence or absence of the H5N1 virus and the incident was ascribed to an outbreak of Newcastle disease. Nevertheless, poultry prices in the Kyrgyz Republic have risen measurably since September 2005 as a direct consequence of avian flu related developments. Poultry meat is now the most expensive meat in the Kyrgyz Republic, a radical change from only a few months ago when it was the most affordable source of animal protein, especially for the poorer urban households. A serious contraction in the regional poultry trade explains most of this change and was caused by import restrictions by Russia, Kazakhstan and Uzbekistan, resulting in reduced re-exports to the Kyrgyz Republic. Similarly, the development of the nascent domestic poultry industry has been slowed by inability to import chicks and hatching eggs from China and the increased costs of access to Kazakh urban markets.

*(d) Organizational structure of the health care and veterinary systems in the Kyrgyz Republic*

9. **Health Care.** The Kyrgyz health care system remains state-owned and administered. The *Ministry of Health (MOH)* is responsible for health policy formulation and for the formulation, financing and control of action plans for health sector development and specific programs. MOH is also responsible for regulatory action for controlling the quality, safety and effectiveness of health services, pharmaceuticals and medical equipment. The Mandatory Health Insurance Fund is a separate legal entity within MOH and is responsible for collecting and disbursing funds for health services covered by the State Guaranteed Package and the Outpatient Drug Benefit Program. Structural subdivisions of MOH are, besides the Mandatory Health Insurance Fund, the Department of Drug Supply and Medical Equipment, the Department of State Sanitary Epidemiological Surveillance, the Department of Health Sector Reform, and Republican-level national centers and educational institutions. In the context of the government's decentralization policy, some of MOH's authority has been delegated to these sub-divisions. MOH also has direct managerial and financial responsibility for specialized republican health facilities and tertiary level health facilities in Bishkek, as well as for procurement and distribution of medical supplies and equipment for priority programs. Delivery of health care at primary and secondary health care facilities is delegated to the regional (oblast) and district (raion) health facilities; they operate with a large degree of managerial autonomy under the supervision of oblast-level Coordination Commissions on Health Care.

10. **Disease Surveillance, Sanitary Inspection and Control.** Infectious disease surveillance and sanitary inspection and control are carried out by the State Sanitary-Epidemiological Department headed by a Director General and organized into departments for State Epidemiological Surveillance, State Sanitary Inspection and Control, and for Laboratory Examinations. The Sanitary-Epidemiological Service (SES) comprises, in addition, the National AIDS Center, the Republican Center for Immunoprophylaxis, the Republican Center for Quarantine and Dangerous Infections, and the Research Institute for Preventive Medicine. Main current SES responsibilities are infectious disease control through surveillance, analysis and response to disease and sanitary inspection and control. Disease surveillance is carried out with regard to 30 infectious and five parasitic diseases and should result in a local-level response to outbreaks in consultation with local civil administrations. Sanitary inspection and control is carried out with regard to food and water safety, occupational safety, school health, and radiation, but also with regard to licensing of commercial facilities and products. These functions are carried out through seven oblast-level SES Centers and two City SES Centers in Bishkek and Osh and through 54 raion and inter-raion SES Centers, all supported by microbiology laboratories (equipped to different standards) that are used jointly for purposes of disease control and sanitary inspection and control.

11. The **Veterinary Services** are, in principle, still structured as in the Soviet time, although with the addition of a number of private veterinarians. The structure is hierarchic and top down. The basis of all operations for both state and private veterinarians is the annual plan, prepared by the State Veterinary Department (SVD) in Bishkek, part of the *Ministry of Agriculture, Water Resources and Processing Industry (MAWRPI)*. Reporting is done with the annual plan as the basis. Private veterinarians are required to report to the raion public veterinarians, who report to the oblast veterinarians, who travel at regular intervals to Bishkek to report to the SVD. The SVD is traditionally not equipped for communication and awareness raising of large numbers of people. In the past, it communicated only with veterinarians in the kolkhozes and field offices; to a large extent it still follows this approach. The recently approved veterinary law (April 2005) lacks a clear policy and strategy on public-private collaboration. As a result, the state veterinary system has yet to develop effective collaboration with the emerging private veterinary practitioners who have started to take over many of the tasks exclusively reserved for the state veterinary service (VS) in the past.

12. There are about 220 state and 800 private veterinarians as well as some 600 registered private veterinary practitioners; the latter figure is probably an underestimate as some might be practicing without registration. The private veterinarians are not sufficiently equipped in their new tasks to assist livestock keepers and the state VS in controlling animal diseases, due to lack of means such as transport and drugs, but also up-to-date knowledge, especially in the case of veterinary assistants practicing as independent veterinarians. The entire system can be said to be under-funded, and the underfunding becomes more severe further down the line. At the Aiyl Okmotu (Local Self-Government) level the veterinary services basically consist of one veterinarian or veterinary assistant, who is employed by the Aiyl Okmotu (AO) and underpaid. As a result, both private and state veterinarians often complement their incomes by farming or other supplemental activities.

13. There is a countrywide network of veterinary laboratories, with the Republican Central Veterinary Laboratory in Bishkek functioning as national reference lab and Chui Oblast laboratory. There are also six Oblast-level, 21 raion-level and 7 inter-raion laboratories. In line with OIE regulations, the central veterinary laboratory is functionally under the SVD. The *central laboratory* functions as reference lab and should play a major role in quality control of the other laboratories through the organization of ring testing, production and distribution of reference sera, etc. Currently, there are no means to execute these tasks. The central lab has the only ELISA<sup>1</sup> equipment in the veterinary services, but in the absence of the necessary test kits does not currently use it. Over the last 15 years the number of staff in the national laboratory has declined from 200 to 60. *The oblast and raion veterinary laboratories* used to have almost identical testing capacity with facilities for serology, bacteriology, parasitology, virology, disease diagnosis and monitoring. The capacity of raion laboratories has been severely reduced due to staff cuts, broken equipment, lack of materials and frequent electricity cuts. More and more samples are referred to the oblast level. Staffing at the Osh oblast laboratory has declined from 300 to 75 members, at Karakol from 180 to 22, and at Naryn from 120 to 66. There also are *small inspection laboratories* (usually one/two room operations) responsible for checking milk for brucellosis, density and fat content, and an organoleptical inspection of meat usually located in bazaars.

## 2. Rationale for Bank involvement

14. As described in the GPAI Program Framework Document (PFD), a key justification for the Bank's involvement is the Global Public Goods aspect of HPAI control. There is a national Public Goods perspective for countries to strengthen their veterinary services, disease surveillance, and human health system as proposed in this operation. HPAI control programs require a multi-disciplinary approach to

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<sup>1</sup> Enzyme Linked Immuno Sorbed Assay.

integrate technical, social, economic, political, policy, and regulatory issues in addressing a complex problem. Recognizing the key role that the technical agencies -- WHO, the Food and Agricultural Organization (FAO), and the World Organization for Animal Health (OIE) – play in HPAI control, the Bank’s main comparative advantage vis-à-vis its partner agencies is its ability to mobilize significant funds for countries at risk, based on the technical approaches espoused by these agencies, and to assist countries with integrating their national action plans into their overall sectoral regulatory and institutional framework. Working collaboratively with other agencies, the Bank is well placed to draw upon its knowledge base and international best practice on the kind of multi-disciplinary approaches needed in the proposed operation and to apply the lessons learned in various regions during emergency preparedness and multi-disciplinary operations. The Bank has a comparative advantage in providing integrator skills and multi-sectoral perspectives and in addressing the institutional dimensions of the response to such emergencies. It can also bring extensive experience and skills in analyzing and addressing social and economic impact. The Bank has been helpful in the Kyrgyz Republic to bring together the relevant ministries, government agencies and the donor community, and in helping ensure high level coordination.

15. The Bank has worked closely with WHO and CDC, and in consultation with OIE and FAO, to help the Kyrgyz government assess and strengthen its national HPAI response plan. A joint WHO/CDC/IDA mission collaborated with the Kyrgyz counterpart agencies to define a range of priority measures needed to strengthen the country’s response capability and to identify investments and activities that can be financed under the proposed project. The Bank also assisted the Kyrgyz Republic in obtaining additional resources for this undertaking, notably from the Government of Japan through a PHRD Grant for cofinancing the Project.

16. The proposed project contributes to two essential higher-level objectives identified in both the National Poverty Reduction Strategy (NPRS) and the Bank’s Country Assistance Strategy (CAS) approved by the Board in May 2003.<sup>2</sup> The NPRS emphasizes the importance of placing greater attention on public health and combating communicable diseases and on public awareness campaigns concerning key health issues, and one of the 16 specific poverty indicators for monitoring progress towards the NPRS goals is a reduction in the mortality from infectious diseases. It also emphasizes the need to improve productivity and growth in private agriculture. The CAS, likewise, notes the critical need for effective provision of health care services and for continued efforts to promote agricultural development as a key driver of growth and poverty alleviation. The Project will strongly support both these objectives – by improving the country’s capacity to deal with the threat of a serious communicable disease, and by putting in place institutional capability to prevent a massive loss of poultry due to avian influenza or at least to minimize its impact on the agricultural economy and the rural poor in particular.

## **B. PROJECT DESCRIPTION**

### **1. Lending Instrument**

17. The proposed project is to be supported by an Emergency Investment Grant from the International Development Association (IDA) of US\$4 million equivalent. The project will be co-financed: (i) by the Government of Japan through a PHRD Grant of US\$1 million, (ii) US\$1 million cofinancing from the ongoing IDA-funded Agricultural Support Services Project (ASSP), and (iii) US\$0.3 million from the Government.

18. The project comes under the GPAI discussed by the Board on January 12, 2006. The GPAI is to be provided using the horizontal Adaptable Program Loan (APL) instrument and within a global coordination framework. Under the global APL, individual countries would obtain separate loans and credits, and grants

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<sup>2</sup> Report No. 25708-KG, 22 April 2003.

(as they become available) to finance their own national projects up to the global aggregate limit of US\$500 million. Since the GPAI is designed to provide emergency finance to participating countries to contain an outbreak of avian flu through early detection and rapid response measures, the country-specific operations, such as this for the Kyrgyz Republic, would be processed under the Banks' emergency policy, OP/BP 8.50. The GPAI would treat specific emergency response projects in each country as "phases" of a horizontal APL (similar approaches include the Multi-Country HIV/AIDS Programs for the African and the Caribbean Regions, and the Energy Community of South East Europe APL). A joint Bank/WHO/CDC appraisal mission in December 2005 assessed the readiness of the Kyrgyz Republic to proceed with a program of support under the GPAI and concluded that the Kyrgyz Republic meets the eligibility criteria for "countries at risk" in GPAI category (iii) as specified under the GPAI (see text box below). The Kyrgyz Republic has demonstrated the necessary commitment and readiness to implement appropriate early detection and rapid response measures. A formal request for Bank assistance was received on 28 November 2005, a draft national plan on response to an avian influenza pandemic was prepared by the Government prior to the appraisal mission and was updated on the basis of discussions during the mission and comments from WHO, CDC and the Bank, and appropriate implementation and monitoring arrangements have been agreed upon with the Government during the mission.

#### **Country Eligibility Criteria under the GPAI**

In view of the wide variation of individual countries' conditions, GPAI projects will need to reflect the environment in which they are to be implemented. Accordingly, country requests for assistance are eligible for financing under the GPAI when they meet the following criteria:

- (i) ***Countries in endemic situation***, where new human infections are being detected, will need to have prepared and be implementing an HPAI Control Strategy;
- (ii) ***Newly infected countries***, with an active outbreak of avian influenza among poultry but no human infection, will need to have in place an appropriate program of rapid response, detection and containment measures, including implementation and monitoring arrangements that the international agencies and donor community, including the Bank, could support;
- (iii) ***Countries at risk***, with no outbreaks or at an early stage of an outbreak, will need to demonstrate governmental commitment to addressing the situation and have in place an appropriate plan for early detection and rapid response, including implementation and monitoring arrangements that the international agencies and donor community, including the Bank, could support;
- (iv) ***Countries with very low income levels and very low capacity*** will be considered against special criteria, and waivers would apply if a full-blown human pandemic were to materialize to ensure that assistance is available if and when needed, even if the country itself would hardly be able to generate or mobilize any effective HPAI response.

19. **Project Characteristics.** The financial assistance under the project will be provided as a Grant. The Grant is being processed as an emergency investment operation using procedures under OP 8.50 – Emergency Recovery Loan (ERL) procedures -- and it meets all applicable Bank policies, practices and standards as discussed below.

## **2. Project Development Objectives**

20. The overall development objective is to minimize the threat posed to humans and the poultry industry by HPAI infection and to prepare for, control, and respond to influenza pandemics. To achieve this, three areas will be supported by the project: (i) prevention, (ii) preparedness and planning and (iii) response and containment.

### 3. Project Components

21. In both the public health and animal health fields, short- and long-term actions need to be taken and an appropriate balance must be struck between the two. Immediate action is needed in a number of areas, but there is also a longer-term agenda, given systemic shortcomings with respect to core public health functions and veterinary services. Work on both the short- and long-term fronts, therefore, needs to proceed in parallel, and efforts should be made to ensure that short-term responses are consistent with and contribute to proposed longer-term interventions. Setting priorities in both cases is essential. Concentrating efforts on dual-use investments will generate benefits during normal times and in a pandemic. The project will finance activities under five components: (i) animal health, (ii) human health, (iii) public awareness and information, (iv) implementation support, monitoring and evaluation, and (v) emergency imports. Even though the activities are organized by sectoral components, the project strongly endorses an integrated national plan that ensures common objectives across sectors for dealing with this issue.

#### I. ANIMAL HEALTH COMPONENT

22. The project will support a national program to develop and implement HPAI prevention, containment, control, and eradication activities in the livestock sector, specific to the needs of the Kyrgyz Republic in the short and longer term. These activities reflect an assessment of the particular risks, conditions, constraints, needs and possibilities in the country, including a rapid assessment of the veterinary services, a functional review (by TACIS) of the key veterinary agencies and institutions, and a recent Bank study of the Kyrgyz livestock economy.

#### (A) Strengthening National HPIA Preparedness and Prevention Capability

23. **A1 - Strengthening the National Policy and Regulatory Environment.** The project will support activities aimed at improving the policy, legal and regulatory framework that governs the national capability to implement the recommended disease detection, control, prevention, containment and eradication measures in a uniform and effective way and in accordance with OIE standards and guidelines. The project includes support for a detailed review of current policies and the existing legal and regulatory environment and for the drafting, as may be warranted, of legal amendments, regulations and implementation guidelines and manuals.

24. **National Action Plan.** As part of the draft national action plan for avian flu, a good and comprehensive draft action plan<sup>3</sup> has been prepared for the veterinary sector. The project will provide support to further refine and finalize this draft plan and to develop the necessary detailed implementation guidelines and manuals for all relevant agencies and services. Specialized international expertise will be mobilized to assist in the effort as needed to work with the national HPAI working group and the agencies involved in HPAI prevention and control on the veterinary side. Support will also be provided for the participation of veterinary experts and project staff in regional and international information exchanges on avian influenza as well as for working visits to other countries implementing similar activities.

25. **Assessment of the National Veterinary Services.** The organizational and functional review of the main governmental veterinary services undertaken by TACIS experts and the rapid assessment carried out by the IDA team strongly suggest the need for an intensive assessment of the national veterinary services, followed by appropriate reforms as may be warranted. To meet international standards set by the OIE and the recommendations developed by FAO, and to ensure that the Kyrgyz poultry and livestock industry can be a recognized player in international trade, the veterinary services need to develop and document appropriate procedures and standards for the implementation and management of animal health measures

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<sup>3</sup> Contingency Plan for Avian Influenza, 10 December 2005, State Veterinary Department, MAWRPI, Bishkek.

and international veterinary certification activities. The OIE has developed instruments that allow national veterinary services to carry out a self-evaluation and establish their current level of performance, form a shared vision with service providers and clients in the private sector, establish priorities, and facilitate strategic planning. A key tool is the auditing kit entitled “Performance, Vision and Strategy for Veterinary Services,” and this will be used for this evaluation.

26. ***Establishment of a National Compensation Policy and Fund.*** Early detection and reporting, as well as rapid response, depend critically on the incentives for poultry owners to report very quickly any sick and dead poultry to their veterinarians. For this to happen, adequate compensation arrangements are absolutely essential. The new veterinary law, adopted earlier this year, provides for the establishment of a compensation fund, but no steps have been taken as yet to develop the required implementation arrangements – including financing, fiduciary aspects, eligibility criteria, payment arrangements, flow of funds, etc. The project will provide technical support to do so. Compensation payments could, depending on the scope of disease outbreaks, pose a significant fiscal burden on the state, and the project will provide financial resources to help establish the compensation facility (see also para. 38).

27. **A2 - Updating Essential Information on Migratory Birds.** Flight and rest patterns of certain species of migratory birds, as they concern the territory of the Kyrgyz Republic, are likely to have changed since the extensive studies carried out in the 1970s and 1980s, because of significant development of irrigation facilities, ponds, etc., in the southern oblasts. The project will finance an immediate effort to update this critical information, so as to identify “hot spots” and high-risk locations where migratory fowl may come into contact with domestic poultry.

## **(B) Strengthening Disease Surveillance, Diagnostic Capacity, and Applied Research**

28. **B1 - Strengthening Veterinary and Related Services.** Once the evaluation of the veterinary and related services has been completed, targeted support will be provided to strengthen these services so as to bring them in line with OIE standards. This will include: technical support for realigning institutional resources with priority objectives, mandates and tasks; institutional and organizational restructuring and training of staff; and upgrading of priority infrastructure (limited works, equipment, materials and supplies, and technical assistance). Staff training will be targeted at the personnel of the SVD as well as public and private veterinarians and veterinary practitioners operating in the rural areas. Its focus will be on awareness raising, monitoring, investigating, sampling and test procedures to be applied in case of an outbreak, as well as on analyzing epidemiological data and performing risk assessments.

29. **B2 - Strengthening Diagnostic Capacity.** Project support will be targeted primarily at strengthening the capacity of the Republican Central Veterinary Laboratory, the Veterinary Laboratory in Osh and, to a lesser extent, some of the oblast laboratories and raion facilities, in sample collection and submission, detection, reporting and follow-up of reported AI cases. Initially, this will involve surveillance activities. Essential equipment, consumables and reagents, staff training and technical assistance (TA) will be provided to establish, as rapidly as possible, an adequate institutional capacity for serological tests and screening surveys and for virological tests for confirmation of the disease and preparation for serotyping of AI sub-types. Twinning arrangements with appropriate institutions and laboratories will be explored to facilitate sustained capacity strengthening over the medium and longer term.

30. ***Strengthening Animal Disease Information Systems.*** Project assistance will be provided to improve the reporting of animal health information from the field and the flow of information among relevant agencies. The emphasis will be on developing an efficient disease information system, as part of the effort to enable the Kyrgyz Republic to participate in global disease information sharing, in full compliance with the obligations of membership in the OIE. Much emphasis will be placed on human resources development in the establishment and use of database programs (including GIS) and the analysis

of data to deliver the necessary support to decision makers charged with prevention and control of animal diseases. The system will be linked with rapid and standardized methods of routine analysis of surveillance data, which will demonstrate important changes in the H5N1 situation, and this information will be promptly supplied to field staff. The project will finance relevant epidemiological studies and surveillance programs to inform the improvement of disease control measures, which will be then adjusted and improved as new information becomes available. It will also support the upgrading of Kyrgyzstan's participation in the World Animal Health Information System (WAHIS) to strengthen the country's ability to participate in global disease information sharing. The applicability of graphical information system technology will be fully exploited.

31. **B3 - Community-Based Animal Disease Surveillance and Early Warning.** The project will finance the establishment, at the community level, of early warning systems to support a robust emergency reporting and feedback system for notifiable animal diseases as part of the development of participatory disease search techniques. A key objective of this sub-component will be to improve the commitment of all participants of the epidemiological surveillance networks. The sub-component will support training for animal health workers/extension agents on treatment of infected animals, reporting procedures and immediate local response measures. Farmers will receive hands-on training in detection of clinical signs. Funding will be provided for essential bio-security equipment such as sprayers and protective equipment.

32. **B4 - Strengthening Applied Veterinary Research Capacity.** The project will provide support for strengthening the laboratory and applied research capacity of the Livestock, Veterinary and Pasture Research Institute (LVPRI), by providing essential equipment, consumables and reagents, staff training and TA. Twinning arrangements with appropriate institutions elsewhere will be explored to facilitate sustained capacity strengthening over time. Some funding will be provided as well for studies linked with the national disease control plan.

### **(C) Strengthening HPAI Control and Outbreak Containment Capacity**

33. Project support will be made available for the implementation of HPAI outbreak containment actions, as set forth in the draft national action plan and to be further specified in the final plan and associated implementation guidelines and manuals. The project will finance and support activities related to the implementation of the national action plan. The plan specifies the responsibilities and functions of the National Disease Crisis Coordination Center in MAWRPI, headed by the Director General of the SVD. It also defines the composition and responsibilities of Local Disease Crisis Coordination Committees that will be formed and trained now and activated in any location where an outbreak is suspected and/or confirmed.

34. **C1 - Targeting Virus Eradication at the Source.** The overriding objective for the veterinary services is eradication of the disease at the source of infection. Accordingly, the project will provide support for: (i) culling of infected and at-risk poultry, (ii) compensation to farmers and commercial poultry producers (at a reasonable rate), (iii) disposal of carcasses and potentially infective materials in a bio-secure and environmentally acceptable manner, and (iv) control of movement of birds and products that may be infected, including controls at the interface of infected/non-infected areas and border controls.

35. **C2 - Human Safety.** The project will support the provision of training of people likely to be in direct contact with birds that may carry the live virus. These include veterinary and extension field staff involved in the identification of the disease, farm workers involved in culling and in disposing of manure, and laboratory workers involved in virus isolation and diagnosis. Adequate resources will be allocated for training and equipment (bio-safety hoods and appropriate personal protective gear and clothing). In addition, all veterinary staff and workers will be vaccinated against seasonal human influenza.

36. **C3 - Poultry Vaccinations.** Poultry vaccination on a large scale as a preventive measure is not recommended in Kyrgyzstan at the present time. In the face of an outbreak and in order to prevent spread, the project will fund the procurement of a limited quantity of AI vaccine to undertake ring vaccinations (which would be followed by culling).

#### **(D) Improving Bio-Security in Poultry Production**

37. Improving bio-security in poultry production is an important element in any strategy to guard against the damaging impact of HPIA. The project will support efforts to enhance bio-security at poultry farms and associated premises, through bio-containment and bio-exclusion and the provision of safe carcass disposal facilities (Bekkari holes).

#### **(E) Compensation Fund**

38. The project will compensate poultry owners for culled birds, in accordance with the operational guidelines governing the compensation fund. The legal, institutional and operational details will be developed and agreed upon during the first months of project implementation. They will be included in the Project Operational Manual (for details see Annex 6b).

## **II. HUMAN HEALTH COMPONENT**

39. This component will support a national program to implement HPIA prevention, preparedness and planning, response and containment activities in the human health sector specific to the needs of the Kyrgyz Republic in the short, medium and longer term. These activities reflect an assessment of the particular risks, conditions, constraints, needs and possibilities in the country, including a rapid assessment of the health services undertaken in the context of the recently approved Health and Social Protection Project and by the appraisal team for this project. Particular attention has been paid in the design of the component to ensuring consistency of the Government's health reform program and the overall public health reform agenda, thereby promoting an acceleration of implementation of the public health agenda.

40. To prevent an outbreak among humans, initial support under the project will concentrate on a few essential areas, including launching or expanding regular seasonal flu vaccinations, strengthening surveillance and laboratory networks, and stockpiling anti-virals. The component targets the reduction of the impact of a pandemic influenza virus through: (i) year-round surveillance; (ii) effective and accurate methods of diagnosis; (iii) social distance interventions; (iv) vaccines (once they become available); (v) anti-viral drugs; and (vi) strengthened medical services. It will support activities for: (i) enhancing public health program planning and coordination; (ii) strengthening of the national public health surveillance system; and (iii) strengthening the health system response capacity. These interventions are based on Kyrgyz Republic's epidemiological and programmatic needs and on well-assessed options for meeting them. They will be grouped in three broad sub-components.

#### **(A) Enhancing Public Health Program Planning and Coordination**

41. An initial draft plan for dealing with pandemic influenza, prepared by MOH with support of WHO and CDC, was reviewed by the joint IDA/WHO/CDC mission and updated to include detailed sections on the context and epidemiological underpinnings of an eventual influenza pandemic, the current legislative and regulatory basis for intervention, surveillance, case verification through serological testing and virological sub-typing, immunization, symptomatic case management with anti-viral drugs, and implementation arrangements for an inter-sectoral effort. The updated Action Plan also provides details on the coordination of an emergency response, the logistics involved, the protocols and algorithms to be followed for surveillance, diagnosis, immunization and anti-viral therapy during inter-pandemic, pandemic

alert and pandemic periods, and the means of communication and public information. It provides a list of regional and reference laboratories that would be in charge of the operations and outlines inter-sectoral cooperation arrangements among relevant agencies.

42. Funding will be made available for three packages of technical assistance (TA). First, support will be provided for: (i) establishing inter-sectoral command and control system structures and developing their institutional capacity, including in public, private and civil society organizations, (ii) identifying crucial gaps in infrastructure and other resources, as well as in laws and/or statutes which, if not corrected, may interfere with an effective response, (iii) defining operational priorities, such as mass immunizations during an infectious disease emergency, and (iv) ensuring coordination among affected units. Second, assistance will be given for the review and/or preparation of: (i) statutory provisions regarding quarantine laws and how they apply in a public health emergency, (ii) laws and procedures for closing businesses or schools and suspending public meetings during a declared state of emergency; (iii) medical volunteer licensure, liability, and compensation for retired and non-medical volunteers; and (iv) workers' compensation laws as they apply to health care and other essential workers who have taken anti-virals for prophylaxis. Third, support will be provided for health preparedness and response plan preparation and to finance a simulation exercise at the national level, but involving regional and local levels as well as supranational levels. These plans will include activities to protect health care workers and other personnel and ensure they can and are willing to continue to do their job in a pandemic.

#### **(B) Strengthening of the Public Health Surveillance System**

43. To assess risks to public health and guide protective measures, information is needed on the extent of influenza infection in animals and humans, on circulating viruses, and on other priority infectious diseases. Four main national surveillance areas need to be strengthened: (i) virological surveillance to report the number of clinical specimens tested for influenza and other priority infectious diseases and the number of positive results by virus type and sub-type; (ii) surveillance for influenza-like illnesses (ILIs) and other priority infectious diseases to report the number of patient visits for ILIs and other priority infectious diseases by age group and the total number of patient visits each week; (iii) surveillance for influenza and pneumonia, as well as for other priority infectious diseases, to report the total number of deaths related to influenza and other priority infectious diseases; and (iv) regional and local epidemiologists to assess and report influenza and other priority infectious disease activity levels in their respective localities. Surveillance systems should be enhanced prior to the start of a pandemic, to ensure that the high demand for timely information that can be anticipated in a pandemic can be met. To this end, the Project will support the following activities.

44. **B1 - Improvement of health information and telecommunication systems.** This sub-component will finance rapid adaptation and strengthening of existing health information systems and processes to improve the timeliness and effectiveness of reporting of ILIs and other priority infectious diseases of direct relevance to a potential epidemic of avian influenza. It will support: development of standard case definitions, active clinical and virological surveillance criteria and reporting protocols/systems for ILIs, fevers of unknown origin and other relevant infectious diseases; establishment of a network of sentinel units; and development of epidemiological intelligence capacity to assess and verify events and rumors, dispatch teams to investigate, and assist regional and local levels in infectious control measures (see paragraph 46). These efforts will build an immediate defense against AI and will complement, and in some cases accelerate, Health Information System (HIS) interventions planned under the Manas Taalimi Health Reform Program financed by other donors.

45. **B2 - Improvement of Laboratory Networks.** This sub-component will strengthen the currently weak national and regional public health laboratory capacity and augment the supply of materials for specimen collection, transportation and testing so as to be able to cope with the increased demand in case of

a pandemic. Specific interventions will include: a re-design and renovation of the national reference laboratory required for work with virus isolation and micro-neutralization diagnostic procedures for avian influenza, including the RT-PCR method; strengthening 3 or 4 oblast-level laboratories in regions at risk, including border areas; strengthening biomedical waste management systems in these laboratories; and supporting activities to link more effectively public health laboratories with epidemiologists and with veterinary laboratories and veterinary service providers.

46. **B3 - Training.** This sub-component will finance the training of staff at different levels of the health system in detection, testing, clinical management, epidemiology, reporting and laboratory bio-safety of relevance to influenza-like illnesses and other relevant infectious diseases. It will also finance short courses on applied epidemiology to strengthen surveillance in connection with the activities under sub-component B1. To improve coordination between the public health agencies and the veterinary services, joint training activities will be supported involving epidemiologists, clinicians, laboratory staff, and veterinarians. Using the Bank's Global Distance Learning Network (GDLN) and networks such as those of CDC and WHO, initiatives will be developed to support training activities at national, regional and local levels as well as inter-country partnerships.

### **(C) Strengthening Health System Response Capacity**

47. **C1 - Social Distancing Measures.** The most effective measure to prevent contracting avian influenza is to limit, as much as possible, contact with the public. This sub-component will finance the development of a detailed implementation plan for so-called "social distancing" measures to be activated in case of an epidemic and to be backed up with a well-designed communication action plan and materials (see Component III). Social distancing measures are typically activated on advice from health professionals/institutions, although these will not be the enforcing institutions. The implementation plan will, therefore, explicitly define institutional responsibilities for activation and enforcement of social distancing measures and for inter-agency and inter-ministerial coordination. Training will also be provided to "enforcement agents" such as the police and military in safe, efficient implementation of social distancing measures in ways that do not induce panic. Additional preventive actions that would complement social distancing (such as personal hygiene promotion through various communication channels, including handwashing and proper cooking, and distribution and use of masks) will also be supported.

48. **C2 - Vaccination.** This sub-component will help launch and expand regular seasonal influenza vaccination as an essential step to prevent an AI outbreak among humans. It will build on the existing immunization system in the country (with additional support from the informational activities described in Component III below), rather than establish a parallel system. It will also finance the development of a detailed logistical (procurement and distribution) plan for mass vaccination, should an AI vaccine become available. In case of an avian influenza pandemic, once a vaccine becomes available, funding will also be made available for implementing a vaccination program that rapidly administers vaccine to priority groups and monitors vaccine effectiveness and safety. The targeted priority groups will be selected on the basis of several factors: (i) risk of occupational infectious/transmission (e.g., health care workers and veterinary staff); (ii) the responsibilities of certain occupations in providing essential public health safety services; (iii) impact of the circulating pandemic virus on different age groups; and (iv) heightened risks for persons with specific conditions. To this end, support will be provided for the rehabilitation, strengthening and possible expansion of the existing vaccine cold chain.

49. **C3 - Drug Therapy.** In a pandemic, vaccine supply levels will change over time, and when a pandemic first strikes vaccine will likely not be ready for distribution. The use of anti-viral drugs, while not a panacea, will be part of the approach to contain an avian influenza pandemic and to reduce morbidity and mortality. Governments and international agencies such as WHO are stockpiling anti-viral drugs.

Therefore, support will be provided for the purchase and distribution of anti-viral drugs, following WHO guidelines and arrangements, and for the targeted use of available supplies. This will include the adoption of measures against inappropriate use so as to guard against the development of antiviral resistance and ensure that this limited resource is used effectively. Specifically, this sub-component will finance the development of: (i) a detailed implementation/logistics plan for the distribution of anti-viral drugs, and (ii) guidelines and training for physicians, nurses and other health personnel before and during the pandemic on effective use of these drugs. The objective of anti-viral prophylaxis is to prevent influenza illness and would need to continue throughout the period of exposure in a community. Support will also be provided to monitor patient compliance with treatment regimes and the onset of resistance to anti-viral drugs.

50. **C4 - Medical Services.** In coordination with and complementing the Manas Taalimi Health Reform Program, additional assistance will be provided to the health care system for preparedness planning and strategy development to provide optimal medical care and maintain essential community services in the event of a pandemic. Specifically, this sub-component will finance development of an Action Plan for establishing specialized units in selected hospitals to act as referral/treatment locations and to increase bed availability in case of a pandemic through more stringent triage for admission and earlier discharge with follow-up by home health care personnel. It will also develop and/or update treatment guidelines and hospital infection control guidelines and measures, including the stocking of antibiotics, mobilization of additional health personnel, training of health personnel, and the provision of drugs, vaccines and other medical inputs such as diagnostic reagents and kits. The sub-component will also finance one “test run” of the Action Plan. In the event of a pandemic, the Project will finance implementation of the plan by covering operational expenses related to these activities.

### III. PUBLIC AWARENESS AND INFORMATION COMPONENT

51. This component will promote awareness and improved coordination of the execution of the contingency plans and the National AI strategy. It is designed to safeguard human health, in particular for extension staff, animal health workers, poultry producers and their families, by improving public awareness and information and preventing panic. Support will be provided for the development of strategies to promote public awareness and improved coordination of the execution of the national AI responses strategies and plans. The central element of the component will be a detailed Communications Action Plan that describes, in detail, communication activities to be carried out before and during a pandemic.

52. Support will be provided for information and communication activities that increase the attention and commitment of government, private sector and civil society organizations and that will raise awareness, knowledge and understanding among the general population about the risk and potential impact of a pandemic. Activities will include:

- (i) Development of a detailed Communication Action Plan that describes, in detail, communication activities and materials to be carried out before *and* during a pandemic, including the logistical details of carrying out these activities.
- (ii) Development, testing and deployment -- in the form of a major omni-media communication campaign -- of basic pre-pandemic communication materials on influenza, influenza vaccine, antiviral agents, and other relevant topics; general preventive measures such as “dos” and “don’ts” for the general public; and information and guidelines for health care providers.
- (iii) Development and testing of messages and materials to be used in the event of a pandemic or emerging infectious disease outbreak, and further enhancing the infrastructure to disseminate information from national to oblast, raion and community levels and between the public and private sectors.

- (iv) Training of extension and veterinary staff as well as health workers at the oblast, raion and community levels in meeting their responsibilities under the Communication Action Plan.
- (v) Development and implementation of activities to improve coordination and collaboration among stakeholders. The major stakeholders include various ministries/departments (the Ministries of Economy and Finance, of Health, of Agriculture, Water Resources and Processing Industry, of Education, of Transport and Communications, and of Emergency Situations, the veterinary services, laboratories, and local self-governments), the Rural Advisory Service, NGOs, civil society and community-based organizations, veterinarians and farmers.
- (vi) In the event of a pandemic, funding for the immediate implementation of relevant parts of the Communication Action Plan.

#### **IV. IMPLEMENTATION SUPPORT AND MONITORING AND EVALUATION COMPONENT**

53. The primary implementing agencies for the Project will be the Ministry of Health (MOH) and the Ministry of Agriculture, Water Resources and Processing Industry (MAWRPI). Both ministries have appointed a Component Coordinator (CC) responsible for coordinating activities within the respective ministry. Reporting to their respective deputy minister, the CCs will work with staff and consultants who would support the development and organization of project activities and the M&E of these activities.

##### **(D) Project Management**

54. The Project will provide financial and technical support for project management and coordination and for monitoring and evaluation. The inter-ministerial Republican Emergency Antiepidemic and Antiepzootic Commission (REAAC), chaired by the Deputy Prime Minister responsible for the social sectors, has been reactivated to provide policy guidance, coordination and oversight at the national level and to oversee the implementation of the Project. It will be responsible for ensuring coordination and linkages across relevant agencies and with international partners.

55. The Agricultural Projects Implementation Unit (APIU) in MAWRPI, which is already coordinating the implementation of the Bank-financed Agricultural Support Services Project (Credit Number 3062-KG), will be entrusted with the coordination of project activities, technical assistance and training, as well as with the fiduciary tasks of procurement and financial management. The APIU will be responsible also for consolidating the annual WPs, budgets, FMRs and progress reports. The APIU will be strengthened by the recruitment of additional staff/consultants responsible for overall administration of training activities, procurement and financial management.

56. Component Coordinators (CCs) have been appointed in both MAWRPI and MOH to coordinate and oversee project activities within their respective ministry and its subordinate and associated institutions as well as with other relevant government departments so as to ensure effective inter-agency collaboration. The CCs will also be responsible for the preparation of annual WPs and budgets for their respective project components as well as for providing inputs to the quarterly and annual progress reports and financial monitoring reports (FMRs). They will be assisted by staff and, as necessary, consultants who would support planning and implementation of activities as well as M&E of project activities in both ministries.

##### **(E) Monitoring and Evaluation (M&E)**

57. The Project will support the development of simple, but effective M&E systems in both implementing ministries and for the Project as a whole. It will also support development of an action plan

for M&E, training in participatory monitoring & evaluation at national, regional and local levels, and a mid-term evaluation workshop.

58. Specific support will be provided to facilitate project monitoring and impact evaluation assessments. Two types of M&E are envisaged. First, with the help of the APIU and consultants, the CCs will collect relevant data from their ministries and other implementing agencies and compile them into quarterly progress reports, focusing on output indicators and the status of physical implementation by component and use of project funds. For some output indicators, specific surveys will need to be conducted to obtain data for this purpose; these will be financed by the Project.

59. The aim of evaluation is to ascertain whether the interventions are effective and the Project is having the desired impact. The evaluation will have both quantitative and qualitative aspects and will be conducted on an annual basis. The quantitative aspects will rely on new information systems and surveys implemented as part of the various project components, existing data sources, and primary evaluative data collection efforts. The objective of the qualitative aspect of the evaluation will be to document perceptions of managers, staff, patients, and local and national leaders. Qualitative information will be collected using site-visit interviews, questionnaires, focus groups and respondent surveys.

## **V. EMERGENCY IMPORTS**

60. In case of a declared influenza pandemic, the Project will finance emergency imports identified as necessary under a well-defined preparedness and response program to be prepared as part of project implementation. These imports are likely to include: (i) pharmaceuticals and vaccines, (ii) medical and veterinary supplies and equipment, (iii) communication equipment, supplies and information campaigns, (iv) food and water containers, and (v) protective clothing.

### **4. Lessons learned and reflected in project design**

61. Relevant lessons for the design of the proposed operation have been drawn from implementation of previous and ongoing projects in the rural and health sectors in the Kyrgyz Republic. They have also been drawn from the design of previous World Bank/IDA and FAO-supported emergency recovery projects. Experiences and lessons learned have been taken into account in the design of the proposed project. These included the Vietnam Avian Influenza Emergency Recovery Project, the only project approved by the Bank in response to the avian influenza threat so far.

62. A key lesson learned is that project success depends to a large extent on the speed of the response provided and, particularly when dealing with smallholders' production systems, that speedy, efficient and transparent distribution of suitable key inputs is essential for limiting the impact of a crisis and hastening recovery. A performance audit of some of the emergency projects supported by the Bank in various regions drew the following general lessons: (i) emergency projects should avoid policy conditionality; (ii) project design must be simple and take into account a realistic assessment of the existing governmental and other stakeholders' capacity; (iii) speedy appraisal and approval are crucial to provide a prompt response and a substantial contribution to project success; (iv) procurement arrangements need to be flexible and should be finalized at an early stage; (v) mitigation and prevention measures should be included in project design to minimize impacts of a possible recurrence of the disaster; and (vi) realistic assessments should be made of counterparts' absorption capacity as well as of the communication and coordination mechanisms among all relevant stakeholders.

63. Although the Vietnam Avian Influenza Emergency Recovery Project has been effective for only a little more than one year, the main recommendations arising from its implementation are the following:

- (a) Preparedness is a key factor. There was a national strategy document on controlling avian influenza in the poultry population, but it was not clearly understood and shared by all relevant agencies and stakeholders, and some aspects of the response have been lagging behind.
- (b) A two-pronged strategy is recommended. This should include: (i) the control of avian influenza at the source in high-risk regions (through aggressive measures including culling, movement control and vaccination campaigns for poultry); and (ii) simultaneously prepared short- and medium-term measures to minimize the risks to humans and prepare for an eventual pandemic.
- (c) For implementation arrangements, it is important to have a coordination structure which is empowered with multi- and cross-sectoral responsibilities, for instance at the level of the Prime Minister's Office, and to have full-time project coordinators to implement activities in a "crisis situation".
- (d) An effective and credible "compensation framework" is essential to obtain real cooperation from affected stakeholders (farmers/producers) and to ensure the efficacy of the surveillance and diagnosis mechanisms.
- (e) The importance of strengthening the technical, scientific and operational capacity of the relevant participating agencies should not be overlooked.
- (f) There is an urgent need to organize an effective national response, including all technical ministries in charge of agriculture/animal health and human health as well as other relevant sectors, at the national and sub-national level in case of a human epidemic.
- (g) It is important to raise awareness in the public and private sectors from the initial moments and to strengthen effective coordination mechanisms for the implementation of the necessary technical responses, involving the Government, the donor community, the private sector and civil society.
- (h) Attention should be given to support the integration of each country into a regional and global framework for the control of HPAI, and more broadly of all trans-boundary animal diseases and other emerging infectious diseases, so as to increase cost-effectiveness and ensure the harmonization of activities and responses.

64. Some important lessons learned from the response to the HIV/AIDS epidemic have also guided the design of the GPAI program and of the proposed Project.<sup>4</sup> They include:

- The need for high-level political commitment and leadership is key.
- A comprehensive multi-sectoral approach is needed.
- Monitoring and evaluation is critical in the scaling-up of a national response.
- Stakeholders at the country and international levels are important in dealing with the AI threat
- Building a strong fiduciary architecture is needed.

## 5. Alternatives considered and reasons for rejection

65. **Restructuring of existing projects.** An alternative considered was to restructure one or more ongoing projects and to inject financing, in the form of additional financing, to support the implementation of the activities proposed under this Project. It was decided, however, that the importance of the issue and the need to scale up the response at the country level would require a clear focus and impetus to facilitate the implementation of the necessary priority activities, and that this could not be effectively achieved by merely restructuring ongoing projects. Moreover, restructuring ongoing projects and diverting funds to other uses might have endangered the achievement of their respective development objectives. By contrast, a separate project allows for the establishment of a broader and objective-focused policy framework and for the design of specific mechanisms to manage resources and monitor the implementation of activities. Moreover, a separate project allows the preparation of a multi-sectoral national plan that engages different

<sup>4</sup> World Bank. 2005. Committing to Results: Improving the Effectiveness of HIV/AIDS Assistance. An OED Evaluation of the World Bank's Assistance for HIV/AIDS Control. Washington, D.C.

governmental institutions and civil society as well as scaled-up efforts to serve the entire population. It lends itself more readily to joint support from a coalition of external donors. And it facilitates advocacy and communication to mobilize the high-level political support needed for mounting effective and sustainable prevention and control efforts.

## **C. IMPLEMENTATION**

### **1. Partnership arrangements**

66. Effective and suitable partnership arrangements for this Project have been developed in the Kyrgyz Republic with the international technical agencies as well as with bilateral donor agencies, building on productive collaborative arrangements developed over time in both the agricultural and health sectors under previous projects. As noted above, project preparation and appraisal was undertaken by a multi-agency team that included WHO and CDC experts and also drew heavily on technical guidance available from FAO and OIE. Work in the country involved close consultations with local staff of the multilateral and bilateral donors represented in Kyrgyzstan. Round tables were organized prior and during the appraisal mission to brief these partners on the intended program of working with the Government to strengthen its National Action Plan and design a country-specific project and to ascertain their interest in providing financial and/or technical support for the project.

67. The Government of Japan has already approved, on very short notice, a PHRD Co-financing Grant of US\$1 million for the Project. The UNDP, in close consultation with the Bank, has formulated a proposal for a technical assistance project to complement and to help jump-start the activities proposed under the Project. The Kyrgyz Republic is already receiving and will likely receive further support on the technical content of an Avian Influenza response from WHO for public health and from FAO and OIE for animal health. USAID and CDC are in the process of developing a support program for Central Asian countries, including the Kyrgyz Republic. The EU has established a task force to address HPAI and is considering the allocation of funds into the international multi-donor Trust Fund for the Global HPAI Facility as well as direct financial support for HPAI preparedness to individual countries, including the Kyrgyz Republic.

### **2. Institutional and implementation arrangements**

68. Institutional and implementation arrangements are detailed in Annex 7. The primary implementation agencies will be the Ministry of Health and the Ministry of Agriculture, Water Resources and Processing Industry. Each has appointed an internal Component Coordinator responsible for coordinating project activities within their respective ministry and its subordinate and associated institutions. The CCs will also be responsible for coordinating with other relevant government agencies and departments so as to ensure effective inter-agency collaboration. The CCs will be responsible for the preparation of WPs and budgets for their respective project components as well as for providing inputs to the quarterly and annual progress reports and financial monitoring reports (FMRs). They will be assisted by staff and, as necessary, consultants who would support planning and implementation of activities as well as M&E of project activities in both ministries.

69. Overall responsibility for overseeing and coordinating institutional and implementation arrangements will be vested with the Office of the Deputy Prime Minister, where a Republican Emergency and Antiepidemic and Antepizootic Commission (REAAC) was established in 2001 and has been reactivated to oversee with the national HPAI control and containment effort and to provide general policies and guidelines for Project implementation (see para. 54). This Commission will be responsible for ensuring coordination and linkages across relevant agencies and with international partners and for guiding and monitoring project implementation at the central level. It will review and approve annual work programs

(WPs) and budgets and ensure coordination and linkages across relevant agencies and with international partners.

70. The Agricultural Projects Implementation Unit (APIU) in MAWRPI, which is already coordinating the implementation of the Bank-financed Agricultural Support Services Project and is well staffed and experienced, will be entrusted with the coordination of project activities, technical assistance and training, as well as with the fiduciary tasks of procurement and financial management. It will also be responsible for consolidating the annual WPs and budgets for submission to the implementing agencies, REAAC and IDA, as well as for the consolidation of quarterly FMRs and progress reports. The APIU will be strengthened by the recruitment of additional staff/consultants responsible for overall administration of training activities, procurement and financial management. To facilitate the management and implementation of the Project, a Project Operational Manual (POM) is to be prepared as a Condition of Effectiveness.

### **3. Monitoring and evaluation of outcomes/results**

71. M&E activities will be the responsibility of MOH and MAWRPI as well as of the APIU. Depending on the specific situation in each case, these activities could be carried out by the regular staff of the agencies (with technical assistance) or by specialized agencies/institutes contracted for this purpose.

72. Monitoring progress in implementation and towards the achievement of objectives will entail a process of continuous and systematic review of the various project activities. M&E activities are intended to: (i) measure input, output and outcome indicators (see Annex 4); (ii) provide regular and up-to-date information on progress toward achieving the intended results and facilitate reporting to the government and IDA; (iii) alert government authorities and the Bank to actual or potential problems in implementation so that adjustments can be made; (iv) determine whether the relevant stakeholders are responding as expected and intended; and (v) provide information to allow the implementing agencies to reflect and improve on their performance.

73. The findings of relevant M&E activities will be reflected in quarterly and annual progress reports. The progress reports will cover the implementation of activities related to civil works, institutional activities, training and studies, performance indicators, and FMRs. They also will cover issues identified during implementation and the strategies and actions proposed to be taken to resolve such issues that affect progress. The fourth quarterly report of each year will be an annual report, covering progress during the past year.

### **4. Sustainability**

74. Critical to the project sustainability will be the continuous ownership of this initiative by the various stakeholders, coupled with strong political support and an adequate flow of financial resources to carry out project activities. Institutional sustainability will be ensured by: (i) strengthening of programs to maintain public awareness of the threat of HPAI and other rapidly spreading infectious diseases; (ii) sustained surveillance and prevention and control activities, particularly in high-risk regions; (iii) strengthened country capacity to manage at national and local levels the risk factors associated with the spread of HPAI and other infectious diseases; and (iv) effectiveness of programs to control the spread of HPAI from birds to the general population.

## 5. Critical risks and possible controversial aspects

Risk	Rating	Mitigation Measure
<p><b>From Outputs to Objective</b></p> <p>Decline in political commitment to addressing HPAI and the threat of a Global Influenza Pandemic and other infectious diseases as a national priority.</p> <p>Project implementing agencies do not have sufficient authority, leadership and capacity to take a leading role in avian influenza prevention and control.</p> <p>Intervention activities not effective in containing the spread of avian influenza from birds to the human population.</p> <p>Inadequacy or lack of multi-sectoral participation</p> <p>Low oblast/raion-level commitment means that strong central commitment does not translate into action on the ground.</p> <p>Lack of independent internal audit function</p>	<p>H</p> <p>S</p> <p>S</p> <p>M</p> <p>S</p> <p>S</p>	<p>Continuing support for inter-sectoral collaboration through information exchanges and dialogue and operationalization of the Republican Emergency Antiepidemic and Antiepzootic Commission (REAAC), which is to provide general policies and guidance for avian influenza control.</p> <p>Adequate implementation arrangements have been put in place; including the reactivation of REAAC, chaired by the Deputy PM.</p> <p>Activities would strengthen response capacity in priority areas in the short- and medium term and lay the foundation for a more broadly based strategy, including:</p> <ul style="list-style-type: none"> <li>• Comprehensive awareness and communication campaigns, critical to containing the spread of an influenza pandemic.</li> <li>• Choosing well designed, cost-effective interventions.</li> <li>• Interventions phased and carefully monitored, allowing for modifications and redesign as needed.</li> <li>• Service delivery deconcentrated with the maximum use of local governments and civil society.</li> <li>• Good M&amp;E to flag emerging issues</li> </ul> <p>REAAC will, inter alia, ensure coordination and linkages across relevant agencies and international partners. In addition, the multi-agency working group established as the counterpart team to work with IDA and other donors in project design will continue to play a role during project implementation.</p> <p>Implementation mechanisms explicitly address the link between the required centralized decision making (the principle of ‘direct chain of command’) with the needed local-level implementation; communication strategies will include local-level implementing actors as targets; capacity building includes periphery.</p> <p>Ensure that robust internal audit function is independent from operations and reports to top management and REAAC.</p>

Risk	Rating	Mitigation Measure
<b>From Components to Outputs</b>		
Controlling the spread of the pandemic may expose the Government to criticism concerning the curtailment of civil rights due to the adoption of quarantines and other related measures.	S	Project will support advocacy and coalition building to sensitize key groups including policy makers and the media. This will be complemented by carefully designed mass communication campaigns to build support for the project among the population.
Lack of laboratory capacity for prompt diagnosis and surveillance and of sufficient quantities of drugs and other medical inputs needed to address the needs of the general population during a pandemic	H	Project activities will be coordinated with efforts undertaken by other international organization such as WHO that have established an international anti-viral stockpile with donations from the pharmaceutical industry (e.g., Roche's donation of three million treatment courses of the antiviral oseltamivir).
Inadequate institutional capacity to manage the project.	S	Capacity building and institutional development is one of the project's key objectives.
Financial resources not accessible in a timely manner; weak procurement management	M	Procurement and financial management arrangements will be handled by the experienced APIU.
Lack of timely and predictable access to expert advice and technical support	M	Project activities have been designed with assistance from leading multilateral agencies such as FAO and WHO.
Low priority given to public accountability and transparency in program management	S	Publication of audit results and achievements; transparency in decision and resource allocation.
Inadequate capacity for planned surveillance, surveys and monitoring & evaluation	M	Technical assistance and partnership between local and international institutions will be provided. The M&E plan will include information on instruments for data collection, agencies responsible and a detailed time table
Misuse of the Compensation Fund facility	S	Implementation arrangements for the Compensation Fund incorporate strong features of transparency, community involvement, and ex-ante and ex-post checks that have been found effective in the country under other projects.
<b>Overall Risk Rating:</b>	<b>S</b>	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

75. Corruption is acknowledged, even by officials within government, as a major issue in the public sector, and the project will be implemented in an environment of high perceived corruption. In addition to the risk mitigation measures highlighted below, the Project will place strong emphasis on disclosure and transparency and on strengthened complaint handling mechanism coupled with specific remedial measures. A summary of measures is provided below in the context of fiduciary risk mitigation. The corollary benefits regarding good governance are self-evident. The following measures are incorporated in project design to minimize the possible misuse of funds:

- **Ex-ante controls.** Appropriate ex-ante internal controls in the poultry culling and compensation program (outlined in Annexes 2b and 8) will be implemented before any disbursement of IDA resources for the Compensation Fund, and ex-ante checks will be carried out before and compensation payments are made.

- **Annual operational reviews.** To supplement the annual project audit, an annual operational review will be carried out by external reviewers, acceptable to IDA, who will review the internal control framework and procedures, especially for the Compensation Fund, and the inventories of drugs, vaccines, medical and veterinary equipment, and other sensitive and/or expensive assets.
- **Prior review of procurement.** Project procurement will be subject to prior-review in accordance with the Bank's procurement guidelines and with thresholds level indicated in Annex 8.
- **Complaints mechanisms.** A strengthened complaint handling mechanism, especially for the Compensation Fund, will be put in place to handle complaints regarding alleged misuse of funds.
- **Transparency and public information.** Information about project activities will be continually posted on a Project website.
- **Intensive supervision by IDA.** The project, including procurement and financial management activities, will be intensively supervised by Bank staff in the Country Office and by periodic supervision missions.

## 6. Possible Controversial Aspects

76. The Project will support the implementation of immediate actions to prevent, control and respond to a possible influenza pandemic. Some of the typical and necessary "social distancing measures" -- such as quarantines, bans on mass gatherings, and travel restrictions -- may be politically and socially controversial. Intensive and continuous dialogue and compromises are needed, therefore, among the different stakeholders, backed by a well-designed communication strategy. A high degree of political commitment to preventing and controlling the spread of infectious diseases such as an influenza pandemic will be needed for managing controversies that will undoubtedly arise.

## 7. Grant Conditions

77. The key conditions needed to minimize the risks to the Project have been addressed by the Kyrgyz Republic having met the eligibility requirements for participating in the GPAI (see page 6). Specific provisions have been developed to meet the standard requirements covering organizational and staffing arrangements, as well management, procurement and financial management arrangements.

- **Conditions of Effectiveness** of the Grant will be: (i) the Project Operational Manual, satisfactory to the Association, has been prepared and adopted by the Recipient and (ii) the work program for the first year of the Project, satisfactory to IDA, has been adopted by the recipient.
- **Conditions of Disbursement** are: (i) for expenditures under Category (5) -- Compensation Fund --, the Compensation Fund Manual, satisfactory to the Association, has been adopted by the Recipient; (ii) for expenditures under Category (2) – civil works --, the Environmental Management Plan, satisfactory to the Association, has been adopted by the Recipient; and (iii) expenditures under Category (6) – Eligible Imported Goods and Commodities --, a national emergency on avian influenza has been declared by the Recipient and a well-defined preparedness and response program has been prepared.

## D. APPRAISAL SUMMARY

### 1. Economic analysis

78. The extent of protection achieved through the implementation of the Project, which supports the National Action Plan, will depend on the efficacy of the prevention, containment and treatment measures enacted. Assumed levels of efficacy of these measures determine the range of protection scenarios. For purposes of economic analysis, protection rates varying from 33 to 80 percent for both poultry and humans

have been assumed. The likely impact of an HPAI pandemic on unprotected humans was derived using WHO estimates of human-to-human transmission: (a) 30 percent of unprotected humans are likely to be affected, (b) one tenth of them will require hospitalization, and (c) one and a half percent of all human infection cases will be fatal. The same parameters were assumed for poultry protection, although all birds exposed to the risk were assumed to perish (either from the infection or through culling). The costs of implementing the National Action Plan were assumed to remain unchanged for each scenario. The incremental benefits for each of the different protection scenarios were evaluated for a period of 20 years, with a discount rate of 12 percent.

79. The table below presents the major economic outcomes under each of the scenarios modeled. The scenario of 80 percent protection results in an estimated 18,320 human lives saved and 122,130 hospitalizations averted. At the lowest end, the protection rate of 33 percent still saves 7,577 lives and reduces the number of hospitalizations by 50,379. The net economic effect is massive and ranges from US\$35 million to US\$103 million (in net present value terms) for Scenarios III and I, respectively. The benefit-cost ratios of the three scenarios, ranging from 3.8 to 9.1, are also exceptionally large.

<b>Summary of Economic Analysis for Different Protection Scenarios</b>			
	<b>Scenario I</b>	<b>Scenario II</b>	<b>Scenario III</b>
<b>Key Scenario Assumptions:</b>			
Efficacy of Prevention Measures (%)	100	65	65
Efficacy of Containment and Treatment (%)	80	80	50
Protection rate (%)	80	52	33
<b>Key Outcomes:</b>			
Human lives saved (persons)	18,320	11,908	7,557
Hospitalizations averted (persons)	122,130	79,385	50,379
Intervention Costs (US\$)	12,754,671	12,754,671	12,754,671
Benefits in monetary terms (US\$)	116,050,586	75,432,881	47,870,867
Agriculture sector	58,098,768	37,764,199	23,965,742
Health sector	57,951,819	37,668,682	23,905,125
Benefits to households	65,429,269	42,529,025	26,989,574
Benefit to society	50,621,317	32,903,856	20,881,293
Benefit-Cost Ratio	9.10	5.91	3.74

80. The allocation of benefits between households and Kyrgyz society at large shows that households would benefit more from the Project, reflecting the fact that households are assumed to bear a considerable share of medication and economic costs associated with any outbreak of an influenza pandemic. The benefits realized in the health sector are similar to those accruing in the agriculture sector, because medical cost savings and the avoidance of associated losses of income are approximately equivalent to the poultry-related benefits. More importantly, the values of sectoral benefits show that the National Action Plan is justified even if the costs of implementing the project were attributed exclusively to either of the two sectors. The benefits are robust and insensitive to changes in the underlying assumptions. Even a 50 percent decrease in the assumed risks of morbidity, hospitalization and mortality among the unprotected human population still allows the health sector to recoup the costs of implementing the National Action Plan under scenarios I and II, while the benefits to the agriculture sector remain unchanged.

81. While the quantification of indirect benefits is difficult, some of them may be as important as those presented above. At the current stage of the country's economic development, many other issues are at stake. For example, an increase in human fatalities will decrease public trust in health institutions and veterinary services (both public and private), thus undermining future efforts to control other pressing health problems (e.g., brucellosis), while an effective containment and treatment program will increase the likelihood of success of such future efforts. Heavy losses of poultry will compromise its traditional role of initial "stepping stone" in asset accumulation and poverty alleviation among the poorest. More broadly, rural income reductions due to total destruction of infected and at-risk poultry will slow rural development in its broadest sense. Most of the current growth in rural areas is driven by households "graduating" above subsistence needs. An outbreak of avian flu will stifle this engine of rural savings and investments and, thus, slow the development of the rural non-farm economy.

## 2. Technical

82. **Animal Health.** Successful implementation of the project depends on a phased multi-disciplinary strategy based on a sound epidemiological approach to control HPAI outbreaks. This strategy has to take into consideration the range of epizootological and epidemiological scenarios that exist or may arise in the Kyrgyz Republic as well as the different poultry production systems in the country and different levels of incidence (ranging from high incidence with variable flock outbreaks, though low frequency disease outbreaks with partial flock immunity, to sporadic outbreaks). A balanced combination of appropriate disease control options, tailored to the specific characteristics and needs of Kyrgyzstan, is therefore essential for the achievement of the project objectives.

83. The implementation of the Project raises important technical issues and presents substantial challenges. Key issues include the following:

- ***The capacity of the public and private veterinary services.*** The Kyrgyz veterinary services are inadequately equipped and trained to deal with HPAI and the potentially large scope, severity and rapid spread of any outbreaks. This is evident across the entire range of critical capabilities: surveillance and diagnostic capacity for early detection and reporting of outbreaks, monitoring the disease, rapid response and implementation of the required control measures within and around the outbreaks, and essential research to understand how the disease develops in a particular situation.
- ***Adequate regulatory and incentive framework.*** The current legal and regulatory framework is incomplete, not fully consistent internally, and in many instances poorly aligned with actual physical, technical and staff capacities on the ground. Amendments will be needed, therefore, to the veterinary law, to various decrees governing emergency situations as well as highly dangerous animal diseases, to regulations concerning institutional responsibilities and the like. In addition, the legal basis for effective compensation being provided to livestock owners will need to be put in place urgently to ensure good governance, transparent allocation of resources and probity in compensation payments.
- ***Laboratory facilities and staff capabilities.*** As a consequence of the Soviet legacy and 15 years of post-Soviet resource scarcity, most laboratory facilities are outdated and severely lacking in modern equipment needed to discharge critical diagnostic functions. Staff expertise, likewise, needs substantial upgrading. With the help of experts from WHO and CDC and utilizing information and guidelines provided by WHO and OIE, the critical deficiencies have been identified and will be addressed by the Project.
- ***Bio-security measures.*** Bio-containment measures to prevent the spread of the virus from infected premises and bio-exclusion measures to exclude the virus from uninfected locations are essential, but have often proven to be difficult to implement effectively. The lack of capacity and experience in practicing effective measures is one of the main reasons for the persistence of the disease and its

spread in the world. It will be critical to develop and practice effective implementation under the specific conditions of Kyrgyzstan and to develop and institutionalize efficient coordination among local and national institutions, agencies and services.

- ***Epidemiological expertise.*** Incorporating epidemiological and epizootological studies linked to disease control programs, so as to generate quantitative and geo-referenced data on infection and transmission dynamics, is another key success factor. Scarce scientific expertise limits the availability of modern methodologies and tools, and the project will support initiatives to address this weakness.
- ***Harmonized disease information systems.*** The importance of harmonized disease information systems, linked to disease surveillance and epidemiological programs, is widely accepted. Although the Kyrgyz authorities exchange relevant information with their counterparts in neighboring countries, information exchange is not systematic and adequately institutionalized. The project will support the development and operationalization of effective information sharing arrangements within the Central Asia region, as well as the upgrading of Kyrgyz capacity to participate in the World Animal Health Information System (WAHIS) of the OIE.
- ***Wildlife species and reservoirs are a source of HPAI.*** Some species of migratory birds appear to have played a role in the transmission of the H5N1 virus to domestic poultry. Kyrgyzstan is an important stop-over place on the flyways of a broad range of migratory birds and for many of them their main wintering location. The country therefore faces significant risk. It is very difficult to apply bio-security measures aimed at avoiding contact between migratory and other wild birds and domestic poultry, particularly where, as in Kyrgyzstan, backyard poultry is widely practiced and domestic birds are allowed to roam freely. In these circumstances, it is likely to prove very difficult, if not impossible, to completely eradicate the HPAI virus, but the project will place heavy emphasis on efforts to minimize the contact between wild and domestic birds.
- ***Poor coordination among public agencies and weak linkages with the private sector.*** Ineffective coordination among ministries and public agencies, as well as weak linkages with the private sector, are major impediments to long-term planning for infectious disease control. Given the zoonotic and transboundary nature of HPAI, a well coordinated public-private response is essential. The project will seek to establish efficient coordination arrangements and mechanisms.

84. **Human Health.** According to WHO, the current epidemiological situation of avian influenza corresponds to “a Pandemic Alert Period, phase 3, with human infection(s) with a new sub-type, but no human-to-human spread or, at most, rare instances of spread by close contact.” Compared with previous influenza pandemics that have taken the world by surprise and given health services little time to prepare for the abrupt increases in cases and deaths that characterized these events, the present situation is markedly different for several reasons: (i) the world has been warned in advance; (ii) this advance warning has brought an unprecedented opportunity to prepare for a pandemic and develop ways to mitigate its effect; (iii) apart from stimulating national preparedness activities, the present situation has opened an important opportunity for international intervention aimed at delaying the emergence of a pandemic virus or forestalling its international spread.

85. The risk to human health posed by the recent avian influenza outbreaks has led to the preparation of a Global Technical Framework (as part of the GPAI) to guide action against an increasing pandemic threat. It recognizes that there are areas that require further development and that specific actions to be included and supported under country projects need to reflect the epidemiological conditions, institutional capacity, needs and priorities of the specific country. In case a true human AI pandemic and emergency were to develop, separate procedures may be decided upon, especially with regard to sole-source financing of anti-virals and AI vaccines.

86. Not knowing which influenza virus strain is going to cause the next pandemic makes planning for it very challenging. The likely impact of a pandemic depends upon characteristics of the virus such as its infectivity, attack rates in different ages (i.e., the proportion of the population infected for each age group) and the severity of disease it causes. The three pandemics of the 20th century demonstrate the variation in mortality, severity of illness and patterns of spread that can occur.

87. A critical element of pre-pandemic planning, however, is ensuring that the building blocks are in place ahead of an actual pandemic threat. The two major strategies to be supported under the GPAI are technically sound. They focus on: (i) containment measures to prevent transmission and spread of the virus through social distancing measures, judicious use of anti-viral medication, and strengthening of surveillance and public health laboratory systems to ensure that capacity and capability are in place to allow early detection of virus sub-types and rapid and accurate identification of emerging virus sub-types are in place, and (ii) maintenance of essential medical services and mobilization of international emergency health care and staffing for low-income and low-capacity situations if there is an explosive spread of the virus within the general population and containment is no longer possible, coupled with preparedness for pandemic vaccination development and administration. In addition, support is considered for ensuring that appropriate decision making bodies are in place and have the necessary expertise and authority to make decisions quickly and effectively in the face of rapidly developing situations.

88. The Project will support short- and longer-term actions in the public health field, while ensuring that an appropriate balance is struck between the two. The project is fully consistent with WHO's recommendations. The aim of the proposed interventions is to minimize the morbidity and mortality associated with a pandemic event.

### **3. Social**

89. Although there are several large and a number of medium-size commercial poultry producers in Kyrgyzstan, the vast majority of poultry are kept by smallholders in their backyards and managed by women with the help of children. More than 80% of all Kyrgyz households have some poultry, but fewer than 30% own some sheep. Some birds and eggs may be sold to neighbors or in near-by markets, but the bulk of backyard poultry production is consumed within the household and represents an important component of the diet. Market sales are done by women. Backyard poultry assets and income are, thus, essentially women's assets and income.

90. The central roles of women and children in managing backyard poultry have important implications for the project:

- Given the involvement of children in managing domestic birds (feeding, egg collection, herding geese and ducks, etc.), awareness and educational efforts need to ensure that children are effectively targeted and reached with appropriately designed messages, through the schools.
- Reaching women with critical HPAI awareness messages and information will, similarly, require specific targeting and utilization of suitable dissemination and outreach channels. School-age children can bring leaflets to their mothers. The Rural Advisory Service (RAS), UNDP and the Community Development and Investment Agency (ARIS) have village organizers (VOs), village activists (VAs) and village mobilizers (VMs), respectively, in the villages where they operate, and the many of these are women who represent a very effective channel to reach village women. ARIS has very active village-level committees in about half the country (and will have them in two thirds of the country by the spring of 2006) that can be utilized as outreach tools to reach rural women. Likewise, the Community Health Improvement Project supported by Switzerland has village health committees in most villages in Naryn and Talas oblasts that will be effective

intermediaries for HPAI awareness raising (this program is to be expanded over the next two years with support from SIDA and USAID into the other five oblasts).

- In the event of culling, compensation will need to be provided to the women owners, and the project will ensure that mechanisms are in place to ensure this.

#### 4. Fiduciary

91. A **financial management** assessment of the APIU was undertaken in December 2005 to determine whether the existing financial management arrangements are acceptable to IDA. The financial management arrangements of the APIU have also been reviewed periodically as part of previous project supervisions since 1999 and have been found satisfactory. The APIU has established and maintained a good financial management system for the implementation of the Agricultural Support Services Project. The APIU's financial management system is capable of supporting the implementation of the proposed project in accordance with the requirements of OP 10.02, except for the Compensation Fund sub-component for which internal control and fund flow arrangements have been prepared (see Annex 8) but are yet to be finalized. The flow of funds under the this sub-component will only begin after appropriate internal control and fund-flow procedures, satisfactory to IDA, have been adopted and documented in the Financial Manual. This is a condition of disbursement for this sub-component.

92. **Procurement.** An assessment of procurement systems concluded that an acceptable legislative framework is in place at the country level. The capacity of the APIU to conduct procurement under Bank guidelines has been assessed as satisfactory under the ongoing Agricultural Support Services Project. Procurement under the proposed project will be undertaken in accordance with the procedures set forth in the Bank's "Guidelines – Procurement under IBRD Loans and IDA Credits", dated May 2004 (the "Procurement Guidelines"). Similarly, the selection and employment of consultants' services will be governed by the Bank's "Guidelines: Selection and Employment of Consultants by World Bank Borrowers", dated May 2004 (the "Consultant Guidelines"). Details on procurement arrangements are provided in Annex 8.

#### 5. Environment and Social Aspects

<b>Environmental assessment</b>	Environmental Category	B
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93. The two safeguard issues which pertain to the Project are those of an environmental assessment for methods and technologies to be deployed for the disposal of culled poultry and of mitigating the negative economic impacts of disease-induced deaths and/or mandated culling of poultry on small-scale and backyard poultry producers. A delay in the completion and disclosure of the Environmental Assessment from the appraisal stage was approved by the Regional Vice President on 22 December 2005, instead making this a condition of Grant disbursement for the Animal Health and Human Health components. Activities under the proposed project are not expected to generate any adverse environmental effect, since a large part of the project is geared to support prevention activities. The project will, overall, have positive environmental and social impacts.

94. The proposed investments in laboratory facilities, equipment and staff training will improve the effectiveness and safety of avian influenza handling and testing procedures by meeting international standards established by OIE. Medical waste generated in health care facilities will be managed using existing guidelines in the Kyrgyz Republic, which have been found satisfactory under previous projects. The Project will also support updating these guidelines, training of health care workers to manage medical waste following these guidelines and, if necessary, purchase of equipment for the proper handling and disposal of medical waste in participating facilities. These provisions will be included in the Project Operational Manual to be prepared prior to effectiveness.

95. The Project will assist the Government to develop a strategy for managing future emerging and re-emerging zoonotic and infectious disease outbreaks. It will, this, improve environmental and social safeguards in two areas: (i) mainstreaming environmental safeguards into protocols and procedures for the culling and disposal of animals during an outbreak, in particular by adopting OIE standards in these areas, and improving bio-medical waste management systems in health facilities and laboratories; and (ii) developing policies on compensation for poultry farmers affected by future outbreaks.

96. Since the Project supports investments for the disposal of carcasses and laboratory wastes, an Environmental Management Plan (EMP) for carcass disposal facilities will be necessary. This EMP will also cover the clean up of animal wastes of infected and culled poultry. The scope of this EMP will be specified during the initial period of Project implementation.

## 6. Safeguard Policies

<b>Safeguard Policies Triggered by the Project</b>	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[x]	[ ]
Natural Habitats (OP/BP 4.04)	[ ]	[x]
Pest Management (OP 4.09)	[ ]	[x]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[x]
Involuntary Resettlement (OP/BP 4.12)	[ ]	[x]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[x]
Forests (OP/BP 4.36)	[ ]	[x]
Safety of Dams (OP/BP 4.37)	[ ]	[x]
Projects in Disputed Areas (OP/BP/GP 7.60)	[ ]	[x]
Projects on International Waterways (OP/BP/GP 7.50)	[ ]	[x]

97. The Project is assessed as a B-category project, and Environmental Management Plans will be prepared under the Animal Health and Human Health components and implemented with project support.

## 7. Policy Exceptions & Readiness

98. No policy exceptions are anticipated for the Project.



## **Annex 1: Ten things you need to know about pandemic influenza (WHO - 14 October 2005)**

### **KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project**

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## **World Health Organization**

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### **A. Pandemic influenza is different from avian influenza**

1. Avian influenza refers to a large group of different influenza viruses that primarily affect birds. On rare occasions, these bird viruses can infect other species, including pigs and humans. The vast majority of avian influenza viruses do not infect humans. An influenza pandemic happens when a new subtype emerges that has not previously circulated in humans.

2. For this reason, avian H5N1 is a strain with pandemic potential, since it might ultimately adapt into a strain that is contagious among humans. Once this adaptation occurs, it will no longer be a bird virus—it will be a human influenza virus. Influenza pandemics are caused by new influenza viruses that have adapted to humans.

### **B. Influenza pandemics are recurring events**

3. An influenza pandemic is a rare but recurrent event. Three pandemics occurred in the previous century: “Spanish influenza” in 1918, “Asian influenza” in 1957, and “Hong Kong influenza” in 1968. The 1918 pandemic killed an estimated 40–50 million people worldwide. That pandemic, which was exceptional, is considered one of the deadliest disease events in human history. Subsequent pandemics were much milder, with an estimated 2 million deaths in 1957 and 1 million deaths in 1968.

4. A pandemic occurs when a new influenza virus emerges and starts spreading as easily as normal influenza – by coughing and sneezing. Because the virus is new, the human immune system will have no pre-existing immunity. This makes it likely that people who contract pandemic influenza will experience more serious disease than that caused by normal influenza.

### **C. The world may be on the brink of another pandemic**

5. Health experts have been monitoring a new and extremely severe influenza virus – the H5N1 strain – for almost eight years. The H5N1 strain first infected humans in Hong Kong in 1997, causing 18 cases, including six deaths. Since mid-2003, this virus has caused the largest and most severe outbreaks in poultry on record. In December 2003, infections in people exposed to sick birds were identified.

6. Since then, over 100 human cases have been laboratory confirmed in four Asian countries (Cambodia, Indonesia, Thailand, and Viet Nam), and more than half of these people have died. Most cases have occurred in previously healthy children and young adults. Fortunately, the virus does not jump easily from birds to humans or spread readily and sustainably among humans. Should H5N1 evolve to a form as contagious as normal influenza, a pandemic could begin.

#### **D. All countries will be affected**

7. Once a fully contagious virus emerges, its global spread is considered inevitable. Countries might, through measures such as border closures and travel restrictions, delay arrival of the virus, but cannot stop it. The pandemics of the previous century encircled the globe in 6 to 9 months, even when most international travel was by ship. Given the speed and volume of international air travel today, the virus could spread more rapidly, possibly reaching all continents in less than 3 months.

#### **E. Widespread illness will occur**

8. Because most people will have no immunity to the pandemic virus, infection and illness rates are expected to be higher than during seasonal epidemics of normal influenza. Current projections for the next pandemic estimate that a substantial percentage of the world's population will require some form of medical care. Few countries have the staff, facilities, equipment, and hospital beds needed to cope with large numbers of people who suddenly fall ill.

#### **F. Medical supplies will be inadequate**

9. Supplies of vaccines and antiviral drugs – the two most important medical interventions for reducing illness and deaths during a pandemic – will be inadequate in all countries at the start of a pandemic and for many months thereafter. Inadequate supplies of vaccines are of particular concern, as vaccines are considered the first line of defense for protecting populations. On present trends, many developing countries will have no access to vaccines throughout the duration of a pandemic.

#### **G. Large numbers of deaths will occur**

10. Historically, the number of deaths during a pandemic has varied greatly. Death rates are largely determined by four factors: the number of people who become infected, the virulence of the virus, the underlying characteristics and vulnerability of affected populations, and the effectiveness of preventive measures. Accurate predictions of mortality cannot be made before the pandemic virus emerges and begins to spread. All estimates of the number of deaths are purely speculative.

11. WHO has used a relatively conservative estimate – from 2 million to 7.4 million deaths – because it provides a useful and plausible planning target. This estimate is based on the comparatively mild 1957 pandemic. Estimates based on a more virulent virus, closer to the one seen in 1918, have been made and are much higher. However, the 1918 pandemic was considered exceptional.

#### **H. Economic and social disruption will be great**

12. High rates of illness and worker absenteeism are expected, and these will contribute to social and economic disruption. Past pandemics have spread globally in two and sometimes three waves. Not all parts of the world or of a single country are expected to be severely affected at the same time. Social and economic disruptions could be temporary, but may be amplified in today's closely interrelated and interdependent systems of trade and commerce. Social disruption may be greatest when rates of absenteeism impair essential services, such as power, transportation, and communications.

## **I. Every country must be prepared**

13. WHO has issued a series of [recommended strategic actions \[pdf 113kb\]](#) for responding to the influenza pandemic threat. The actions are designed to provide different layers of defense that reflect the complexity of the evolving situation. Recommended actions are different for the present phase of pandemic alert, the emergence of a pandemic virus, and the declaration of a pandemic and its subsequent international spread.

## **J. WHO will alert the world when the pandemic threat increases**

14. WHO works closely with ministries of health and various public health organizations to support countries' surveillance of circulating influenza strains. A sensitive surveillance system that can detect emerging influenza strains is essential for the rapid detection of a pandemic virus.

15. Six distinct phases have been defined to facilitate pandemic preparedness planning, with roles defined for governments, industry, and WHO. The present situation is categorized as phase 3: a virus new to humans is causing infections, but does not spread easily from one person to another.



## **Annex 2: Summary of the the Avian Influenza Contingency Plan of the Kyrgyz Republic**

### **KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project**

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1. The National Avian Influenza Contingency Plan of the Kyrgyz Republic, available in the Project Files, comprising two major parts, one focused on animal health, the other on human health. It will be updated and modified as needed in the light of evolving conditions and growing experience.

#### **Part I – Animal Health**

2. The “Plan of anti-epizootic measures against the pandemic of Highly Pathogenic Avian Influenza” provides the basis for the mobilization of resources and the provision of coordinated technical and financial support, training and capacity building with regard to animal health and veterinary services. It deals with the preparedness of the relevant institutions, particularly the Ministry of Agriculture, Water Resources and Processing Industry and the State Veterinary Department, to deal with the imminent threat of the disease being introduced into poultry in the Kyrgyz Republic and with actual outbreaks. The Plan is based on a review of the present status of the key institutions and services and their readiness to perform their intended tasks.

3. The plan specifically deals with four main themes:

- **Surveillance**, introducing specific monitoring, early detection and rapid response systems that also include developing and strengthening human resource and physical laboratory capacity.
- **Rapid Containment**, including the investigation of animal cases, planning and testing rapid containment activities, and enhanced data analysis support for decision makers.
- **Control at Source in Birds**, specifying action scenarios for the veterinary services’ emergency preparedness and the implementation of control measures, including culling, vaccination, and compensation.
- **Communications**, supporting all of the above with factual, transparent and timely communications, in particular on risks and compensation and as incentive for early reporting.

4. The plan includes the following thirteen chapters:

1. Legal framework
2. Financial provisions
3. Chain of command
4. National command structure
5. Local command structure
6. Experts group
7. Resources (personnel, laboratory, equipment)
8. Operational manual
9. Emergency vaccination
10. Training of staff
11. Worst case scenario (measures to avoid worst case situations)
12. Removal of animals and animal products
13. Disease awareness and public relations

## **Part II – Human Health**

5. The human health part of the national plan aims at strengthening national capacity in key public health areas, including inter-sectoral coordination, epidemiological surveillance, laboratory diagnosis, disease prevention, clinical case management, and communication. It is composed of two main sections:

- The first section addresses the pandemic alert period (current WHO phase 3, but also phase 4 and 5) when animal and human cases may occur, but without sustained person-to-person transmission. The focus is on coordination with the veterinary services as well as with relevant regional and international organizations, epidemiological surveillance, laboratory diagnosis, and clinical management of a limited number of human cases. It also addresses some elements of pandemic preparedness. Some immediate investments are required in the area of information technology, laboratory reagents, training, and communication.
- The second section addresses the pandemic period (WHO phase 6) when effective person-to-person transmission exists. The focus is on clinical management of a large number of patients over a relatively short period of time, some with severe respiratory infection which may require hospitalization in intensive care units. The scenario for Kyrgyzstan, based on overall figures of the 1918-19 pandemic (Spanish flu), is of 1.5 million people infected, 10% of them (150,000) may require hospitalization, and up to 2% of them (30,000) may die. The focus is also on inter-sectoral coordination, procurement of pandemic vaccine when available, and rapid implementation of a national immunization campaign, and communication to the public.

6. For each working area, the plan provides currently acknowledged limitations, proposed activities, and resource requirements. Annexes provide additional information on coordination mechanisms and further details on required resources.

## **Annex 3: Organization of the Veterinary Services and the Health Care System in the Kyrgyz Republic**

### **KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project**

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#### **A. Veterinary Care**

1. With the agrarian reform, the comprehensive and state-funded veterinary services formerly provided by the collective and state farms ceased to function. Veterinary drugs no longer arrive without payment made on the spot. When the animals were distributed among the farm workers, the veterinary services lost their direct link with the animals. The established input and output distribution chains collapsed and a wide range of alternative processing (often home-based) and marketing systems developed, in most instances without veterinary oversight. These changes have brought serious challenges for the staff of the State Veterinary Department (SVD). Instead of working only with the veterinary fraternity in the state and collective farms, they now have to interact and communicate extensively with numerous individual livestock producers, private veterinarians, consumers and their organizations. Moreover, WTO membership has added a commitment to communicate about animal health, trade and food safety issues at the international level and to develop a domestic food safety assurance system that is compliant with the Codex Alimentarius.

2. Vaccination coverage of the livestock population and availability of quality veterinary drugs has decreased dramatically. Due to budgetary constraints, the number of diseases for which the SDV intends to have an active control campaign has been reduced from 45 to 5: brucellosis, Foot and Mouth Disease (FMD), anthrax, sheep pox, and rabies. The vaccines against these diseases currently distributed free of charge only cover some 50-60% of the animals that should be vaccinated. The state has ceased to supply veterinary drugs except for a highly inadequate number of Echinococcus treatments. The former “Zoovetsnab” outlets have been privatized. In the absence of an effective supply mechanism, a large proportion of the veterinary drugs available in the market enters the country illegally. These drugs often lack use instructions in Russian and Kyrgyz, and incorrect use by farmers, veterinarians and vet assistants is widespread.

3. Reliable diagnostic data to assess the status of various livestock diseases are lacking. The root causes of the decrease in disease surveillance are shortage of funds for travel, transport and reagents, the poor state of most laboratories, and low morale of the underpaid staff working in the laboratories. None of the 37 veterinary laboratories currently meet international standards (ISO 17025).<sup>5</sup>

#### ***Veterinary Services***

4. The governmental veterinary service is, in principle, still structured as in Soviet times, although with the addition of a number of private veterinary practitioners. It is hierarchic and top down, with subordinate units at the oblasts, raions and rural municipalities (aiyl okmotus). There are some 210 SVD veterinarians at the raion level and a similar number of veterinarians/veterinary assistants at the aiyl okmotu level; those at the aiyl okmotu level are employed and paid by the aiyl okmotu.

5. There also are an estimated 800 private veterinarians and about 600 registered private veterinary practitioners, but this latter figure is probably an underestimate because the cost of registration is a disincentive for some who operate without registration.

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<sup>5</sup> ISO/IEC 17025= International Organization for Standardization/International Electrotechnical Commission’s standard for the competence of testing and calibration laboratories.

6. The basis of all operations for both the state and the private veterinarians is the annual plan, prepared by the anti-epizootic department in the SVD, which stipulates exactly when which oblast has to do what. Reporting is done with the annual plan as the basis. Private veterinarians are supposed to report to the raion veterinarians, who report to the oblast veterinarians, who at regular intervals travel to Bishkek to report to the SVD.

### ***Laboratories***

7. The countrywide network of veterinary laboratories is centered on the Republican Central Veterinary Laboratory (RCVL) in Bishkek as national reference lab; it also serves as Chui oblast laboratory. There are six oblast-level, 21 raion-level and 7 inter-raion laboratories. In accordance with OIE regulations, the central veterinary laboratory is functionally under the SVD. The central lab functions as reference lab and should play a major role in quality control of the other laboratories through the organization of ring testing, production and distribution of reference sera, etc., but there are no means to execute these tasks. The central lab has the only ELISA<sup>6</sup> equipment in the veterinary services, but lack of funds to procure test kits renders it practically inoperative. Over the past 15 years, the number of staff in the national laboratory has declined from 200 to 60.

8. The oblast and raion laboratories used to have almost identical testing capacity, with facilities for serology, bacteriology, parasitology, virology, disease diagnosis and monitoring. The raion laboratories today are largely non-functioning, due to staff cuts, broken equipment, lack of materials and frequent electricity outages. More and more samples are referred to oblast level. Staff are usually of an advanced age, and the lack of in-service training has them increasingly out of touch with advances in their field. Staffing at the Osh oblast laboratory has declined from 300 to 75 over the past decade, at Karakol from 180 to 22, and at Naryn from 120 to 66.

9. There also are a number of small inspection laboratories (usually one or two room operations and located in bazars) responsible for checking milk for brucellosis, density and fat content and for organoleptical inspection of meat. Meat inspection has become inadequate. Although the rules require both pre- and post-mortem inspection, most animals are slaughtered in the back yards without either. Traders carry a veterinary permit stating that the animal was free from contagious diseases. This permit is usually issued by the state veterinarian, but it might also have been a private veterinarian vaccinating or conducting the serology test for brucellosis. It is widely considered that these permits are a means for veterinarians to augment their income and an admission ticket to the market, but that they hardly function as a means to protect people's health.

### ***Procurement and Distribution of Vaccines***

10. The quality of vaccines procured by the SVD does not conform to reliable and internationally accepted quality standards. The SVD has the exclusive right to import and/or procure vaccines against list A diseases. This is usually done through an annual public tender, with funding provided through the EU Food Security Program. The tender requires only a quality declaration by the public veterinary service of the country from where the vaccines are imported. There is only one local vaccine producer, Altyn Tamyр, and for vaccines procured there a declaration of the factory's own laboratory is considered sufficient. Altyn Tamyр's filling department has a "Good Manufacturing Practices" plan in operation, but the absence of local auditing capacity for such systems and the absence of such systems in the other departments of the factory preclude its being able to guarantee the quality compliance of its vaccines with international standards. At present, the factory is unlikely to pass an OIE compliant quality test of

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<sup>6</sup> Enzyme Linked Immuno Sorbed Assay.

vaccines or to meet an international quality management standard for its manufacturing and laboratory facilities (ISO 17025).

11. The reliability of official statistics on vaccinations depends critically on the reliability of reporting by the private veterinarians. Vaccines are distributed free-of-charge to the private veterinarians, who are allowed to charge farmers for administering the vaccinations and have to report to the state veterinary service on the vaccinations they have performed. Frequently, the vaccine is no longer effective by the time it reaches the village and is simply discarded. In other cases, the number of animals to be vaccinated exceeds the number of vaccine doses available. To cope with these problems, private veterinarians often obtain vaccines from traders who import vaccines from elsewhere.

### ***Management of Veterinary Drugs***

12. The past system of state distribution of veterinary drugs through the “Zoovetsnab” outlets has been replaced by private operators. The registration of veterinary drugs and vaccines, previously the responsibility of the SVD, has recently been shifted to the Drugs Registration Unit of the Ministry of Health, but according to the new veterinary law SVD is to regain this responsibility. Accordingly, the SVD has initiated the preparation of a suitable laboratory, but the budgetary resources are insufficient to do this to the required standard. Currently, there is a list with 117 registered drugs and vaccines, and a further 13 applications are pending approval.

13. The SVD has always been responsible for the issue of import licenses for veterinary drugs and vaccines. Importers of veterinary drugs estimate the annual value of domestic demand to be in the range of US\$500,000 to US\$1,000,000. However, there is only a limited number of officially recognized and licensed dealers in veterinary drugs, and they face stiff competition from illegal importers, partly because little or no action is taken against the latter. During 2003-2004 only 18 import licenses were issued, and most of them for only one importer.

### ***Veterinary Militia***

14. The Department of Militia on Boundary Veterinary Control Posts is a special service under the joint oversight of the Ministry of Internal Affairs and the Ministry of Agriculture, Water Resources and Processing Industry. Its main functions are to monitor border crossings and road checkpoints within the country. It is a para-military service, headquartered in Bishkek, with a southern and northern subdivision and six platoons stationed in the oblasts who staff 27 permanent checkpoints and any temporary ones that may be set up at any particular time. Total staff strength is about 190, including 155 field staff. Few are trained in veterinary sanitary procedures. At the checkpoints, veterinary certificates and other cargo documents are checked; cargo is detained until documentation is in order. In fact, none of the boundary posts or checkpoints are equipped according to boundary quarantine post requirements, and none have any facilities to quarantine animals or keep animal products in safe seclusion. Only 7 of the 27 permanent posts are in buildings of standard construction; the others operate in vans or old and unsuitable premises. All lack effective communications equipment.

15. The militia does not operate entry/exit control posts at the most important border points – the airports, railway border crossings, and the two road crossings with China; these are operated by the SVD itself.

### ***Association of Private Veterinarians***

16. With active support from the EU-funded Food Security Program, a private veterinary association has been established, with oblast and raion level associations at the lower levels. The national association

claims to have 63 physical and 92 corporate members, but is not very active. Nationwide, membership in oblast-level associations is reported to be around 600. A serious problem is the close association with the state veterinary services and the formerly state-owned, but now privatized vaccine factory Altyn-Tamyr. The president of the association is director of the factory, and its executive director has his office in the SVD and reports to the Director General of the SVD. Many private veterinarians refuse to join the Association, as they perceive it to be an instrument of governmental control over the veterinarians made redundant during the various cuts in SVD staffing.

17. There are differing views about the objectives and tasks of the National Association. At oblast level, its principal role is seen as implementer of the regional veterinary plan and vaccination targets; at national level there is more of a vision that acknowledges the need for a functional separation of the state and private veterinary bodies, which is yet to be developed and documented in the law. It is also seen as a potential supplier of affordable drugs to its members.

### ***Animal Carcass Disposal Arrangements***

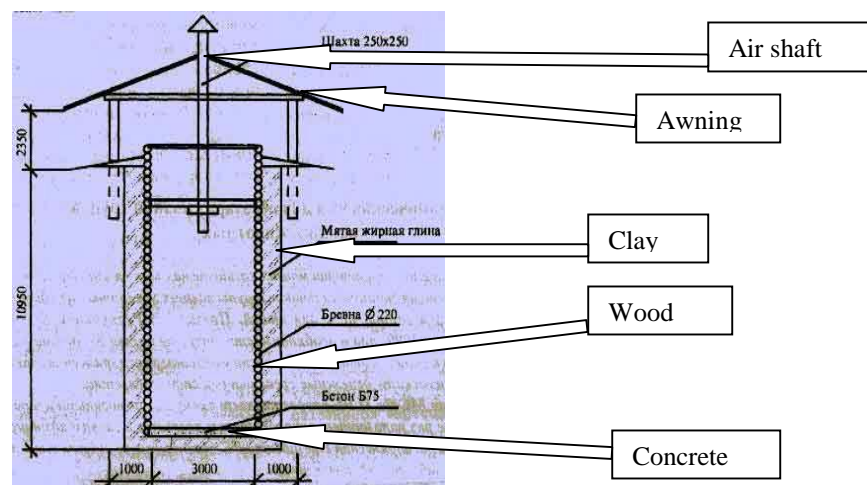
18. There are no rendering plants in the Kyrgyz Republic. Disposal of animal carcasses is done through burial or biothermal decomposition. Animal owners are, by law, required to inform a veterinarian when an animal has died; the veterinarian inspects the animal and decides if further bacteriological, virological or other tests are required. If not, the carcass is to be disposed of either in an official animal burial ground or a biothermal disinfection facility (“Bekkari hole”). There are, officially, 93 cattle burial grounds and 47 Bekkari holes in the Republic. It is prohibited to bury animals anywhere else.

<b>Oblast</b>	<b>Burial Grounds</b>	<b>Bekkari Holes</b>
Batken	6	5
Chui	36	9
Issyk-Kul	18	7
Jalalabad	16	15
Naryn	11	4
Osh	6	7
Talas	-	-
<b>Total</b>	<b>93</b>	<b>47</b>

19. However, with the dissolution of the state and collective farms, these facilities were transferred to the rural municipalities (aiyl okmotus), and the universal lack of financial and other resources in the aiyl okmotus has caused most of these facilities to fall into disrepair and disuse. In practice, many farmers do not report the death of animals, but dispose of them in any manner convenient to them. This may, and reportedly often does, involve their illegal processing into marketable food products, posing high risks to consumers. Reports of food-induced human illnesses traceable to the consumption of products purchased in local markets are frequent.

20. Biothermal holes, or Bekkari holes, are structures of standardized design for the destruction of animal carcasses. The holes are constructed at a dry, high-ground place with a low level of subsoil water, at least 300 m from the livestock sheds, processing facilities, rivers, ponds and wells, and the area is fenced to a height of not less than 2 m. The hole itself is 10-12 m deep, with a diameter of 2-3 m. The facility is constructed of moisture- and thermo-resistant material (bricks, ferroconcrete, wood and clay), with a hermetic cover and a ventilation system (see drawing below). Construction costs are about Som 40,000. 20 days after being loaded with animal carcasses the internal temperature rises to 65<sup>0</sup> C. The decaying process is completed within 35-40 days, with the formation of uniform and odorless compost, suitable for fertilizing. The biothermal hole has a significant advantage over burial grounds in that it

causes fairly rapid destruction of many microbes. In the absence of rendering facilities, Bekkari holes provide effective carcass sterilization and, thus, a high sanitary status at livestock farms.



## B. Health Care System

21. At the Republican level, MOH is responsible for health policy formulation and for development, financing and control of action plans for health sector development and specific programs. MOH is also responsible for regulatory action for controlling the quality, safety and effectiveness of health services, pharmaceuticals and medical equipment. The Mandatory Health Insurance Fund (MHIF) is a separate legal entity within MOH and is responsible for collecting and disbursing funds for health services covered by the State Guaranteed Package and the Outpatient Drug Benefit. Structural subdivisions of MOH and institutions reporting directly to the Minister are, besides the Mandatory Health Insurance Fund, the Department of Drug Supply and Medical Equipment, the Department of State Sanitary Epidemiological Surveillance, the Department of Health Sector Reform, and Republican-level National Centers and Educational Institutions. In the context of the government's decentralization policy, some of MOH's authority has been delegated to these subdivisions.

22. While MOH has a supervisory role in relation to all health-related organizations regardless of ownership and administrative level, it has direct managerial and financial responsibility only for the small number of specialized republican health facilities and the tertiary level health facilities in Bishkek. MOH has, in addition, direct financial responsibility for equipping tertiary health care organizations with high-tech products and for procurement and distribution of medical supplies and equipment for priority programs. These executive functions of MOH are carried out under oversight of the MOH's Head of Office/Executive Head, the Chief Department for Organization of Health Delivery and Licensing, the Policy and Organizational Work Department and the Financial and Economic Policy Department.

23. **Service delivery in the health sector.** Delivery of health care at primary and secondary health care facilities is delegated to oblast and rayon health facilities. These function with a large degree of managerial autonomy under the supervision of oblast-level Coordination Commissions on Health Care.

24. **Primary health care** is delivered by a network of facilities at the raion level and below, consisting at the end of 2004 of 862 Feldsher-Obstetrical Points (FAPs), including 60 Feldsher-Ambulance Stations, 672 FMC-affiliated and 31 autonomous Family Group Practices (FGPs), and 85 Family Medicine Centers (FMCs).

- **Feldsher-obstetrical points (FAPs)** are the first points of contact with the health care system for patients in rural areas. FAPs were established in the Soviet period to serve small villages and remote localities with 500-2000 population. They are staffed with at least one health worker, called Feldsher, who is a paramedic. In bigger villages they are also staffed with a midwife and a nurse. Services rendered by FAPs are limited to very basic curative, antenatal and postnatal care, immunization and health promotion. Deliveries are referred to the nearest hospital. FAPs report to either FGPs or FMCs of their raion. During 2005, FAP and FAP Training Centers were provided with basic equipment.
- **Family Group Practices (FGPs)** were formed in recent years on the basis of pre-existing health facilities. FGPs are typically staffed with an internal medicine physician, a pediatrician and a gynecologist, all of whom should have undergone re-training in family medicine. They have at least one physician in addition to nurses and midwives and serve villages with a population of more than 2000 inhabitants. The number of staff depends on village size or urban catchment population.
- **Family Medicine Centers (FMCs)** are the largest outpatient health facilities at the primary care level and are situated in the main settlement in the raion. They combine primary care and secondary outpatient care services, ranging from general medical care to specialized care and diagnostics including x-ray and ultra-sound. FMCs provide care for children, minor surgery, rehabilitation, family planning, obstetric care, perinatal care, first aid, pharmaceutical prescriptions, certification, home visits, and preventive and health promotion services. Health personnel in FMCs usually comprise 10-20 specialists. One FMC has been established in each raion, having replaced polyclinics. FMCs are also responsible for all Family Group Practices and Feldsher-obstetrical Points in their raion, although there are 31 Family Group Practices that are independent juridical entities. For some time the value of FMCs has been questioned. In particular, the extensive provision of narrow specialist services in close proximity to Territorial Hospitals does not seem to be justified in the resource-poor setting of the country. Attempts are under way to define the outpatient department of territorial hospitals as the place of specialized outpatient care.
- **Ambulance services and emergency care** is provided by Feldshers working at a FAP or at one of the about 60 rural ambulance stations. In 2004, ambulance services were integrated with FMCs. Until recently, FAP personnel, including Ambulance Feldshers, were poorly equipped, had had little or no in-service training and had low levels of knowledge and skills. By year-end 2005, all Ambulance-Feldshers are expected to have completed a basic course in emergency care, with more advanced training to follow in 2006. The role of ambulance teams with regard to emergency preparedness and response remains, however, to be defined.

25. **Secondary and referral care.** Secondary care is provided at specialized outpatient and general hospital levels. FMCs and outpatient departments of general hospitals are providers of specialized outpatient care. General inpatient facilities include: territorial (city and raion) hospitals, affiliates of territorial hospitals, a small number of remaining rural district hospitals, city children's hospitals, maternity houses and oblast merged hospitals. As of year-end 2004, there were 45 raion-level Territorial and 'Numerical' Hospitals; 21 Rural Hospitals, 19 of them in Jalal-Abad oblast; and 14 Territorial City Hospitals and City Hospitals. Territorial hospitals have a wide range of specialists and medical equipment and supplies and usually also house a Family Medicine Center and its ambulance service. Rural district hospitals are envisaged to be restructured into outpatient facilities or affiliates of Territorial Hospitals. City hospitals of all types, including adult, children and maternity houses/gynecological hospitals, provide general hospital care in cities but do not operate polyclinics. Under re-structuring, most

city hospitals have been transformed into Territorial (City) Hospitals based on mergers of health facilities situated in the same city with parallel closure of in-efficient ones or transformation into FGPs or FMCs.

26. Seven Oblast Merged Hospitals (OMHs) and one National Hospital provide specialized outpatient, general and specialized inpatient care at the oblast level and in Bishkek. With the exception of Republican facilities, these providers have the biggest capacity in their respective oblasts and are usually situated in oblast capitals. Oblast Merged Hospitals are the result of re-structuring in 2000, when oblast health departments were abolished and, as an interim measure, the administrative functions of oblast health departments were transferred to Oblast Merged Hospitals. Re-structuring plans under the Manas Taalimi Program envision a further merger of specialized health facilities with Oblast Merged Hospitals, including narcological dispensaries, dermato-venereal dispensaries and TB dispensaries.

27. *Tertiary care* is provided by Republican health facilities at the national level (national hospitals, centers and scientific-research institutes) and by specialized dispensaries and hospitals at sub-national levels. These facilities are narrowly specialized and cover cardiology, tuberculosis, oncology and radiology, obstetrics and pediatrics, treatment of infectious diseases, and treatment of mental illnesses. Republican facilities usually have the best facilities and experts and often act as teaching and research hospitals. There are nine republican-level national facilities; at the end of 2003, they employed 1,891 (18 percent) of all 10,737 doctors in practice in the country. Almost all Republican facilities are situated in Bishkek. They are intended to provide tertiary care to the whole population, but in practice the majority of patients are from Chui oblast and Bishkek and most of the services provided are secondary rather than tertiary in nature.

28. *Disease Surveillance, Sanitary Inspection and Control, and Health Promotion.* Infectious disease surveillance and sanitary inspection and control are carried out by the State Sanitary-Epidemiological Department of the Kyrgyz Republic headed by a Director-General and a first Deputy Director-General and organized into the departments for State Epidemiological Surveillance, State Sanitary Inspection and Control, and Laboratory Examinations. The Sanitary-Epidemiological Service (SES) comprises, in addition, the National AIDS Center (described above), the Republican Center for Immunoprophylaxis, the Republican Center for Quarantine and Dangerous Infections, and the Research Institute for Preventive Medicine.

29. The main current SES responsibilities are infectious disease control through surveillance, analysis and response to disease and sanitary inspection and control. Disease surveillance is carried out with regard to 30 infectious and five parasitic diseases and should result in a local-level response to outbreaks in consultation with local civil administrations. Sanitary inspection and control is carried out with regard to food and water safety, occupational safety, school health, and radiation, but also with regard to licensing of commercial facilities and products. These functions are carried out through seven oblast-level SES Centers and two City SES Centers in Bishkek and Osh and through 54 raion and inter-raion SES Centers. All are supported by microbiology laboratories (equipped to different standards) that are used jointly for purposes of disease control and sanitary inspection and control. According to a MOH decree of July 2004, raion-level SES microbiology laboratories were intended to incorporate HIV/AIDS labs. For the time being, sanitary inspection and control is conducted on the basis of several major laws and some 3,000 detailed regulations. Based on the Decree/Ukaz "On Fundamentals/Principles of Technical Regulation" of May 2004, these will be compiled into far fewer, less specific requirements which will, however, have the status of Parliament-approved laws, rather than the status of SES-mandated regulations. The process of review, updating and compilation, which started in December 2004, will take about five years to complete and will be evidence-based to the extent possible. Similar updating is underway with regard to procedures for epidemiological surveillance, based on a health risk approach.

30. Health promotion is the responsibility of the Republican Center for Health Promotion, established in 2001. The Center is a sub-division of MOH and reports directly to the Minister. Its field activities are carried out through Oblast Health Promotion Centers and a Health Promotion Center in Bishkek. At the raion level, each Family Medicine Center has a Health Promotion Room that serves as a base for integration of health promotion into primary health care. The foundational concept for health promotion is to enable people to take responsibility for their own health. Based on pilot experience under the Kyrgyz-Swiss Health Reform Project, health promotion is being practiced by some 350 Village Health Committees in Naryn and Talas oblasts; there are plans to extend this approach with SIDA and USAID support to all oblasts and, thus, to cover all 1800 villages in the country. Urban approaches to health promotion are being developed in collaboration with the WHO "Healthy Cities" program. Professional practice by the Center covers a full range of health education and communication activities, based on expertise in PRA techniques, interpersonal communications, and monitoring and evaluation of behavior changes. The Republican Center is, therefore, well placed for the integration of health promotion with disease prevention and control that is foreseen under Manas Taalimi.

## Annex 4: Results Framework and Monitoring

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

Project Development Objective	Outcome Indicators	Use of Outcome Information
To minimize the global threat posed by HPAI infection and other zoonoses in domestic poultry and to prepare for, control, and respond to an influenza pandemic and other infectious disease emergencies in humans.	<p>Evidence* of improved effectiveness of participating animal and public health services in responding to the risk of an HPAI outbreak and/or pandemic:</p> <ul style="list-style-type: none"> <li>• National integrated preparedness, control and response plans prepared and accepted by WHO, OIE and FAO;</li> <li>• Contained and diminishing pattern of HPAI Infection in poultry.</li> </ul>	To determine whether or not the project objectives have been achieved.

Intermediate Outcome (One per Component)	Intermediate Outcome Indicator (*)	Use of Intermediate Outcome Monitoring
<b>Component I.A:</b> National policy framework defined and national strategy developed to prevent, control, and eradicate HPAI among the animal population.	<p>Evidence* of timely and satisfactory progress toward delivery of Component I.A outputs, as compared to the original plan, including specific indicators as follows:</p> <ul style="list-style-type: none"> <li>• National AI Strategy developed and adopted by government;</li> <li>• Outbreak Containment Plan conforms with the guidelines of FAO/OIE and GPAI;</li> <li>• Assessment of the Veterinary Services completed.</li> </ul>	To ensure adequacy of policies and actions to the changing situation.
<b>Component I.B:</b> Animal disease surveillance and diagnostic capacities strengthened and training of the veterinary services designed and completed.	<p>Evidence* of timely and satisfactory progress toward delivery of Component I.B outputs, including specific indicators as follows:</p> <ul style="list-style-type: none"> <li>• Laboratory equipment and materials are procured, distributed and installed;</li> <li>• Staff is trained in surveillance and diagnostic methods;</li> <li>• Reporting and reaction time for suspected cases of AI is reduced to the minimally acceptable levels;</li> <li>• 75% average monitoring coverage in at-risk areas.</li> </ul>	To assess the level of readiness for disease surveillance and diagnosis.
<b>Component I.C:</b> Outbreak Containment Plan prepared and activated as needed in response to AI outbreaks	<p>Evidence* of timely and satisfactory progress toward delivery of Component I.C outputs, including specific indicators as follows:</p> <ul style="list-style-type: none"> <li>• Emergency supplies procured and available at strategic locations in the field;</li> <li>• If appropriate, ring vaccination around infected areas completed;</li> <li>• Culling, disposal and disinfection activities completed as needed;</li> <li>• Compensation provided to poultry owners rapidly and in a monitorable way.</li> </ul>	To ensure satisfactory and timely containment of the infection.

<b>Intermediate Outcome (One per Component)</b>	<b>Intermediate Outcome Indicator (*)</b>	<b>Use of Intermediate Outcome Monitoring</b>
<b>Component II.A:</b> Public health program planning and coordination enhanced to better manage public health emergencies	Evidence* of timely and satisfactory progress toward delivery of Component II.A outputs, including these indicators: <ul style="list-style-type: none"> <li>• Inter-institutional/multi-sectoral coordination arrangements in place.</li> <li>• Command and control structure for program finance/management defined and in place.</li> <li>• Health laws, regulations and other legal provisions revised and/or promulgated.</li> </ul>	To verify satisfactory and timely progress in, or completion of Component II.A.
<b>Component II.B:</b> National public health surveillance systems strengthened	Evidence* of timely and satisfactory progress toward delivery of Component II.B outputs, including these indicators: <ul style="list-style-type: none"> <li>• National health surveillance for influenza virus developed at national level.</li> <li>• Number of at risk regions in the country that have implemented a system for influenza virus surveillance and control.</li> <li>• Number of health personnel trained in influenza virus surveillance and control.</li> <li>• % of national and local agencies submitting regular weekly and monthly reports on the influenza pandemic.</li> </ul>	To verify satisfactory and timely progress in, or completion of Component II.B.
<b>Component II.C:</b> Health system response capacity strengthened	Evidence* of timely and satisfactory progress toward delivery of Component II.C outputs, including these indicators: <ul style="list-style-type: none"> <li>• ‘Social distancing measures’, such as quarantine, bans on mass gatherings, and travel restrictions, developed and backed up by communication strategy.</li> <li>• Strategy to access pandemic vaccines developed.</li> <li>• Strategy to access anti-virals for national use (e.g., stockpiling) developed.</li> <li>• Contingency plans for maintenance of essential services within the health and outside the health system developed.</li> </ul>	To verify satisfactory and timely progress in, or completion of Component II.C.
<b>Component III:</b> Public information on the recommended practices for control and eradication of HPAI among key target groups developed, tested, and disseminated.	Evidence* of timely and satisfactory progress toward delivery of Component III outputs, including these indicators: <ul style="list-style-type: none"> <li>• National communication strategy for pandemic influenza established and materials and messages prepared.</li> <li>• Public information campaign launched in at-risk areas;</li> <li>• Evidence of high level of awareness by target groups following dissemination of messages.</li> </ul>	To verify satisfactory and timely progress in, or completion of Component III.

<b>Intermediate Outcome (One per Component)</b>	<b>Intermediate Outcome Indicator (*)</b>	<b>Use of Intermediate Outcome Monitoring</b>
<b>Component IV.A:</b> Coordination and management of project activities carried out as planned.	Evidence* of timely and satisfactory progress toward delivery of Component IV.A outputs, including these indicators: <ul style="list-style-type: none"> <li>• Program reports, financial monitoring, procurement and disbursement reports, audits, management and financial reports prepared and submitted periodically.</li> </ul>	Indicators will allow for the verification of satisfactory and timely progress in program management.
<b>Component IV.B:</b> Coordination and management of project M&E activities carried out in a professional manner, as planned.	Evidence* of timely and satisfactory progress toward delivery of Component IV.B outputs, including these indicators: <ul style="list-style-type: none"> <li>• Baseline developed for monitoring and evaluating Project impact six months after Grant effectiveness.</li> <li>• Methodology defined and monitoring and evaluation periodically undertaken.</li> </ul>	Data collected through M&E activities will be key for defining what program adjustments are needed.

(\*) via reports from technical teams. The actual composition of teams is to be decided, but is likely to draw from international agencies and other experts.

**NOTE:** Should any disease outbreak occur (avian influenza or another communicable disease), the response of the health system will be examined, both for results monitoring and to ensure that lessons learned will inform further implementation of this operation.



## Annex 5: Project Costs and Financing Arrangements

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

US\$ million

COMPONENTS	Local	Foreign	Total
<b>1. Animal Health</b>			
1.A Enhancing HPAI Prevention and Preparedness	0.07	0.10	0.18
1.B Strengthening Disease Surveillance	0.20	0.72	0.92
1.C Strengthening HPAI Control Programs	0.32	1.36	0.68
1.D Improving Bio-security in Poultry Production	0.02	0.08	0.10
1.E Compensation Fund	1.00	0.00	1.00
<i>Sub Total</i>	0.61	2.26	2.88
<b>2. Human Health</b>			
2.A Enhancing Public Health Program Planning	0.06	0.14	0.20
2.B Strengthening of Health Surveillance Systems	0.06	0.54	0.60
2.C Strengthening Health System Response Capacity	0.54	0.96	1.50
<i>Sub Total</i>	0.66	1.64	2.30
<b>3. Public Awareness and Information</b>			
3.A Capacity Building	0.04	0.04	0.08
3.B Information and Communication Services	0.10	0.26	0.36
<i>Sub Total</i>	0.14	0.30	0.44
<b>4. Implementation Support and Monitoring &amp; Evaluation</b>			
4.A Project Management	0.20	0.08	0.28
4.B Monitoring and Evaluation	0.04	0.06	0.10
<i>Sub-Total</i>	0.24	0.14	0.38
<b>Total Base Costs</b>	1.65	4.35	6.00
Physical Contingencies	0.04	0.06	0.10
Price Contingencies	0.10	0.20	0.30
<b>TOTAL PROJECT COSTS</b>	1.79	4.61	6.40

Note: Allocations for the Emergency Imports component of the Project are included in the allocations for the other four components.

Total project costs have been estimated at US\$6.40 million, of which: (i) the IDA Grant will finance US\$4.0 million (63% of total project costs), (ii) the Government will finance US\$0.30 million (5%), (iii) the Government of Japan will co-finance through a PHRD Grant US\$1.0 million (16%), (iv) the IDA-funded Agricultural Support Services Project (ASSP), restructured to include this new component, will co-finance US\$1.0 million (16%). Other cofinanciers are expected to cover the remaining US\$0.10 million. The Ministry of Economy and Finance has confirmed that it will waive import duties and taxes on goods and services to be procured for the Project on the basis of the “public goods” nature of preventing and controlling outbreaks of avian influenza.

**Estimated Project Expenditures by Year**  
(US\$)

Component	Subcomponent	2006	2007	2008	2009	2010	Total
<b>Animal Health</b>	A. Enhancing HPAI Prevention and Preparedness Capability	80,000	80,000	30,000	6,000	0	196,000
	B. Strengthening Animal Disease and Surveillance, Diagnostic Capacity, and Applied Research	523,285	215,585	180,585	71,585	0	991,040
	C. Strengthening HPAI Control and Outbreak Containment Capacity	290,000	280,700	100,000	100,000	35,000	805,700
	D. Improving Bio-security in Poultry Production and Trade	45,000	45,000	5,000	5,000	0	100,000
	E. Compensation Fund	200,000	200,000	200,000	200,000	200,000	1,000,000
<b>Subtotal</b>		<b>1,138,285</b>	<b>821,285</b>	<b>515,585</b>	<b>382,585</b>	<b>435,000</b>	<b>3,092,740</b>
<b>Human Health</b>	A. Enhancing Public Health Program Planning and Coordination	90,000	90,000	20,000	10,000	4,000	214,000
	B. Strengthening of Public Health Surveillance Systems	250,000	350,000	30,000	8,000	4,000	642,000
	C. Strengthening Health System Response Capacity	550,000	700,000	290,000	50,000	15,000	1,605,000
<b>Subtotal</b>		<b>890,000</b>	<b>1,140,000</b>	<b>340,000</b>	<b>68,000</b>	<b>23,000</b>	<b>2,461,000</b>
<b>Public Awareness and Information</b>	A. Capacity Building	30,000	30,000	25,600	0	0	85,600
	B. Information and Communication Services	160,000	150,000	75,200	0	0	385,200
<b>Subtotal</b>		<b>190,000</b>	<b>180,000</b>	<b>100,800</b>	<b>0</b>	<b>0</b>	<b>470,800</b>
<b>Implementation Support and Monitoring &amp; Evaluation</b>	A. Project Management	115,000	95,000	75,000	75,000	46,600	406,600
<b>Subtotal</b>		<b>115,000</b>	<b>95,000</b>	<b>75,000</b>	<b>75,000</b>	<b>46,600</b>	<b>406,600</b>
<b>Emergency Imports</b>		0	0	0	0	0	0
<b>Subtotal</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>		<b>2,333,285</b>	<b>2,236,285</b>	<b>1,031,385</b>	<b>725,585</b>	<b>404,600</b>	<b>4,431,140</b>

**Financing:**

IDA Grant	1,513,285	1,221,285	640,245	390,585	234,600	4,000,000
PHRD Grant	300,000	300,000	300,000	75,000	25,000	1,000,000
ASSP Co-financing	400,000	600,000	0	0	0	1,000,000
Government co-financing	70,000	65,000	60,000	60,000	45,000	300,000
Other co-financing	50,000	50,000	31,140	0	0	131,140

## Annex 6: Detailed Project Description

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

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1. The Project will finance activities under five components: (i) animal health, (ii) human health, (iii) public awareness and information, (iv) implementation support, monitoring and evaluation, and (v) emergency imports. Even though the activities are organized by sectoral components, the project will strongly endorse integrated national plans that ensure common objectives across sectors for dealing with this issue.

#### I. ANIMAL HEALTH COMPONENT

2. The project will support a national program to develop and implement HPIA prevention, containment, control and eradication activities in the livestock sector, specific to the needs of the Kyrgyz Republic in the short, medium and longer term. These activities reflect an assessment of the particular risks, conditions, constraints, needs and possibilities in the country, including a rapid assessment of the veterinary services, a functional review (by TACIS) of the key veterinary agencies and institutions, and a recent Bank study of the Kyrgyz livestock economy.

#### A. Enhancing HPIA Preparedness and Prevention Capability

3. **A1 - Strengthening the National Policy and Regulatory Environment.** The project will support activities aimed at improving the policy, legal and regulatory framework that governs the national capability to implement the recommended disease detection, control, prevention, containment and eradication measures in a uniform and effective way and in accordance with OIE standards and guidelines. The project includes support for a detailed review of current policies and the existing legal and regulatory environment and for the drafting, as may be warranted, of legal amendments, regulations and implementation guidelines and manuals. Staff of the Ministry of Agriculture, Water Resources and Processing Industry (MAWRPI), the State Veterinary Department (SVD), the Ministry of Justice (MOJ) and other concerned agencies will, in topical working groups and with support by international experts on veterinary laws and regulations, review the relevant laws and regulations governing animal disease control and will draft the necessary legislative amendments, regulations and implementation guidelines. Particular emphasis will be placed on regulations concerning the control of notifiable diseases, the delineation of the respective responsibilities of the veterinary authorities and private veterinary service providers, and the establishment and operation of effective and transparent compensation mechanisms for livestock owners in the event of mandatory culling.

4. **National Action Plan.** As part of the draft national action plan, a good and comprehensive draft action plan has been prepared for the veterinary sector.<sup>7</sup> The project will provide support to further refine and finalize this plan and to develop the necessary detailed implementation guidelines and manuals for all relevant agencies and services. Specialized international expertise will be mobilized to assist in the effort, as needed, to work with the national HPAI veterinary sector working group and with the agencies involved in HPAI prevention and control on the veterinary side. Support will also be provided for the participation of veterinary experts and project staff in regional and international information exchanges on avian influenza as well as for exposure to actual control operations elsewhere.

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<sup>7</sup> Contingency Plan for Avian Influenza, 10 December 2005, State Veterinary Department, MAWRPI, Bishkek.

5. **Assessment of the National Veterinary Services.** The organizational and functional review of the main governmental veterinary services undertaken by TACIS experts and the rapid assessment carried out by the project team strongly suggest the need for an intensive assessment of the national veterinary services, followed by appropriate reforms as may be warranted. To meet international standards set by the OIE and the recommendations developed by FAO Empres, and to ensure that the Kyrgyz poultry and livestock industry can become a recognized player in international trade, the veterinary services need to develop and document appropriate procedures and standards for the implementation and management of animal health measures and international veterinary certification activities. The OIE has developed instruments that allow national veterinary services to carry out a self-evaluation and establish their current level of performance, form a shared vision with service providers and clients in the private sector, establish priorities, and facilitate strategic planning. A key tool is the auditing kit entitled “Performance, Vision and Strategy for Veterinary Services”, and this will be used for this evaluation. Essential aspects of this assessment will include the need to focus on public-good aspects and rationalize the operations and resource use of the national veterinary system, to become and be perceived as a transparent service provider, and to provide a more proactively supportive environment for private veterinary service providers.

6. **Establishment of a National Compensation Policy and Fund.** Early detection and reporting as well as rapid response depend critically on the incentives for poultry owners to report very quickly any sick and dead poultry to their veterinarians. Without adequate compensation arrangements in place, poultry owners have no incentive to do so, but must fear that their animals will be destroyed and they lose this valuable capital. Article 34, para. 3, of the “Law of the Kyrgyz Republic on Veterinary Medicine” of 12 April 2005 confirms the right of legal entities, private entrepreneurs and individuals to receive compensation for damages suffered as a result of mandatory culling, but no steps have been taken as yet to develop the required implementation arrangements – including financing, institutional arrangements, legal authority over the fund, fiduciary aspects, eligibility criteria, payment arrangements, flow of funds, etc. The project will provide technical support to do so.

7. Compensation payments could, depending on the scope of disease outbreaks, pose a significant fiscal burden on the state, and the project will provide financial resources to establish the foundation of a compensation facility. The Government will establish a national compensation fund from which the owners of animals culled will be compensated, and the Project will provide US\$1 million to establish this fund. US\$100,000 will be disbursed into a specially established account so as to provide sufficient resources for immediate needs; it will be a condition of disbursement for this subcomponent that the modalities for operating the fund have been established and have been approved by IDA. The remaining US\$0.9 million will be disbursed only in the event of actual need.

8. The legal, institutional and operational details will be developed and agreed upon during the first months of project implementation. Key parameters guiding this effort include the following:

- Compensation payment to livestock owners will be in cash. There will be no vouchers or animal replacements. Payment will be made within four weeks from the date of culling.
- For smallholders (owning up to 200 birds), payment per bird will be at 75% of the market price of laying hens in the respective oblast administrative center as reported by the Kyrgyz Agricultural Market Information Service (KAMIS) for the third month preceding the month in which culling took place. Payments will be made at the village level, in public, and under the supervision of the committee members from the village who attended the culling and signed the culling records (see para. 21). Since backyard poultry is predominantly managed by women, payment will be made directly to the women owners.
- For commercial poultry producers, compensation will be provided in cash at a reasonable replacement cost – i.e., for birds less than 3 months old at the cost of one-day chicks, and for

birds older than 3 months at the cost of 3-months-old birds, as reported by KAMIS during the third month preceding the month in which culling took place.

- Flow-of-funds arrangements for making compensation payments will minimize the number of stages through which funds will need to pass before reaching the intended beneficiaries, while ensuring maximum transparency.

9. **A2 - Updating Essential Information on Migratory Birds.** Migratory birds come through Kyrgyz territory in significant numbers in both fall and spring. In the fall (September-November) they head from the North and East for locations in southern and southwestern Asia. On their way, many tend to rest for lengthy periods at locations such as Lake Issyk-Kul, the Chui valley and the Fergana valley. In the spring, when they are returning from warmer climates, they are generally in a hurry to get to their nesting places in Kazakhstan and Siberia and rarely stop in Kyrgyzstan. The main risk period for the introduction of avian influenza (or other diseases) into the Kyrgyz wild and domestic avian population is, thus, September-November. Extensive long-term surveys conducted in the 1970s and 1980s indicate that the number of migrating birds crossing Kyrgyz territory each year is several million. Approximately 100,000 waterfowl from western and central Siberia stay for the entire winter at Issyk-Kul, one of the 14 globally important transit hubs for migrating birds.

10. Flight, rest and wintering patterns of certain species of migratory birds, as they concern the territory of the Kyrgyz Republic, are likely to have changed since the extensive studies carried out in the 1970s and 1980s, because of extensive development of irrigation facilities, ponds, etc., in the southern oblasts. The project will finance an immediate effort to update this critical information, so as to identify “hot spots” and high-risk locations where migratory fowl may come into contact with domestic poultry. This will be followed up with annual surveys to ensure that the knowledge base on migratory bird behavior remains current. In addition, a program of regular testing of migratory water fowl will be initiated with support from the project.

## **B. Strengthening Disease Surveillance, Diagnostic Capacity, and Applied Research**

11. **B1 - Strengthening Veterinary and Related Services.** Once the evaluation of the veterinary and related services has been completed, targeted support will be provided to strengthen these services so as to bring them in line with OIE standards. This will include: technical support for realigning institutional resources with priority objectives, mandates and tasks; institutional and organizational restructuring and training of staff; and upgrading of priority infrastructure (limited works, equipment, materials and supplies, and technical assistance). Staff training will be targeted at the personnel of the SVD and the veterinary laboratories as well as public and private veterinarians and veterinary practitioners operating in the rural areas. Its focus will be on awareness raising, monitoring, investigating, sampling and test procedures to be applied in case of an outbreak, as well as on analyzing epidemiological data and performing risk assessments. Appropriate training will also be provided to staff at the veterinary boundary control posts operated by either SVD or the Veterinary Militia.

12. The project will also finance facilities and training to strengthen the internal communications capabilities of the national veterinary services and their ability to access internationally available information through the internet. This will include English language training for selected staff.

13. **B2 - Strengthening Diagnostic Capacity.** Project support will be targeted primarily at strengthening the capacity of the Republican Central Veterinary Laboratory, the Veterinary Laboratory in Osh and, to a lesser extent, some of the associated oblast laboratories and raion facilities in sample collection and submission, detection, reporting and follow-up of reported HPAI cases. Initially, this will involve surveillance activities. Essential equipment, consumables and reagents, staff training and TA will be provided to establish, as rapidly as possible, an adequate institutional capacity for serological tests and

screening surveys and virological tests for confirmation of the disease and preparation for serotyping of HPAI subtypes. Project support will be focused on establishing virology and serology testing procedures, including the setting up of PCR methodology at the Central Laboratory and the strengthening of the ELISA work at central level and in Osh. The central laboratory and the Osh laboratory will be the main foci from where diagnostic work (sample collection and laboratory examinations) will be coordinated and executed, and both will receive the appropriate equipment and training. Twinning arrangements with suitable institutions elsewhere will be explored and supported.

14. **Strengthening Animal Disease Information Systems.** Project assistance will be provided to improve the reporting of animal health information from the field and the flow of such among relevant agencies. The emphasis will be on developing an efficient disease information system, as part of the effort to enable the Kyrgyz Republic to participate in global disease information sharing, in full compliance with the obligations of membership in the OIE. Much emphasis will be placed on human resources development in the establishment and use of database programs (including GIS) and the analysis of data to deliver the necessary support to decision makers charged with prevention and control of animal diseases. The system will be linked with rapid and standardized methods of routine analysis of surveillance data, which would demonstrate important changes in the H5N1 situation, and promptly supply this information to field staff.

15. The project will finance relevant epidemiological studies and surveillance programs to inform the improvement of disease control measures, which will be adjusted and improved as new information becomes available. It will also support the upgrading of Kyrgyzstan's participation in the World Animal Health Information System (WAHIS) to strengthen the country's ability to participate in global disease information sharing. A modest, but effective computer-based information system will be established. The applicability of graphical information system technology will be fully exploited. Epidemiological studies will include efforts to update the knowledge base on the movement of migratory birds in the main areas of their known transit. An epidemiology course will be designed with appropriate examples and case studies for distance learning.

16. **B3 - Community-Based Animal Disease Surveillance and Early Warning.** The project will finance the establishment, at the community level, of early warning systems to support a robust emergency reporting and feedback system for notifiable animal diseases as part of the development of participatory disease search techniques. A key objective will be to improve the commitment of all participants of the epidemiological surveillance networks. Staff will be trained in participatory epidemiology techniques, and surveys will be designed for such work. The project will support training for animal health workers and rural extension agents concerning treatment of infected animals, reporting procedures and immediate local response measures. Farmers will receive hands-on training in the detection of clinical signs. Funding will be provided for essential bio-security equipment such as sprayers and protective equipment.

17. Drawing on the reservoir of community activists involved in community-based organizations (CBOs), the project will promote awareness and widespread recognition of the need for immediate reporting and dissemination of alerts, and it will foster the involvement of these CBO networks in early warning systems within and across communities. Key CBOs to be mobilized include the village health committees (currently operating with Swiss support in Naryn and Talas oblasts, but now to be established in the other five oblasts with support from USAID and SIDA), local livestock owner cooperatives, UNDP-supported self-help groups, Rural Advisory Service (RAS) field agents and village organizers, as well as Village and Community Investment Committees working within the framework of the Village Investment Project.

18. **B4 - Strengthening Applied Veterinary Research Capacity.** The project will provide support for strengthening the laboratory and applied research capacity of the Livestock, Veterinary and Pasture Research Institute, by providing essential equipment, consumables and reagents, staff training and TA. Twinning arrangements with appropriate institutions elsewhere will be explored to facilitate sustained capacity strengthening over time. Some funding will be provided as well for studies linked with the national disease control plan. This will allow the institute to fulfill the critically needed function of providing quality assurance and training.

### **C. Strengthening HPAI Control and Outbreak Containment Capacity**

19. Project support will be made available for the implementation of HPAI outbreak containment actions, as set forth in the draft national action plan and to be further specified in the final plan and associated implementation guidelines and manuals. The project will finance and support activities related to the implementation of the national action plan. The plan specifies the responsibilities and functions of a National Disease Crisis Coordination Center (NDCCC) in the MAWRPI, headed by the Director General of the SVD. It also defines the composition and responsibilities of Local Disease Crisis Coordination Committees (LDCCCs) that will be formed and trained now and activated in any location where an outbreak is suspected and/or confirmed.

20. **C1 - Targeting Virus Eradication at the Source.** In the event of an HPIA outbreak, the overriding objective for the veterinary services is eradication of the disease at the source of infection. Accordingly, the project will provide support for: (i) culling of infected and at-risk poultry, (ii) compensation to farmers and commercial poultry producers (see paras. 6-8 above), (iii) disposal of carcasses and potentially infective materials in a bio-secure and environmentally acceptable manner, and (iv) control of movement of birds and products that may be infected, including controls at the interface of infected/non-infected areas and border controls.

21. The project will provide the technical and logistical means to contain an HPIA outbreak through location quarantining and culling of the affected animals and those in the surrounding risk area. Culling and carcass disposal will be done under the supervision of the SVD or of SVD-contracted private veterinarians by properly equipped and protected staff (SVD staff, Veterinary Militia, and/or laborers hired by SVD for the purpose). Appropriate equipment and materials will be provided for efficient and humane animal destruction as well as for the safe disposal of carcasses. Carcass disposal will be case-specific, depending on local circumstances, but in all cases in an authorized and bio-environmentally safe manner. Protective clothing and other gear will be procured and kept in ready supply, to be issued to all staff and workers involved in containing an outbreak. Precise lists will be kept of all animals culled, so as to provide the basis for subsequent compensation to their owners.

- For backyard poultry operations, the culling will be done in the presence and under the “social supervision” of a small local committee that includes at least two trusted members of the village community (of which at least one will be a woman) as well as the raion veterinarian and one official from the aiyl okmotu administration. The community representatives may be from the Village Health Committee, the Women’s Mahalla, the GenSoviet, the Village Investment Committee or other locally recognized and trusted community organizations. This committee will verify the number of birds culled and their owners, so as to ensure a correct count and full transparency for subsequent compensation payments. The commission members will sign and the poultry owners will countersign the list of birds culled.
- At commercial poultry farms, the culling will be carried out in the presence of the owner or manager or of a person designated by him/her and under the supervision of the raion veterinarian and one official of the aiyl okmotu administration. All three will sign the list of birds culled.

22. **C2 - Human Safety.** The project will support the provision of training of people likely to be in direct contact with birds that may carry the live virus. This includes veterinary and Rural Advisory Service field staff involved in the identification of the disease, farm workers involved in culling and in disposing of manure, and laboratory workers involved in virus isolation and diagnosis. Adequate resources will be allocated for training and equipment (bio-safety hoods and appropriate personal protective clothing). In addition, all veterinary staff and workers will be vaccinated against seasonal human influenza.

23. **Poultry Vaccinations.** Poultry vaccination on a large scale as a preventive measure is not recommended in Kyrgyzstan at the present time. In the face of an HPIA outbreak and in order to prevent spread, the project will fund the procurement of a limited quantity of AI vaccine to undertake ring vaccinations.

#### **D. Improving Bio-Security in Poultry Production**

24. Improving bio-security in poultry production is an important element in any strategy to guard against the damaging impact of HPIA. The project will support efforts to enhance bio-security at poultry farms and associated premises, through bio-containment and bio-exclusion and the provision of safe carcass disposal facilities. In the absence of incinerators and rendering plants, the nationally accepted technology for carcass disposal is the use of biothermal holes, or “Bekkari holes”, and the project will finance the rehabilitation of existing ones and the construction of additional ones in key locations throughout the country. Of standardized design, Bekkari holes are constructed at a dry location at least 300 m from livestock sheds, processing facilities, rivers, ponds and wells. 10-12 m deep and with a diameter of 2-3 m, they are constructed of moisture- and thermo-resistant materials (bricks, ferroconcrete, wood and clay), with a hermetic cover and a ventilation system. Animal carcasses loaded into the facility decay at high temperature within 35-40 days into odorless and safe compost, suitable for fertilizing.

#### **E. Compensation Fund**

25. The project will compensate poultry owners for culled birds, in accordance with the operational guidelines governing the compensation fund. The legal, institutional and operational details will be developed and agreed upon during the first months of project implementation. They will be included in the Project Operational Manual (please see more details in Annex 6b).

### **II. HUMAN HEALTH COMPONENT**

26. The component will support a national program to implement HPIA prevention, preparedness and planning, response and containment activities in the human health sector specific to the needs of the Kyrgyz Republic in the short, medium and longer term. These activities reflect an assessment of the particular risks, conditions, constraints, needs and possibilities in the country, including a rapid assessment of the health services undertaken in the context of the recently approved Health and Social Protection Project and the appraisal team. Particular attention has been paid in the design of the component to ensure consistency of the Government’s health reform program and the overall public health reform agenda, thereby promoting an acceleration of implementation of the public health agenda.

27. To prevent an outbreak among humans, initial support under the project will concentrate on a few, but vital areas, including launching or expanding regular seasonal flu vaccinations, strengthening surveillance and laboratory networks, and stockpiling anti-virals. The component targets the reduction of the impact of a pandemic influenza virus through: (i) year-round surveillance; (ii) effective and accurate methods of diagnosis; (iii) social distance interventions; (iv) vaccines (once they become available); (v)

anti-viral drugs; and (vi) strengthened medical services. It will support activities for: (i) enhancing public health program planning and coordination; (ii) strengthening of the national public health surveillance system; and (iii) strengthening the health system response capacity. The interventions under the component are based on the country's epidemiological and programmatic needs and on well-assessed options for meeting them. They will be grouped into three broad sub-components:

#### **A. Enhancing Public Health Program Planning and Coordination**

28. Funding will be provided for: (i) establishing inter-sectoral command and control system structures and development of their institutional capacity, including public, private and civil society organizations, (ii) identifying crucial gaps in infrastructure and other resources, as well as laws and/or statutes which, if not corrected, may interfere with an effective response, (iii) defining operational priorities, such as a mass immunization campaign during an infectious disease emergency; and (iv) ensuring coordination among affected units. Fragmented authority would cripple the country's efforts. Support will also be provided for the review and/or preparation of statutory provisions regarding quarantine laws and how they apply in a public health emergency; laws and procedures for closing businesses or schools and suspending public meetings during a declared state of emergency; medical volunteer licensure, liability, and compensation for retired and non-medical volunteers; and worker's compensation laws as they apply to healthcare and veterinary workers and other essential workers who have taken anti-virals for prophylaxis.

29. Additionally, support will be provided for health preparedness and response plan preparation, and for a simulation exercise at national level, involving regional and local levels as well as supranational levels. These plans will include activities to protect healthcare workers and other personnel and ensure they can and are willing to continue to do their job in a pandemic.

#### **B. Strengthening of National Public Health Surveillance Systems**

30. To assess risks to public health and guide protective measures, information is needed on the extent of influenza infection in animals and humans and on circulating viruses, as well as on other priority infectious diseases. The national surveillance systems must be improved. When outbreaks in animals occur, active human case detection should be carried out by a joint veterinarian and health team. This will require the development of epidemiologic intelligence capacity to assess and verify events and rumors, dispatch teams to investigate, and assist regional and local levels in infectious control measures. In the case of Kyrgyzstan, such surveillance, communication, diagnostic, training, epidemiological and research activities will not be possible to pursue in the short- to medium term, and special action will be necessary to ensure local, regional and international coverage of these activities.

31. The detection of novel influenza strains is done through clinical and virological surveillance of human and animal influenza disease. There are four main national surveillance areas that need to be strengthened: (i) virologic surveillance to report the number of clinical specimens tested for influenza and other priority infectious diseases and the number of positive results by virus type and sub-type (crucial for proper vaccine seed strain); (ii) surveillance for influenza-like illness (ILI) and other priority infectious diseases to report on the number of patient visits for ILI and other priority infectious diseases by age group and the total number of patient visits each week; (iii) surveillance for influenza and pneumonia, as well as for other priority infectious diseases to report the total deaths related to influenza and other priority infectious diseases; and (iv) oblast and raion epidemiologists to assess and report influenza and other priority infectious diseases activity levels in their respective localities. Surveillance systems should be enhanced prior to the start of a pandemic, to ensure that the high demand for timely information that can be anticipated in a pandemic can be met. To this end, the Project will support three sets of activities.

32. **B1 - Improvement of Health Information and Telecommunication Systems.** This sub-component will finance rapid adaptation and strengthening of existing health information systems (HIS) and processes to improve the timely and effective reporting of influenza-like illnesses and other priority infectious diseases of direct relevance to a potential epidemic of avian influenza. It will support development of standard case definitions, active clinical and virological surveillance criteria and reporting protocols/systems for ILIs, fevers of unknown origin and other relevant infectious diseases; establishment of a network of sentinel units; and development of epidemiological intelligence capacity to assess and verify events and rumors, dispatch teams to investigate, and assist regional and local levels in infectious control measures (see para. 34 for details). These efforts will build an immediate defense against AI and will complement -- and in some cases accelerate -- HIS interventions planned under the Manas Taalimi Health Reform Program financed by other donors.

33. **B2 - Improvements of Laboratory Networks.** This sub-component will strengthen the country's weak laboratory capacity and augment the supply of materials for specimen collection, transportation and laboratory supplies by upgrading the network of regional and national public health laboratories to cope with the increased demand in case of a pandemic. Specific interventions will include a re-design and renovation of the national reference laboratory required for work with virus isolation and micro-neutralization diagnostic procedures for avian influenza, including the RT-PCR method; strengthening 3 or 4 oblast-level laboratories in regions at risk, including border areas; strengthening biomedical waste management systems in these laboratories; and support activities to better connect public health laboratories and epidemiologists along with animal laboratories and veterinary departments.

34. **B3 - Training.** This sub-component will finance the training of staff at different levels of the health system in detection, testing, clinical management, epidemiology, reporting and laboratory bio-safety of relevance to ILIs and other relevant infectious diseases. It will also finance short courses on applied epidemiology to strengthen surveillance in connection with the activities under sub-component B1. To improve coordination between the public health agencies and the veterinary departments, joint training activities will be supported involving epidemiologists, clinicians, laboratory staff, and veterinarians. Using the Bank's Global Distance Learning Network (GDLN) and other networks such as CDC and WHO, initiatives will be developed to support training activities at national, regional, and local levels, as well as inter-country partnerships.

### **C. Strengthening Health System Response Capacity**

35. **C1 - Social Distancing Measures.** The most effective measure to prevent contracting avian influenza will be to limit, as much as possible, contact with the public. This sub-component will finance development of a detailed implementation plan for so-called "social distancing" measures to be activated in case of an epidemic and backed up with a well-designed communication action plan and materials (see Component III). Social distancing measures would typically be activated on advice from health professionals/institutions, although they will not be the enforcing agencies. The implementation plan will, therefore, explicitly define institutional responsibilities for activation and enforcement of social distancing measures and for inter-agency and inter-ministerial coordination. Training will also be provided to "enforcement agents" such as the police and military in safe, efficient implementation of social distancing measures in ways that do not induce panic. Additional preventive actions that will complement social distancing (such as personal hygiene promotion through various communication channels, including handwashing and proper cooking, and distribution and use of masks) will also be supported.

36. **C2 - Vaccination remains the most effective measure to prevent and control a pandemic.** This sub-component will help launch and expand regular seasonal flu vaccination as a vital step to prevent an outbreak among humans, building on the existing immunization system in the Kyrgyz

Republic (with additional support from the informational activities described in Component III below) rather than establishing a parallel system. It will also finance the development of a detailed logistical (procurement and distribution) plan for mass vaccination should an AI vaccine become available. In case of an avian influenza pandemic, when a vaccine becomes available, funding will also be made available for implementing an influenza vaccination program that rapidly administers vaccine to priority groups and monitors vaccine effectiveness and safety. The targeted priority groups will be selected on the basis of several factors: (i) risk of occupational infectious/transmission (e.g., health care workers and veterinary staff); (ii) the responsibilities of certain occupations in providing essential public health safety services; (iii) impact of the circulating pandemic virus on various age groups; and (iv) heightened risks for persons with specific conditions. To this end, support will be provided for the rehabilitation, strengthening and possible expansion of the existing immunization cold chain.

37. **C3 - Drug Therapy. Anti-virals are only of use in the absence of a vaccine.** In a pandemic, vaccine supply levels will change over time. That is, when a pandemic first strikes, vaccine will likely not be ready for distribution. The therapeutic use of anti-viral drugs, while not a panacea, will be part of the strategy to contain an avian influenza pandemic and to reduce morbidity and mortality. Governments and international agencies, such as WHO, are stockpiling anti-viral drugs. Therefore, support will be provided for the purchase and distribution of anti-viral drugs in accordance with WHO guidelines and arrangements; determining the susceptibility of the pandemic strain to existing influenza antiviral drugs and targeting the use of available supplies; adoption of measures to avoid inappropriate use to limit the development of antiviral resistance and ensure that this limited resource is used effectively. Support will also be provided to monitor patient compliance with treatment regimes and the onset of resistance to anti-viral drugs.

38. Although anti-viral drugs such as neuraminidase inhibitors (oseltamivir) do not cure influenza infection, it has been shown to reduce the severity of the symptoms as well as to alleviate complications. The objective of treatment, therefore, is to decrease the consequences of the infection and to reduce the hospitalization rate. For optimal impact, treatment needs to be started as soon as possible and within 48 hours of the onset of illness. One type of drug is recommended for treatment of avian influenza infections: neuraminidase inhibitors (oseltamivir and zanamivir). However, the availability of influenza anti-viral medications is limited and production cannot be rapidly expanded. Therefore, planning by health agencies is needed to assure effective use of available drugs. To this end, support will be provided for developing guidelines and educating physicians, nurses, and other health personnel before and during the pandemic to promote effective use of these drugs.

39. Given the current worldwide shortage of the drug and the limited stock available to the countries, priority will be given to population groups most exposed to immediate risk. Taking into account the situation observed today, the project will support the use of the anti-viral drugs for: (i) post-exposure: at an early stage, when isolated cases or small outbreaks are occurring, anti-viral drugs can be given to persons known to have been in close and unprotected contact with suspected or confirmed cases, and workers at risk of occupational exposure; and (ii) treatment: in symptomatic patients suspected of having avian influenza, the current recommendation for neuraminidase inhibitors' administration is two 275mg capsules a day for 5 days.

40. **C4 - Medical Services.** In coordination with and complementing the recently-approved Health SWAp Project, additional assistance will be provided to the health care system for preparedness planning and strategy development to provide optimal medical care and maintain essential community services. To this end, support will be provided for the development of plans to establish specialized units in selected hospitals and to increase bed availability in case of a pandemic through more stringent triage for admission and earlier discharge with follow-up by home health care personnel, development and/or updating of treatment guidelines and hospital infection control guidelines and measures, including

antibiotic stocks, mobilization of additional health personnel, training of health personnel, provision of drugs, vaccines, and other medical inputs, diagnostic reagents, including kits, and financing to cover other operational expenses such as those related to mobilization of health teams, and technical assistance.

### III. PUBLIC AWARENESS AND INFORMATION COMPONENT

41. The component is designed to safeguard human health, in particular for extension staff, animal health workers, poultry producers and their families, by improving public awareness and information. It will have two sub-components:

#### A. Capacity Building

42. The development of a strong, sustainable human resource base is one of the most important objectives of country-specific disease control strategies. This sub-component will support the needs assessment of the veterinary services (OIE-type audit of the quality of veterinary services) and rural extension staff and health workers at the central and local levels. It will support the preparation of training programs and materials, training of trainers (TOT) and training of farmers in animal health and husbandry, and training of health workers in better identifying symptoms and providing recommendations to the public on control measures. Capacity building will also involve animal health governance and policies, institutional strengthening and human resource development. On the institutional side, training will be supported in various aspects of policy development and economic impact assessment to include poultry sector compartmentalization and zoning, compensations and emergency preparedness planning. At the technical level, it will include disease detection, laboratory diagnosis, risk-based surveillance, risk analysis, vaccine quality control, vaccination delivery and monitoring, and bio-security. Laboratory diagnostic and surveillance capacity will be strengthened by upgrading equipment and disease information systems.

#### B. Information and Communication Services

43. **B1 - Communication preparedness.** Activities to be supported include developing and testing messages and materials to be used in the event of a pandemic or emerging infectious disease outbreak, and further enhancing the infrastructure to disseminate information from national to state and local levels and between the public and private sectors. Communication activities will support cost-effective and sustainable methods such as “marketing” of hand-washing via mass media, counseling, schools, etc., and integrated into avian influenza specific interventions as well as ongoing outreach activities of ministries and services, especially the Ministries of Health, Education, Agriculture, and Communications and the Rural Advisory Service (RAS). Support will be provided for information and communication activities to increase the attention and commitment of government, private sector and civil society organizations, and to raise awareness, knowledge and understanding among the general population about the risk and potential impact of the pandemic and to develop multi-sectoral strategies to address it. In addition, support will be provided for the development and distribution of basic communication materials (such as question and answer sheets and fact sheets) on influenza, influenza vaccine, antiviral agents and other relevant topics; general preventive measures such as “dos” and “don’ts” for the general public; information and guidelines for health care providers; training modules (web-based, printed, and video); presentations, slide sets, videos, and documentaries; and symposia on surveillance, treatment and prophylaxis. In addition, support will be provided to strengthen networks of communication offices, as well as mechanisms to increase coordination and consistency of messages among risk communication managers.

44. **B2 - Collaboration with stakeholders.** The multi-dimensional problems associated with HPAI infection necessitate collaboration among a wide range of stakeholders. The major stakeholders include

various ministries, research institutions, diagnostic laboratories, NGOs and civil society organizations, private companies and associations (e.g., commercial poultry producers, farmers' associations), veterinarians and farmers. The sub-component will support activities designed to improve the effective coordination and collaboration among these stakeholders.

45. **B3 - Developing Pilot Models for Community-based Rapid Communication.** This sub-component will support the development and implementation of training courses in communications methodology for extension and veterinary staff as well as health workers at the central and local levels. It will include TOT programs, the preparation and dissemination of information materials, and the provision of communications and information equipment for use at the local and central levels.

#### **IV. IMPLEMENTATION SUPPORT AND MONITORING AND EVALUATION COMPONENT**

46. Financial and technical support will be provided for project management and coordination activities. Details are provided in Annex 7. The Republican Emergency Antiepidemic and Antiepzootic Commission has been reactivated to oversee the national HPAI control and containment effort and to provide general policy and implementation guidance for Project implementation. The Commission is chaired by the Deputy Prime Minister responsible for the social sectors and comprises high-level representatives from the Ministries of Economy and Finance; Health; Agriculture, Water Resources and Processing Industry; Interior; Foreign Affairs; Emergency Situations; Education; and Defense. The Commission will be responsible for ensuring coordination and linkages across relevant agencies and international partners.

47. The Agricultural Projects Implementation Unit (APIU) in MAWRPI, will be responsible for the fiduciary tasks of procurement and financial management and for the coordination of project activities, technical assistance and training.. It will be strengthened by the recruitment of additional staff/consultants responsible for overall administration of training activities, procurement, and financial management.

48. The two Component Coordinators (CCs) appointed within both MAWRPI and MOH will be responsible for coordinating and overseeing the implementation of project activities within their respective ministry and its subordinate and associated institutions. Likewise, they will be responsible for coordinating with other relevant government agencies and departments so as to ensure effective inter-agency collaboration. The CCs will also be responsible for the preparation of annual WPs and budgets for their respective project components and providing inputs to the Project's quarterly and annual financial monitoring reports and progress reports. The CCs will be assisted by staff and, as necessary, consultants.

#### **B. Monitoring and Evaluation (M&E)**

49. **B1 - Training.** This sub-component will support training in monitoring and evaluation at all administrative levels, mid-term evaluation workshop, and development of an action plan for M&E and replication of successful models. It will support the following activities:

- Training in M&E;
- Developing a M&E plan for the specific country projects;
- Implementation of baseline studies;
- Mid-Term evaluation of the project;
- On-going participatory monitoring and evaluation; and
- Final project evaluation.

50. **B2 - Monitoring and Impact Evaluation.** Support will be provided to develop project monitoring and impact evaluation assessments. Two types of M&E are envisaged:

**(i) Monitoring of project implementation.** This is a function of the CCs and the APIU, who will collect relevant data from the implementing ministries and agencies and compile them into progress reports, focusing on the status of physical implementation by component, the use of project funds and monitoring indicators. Specific surveys may be conducted to obtain data for this purpose.

**(ii) Impact evaluation.** The aim of evaluation is to ascertain whether the interventions are effective and the Project is having the desired impact. The evaluation will include both quantitative and qualitative aspects and be conducted on a yearly basis. The quantitative aspects will rely on new information systems and surveys implemented as part of the various components of the project, currently existing data sources, and primary evaluative data collection efforts. The goal of the qualitative aspect of the evaluation will be to document perceptions of program managers, staff, patients, and local and national leaders. Qualitative information will be collected using site-visit interviews, focus groups, and respondent surveys.

## **V. EMERGENCY IMPORTS**

51. In case of a declared influenza pandemic, this component will finance emergency imports identified as necessary under a well-defined preparedness and response program to be prepared as part of project implementation. These imports are likely to include: (i) pharmaceuticals and vaccines, (ii) medical supplies and equipment, (iii) communication equipment, supplies and information campaigns, (iv) food and water containers, and (v) protective clothing.

## **Annex 6b: Culling and Compensation Procedures**

### **KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project**

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#### **A. Compensation Fund**

1. Early detection and reporting as well as rapid response depend critically on the incentives for poultry owners to report very quickly any sick and dead poultry to their veterinarians. Without adequate compensation arrangements in place, poultry owners have no incentive to do so, but must fear that their animals will be destroyed and they lose this valuable capital. Article 34, para. 3, of the “Law of the Kyrgyz Republic on Veterinary Medicine” of 12 April 2005, confirms the right of legal entities, private entrepreneurs and individuals to receive compensation for damages suffered as a result of mandatory culling, but no steps have been taken as yet to develop the required implementation arrangements – including financing, institutional arrangements, legal authority over the fund, fiduciary aspects, eligibility criteria, payment arrangements, flow of funds, etc. The project will provide technical support to do so. All the necessary legal, institutional and operational details will be developed and agreed upon during the first months of project implementation. They will be included in the Project Operational Manual.

2. The first issue to be addressed is the provision of the legal basis for establishing a Compensation Fund (for owners of any animals culled on Government orders). This should include specifics on the institutional location of the Fund (e.g., in the Ministry of Economy and Finance or in MAWRPI or somewhere else) as well as the necessary framework provisions concerning its administration and events triggering payment from the Fund. It should specify whether the Fund is to be merely a financial facility or a distinct governmental body administering such a facility, as well as the appropriate oversight arrangements. The law should specify the governmental body responsible for authorizing payments from the Fund, identify the proposed means and modalities of financing the Fund (e.g., budgetary allocations, farmer contributions, livestock taxes, market fees, export cesses, etc.), and establish the essential principles governing eligibility for compensation payments from the Fund.

3. Farmer fees are considered the most appropriate means to realize cost sharing from the beneficiaries of a Compensation Fund. With medium- and large-scale livestock and poultry producers the ones who face the largest financial risk, strong consideration will be given to establishing an appropriate mechanism to have them contribute to the financing of the Compensation Fund. For poultry owners with more than 200 birds, for instance, it is strongly recommended that they be required to register with MAWRPI and the Compensation Fund, submit a quarterly report on the number of birds they have, and pay a small fee per bird into the Compensation Fund. In the event of subsequent mandatory culling, they would then be compensated for the number of birds they have reported and paid for. (Similar arrangements would apply for owners of other livestock that could be subject to mandatory culling.)

4. It will take time before adequate domestic financing, from governmental or other sources, can be mobilized and will be available in sufficient amounts to operate an effective national Compensation Fund. Farmer contributions in particular will take considerable time to accumulate in sufficient quantities to amount to a significant share of the overall Fund. In the immediate short run, therefore, and considering that the need for compensation payments could arise very soon, the main source of financing will be contingency funding to be provided by IDA under the Project (see para. 6 below). Government budget funds would be needed if the needs exceed the resources being made available by

IDA. Over time, the Government will in any case need to set aside additional funds to cover for such a contingency and to substitute for IDA resources once the Project has closed.

5. The next step will be to prepare and approve the necessary specific regulations, procedures and operational guidelines for establishing, financing and operating the Fund. Critical in this context will be specific and transparent rules and regulations on: (i) the actual mobilization of the needed financing, notably as regards cost-sharing by livestock owners, (ii) the intermediate disposition of such funds until they are actually needed, (iii) the procedural steps required to trigger actual compensation payments, and (iv) the administrative and payment arrangements in the event of an authorized case of compensation. Also needed are precise guidelines for: (i) establishing and verifying compensation claims, (ii) determining the amount of compensation per animal, (iii) recording and reporting culling and compensation claims, (iv) the actual payment to legitimate beneficiaries, and (v) monitoring payments.

6. **IDA Financial Support.** Compensation payments could, depending on the scope of disease outbreaks, pose a significant fiscal burden on the state, and the project will provide financial resources to establish the foundation of a compensation facility. Once the Government has formally established the national Compensation Fund, the Project will provide up to US\$1 million to finance this facility, exclusively earmarked, however, for outbreaks of HPAI. It will be a condition of disbursement for this sub-component that the modalities for operating the Fund have been established and have been approved by IDA. US\$100,000 will be disbursed into a specially established account so as to provide sufficient resources for immediate needs. The remaining US\$0.9 million will be disbursed only in the event of actual need.

## **B. Culling**

7. In the event of an HPIA outbreak, the overriding objective for the veterinary services is eradication of the disease at the source of infection. Accordingly, the project will provide support for: (i) culling of infected and at-risk poultry, (ii) compensation to farmers and commercial poultry producers, (iii) disposal of carcasses and potentially infective materials in a bio-secure and environmentally acceptable manner, and (iv) control of movement of birds and products that may be infected, including controls at the interface of infected/non-infected areas and border controls.

8. The project will provide the technical and logistical means to contain an HPIA outbreak through location quarantining and culling of the affected animals and those in the surrounding risk area. Culling and carcass disposal will be done under the supervision of the State Veterinary Department (SVD) or of SVD-contracted private veterinarians by properly equipped and protected staff (SVD staff, Veterinary Militia, and/or laborers hired by SVD for the purpose). Appropriate equipment and materials will be provided for efficient and humane animal culling as well as for the safe disposal of carcasses and contaminated materials. Carcass disposal will be case-specific, depending on local circumstances, but in all cases in an authorized and bio-environmentally safe manner. Protective clothing and other gear will be procured and kept in ready supply, to be issued to all staff and workers involved in containing an outbreak. Accurate lists will be kept of all animals culled, so as to provide the basis for subsequent compensation to their owners.

9. In the event that mandatory culling is ordered for a particular location, the compensation Fund will provide the applicable list of compensation values for each type of poultry (see para. 17) to the SVD as well as to the raion and Aiyl Okmotu administration concerned. This information will be then used by the Community Culling Supervision Committee (see para. 10) to calculate the compensation payable to each poultry owner. To minimize the risk of fraud and misuse, stringent requirements will apply to the recording, reporting and verification of poultry cullings, compensation claims and

compensation payments. They place heavy emphasis on transparency, community involvement and multiple ex-ante and ex-post verifications and reflect experience gained under previous and ongoing operations in the country. The procedures to satisfy these requirements involve considerable work, but they are considered essential to ensure adequate fiduciary safeguards in the present Kyrgyz environment. Practical experience will be closely monitored. Once it has become evident that the control mechanisms are effective, some streamlining could be considered if it is deemed not to increase the risk to an unacceptable level.

10. ***Village and Backyard Poultry.*** For village and backyard poultry operations, the culling will be done in the presence and under the technical and social supervision of a small local ad-hoc committee, the Community Culling Supervision Committee (CCSC), established for this purpose by order of the Aiyl Okmotu (AO) administration. The CCSC comprises one official from the Aiyl Okmotu (AO) administration, the raion SVD veterinarian (ex officio) and as well as two trusted members of the village community, of which at least one must be a woman. The community representatives may be from the Village Health Committee, the Women's Mahalla, the GenSoviet (Women's Council), the Village Investment Committee, the Court of Aksakals (elders) or other locally recognized and trusted community organizations; they are nominated by majority vote at a general village meeting. The CCSC will verify the number of birds culled and their owners, so as to ensure a correct count and full transparency for subsequent compensation payments.

11. At the time of culling, each individual poultry owner will receive a ***culling certificate*** noting the date and the type and number of his/her birds culled (see attached sample Form 1). The blank certificates will be provided to the AO administration by the Compensation Fund and are pre-numbered; the numbers are stored in the Compensation Fund's data base (see para. 16). Each certificate will be signed by all four members of the CCSC and countersigned by the poultry owner; it is the poultry owner's record of the claim to compensation. Since backyard poultry is predominantly the domain of women, ownership records on the owner's certificate and on the summary village culling lists will be required to identify the actual owners (rather than simply the "head of household"). The certificate will be completed in four copies: one will be retained by the poultry owner, one will be kept by the AO administration, and one each will be attached to the village summary culling record compiled by the CCSC (see para. 12) and sent by the AO administration to the Compensation Fund and to the APIU, respectively. Certificates not signed by all members of the CCSC and the poultry owner will be declared invalid.

12. Based on the individual poultry owner certificates, the CCSC will then compile a summary record of the culling in the village (see attached sample Form 2). Blank pre-numbered ***village summary poultry culling records*** are provided to the AO administration by the Compensation Fund; the numbers are stored in the Compensation Fund's data base (see para. 16). All four CCSC members will sign and the poultry owners will countersign this list of birds culled and their owners. Forms not signed by all four members of the CCSC will be declared invalid, and all claims included on an invalid Village Summary Poultry Culling Record are rendered invalid as well. The village summary culling record is the official record that establishes the poultry owners' right to compensation from the Compensation Fund. The summary record will be completed in eight identical copies: one will be posted in a weather-protected public place in the village; one will be kept by the raion representative of the SVD; two will be kept in the AO office; one will be sent by the CCSC to the APIU; one will be sent by the CCSC to the Compensation Fund; one will be sent by the AO administration (together with the AO Summary Report, see para. 13) to the APIU; and one will be sent by the AO administration (together with the AO Summary Report to the Compensation Fund). Attached to the copies that are to be sent by the AO administration to the Compensation Fund and to the APIU must be copies of all individual owners' culling certificates that form the basis for the compilation of the village summary culling list.

13. The AO administration will compile a Summary Report on the basis of all village summary poultry culling records, listing all villages and for each village the total number of different poultry culled (see attached sample Form 3). Blank pre-numbered *AO Summary Report* forms are provided to the Aiyl Okmotu administration by the Compensation Fund; the numbers are stored in the Compensation Fund's data base (see para. 16). The AO Summary Report will be made out in five copies and signed by the mayor of the AO. Two copies will be kept by the AO administration, one will be provided to the raion SVD veterinarian, one is to be sent to the APIU, and one is to be sent to the Compensation Fund. Attached to the copies sent to the APIU and to the Compensation Fund are the village summary poultry culling records and copies of all individual owners' culling certificates.

14. **Medium- and Large-Scale Poultry Operations.** At larger poultry farms and enterprises (with more than 200 birds),<sup>8</sup> the culling will be carried out in the presence of the owner or manager or of a person designated by him/her and under the supervision of the raion veterinarian and one official of the AO administration. All three will sign the list of birds culled (see attached sample Form 4). In addition, an audit firm acceptable to IDA will be required to monitor the culling and to certify the culling report. Blank pre-numbered enterprise culling lists will be provided to the Aiyl Okmotu administration by the Compensation Fund; the numbers will be stored in the Compensation Fund's data base (see para. 16). The culling record (list) will be made with five identical copies: one will be kept in the AO office; one will be kept by the raion-representative of the SVD; one will be given to the owner or manager of the farm or to the person designated by him/her; one will be sent to the APIU by the AO administration; and one will be sent to the Compensation Fund by the AO administration. The culling list will be the official record that establishes the poultry owners' right to compensation from the Fund. The copy given to the farm owner or his/her designated representative will be the poultry owner's record of the claim to compensation. *Actual compensation payments will be based, however, on the lower of: (a) the number of birds reported by the enterprise to MOA and to the Compensation Fund at the end of the quarter preceding the mandatory culling and for which the required fee has been paid to the Compensation Fund (see para. 3) or (b) the number of birds reported and certified on the Enterprise Poultry Culling Record.* If all or part of the fee due to the Fund is overdue by more than three months, no compensation will be paid.

15. **Forms.** All forms will be provided by the Compensation Fund. They will be printed in booklets (of 20 or 25) and will be pre-numbered. The Fund will maintain a data base containing, inter alia, the numbers of all forms provided to each AO administration. All unused forms, as well as any invalid or incorrectly completed forms, must be returned to the Compensation Fund when the culling records are submitted.

16. **Database.** The Compensation Fund will establish and maintain a database to facilitate record keeping, monitoring and auditing. This database will include all AOs and villages/settlements. It will also include all livestock and poultry enterprises registered with MAWRPI and the Fund, with the number of animals reported and the fees paid to the Fund for these animals. As mandatory culling orders are issued, the affected communities will be tagged accordingly. Once culling reports are received from AO administrations, the information from the AO Summary Reports and the attached Village Summary Culling Lists will be entered into the database. The database will also contain a record of all pre-numbered forms provided to AO administrations, so as to allow subsequent cross-checking of forms submitted or returned.

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<sup>8</sup> The Agricultural Census of 2003 recorded 133 enterprises with 200 or more birds and only 29 with 500 or more birds. The 8 largest accounted for 870,000 birds, while the other 125 totaled fewer than 65,000 birds among them and none had more than 8,000.

### C. Compensation Payments

17. The key parameters governing the design of implementation arrangements for the actual operation of the Compensation Fund and the provision of compensation payments to poultry owners will include the following:

- Compensation payment to poultry owners will be in cash or by bank transfer or postal transmission. There will be no vouchers or animal replacements. Payment will be made within four weeks from the date of culling.
- For smallholders (owning up to 200 birds), payment per bird will be at 75% of the market price of laying hens in the respective oblast administrative center as reported by the Kyrgyz Agricultural Market Information Service (KAMIS) for the third month preceding the month in which culling took place.<sup>9</sup> Payments will be made at the village level, in public, and under the supervision of the two community representatives on the CCSC who attended the culling and signed the culling records. Special care will be taken to ensure that payments are made to the women poultry owners of record.
- For poultry owners/producers with more than 200 birds, compensation will be provided in cash, by bank transfer or the postal service, at a reasonable replacement cost – i.e., for birds less than 3 months old at the cost of one-day chicks, and for birds older than 3 months at the cost of 3-months-old birds, as reported by KAMIS during the third month preceding the month in which culling took place.

18. The Compensation Fund will establish the amounts of compensation to be paid, based on the parameters identified in para. 17. For village and backyard poultry owners, the culling record prepared and signed at the time of the culling and subsequently submitted by the AO administration to the Compensation Fund and the APIU (see paras. 9-13) will be the basis for compensation payments to be made. The culling record received and filed by the Compensation Fund will be used to calculate the amount of payment due to each village (in the case of smallholders) and to prepare the payment list – which is a copy of the AO Summary Report with the appropriate compensation amounts added in the final column -- but the copy received by and filed at the APIU is the binding one for purposes of verifying payment claims. No payment will be authorized or made unless and until the APIU has compared its records against the payment list prepared by the Compensation Fund and has authorized the payment in writing.

19. For medium- and large poultry owners, the Compensation Fund will calculate the amount of payment due based on the reported number of birds and the fees paid (see para. 13) and will prepare the requisite payment list – which is based on the database records. However, no payment will be authorized or made unless and until the APIU has compared its records against the payment list prepared by the Compensation Fund and has authorized the payment in writing.

20. **Database Cross-Checking.** Before finalizing the payment list, the Compensation Fund will check the culling records received for completeness, accuracy and validity (no blank lines, all signatures provided, all supporting documents attached, no duplicate claims submitted, etc.). It will also cross-check them against its database records to ensure that the pre-numbered forms match with the forms provided to the respective AO administration and that mandatory culling was in fact ordered

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<sup>9</sup> At the time of project appraisal, owners of backyard poultry would have been compensated at Som 68.5 per bird (US\$1.67 per bird), while commercial operators would have received Som 10 (US\$0.24) per hatchling and Som 50 (US\$1.22) for birds 3 months or older. The US\$1 million fund would, thus, cover almost 600,000 birds in backyard poultry systems. If needed for commercial operators, with 50% for hatchlings and 50% for birds over 3 months old, it would cover 2.46 million birds.

for the village concerned. With respect to payment claims from medium- and large-scale poultry enterprises, the database check will verify that the enterprise is registered with MAWRPI and the Fund, has reported its poultry numbers on a quarterly basis, and has no fees overdue to the Fund for more than three months.

21. **Flow of Funds.** Flow-of-funds arrangements for making compensation payments are being designed to minimize the number of stages through which funds will need to pass before reaching the intended beneficiaries, while ensuring maximum transparency. Once authorized by the APIU, compensation payments will be effected by the Compensation Fund in one of three ways: (i) in person and in cash in the village, (ii) through the banking system, or (iii) through the Postal Service.

22. For **village and backyard poultry owners**, whose poultry was culled under the supervision of the CCSC, payment will be made in person and in cash at the village level, in a public place, and under the supervision of the two community representatives on the CCSC. The funds for such payments will be transferred by the Compensation Fund through the banking system or the Postal Service to the AO administration. Simultaneously, separate but identical notices will be sent to the AO administration, to the two community representatives on the CCSC, to the SVD representative in the corresponding raion, and to the APIU that contain information on the total amount being transmitted and on the amount of compensation per bird (by type). The AO administration, in consultation with the village head (Aiyl Bashi), will establish a date and place for the actual payments to be made and will notify the Aiyl Bashi and the two community representatives on the CCSC accordingly; the date must be within one week of the receipt of the funds by the AO administration and no more than four weeks after the date of culling in the village.

23. The funds required to make payments in a village will be taken by the AO administration, with appropriate security arrangements (e.g., strongbox, police escort, etc.), to the village. Payment to the poultry owners will be made by officials of the AO administration and supervised by the two community representatives on the CCSC, based on the village summary culling list kept by the AO and cross-checked against that kept in the village. Each poultry owner will sign the list to verify receipt of payment. To receive payment, each poultry owner will be required to present his/her culling voucher received at the time of the culling. The date and amount of payment will be recorded on the voucher and countersigned by the poultry owner.

24. All individual payments made to poultry owners will be recorded on the two copies of the village summary poultry culling record kept by the AO administration, and each poultry owner must sign for the payment received on both lists. These two copies of the village summary poultry culling record thus become the “village culling-and-payment record”. They must be signed by the AO representative and the two community representatives on the CCSC. Once the payments have been made to the eligible beneficiaries, and based on the completed village culling-and-payment records from all settlements in the Aiyl Kenesh area, the AO administration completes the AO Summary Report by entering in the final column for each village the amounts paid, by village and by type of poultry. The AO administration will then submit to the Compensation Fund one copy of the completed AO Summary Report, with one of the two copies of each village’s culling-and-payment record attached. The cover letter, signed by the mayor (Glawa), confirms that the eligible poultry owners have been paid.

25. For **medium- and large-scale poultry enterprises who have bank accounts** and have provided the necessary account details when their poultry was culled, the compensation payments will be made by the Compensation Fund through the banking system, typically through the Settlement and Savings Company (SSC). The Compensation Fund will transfer the funds to the SSC, which will instruct its branches in the appropriate locations to credit the account(s) of the eligible recipients. Banking fees

associated with this service will be financed by the Project. The Compensation Fund will inform the APIU of the dates and amounts of payments made, with appropriate documentary evidence.

26. For *medium- and large-scale enterprises who have no bank account* or who failed to provide the necessary account details at the time of culling, the payments will be made through the State Postal Service. The Compensation Fund will enter into a contract with the State Postal Service to provide this service; the cost of this service will be financed by the Project. The Compensation Fund will provide the necessary information and instructions to the State Postal Service, with the name and address of the eligible recipient, including passport numbers, etc., and the amount of payment. The State Postal service will obtain confirmation from the recipient that the payment has been received and will submit this confirmation to the Compensation Fund. The Compensation Fund in turn will then inform the APIU of the dates and amounts of payments made, with appropriate documentary evidence.

#### **D. Operational Controls, Reviews and Audits**

27. The APIU will carry out, or will arrange to have carried out, additional checks to ensure that the eligible poultry owners, and only they, are paid and are paid in full. This will include, but not be limited to, periodic operational reviews, under terms of reference (TORs) acceptable to IDA, to confirm the validity and legitimacy of the compensation payments made. The reviewers will be required to verify compensation claims and payments made in randomly selected samples of villages and Aiyl Kenesh territories; this verification will include: checking against the database maintained by the Compensation Fund, collecting and verifying information available and obtained at the village level, checking with individual poultry owners, checking forms and reports, etc. Any significant weaknesses identified will be promptly rectified in close consultation with IDA.

28. In addition, the external independent auditors will be asked to provide an opinion on the reasonableness of the accounting, reporting and internal controls in respect of the operations of the Compensation Fund, and the audit TORs (acceptable to IDA) will include these specific requirements.

29. All ineligible claims will be refunded to APIU and to IDA.

#### **Attachments: Draft Forms for Culling and Compensation**

Form 1: Poultry Culling Record – Owner’s Certificate

(record of birds culled for individual poultry owner)

Form 2: Village Summary Poultry Culling Record

(record of poultry owners and birds culled by village, used to record cullings and subsequent compensation payments)

Form 3: Aiyl Okmotu Poultry Culling Summary Record

(summary record of birds culled in all villages in the Aiyl Kenesh area)

Form 4: Enterprise Poultry Culling Record

(record of birds culled for individual larger poultry operations, used to record cullings and subsequent compensation payments)

**Form 1: Poultry Culling Record – Owner’s Certificate**

<b>Compensation Payment Received</b>
<b>Date:</b> _____
<b>Amount:</b> _____
<b>Signature:</b> _____

**POULTRY CULLING RECORD --- OWNER’S CERTIFICATE**

<u>Village</u>	<u>Aiyl Okmotu</u>	<u>Raion</u>	<u>Oblast</u>	<u>Date</u>
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<b>Name of Poultry Owner:</b>					
<b>Address:</b>					
<b>Birthdate:</b>			<b>Passport Number:</b>		
<b>No.</b>	<b>Type of poultry</b> (chickens, ducks, geese, turkeys, etc.)	<b>Number</b> <b>of poultry</b>	<b>Compensation</b> <b>Value per Bird</b> <b>(Som)</b>	<b>Total</b> <b>Compensation</b> <b>Value (Som)</b>	<b>Remarks</b>
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
--	<b>Totals</b>		---		

**Culling Verified by the Community Culling Supervision Committee:**

Aiyl Okmotu representative  
(Name) \_\_\_\_\_ Signature \_\_\_\_\_

SVD representative  
(Name) \_\_\_\_\_ Signature \_\_\_\_\_

Community Representative  
(Name) \_\_\_\_\_ Signature \_\_\_\_\_

Community Representative  
(Name) \_\_\_\_\_ Signature \_\_\_\_\_

Poultry Owner  
(Name) \_\_\_\_\_ Signature \_\_\_\_\_

**Instructions:**

- (a) Enter new line for each different type of poultry.
- (b) Running numbers must be included in first column, continuing on each additional sheet.
- (c) Lines not used must be crossed out across the entire sheet.
- (d) Voucher must be signed by all four members of the Community Culling Supervision Committee and by the poultry owner.



**Instructions:**

***A. At the Time of Culling***

- (a) Enter a complete new line for each different type of poultry. Only the last column must remain empty.
- (b) Running numbers must be included in first column, continuing on each additional sheet. Sheets must be numbered consecutively.
- (c) Enter the authorized compensation payment in each line, based on the valuation formula provided to by the Compensation Fund.
- (d) Lines not used must be crossed out across the entire sheet.
- (e) Each line must be signed by the relevant poultry owner.
- (f) Each sheet must contain in the last line the sheet totals for the number of birds culled and for the total compensation value.
- (g) Each sheet (and copy thereof) must be signed at the bottom by all four members of the Community Culling Supervision Committee.
- (h) Each sheet must be completed with at least six copies for the following distribution:
  - (i) Copy No. 1 to be posted in a weather-protected public place in the village;
  - (ii) Copy No. 2 to be kept by the raion representative of the SVD;
  - (iii) Copies No. 3 and No. 4 to be kept in the Aiyl Okmotu administration;
  - (iv) Copy No. 5 to be sent by the CCSC to the APIU;
  - (v) Copy No. 6 to be sent by the CCSC to the Compensation Fund;
  - (vi) Copy No. 7 to be sent by the Aiyl Okmotu administration to the APIU (together with the AO Summary Report);
  - (vii) Copy No. 8 to be sent by the Aiyl Okmotu administration to the Compensation Fund (together with the AO Summary Report).

***B. At the Time of Compensation Payment***

- (a) Both copies of the sheet kept at the Aiyl Okmotu administration must be completed.
- (b) Each poultry owner receiving compensation must sign to verify receipt of the payment indicated in the list.
- (c) Each sheet (and copy thereof) must be signed by the representative of the Aiyl Okmotu administration and both community representatives on the Community Culling Supervision Committee.
- (d) One completed copy of each sheet is kept in the Aiyl Okmotu administration.
- (e) The other copy of the sheet is sent by the Aiyl Okmotu administration to the Compensation Fund

**Form 3: Aiyl Okmotu Poultry Culling Summary Report**  
**AIYL OKMOTU POULTRY CULLING SUMMARY REPORT**

Sheet No. \_\_\_\_\_

Copy No.: \_\_\_\_\_

<b>Aiyl Okmotu:</b>	<b>Raion:</b>	<b>Oblast:</b>
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**Date of Culling:** \_\_\_\_\_ **Date of Compensation Payment:** \_\_\_\_\_

No.	Village/Settlement/Aiyl	Type of poultry (chickens, ducks, geese, turkeys, etc.)	Number of poultry	Remarks	Compensation Amount (Som)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
<b>TOTAL AIYL KENESH AREA:</b>					

(Name)  
Glawa, Aiyl Okmotu

**Culling Verified:**  
(Signature)

**Payment Verified:**  
(Signature)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **Instructions:**

### ***A. At the Time of Culling***

- (a) Complete for each village/settlement/aiyl a new line for each different type of poultry. Only the last column must remain empty.
- (b) Running numbers must be included in first column, continuing on each additional sheet. Sheets must be numbered consecutively.
- (c) Lines not used must be crossed out across the entire sheet.
- (d) Each sheet must contain in the last line the sheet totals for the number of birds culled and for the total compensation value.
- (e) Each sheet (and copy thereof) must be signed by the mayor (Glawa) of the Aiyl Okmotu.
- (f) Each sheet must be completed with at least five copies for the following distribution:
  - (i) Copies No. 1 and No. 2 to be kept in the Aiyl Okmotu administration;
  - (ii) Copy No. 3 to be kept by the raion-representative of the SVD;
  - (iii) Copy No. 4 to be sent by the Aiyl Okmotu administration to the APIU;
  - (iv) Copy No. 5 to be sent by the Aiyl Okmotu administration to the Compensation Fund.

### ***B. At the Time of Compensation Payment***

- (g) Both copies of the sheet kept at the Aiyl Okmotu administration must be completed.
- (h) Enter the authorized compensation payment in each line, based on the valuation formula provided by the Compensation Fund.
- (i) Each sheet (and copy thereof) must be signed by the mayor (Glawa) of the Aiyl Okmotu.
- (j) One completed copy of each sheet is kept in the Aiyl Okmotu administration.
- (k) The other copy of the sheet is sent by the Aiyl Okmotu administration to the Compensation Fund.

**Form 4: Enterprise Poultry Culling Record**  
**ENTERPRISE POULTRY CULLING RECORD** Sheet No. \_\_\_\_\_  
Copy No.: \_\_\_\_\_

<b>Village:</b>	<b>Aiyl Okmotu:</b>	<b>Raion:</b>	<b>Oblast:</b>
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**Date of Culling:** \_\_\_\_\_

<b>Name of Enterprise or Poultry Owner:</b>				
<b>Passport or ID Number:</b>				
<b>Address:</b>				
No.	Type of poultry (chickens, ducks, geese, etc. – under 3 months/over 3 months)	Number of poultry	Remarks	Culling Completed: Signature of Owner or Representative
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

**Culling Verified:**

Aiyl Okmotu representative  
(name) \_\_\_\_\_

Signature \_\_\_\_\_

SVD representative  
(name) \_\_\_\_\_

Signature \_\_\_\_\_

Enterprise Representative  
(name) \_\_\_\_\_

Signature \_\_\_\_\_

<p><b><u>Auditor's Certification:</u></b>          (name) _____          (date) _____          (stamp) _____</p>
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**Instructions:**

***At the Time of Culling***

- (a) Enter a complete new line for each different type of poultry. Only the last two columns must remain empty.
- (b) Running numbers must be included in first column, continuing on each additional sheet. Sheets must be numbered consecutively.
- (c) Lines not used must be crossed out across the entire sheet.
- (d) Each line must be signed by the owner or representative of the enterprise.
- (e) Each sheet (and copy thereof) must be signed at the bottom by the AO representative, the SVD representative and the poultry owner or his/her representative.
- (f) Each sheet must be completed with at least six copies for the following distribution:
  - (i) Copies No. 1 and No. 2 to be kept in the Aiyl Okmotu administration;
  - (ii) Copy No. 3 to be kept by the raion-representative of the SVD;
  - (iii) Copy No. 4 to be kept by the poultry enterprise;
  - (iv) Copy No. 5 to be sent by the Aiyl Okmotu administration to the APIU;
  - (v) Copy No. 6 to be sent by the Aiyl Okmotu administration to the Compensation Fund.



## **Annex 7: Implementation Arrangements**

### **KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project**

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1. The Project will be implemented by regular governmental institutions. The two main implementing agencies will be the Ministry of Health (MOH) and the Ministry of Agriculture, Water Resources and Processing Industry (MAWRPI), although other governmental agencies and non-governmental organizations and service providers (e.g., the Rural Advisory Service, private veterinarians, community-based organizations) will also be involved in a variety of functions.
2. Given the national importance and cross-sectoral nature of the project, overall responsibility for overseeing and coordinating institutional and implementation arrangements at the national level will be vested with the Office of the Deputy Prime Minister, where a Republican Emergency Antiepidemic and Antiepzootic Commission was established in 2001. The Commission has been reactivated to oversee the national HPAI control and containment effort and to provide general policy and implementation guidance for Project implementation. The Commission is chaired by the Deputy Prime Minister responsible for the social sectors and comprises high-level representatives from the Ministries of Economy and Finance; Health; Agriculture, Water Resources and Processing Industry; Interior; Foreign Affairs; Emergency Situations; Education; and Defense. It will be responsible for ensuring coordination and linkages across relevant agencies and with international partners and for guiding and monitoring project implementation at the central level. The Commission will review and approve annual work programs (WPs) and budgets and ensure coordination and linkages across relevant agencies and with international partners.
3. Both MOH and MAWRPI have appointed an internal Component Coordinator (CC) to coordinate and oversee the implementation of project activities within their respective ministry and its subordinate and associated institutions. The CCs will also be responsible for coordinating with other relevant government agencies and departments so as to ensure effective inter-agency collaboration. The CCs will also be responsible for the preparation of WPs and budgets for their respective project components as well as for providing inputs to the quarterly and annual progress reports and financial monitoring reports (FMRs). The CCs will be assisted by staff and, as necessary, consultants who will support planning and implementation of activities as well as M&E of project activities in both ministries.
4. The Agricultural Projects Implementation Unit (APIU) in MAWRPI, which is already coordinating the implementation of the Bank-financed Agricultural Support Services Project, will be entrusted with the coordination of project activities, technical assistance and training, as well as with the fiduciary tasks of procurement and financial management. The APIU will be responsible also for consolidating the annual WPs and budgets for submission to the implementing agencies, the Republican Emergency Antiepidemic and Antiepzootic Commission and IDA, as well as for the consolidation of quarterly FMRs and progress reports. The APIU will be strengthened by the recruitment of additional staff/consultants responsible for overall administration of training activities, procurement and financial management. To facilitate the management and implementation of the Project, a Project Operational Manual (POM) is to be prepared as a Condition of Effectiveness.
5. At the oblast and raion levels, implementation will be the direct responsibility of the respective oblast and raion agricultural and health departments and services. Small inter-agency coordination units will be established at the local level to work under the supervision and guidance of the APIU.
6. The Ministry of Emergency Situations is in the process of establishing a Disaster Command Center with financial and technical assistance from IDA and the Asian Development Bank. Once fully operational,

this Center will play an important role with its civil alert and alarm system in terms of facilitating rapid information and responses to an influenza pandemic, including the implementation of social distance measures.

## Annex 8: Procurement and Financial Management Arrangements

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

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1. As described in OP 8.50 for Emergency Recovery Assistance (ERA), in addition to emergency assistance, the Bank may support operations for prevention and mitigation in countries prone to specific types of emergencies. Such operations could assist in: (a) developing a national strategy, (b) establishing an adequate institutional and regulatory framework, (c) carrying out studies of vulnerability and risk assessment, (d) reinforcing vulnerable structures, and (e) acquiring hazard-reduction technology.

2. Given the threat that HPIA may pose to the economic and social fabric of the country, as well as to the health of the population because of the risk of an influenza pandemic, the Project will be financed through a Grant to be approved following ERA procedures.

#### A. PROCUREMENT ARRANGEMENTS

3. Procurement under the Project will be carried out in accordance with the Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004, and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, and with the provisions stipulated in the Legal Agreement. Agreements covering procurement methods, thresholds, and other conditionality will be consistent with ERA assistance guidelines and determined for the Kyrgyz Republic according to its capacity and experience with Bank procurement.

4. The activities covered under the Project will be implemented on the basis of annual work plans to allow for needed flexibility in adjusting activities to account for in-country experience and the lessons from implementation by other countries participating in the multi-country GPPI. Accordingly, the following approach to procurement will be adopted.

5. **Implementing Agency Assessment.** The Bank has carried out a procurement capacity assessment of the Agricultural Projects Implementation Unit (APIU) in the Ministry of Agriculture, Water Resources and Processing Industry (MAWRPI) which will be responsible for fiduciary tasks, including procurement, and found them satisfactory. Procurement staff in the APIU is experienced with procurement following World Bank guidelines, including with all the procurement methods to be included under the Project. Procurement under the ongoing Agricultural Support Services Project has worked well. The same qualified staff will be responsible for procurement under this Project. However, given the country conditions, the Project has been classified in category "C", signifying high risk (A low, B medium, and C high risk). The annual Procurement Plan (PP) will define thresholds for prior review appropriate to the category; these thresholds will be determined so as to minimize prior review as appropriate to the level of risk.

6. **Procurement Plan.** A Procurement Plan (PP) covering the initial 12 month period of Project implementation will be prepared by Negotiations. The updated PP for each subsequent year will be submitted to the Bank for approval before the end of the previous year and will use a pre-defined standard format which will, as a minimum, list: (i) goods and services to be procured during the following calendar year, (ii) their value; (iii) the method of procurement; and (iv) the timetable for carrying out the procurement. At the time of approving the annual work program, IDA will agree on the consistency with the application of the Bank procurement guidelines to the specific procurement lots expected during the year and their methods of procurement. If needed, the plan could be revised and re-submitted. A format for a typical PP will be agreed at Negotiations.

7. **Procurement Methods and Thresholds.** The Financing Agreement defines the appropriate methods and thresholds for International Competitive Bidding (ICB), National Competitive Bidding (NCB), Limited International Bidding (LIB), or Shopping in accordance with ERA guidelines. Thresholds for project procurement methods and prior review requirements have been indicated on the basis of the Bank's assessment of the capacity of the APIU which will be responsible for procurement, the estimated risks of corruption in the country, and the country's capacity of construction and manufacturing industries.

Procurement Method	Threshold	Comments
ICB: Goods	>US\$300,000	
LIB: Goods		For specialized equipment
NCB: Goods	<US\$300,000	If goods available competitively from within the country and the bidding documents shall contain draft contract and conditions of contract acceptable to the Bank. The Bank's sample form may be used.
Shopping: Goods	<US\$200,000	
Direct Contracting		Goods and works which the Bank agrees meet the requirements of the Procurement Guidelines
Shopping (Works)	<US\$100,000	
Quality and Cost Based Selection (QCBS) for Consultant Services	>US\$200,000 (International shortlist) <US\$200,000 (National shortlist)	
Selection Based on Consultants' Qualifications	<US\$200,000	
Individual Consultants		Services for assignments that meet the requirements set forth in the first sentence of para. 5.1 of the Consultant Guidelines.
Single-Source Selection		Services for tasks in circumstances which meet the requirements of para. 3.10 of the Consultant Guidelines, with the Bank's prior agreement.

8. **Prior Review by the Bank.** The Procurement Plan shall set forth those contracts which shall be subject to the Bank's prior review process. All other contract shall be subject to post review.

9. **Advertisement.** The General Procurement Notice (GPN) shall be published in the on-line edition of Development Business in February 2006. Special Procurement Notices (SPN) for all ICB goods contracts and Requests for Expression of Interest for consulting assignments with firms exceeding the value of US\$100,000 equivalent shall be published in the Public Procurement Bulletin, a local newspaper of a wide circulation and the on-line edition of the UNDB and posted on the websites of the Ministry of Agriculture, Water Resources and Processing Industry (MAWRPI) and of the Ministry of Health (MOH).

10. The MAWRPI and the MOH will allocate a part of their respective websites for posting information on contract awards, including the name of each bidder who submitted a bid, bid prices as read

out at public bid opening, name and evaluated prices of each bid that was evaluated, name of bidders who were rejected and the reasons for rejection, the name of the winning bidder and the price it offered. All contracts awarded through direct contracting (irrespective of the amount) shall be listed on the websites. Information on the contracts awarded as a result of an ICB and results of selection of consultant firms for contracts exceeding US\$100,000 will also be posted on the World Bank web-site by submitting the information to the World Bank Country Office in Bishkek.

11. The APIU will follow the Bank's anti-corruption measures and will not engage services of firms and individuals debarred by the Bank. The listing of debarred firms and individuals is located at: <http://www.worldbank.org/html/opr/procure/debarr.html>

12. **UN Agencies as Procurement Agents.** For several years, a number of specialized UN and bilateral agencies operating in the Region have supported various country agencies in the procurement of drugs, vaccines, specialized test equipment and supplies, and other materials. Using this type of assistance will be part of the Project's procurement arrangements. In accordance with the Procurement Guidelines Section 3.9, the Project will include the use of Specialized Agencies of the United Nations (WHO, FAO and UNICEF) as suppliers of goods (mainly for drugs and vaccines and some medical supplies such as reagents), following their own procedures of procurement. In addition, it is foreseen under the Project to use the UNDP as procurement agent. The use of UN Agencies as agents will have to meet the requirements of Sections 3.10 and 3.15 of the Procurement Guidelines. The procurement agents will follow the Bank's Procurement Guidelines under the standard agreement between the Bank and the respective agency.

13. **Procurement under Emergency Assistance Provisions.** Following ERA procedures, the Project is likely to include financing for items included on a positive list of imports identified as necessary under a well-defined preparedness and response program to be prepared as part of project implementation. In case of a declared global influenza pandemic, which will trigger disbursement conditions for critical imports, support will be provided under the Project for the procurement of a positive list of critical imports. These may be procured under Modified International Competitive Bidding (MICB), according to paragraphs 2.66 and 2.67 of the Procurement Guidelines. Also, commonly traded commodities may be procured through organized international commodity markets or other channels of competitive procurement acceptable to the Bank, in accordance with the provision.

14. The positive list of critical inputs to be prepared by the Kyrgyz Republic or to be purchased by the Borrower from the private sector, based on historical imports during national emergencies, will include:

- Pharmaceuticals and vaccines
- Medical and veterinary supplies and equipment
- Communication equipments, supplies, and public awareness campaigns
- Food and water containers
- Protective clothing and gear

15. Disbursements for items procured under emergency assistance provisions can be made for up to 100 percent of import costs. No more than 20 percent of the Grant proceeds may be used for retroactive financing of expenditures, and the payments must have been made after the appraisal mission.

16. **Procurement Audits.** Because the Project has a strong element of decentralized implementation, and to help IDA carry out post-reviews of procurement actions, consultants will be contracted (as a cost to the Project) to carry out annual procurement audits of a sample of contracts, under Terms of Reference acceptable to the Bank.

## **B. FINANCIAL MANAGEMENT ARRANGEMENTS**

17. The APIU will be responsible for coordination on behalf of MOH and MAWRPI and for financial management under the Project. It will be responsible for ensuring that the Project establishes and maintains: (i) adequate accounting systems and procedures; (ii) flow-of-funds mechanisms facilitating timely disbursement of funds and timely payments for goods, works and services; (iii) regular reporting on the use of funds; and (iv) appropriate arrangements for regular financial audits. These responsibilities will be described in detail in a manual of financial procedures and summarized in the Financing Agreement. The APIU has experience with financial management under Bank-financed projects and has established sound internal control mechanisms on the application and use of funds. However, additional internal control procedures for the operation of the Compensation Fund, consistent with the internal control procedures described in paras. 25-34 below will be developed to respond to the specific risks associated with the flow-of-funds mechanism envisaged under the project.

18. **Staffing.** The existing FMS staffing in the APIU is considered adequate to implement this new project at the initial phase, but additional staff will be needed to strengthen the existing capacity and to allow for periodic visits to the village level to review the implementation of the Compensation Fund. The additional staff will report to the APIU financial manager and will be responsible for disbursement functions as well as project accounting -- maintaining books of accounts, reporting day-to-day transactions and preparing accounting reports and financial statements, as well as monitoring financial flows to project beneficiaries. The financial manager will have primary responsibility for the quarterly financial reports (FMRs) and will prepare the annual financial statements for audit.

19. **Financial Reporting.** For project monitoring purposes, quarterly financial monitoring reports will be required. The APIU will be responsible for designing appropriate financial monitoring reports (FMRs) to include: (a) Project Sources and Uses of Funds, (b) Uses of Funds by Project Activity, (c) Special Account/Local Bank Account Statements, (d) Physical progress report, and (e) Procurement report. These financial reports will be submitted to IDA within 45 days of the end of each quarter. The first quarterly FMR will be submitted after the end of the first full quarter following the initial disbursement. Formats of the annual financial statements and the FMRs will be incorporated in the Financial Management Manual (FMM). The accounting software currently used by the APIU will need to be upgraded to have the capacity to prepare FMRs incorporating all components, sub-components and expenditure categories, as may be appropriate.

20. **Disbursement Arrangements.** The Recipient will establish a Special Account in a commercial bank, acceptable to IDA. Disbursements from the IDA Grant will follow the transaction-based method, i.e., traditional Bank procedures: Statements of Expenditure (SOEs), Direct Payments, Special Commitments. For certain payments, above the Minimum Application Size as specified in the Disbursement Letter, the APIU will submit withdrawal applications to the Bank for payments to suppliers and consultants directly from the Grant Account.

21. **Quick Disbursable Funds.** In the event of a global influenza pandemic, the Recipient could obtain quick disbursing funds. These funds would be disbursed against a positive list of imports, identified as critical following emergency events (see para. 14). The declaration of a national emergency will be a disbursement condition for this element of the project. Upon declaration of an emergency, the Government will submit to IDA an initial recovery plan documenting the disaster declaration, the related budget appropriation and the proposed use of the funds. The APIU will keep IDA informed of updates in the recovery plan as the emergency response operations unfold.

22. **Internal Controls.** With the exception of the Compensation Fund component, for which the APIU does not have previous experience, the APIU has maintained an effective internal control system to ensure that project expenditures are properly authorized, supporting documents are maintained; accounts are reconciled periodically; project assets, including cash, are safeguarded, and cash compensation grants are properly accounted for. Although project accounting will be on a cash basis, detailed asset/inventories register will be maintained as part of the project internal control procedures. The APIU will implement appropriate controls over inventories of drugs, vaccines, medical equipment, and other sensitive and/or expensive assets will be especially important for the project.

23. **Compensation Fund.** The Government will establish a national Compensation Fund from which the owners of animals culled will be compensated (see Annex 6B). The Veterinary Law provides the legal basis to do so, but the required implementation arrangements still need to be developed and put in place, and the Project will provide technical support to do so. The necessary legal, institutional and operational details will be developed and agreed upon during the first months of project implementation and will be included in the Operational Plan.

24. As a **condition of disbursement** of funds under the Compensation Fund component, the APIU will implement appropriate internal control procedures and flow-of-funds arrangements acceptable to the Bank and documented in the operational/financial manual. The Project will provide US\$1 million to finance and operate this Fund. US\$100,000 will be disbursed into a specially established account, so as to provide sufficient resources for immediate needs. The remaining US\$0.9 million will be retained as a contingency and will be disbursed only in the event of actual need.

25. **Internal Control Arrangements for the Compensation Fund.** Annex 6b sets forth the procedures for recording poultry culled under government orders and for establishing and recording poultry owner's claims for compensation payments. A number of minimum internal control procedures and risk mitigation measures will be implemented with respect to recording and verifying poultry culling and claims for compensation payment before any flow of funds is initiated.

- The financial and operational manuals will detail the mechanisms, as described in Annex 6b, for identifying those eligible for compensation payments, ensuring that there will be no multiple claims. A Compensation Fund database will be maintained by the Project to facilitate record keeping, claim verification, payment facilitation, monitoring and auditing.
- In the event of government-ordered culling of poultry, the culling and the preparation and processing of culling records and compensation claims will be done in accordance with the procedures detailed in Annex 6b and summarized in paras. 26-33 below.
- All forms to be used to record poultry cullings and compensation claims will provided by the Project. They will be pre-numbered and recorded in the database of the Compensation Fund. All unused forms, as well as any invalid or incorrectly completed forms, must be returned to the Compensation Fund when the culling records are submitted.
- Compensation payment to poultry owners will be in cash or by bank transfer or postal transmission. There will be no vouchers or animal replacements. Payment will be made within four weeks from the date of culling.

26. The owners of **village and backyard poultry** will, at the time of culling, receive a Culling Certificate noting the date and the type and number of birds culled. Each certificate will be signed by all four members of the Community Culling Supervision Committee (CCSC) and countersigned by the poultry owner. The certificate will be completed in four copies: one for the poultry owner, one for the Local Self-Government (Aiyi Okmotu [AO]) administration, and one each will be attached to the village summary culling record compiled by the CCSC and sent by the AO administration to the Compensation

Fund and to the APIU, respectively. Certificates not signed by all members of the CCSC and the poultry owner are invalid.

27. Based on the individual poultry owner certificates, the CCSC will compile a Village Summary Poultry Culling Record. All four CCSC members will sign and the poultry owners will countersign this list of birds culled and their owners. Forms not signed by all four members of the CCSC are invalid, and all claims included on an invalid Village Summary Poultry Culling Record are rendered invalid as well. The village summary culling record is the official record that establishes the poultry owners' right to compensation from the Compensation Fund. It will be completed in eight identical copies: one will be posted in a weather-protected public location in the village; one will be kept by the raion SVD representative; two will be kept by the AO administration; one will be sent by the CCSC to the APIU; one will be sent by the CCSC to the Compensation Fund; one will be sent by the AO administration (together with the AO Summary Report; see para. 28) to the APIU; and one will be sent by the AO administration, together with the AO Summary Report, to the Compensation Fund. Attached to the copies that are sent by the AO administration to the Compensation Fund and to the APIU must be copies of all individual owners' culling certificates that form the basis for the compilation of the village summary culling record.

28. The AO administration compiles an AO Summary Report on the basis of all village summary poultry culling records, listing all villages and for each village the total number of different poultry culled. This report is made out in five copies and signed by the mayor of the AO. Two copies are kept by the AO administration, one is provided to the raion SVD veterinarian, one is sent to the APIU, and one is sent to the Compensation Fund. Attached to the copies sent to the APIU and to the Compensation Fund are the village summary poultry culling records and copies of all individual owners' culling certificates.

29. For *medium- and large-scale poultry operations* with more than 200 birds, the owner or manager will, at the time of culling, receive an Enterprise Poultry Culling Record, signed by the raion SVD veterinarian and an official from the AO administration, and certified by an audit firm acceptable to IDA. The owner/manager countersigns. There will be five identical copies: one for the enterprise, one for the AO administration, one for the raion SVD representative, one for the APIU, and one for the Compensation Fund. This document is the official record that establishes the poultry owners' right to compensation. Actual compensation payments will be based, however, on the lower of (a) the number of birds reported by the enterprise to MAWRPI and to the Compensation Fund at the end of the quarter preceding the mandatory culling and for which the required fee has been paid to the Compensation Fund or (b) the number of birds reported and certified on the Enterprise Poultry Culling Record. If all or part of the fee due to the Compensation Fund is overdue by more than three months, no compensation will be paid.

30. ***Flow-of-Funds Arrangements for the Compensation Fund.*** Flow-of-funds arrangements for making compensation payments are designed to minimize the number of stages through which funds will need to pass before reaching the intended beneficiaries, while ensuring maximum transparency. Once authorized by the APIU, compensation payments will be effected by the Compensation Fund in one of three ways: (i) in person and in cash in the village, (ii) through the banking system, or (iii) through the Postal Service.

31. For *village and backyard poultry owners*, payment will be made in person and in cash at the village level, in a public place. The funds for such payments will be transferred by the Compensation Fund through the banking system or the Postal Service to the AO administration. The funds required to make payments in a village will be taken by the AO administration, with appropriate security arrangements, to the village. Payment to the poultry owners will be made by the AO administration and supervised by the two community representatives on the CCSC, based on the village summary culling

record kept by the AO and cross-checked against that kept in the village. To receive payment, each poultry owner will be required to present his/her culling certificate; the date and amount of payment will be recorded on the certificate and countersigned by the poultry owner.

32. All payments made to individual poultry owners are recorded on both copies of the village summary poultry culling record kept by the AO administration, and each poultry owner must sign for the payment received on both copies to confirm receipt of payment. These two copies of the village summary poultry culling record thus become the “village culling-and-payment record”. They must be signed by the AO representative and the two community representatives on the CCSC. The AO administration then completes the AO Summary Report by entering in the final column for each village the amounts paid, by village and by type of poultry. The AO administration keeps one copy of the completed AO Summary Report and submits the other to the Compensation Fund, with a copy of each village’s culling-and-payment record attached.

33. For *medium- and large-scale poultry enterprises* that have bank accounts, the compensation payments will be made through the banking system, typically through the Settlement and Savings Company (SSC). The Compensation Fund will transfer the funds to the SSC, which will instruct its branches in the appropriate locations to credit the account(s) of the eligible recipients. Banking fees associated with this service will be financed by the Project. The Compensation Fund will inform the APIU of the dates and amounts of payments made, with appropriate documentary evidence. For enterprises that have no bank account or that failed to provide the necessary account details at the time of culling, the payments will be made through the Postal Service. The Compensation Fund will enter into a contract with the State Postal Service to provide this service; the cost of this service will be financed by the Project. The Compensation Fund will provide the necessary information and instructions to the Postal Service, with the name and address of the eligible recipient, including passport numbers, etc., and the amount of payment. The Postal Service will obtain confirmation from the recipient that the payment has been received and will submit this confirmation to the Compensation Fund. The Compensation Fund in turn will inform the APIU of the dates and amounts of payments made, with appropriate documentary evidence.

34. ***Reviews and Audits for the Compensation Fund.*** The APIU will carry out, or will arrange to have carried out, additional checks to ensure that the eligible poultry owners, and only they, are paid and are paid in full. This will include, but not be limited to, periodic operational reviews, under TORs acceptable to IDA, to confirm the validity and legitimacy of the compensation payments made. The reviewers will be required to verify compensation claims and payments made in randomly selected samples of villages and Aiyil Kenesh territories; this verification will include: checking against the database maintained by the Compensation Fund, collecting and verifying information available and obtained at the village level, checking with individual poultry owners, checking forms and reports, etc. Any significant weaknesses identified will be promptly rectified in close consultation with IDA. In addition, the external independent auditors will be asked to provide an opinion on the reasonableness of the accounting, reporting and internal controls in respect of the operations of the Compensation Fund, and the audit TORs (acceptable to IDA) will include these specific requirements. All ineligible claims will be refunded to the Compensation Fund and to IDA.

35. ***Financial Audits.*** There will be annual audits of the project financial statements, covering all aspects of the project, including specific requirements for the Compensation Fund. The audits will be performed by independent auditors acceptable to the Bank, and in accordance with International Standards on Auditing (ISA), and the Bank’s guidelines on auditing as stated in the guidelines: *Annual Financial Reporting and Auditing for World Bank-financed Activities* (June 2003). The auditors' TOR will be prepared by the APIU and cleared by the Bank before the engagement of the auditor. They will include both the audit of financial transactions, an assessment of the internal control, funds flow

mechanisms, and the reasonableness of the accounting, reporting and internal controls in respect of the Compensation Fund. The annual audit reports will consist of a single opinion on the financial statements of the project, incorporating the project accounts, including Special Account Reconciliation, and SOE Withdrawal Schedule; as well as a Management Letter. The audit reports will be submitted to the Bank not later than six months after the end of the fiscal year to which they relate. The cost of the audits will be eligible for financing from the Grant. The APIU will provide the auditor with full access to project-related documents and records, including the compensation claims database, and with the information required for the purpose of the audit. Sample TORs for project audit will be included in the Financial Manual.

36. **Financial Management Action Plan.** Financial management arrangements of the APIU are generally adequate, but a number of actions are required to ensure that arrangements are fully satisfactory for the project, with its specific FM needs, especially with respect to the Compensation Fund. The following action plan will be discussed with the Recipient during Negotiations. Satisfactory implementation of the action plan will ensure the establishment of a financial management system that fully meets requirements of the Project and of the Bank.

	<b>Action</b>	<b>Responsibility</b>	<b>Due Date</b>	<b>Remarks</b>
1	Implementation of appropriate internal control procedures and fund flow arrangements for the <b>Compensation Fund</b> component	APIU	Disbursement Condition for the Compensation Fund component	The Compensation Fund sub-component will be disbursed after the APIU has implemented appropriate internal control and fund flow procedures.
2	<b>Staffing of the FM Unit.</b> Recruitment of Financial/Disbursement Specialist. This is only an action for capacity building and not a FM condition.	APIU	To be ready before project implementation	
3	<b>FM Procedures Manual.</b> Revise existing manual to fully document the procedures for accounting and internal control, including disbursement and flow of funds (including flow chart), financial reporting, including FMR, annual reports and audit. This is only an action for capacity building and not a FM condition.	APIU	To be ready before project implementation	A manual already exists and will require only minor updates to reflect the characteristics of the project, including flow of funds and accountability for cash grants/ compensation fund.
4	<b>Project Accounting and Financial Reporting System.</b> Upgrade existing accounting software, to reflect requirements of the new project, including capacity to generate FMRs without manual summarization in Excel; test the accounting and reporting system by producing sample FMRs for submission to the Bank for review and comments. This is only an action for capacity building and not a FM condition.	APIU	To be ready before project implementation	Sample reports, based on activities under the ASSP, will be reviewed by the Bank prior to Board Presentation. Format and content to be agreed during Negotiations.

### Allocation of Grant Proceeds

Expenditure Category	Amount in US\$ million	Financing Percentage
(1) Goods	1.15	100%
(2) Works	0.08	
(3) Consultants services, including audit and training	0.56	100% of local expenditures and 90% of foreign expenditures
(4) Operating costs	0.46	100%
(5) Compensation Fund under Part I.2 of the Project	1.00	100%
(6) Eligible imported goods and commodities required for the Project as specified in Section IV.C of this Agreement	0.46	100%
(7) Unallocated	0.29	
<b>TOTAL AMOUNT</b>	<b>4.00</b>	

Note: Section IV.A2 of the Financing Agreement has the SDR amounts.



## Annex 9: Economic Analysis

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

1. The continuing outbreaks of the H5N1 strain of Highly Pathogenic Avian Influenza (HPAI) that began in late 2003 and early 2004 have been disastrous for the poultry industry in the affected countries. By mid-2005, more than 140 million birds had died or been destroyed, and losses to the poultry industry world-wide are estimated to be in excess of US\$10 billion. Despite control measures, the disease continues to spread, raising serious public health concerns at the global and national levels, and it has the potential for massive impact on human and animal health as well as for a major socio-economic impact, especially on the poorest.

2. In response to these concerns, the Kyrgyz Republic has prepared a National Action Plan, to be supported by the Project. Estimation of the economic benefit, cost-effectiveness and distribution of benefits from the combined implementation of the proposed Project activities is the main objective of this analysis. The standard practice of comparing the incremental stream of net benefits “with project” to a “without project” scenario is employed. The analysis considers virus transmission among animals and among humans both jointly and separately. At present, HPAI is mainly an animal health problem, although more than half of the more than 140 registered human cases (globally) so far have been fatal. Since it is widely considered that a global pandemic of human influenza is both overdue and likely, the analysis is extended to examine economic consequences of human-to-human transmission.

3. Both costs and benefits are separated by their impact on households and society in the Kyrgyz Republic. This allows for more accurate evaluation of the relevant costs and benefits; it also minimizes any “double counting” bias. For example, the loss of poultry could be viewed as either: (i) the loss of productive asset at the household level that embodies the discounted value of future production of meat and eggs, or (ii) the loss of a part of agricultural output at the national level. As most of the poultry production is currently consumed on-farm, valuation of the loss of poultry at the household level will capture economic benefits more accurately. Consideration of the nationwide losses of production therefore becomes unnecessary because they have already been valued (indirectly) at the household level.

<b>Economic Benefits</b>	
<i>Households</i>	<i>Society</i>
<b>Agriculture Sector</b>	
<i>Primary</i>	
Avoided income loss	Avoided administrative cost of livestock replacement program
<i>Secondary</i>	
Avoided higher cost of food	Avoided loss of higher value markets
<b>Health Sector</b>	
<i>Primary</i>	
Avoided hospitalization expenses	Avoided hospitalization expenses
<i>Secondary</i>	
Avoided loss of income due to disability	Avoided loss of economic activity
<b>Economic Costs</b>	
<i>Primary</i>	
Time spent on promotion of the program	Cost of the National Action Plan
<i>Secondary</i>	
Higher costs of food due to the ban of live poultry imports	Loss of economic activity due to the restrictions on operation of livestock markets and inter-regional trade
Higher cost of poultry production	--

4. Both costs and benefits have been divided by primary (direct) and secondary (indirect) effects. Most of the direct costs and benefits are self-explanatory, and their evaluation is relatively straightforward. More importantly, the magnitude of the direct costs and benefits is a product of the effectiveness of actions taken domestically, while the extent of indirect benefits will be determined overwhelmingly by external factors.

5. Higher prices for food offer a good example. Regional contraction in the supply of poultry meat and the commensurate increase in demand for its substitutes will overpower the effect of national measures, preventing an increase in the supply of poultry to the small and open domestic market of the Kyrgyz Republic. Similarly, a slowdown of the global economy due to a pandemic would reduce demand for Kyrgyz exports. Conversely, inability to contain animal-to-animal and human-to-human transmission will have a devastating effect on the region and more globally. Due to their uncertainty and to practical difficulties in estimating them, most of the secondary benefits and costs were omitted from the calculations.

6. The extent of protection achieved through the implementation of the National Action Plan and the activities supported by the proposed Project will depend on the efficacy of the prevention, containment and treatment measures. The assumed levels of efficacy of these measures determine the range of protection scenarios. The protection rates are assumed here to vary between 33 and 80 percent for both birds and humans. The likely impact of an HPAI pandemic on unprotected humans was derived using WHO estimates of the effects of human-to-human transmission: (a) 30 percent of unprotected humans are likely to be affected, (b) one tenth of them will require hospitalization, and (c) one and a half percent of all human infection cases will be fatal. The same parameters were assumed for poultry protection, although all birds exposed to the risk were assumed to perish (either from the infection or through culling). The costs of activities supported under the project are assumed to remain unchanged for each scenario. Finally, the incremental benefits for each of the three protection scenarios were evaluated for a period of 20 years, with a discount rate of 12 percent.

<b>Summary of Economic Analysis for Different Protection Scenarios</b>			
	<b>Scenario I</b>	<b>Scenario II</b>	<b>Scenario III</b>
<b>Key Scenario Assumptions:</b>			
Efficacy of Prevention Measures (%)	100	65	65
Efficacy of Containment and Treatment (%)	80	80	50
Protection rate (%)	80	52	33
<b>Key Outcomes:</b>			
Human lives saved (persons)	18,320	11,908	7,557
Hospitalizations averted (persons)	122,130	79,385	50,379
<b>Intervention Costs (US\$)</b>			
	12,754,671	12,754,671	12,754,671
<b>Benefits in monetary terms (US\$):</b>			
Agriculture sector	58,098,768	37,764,199	23,965,742
Health sector	57,951,819	37,668,682	23,905,125
Benefits to households	65,429,269	42,529,025	26,989,574
Benefit to society	50,621,317	32,903,856	20,881,293
<b>Benefit-Cost Ratio</b>			
	9.10	5.91	3.74

7. The table above presents the major economic outcomes under each of the scenarios modeled. The scenario of 80 percent protection results in an estimated 18,320 human lives saved and 122,130

hospitalizations averted. At the lowest end, the protection rate of 33 percent still saves 7,577 lives and reduces the number of hospitalizations by 50,379. The net economic effect is massive and ranges from US\$35 million to US\$103 million (in net present value terms) for Scenarios III and I, respectively. The benefit-cost ratios of the three scenarios, ranging from 3.8 to 9.1, are also exceptionally large.

8. The allocation of benefits between households and Kyrgyz society at large shows that households would benefit more from the Project, reflecting the fact that households are assumed to bear a considerable share of costs for medication and of the economic costs associated with any outbreak of an influenza pandemic. The benefits realized in the health sector are similar to those accruing in the agriculture sector, because medical cost savings and the avoidance of associated income losses are approximately equivalent to the poultry-related benefits. Crucially, the values of sectoral benefits show that implementation of the Project is justified even if its costs were attributed exclusively to either of the two sectors. The benefits are robust and insensitive to changes in the underlying assumptions. Even a 50 percent decrease in the assumed risks of morbidity, hospitalization and mortality among the unprotected population still allows the health sector to recoup the costs of Project implementation under scenarios I and II, while the benefits to the agriculture sector remain unchanged.

<b>Net present value of net incremental benefits (US\$ million) and benefit-cost ratios</b>			
	25% risk reduction	33% risk reduction	50% risk reduction
Scenario I	86 (7.7)	80 (7.3)	70 (6.5)
Scenario II	51 (5.0)	48 (4.7)	41 (4.2)
Scenario III	28 (3.2)	26 (3.0)	22 (2.7)

9. **Distributional Analysis.** Overall levels of poultry and egg production are very low. Backyard farmers are the primary owners of the national poultry flock, although slightly larger peasant farmers are (slowly) expanding their production and becoming more important. The table below shows the distribution of poultry producers by the size of their flock according to the 2003 Livestock Census. More than three quarters of the national flock are owned by farmer with fewer than 50 birds. Household budget surveys confirm that poultry holdings are distributed relatively uniformly among all rural households, regardless of income level. Most of the poultry meat and egg output (with the exception of a very limited number of large enterprises) is produced for own consumption.

<b>Distribution of poultry owners by size</b>		
<b>Number of birds</b>	<b>Number of farms</b>	<b>Total poultry</b>
1-9	137,930	743,110
10-49	198,343	3,276,471
50-99	4,961	298,055
100-199	579	70,069
200-499	104	28,319
500-999	11	7,092
1,000-1,999	4	4,831
2,000-2,999	3	6,701
3,000-4,999	1	4,000
5,000-7,999	2	12,641
8,000-9,999	0	0
More than 10,000	8	807,204
<b>Total</b>	<b>341,946</b>	<b>5,258,493</b>

10. Apart from avian influenza, there are several economic factors affecting competitive poultry meat production in the Kyrgyz Republic – notably the availability of cheap imports of frozen broilers, the lack of significant feed crop production (e.g., soybeans, sunflowers), and the traditional consumer preference for beef and mutton. Nonetheless, there are five enterprises of note in the national broiler industry. Although major producers by local standards, they are small by international standards. Most of them import hatching eggs and day-old chicks from China, Russia and Kazakhstan and market their production fresh, practices which are very risky and are likely to be discontinued in the event of HPAI outbreaks in these supplier countries. These enterprises will face considerable adjustment costs in the event of an HPAI outbreak, and it is not clear how many of them would survive. There are also five companies in the fresh egg business, but they have somewhat better economic prospects because international trade in fresh eggs is more limited due to the obvious handling and transport problems.

11. **Consumption of poultry products.** Poultry meat and eggs are small components of the aggregate household food basket in Kyrgyzstan. Per capita consumption of poultry meat and eggs is low (about 2 kg/capita/year and 49 eggs/capita/year, respectively) and is likely to decrease further in response to the avian influenza. During 2000-2004, consumption levels increased in response to high volumes of cheap poultry meat imports, with urban consumers and lower income groups the major beneficiaries of increasing supply. This trend is likely to be reversed, given the recent rise in the price of poultry meat imports, consistent with the high estimated own-price elasticity of -1.62 for poultry meat and -2.0 for eggs. Poultry mortality brought about by HPAI will have considerable impact on diet quality, because it will effectively cut off the supply of poultry meat to rural residents, especially the poorest 20 percent. In contrast to other meats, consumption of poultry is almost exclusively based on own production. While poultry ownership is distributed relatively uniformly among different income groups, the ability of the poorest 20 percent of households to diversify into production of other types of livestock is very limited.

<b>Livestock asset ownership in rural areas (%)</b>	
Households owning poultry	76.7
Households owning cattle	73.5
Households owning sheep	36.3
Households owning horses	23.7
Households owning goats	20.7
Households owning donkeys	9
Households owning pigs	7.5
Households owning rabbits	3.4

12. While the quantification of indirect benefits is problematic, some of them may be as important as those presented above. At the current stage of the country’s economic development, many other issues are at stake. For example, an increase in human fatalities will decrease public trust in health institutions and veterinary services (both public and private), thus undermining future efforts to control other pressing health problems (e.g., brucellosis), while an effective containment and treatment program will increase the likelihood of success of such future efforts. Heavy losses of poultry will compromise its traditional role of initial “stepping stone” in asset accumulation and poverty alleviation among the poorest. More broadly, rural income reductions due to total destruction of infected and at-risk poultry will slow rural development in its broadest sense. Most of the current growth in rural areas is driven by households “graduating” above subsistence needs. An outbreak of avian influenza will stifle this engine of rural savings and investments and, thus, slow the development of the rural non-farm economy.

13. The following table presents the units values of costs and benefits used in the economic analysis together with an explanation of the key assumptions and the sources of data.

## Unit values of benefits and costs used in the economic analysis

<b>Economic Benefits</b>	
<i>Households</i>	<i>Society</i>
<b><i>Agriculture Sector</i></b>	
<i>Primary</i>	
Avoided income loss	Avoided administrative cost of livestock replacement program
<b>US\$6.77 per bird</b>	<b>US\$5.83 per bird</b>
Value of the average annual loss of production of poultry meat and eggs per bird (Source: 2003 National household budget surveys and 2003 National Livestock Census)	Value of the administrative cost of livestock restocking programs, based on a program providing milking goats to poor families. (Source: "Strengthening Livestock Communities in Mountain Regions Study", NZAID, 2005)
<i>Secondary</i>	
Avoided higher cost of food	Avoided loss of higher value markets
Not estimated	Not estimated
<b><i>Health Sector</i></b>	
<i>Primary</i>	
Avoided hospitalization expenses	Avoided hospitalization expenses
<b>US\$112.19 per person</b>	<b>US\$168.28 per person</b>
Average estimated cost of hospitalization in the case of acute pneumonia (Source: Personal communication with the finance department of the Medical Insurance Fund)	Average estimated cost of hospitalization in the case of pneumonia (Source: Personal communication with the finance department of the Medical Insurance Fund)
<i>Secondary</i>	
Avoided loss of income due to disability (death)	Avoided loss of economic activity
<b>US\$2.72 per person hospitalized</b> <b>US\$487.25 per deceased person</b>	<b>US\$8.15 per person hospitalized</b> <b>(not estimated for fatalities)</b>
Loss of wage income for 10 days of disability associated with hospitalization, estimated on the basis of the average wage income per capita among the rural population. For fatal cases assumed to be the net present value of average rural per capita wage income over a 20-year remaining working life. (Source: National Statistical Committee)	Loss of wage income for 10 days for three persons due to withdrawing from economic activities by attending to each person hospitalized. Estimated on the basis of the average wage income per capita among the rural population. No estimates were made for fatal cases. (Source: National Statistical Committee)
<b>Economic Costs</b>	
<i>Primary</i>	
Time spent on promotion of the program	Cost of the National Action Plan
<b>0</b>	<b>US\$6,370,000</b>
	(Source: appraisal mission)
<i>Secondary</i>	
Higher costs of food due to the ban of live poultry imports	Reduced economic activity due to restrictions on livestock market operations and inter-regional trade
Not estimated	Not estimated
Higher cost of poultry production	
Not estimated	Not estimated



## Annex 10: Project Preparation and Supervision

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

	Planned	Actual
Appraisal		December 2005
Negotiations	January 11, 2006	January 11, 2006
Board	February 9, 2006	
Planned date of effectiveness	May 2006	
Planned date of mid-term review	June 2008	
Planned closing date	December 2010	

Key institutions responsible for preparation of the project:

Ministry of Health; Ministry of Agriculture, Water Resources and Processing Industry

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Götz Schreiber	Task Team Leader/Lead Economist	ECSSD
Betty Hanan	Task Team Leader/Senior Operations Officer	ECSSD
Talaibek Koshmatov	Operations Officer (Bishkek)	ECSSD
Patricio Marquez	Lead Health Specialist	ECSHD
Asel Sargaldakova	Health Specialist (Bishkek)	ECSHD
Anarkan Akerova	Counsel	LEGEC
Bekzod Shamsiev	Agricultural Economist	ECSSD
Naushad Khan	Lead Procurement Specialists	ECSPS
Nurbek Kurmanaliev	Procurement Analyst	ECSPS
John Otieno Ogallo	Senior Financial Management Specialists	ECSPS
Siew Chai Ting	Lead Financing Management Specialist	ECSPS
Nicholay Chistyakov	Senior Finance Officer	LOAG1
Lynette Alemar	Senior Program Assistant	ECSSD
Gyulaiym Kolakova	Team Assistant	ECCKG
Daniyar Aitimbetov	Team Assistant	ECCKG
Yulia Balybina	Team Assistant	ECCKG
Ludmila Mosina	Epidemiologist	CDC
Gerald Rockenschaub	Disaster Preparedness and Response Expert	WHO EURO
Guenael Rodier	Communicable Diseases Expert	WHO EURO
Rob de Rooij	Veterinarian Consultant	Consultant

Bank funds expended to date on project preparation:

1. Bank resources: \$100,000
2. Trust funds: \$0
3. Total: \$100,000

Estimated Approval and Supervision costs:

1. Remaining costs to approval: \$10,000
2. Estimated annual supervision cost: \$120,000



## Annex 11: Documents in the Project File

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

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#### A. BANK

- Minutes of the Technical discussions and coordination meeting of August 4, 2005
- Guidance notes to country teams on responding to AI
- Rapid assessment of the economic impact of public health emergencies of international concern – the example of SARS – Milan Brahmhatt
- Vietnam Avian Influenza Emergency Recovery Project – Memorandum of the President and Technical Annex
- Minutes of the meeting on the Emerging zoonoses and pathogens: A Global public goods concern – implication for the World Bank, April 19, 2005
- Issues Note on Avian Influenza in Africa, September 27, 2005. – François Le Gall and Ok Pannenborg
- Minutes of the Review Meeting to discuss the horizontal APL.
- Project Framework Document for the Global Program for Avian Influenza Control and Human Pandemic Preparedness and Response (GPAI)
- Avian and Human Influenza Financing Needs and Gaps

#### B. OTHER DONORS

- A global strategy for the progressive control of HPAI – FAO/OIE in collaboration with WHO – May 2005
- FAO's response to the avian influenza crisis – September 19, 2005
- Technical Cooperation Program – Project descriptions for East Africa, West Africa, Europe and Central Asia, North Africa, and the Middle East – WHO 2005

#### C. PUBLIC HEALTH RELATED

- Global avian influenza information from WHO Web site at [www.who.int/csr/disease/avian\\_influenza](http://www.who.int/csr/disease/avian_influenza)
- Information on U.S. influenza preparedness available at: [www.hhs.gov/nvpo/pandemics/dhhs.html](http://www.hhs.gov/nvpo/pandemics/dhhs.html) and [www.cdc.gov/flu/avian](http://www.cdc.gov/flu/avian)
- WHO. 2005. Responding to the avian influenza pandemic threat. Recommended strategic actions. Geneva.
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- United States Department of Health and Human Services. 2005. Pandemic Flu Fact Sheet.
- United States Department of Health and Human Services. 2004. Pandemic Influenza Preparedness and Response Plan. Draft.
- Browner, J., and Chalk, P. 2003. The Global Threat of New and Reemerging Infectious Diseases. Reconciling U.S. National Security and Public Health Policy. Santa Monica, CA: RAND.
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- Huffman, S., on the basis of report by Daniel Miller and Asel Ryskulova. 2005. *Epidemiologic Surveillance Systems in Eastern Europe and Central Asia: An Overview*. Washington, D.C.: World Bank.
- Neustadt, R.E., Fineberg H.V. 1982. *The Epidemic That Never Was. Policy Making and the Swine Flue Scare*. Vintage Books.

#### **D. ANIMAL HEALTH RELATED**

- OIE website on Avian Flu Official reporting, scientific information, Standards, Guidelines, and Recommendations ([www.oie.int](http://www.oie.int))
- FAO website on Avian Flu General information, Communication, Publications, Projects proposals and reports ([www.fao.org](http://www.fao.org))
- FAO/OIE. February 2005. Second FAO/OIE Regional Meeting on Avian Influenza Control in Asia. Ho Chi Minh City.
- FAO/OIE. February, 2004. Recommendations of the Joint FAO/OIE Emergency Regional Meeting on Avian Influenza Control in Animals in Asia. Bangkok.
- FAO/OIE. March 2005. Summary Report of the First Regional Steering Committee of GF-TADS (Global Framework for the Progressive Control of Transboundary Animal Diseases) in Asia and the Pacific. Tokyo.
- FAO/OIE/WHO. February, 2004. FAO/OIE/WHO Technical Consultation on the Control of Avian Influenza, 3-4 February, 2004: Conclusions and Recommendations.
- OIE. May, 2005. OIE Report of the First Meeting of the Steering Committee of the Joint OIE/FAO Network of Expertise on Avian Influenza (OFFLU). OIE. Paris.
- OIE/ASEAN. August 2005. The Southeast Asia Foot and Mouth Disease Campaign: Business Plan for Phase III (2006-2008).
- OIE/FAO. Network of Expertise on Avian Influenza (OFFLU). Paris.
- OIE/FAO. April, 2005. International Scientific Conference on Avian Influenza, OIE Paris, France 7-8 April 2005: Recommendations. Paris.

#### **E. BIBLIOGRAPHY OF RECENT REPORTS & OTHER DOCUMENTS**

- Bell, Clive and Maureen Lewis. October 2004. *The Economic Implications of Epidemics Old and New*. Working Paper Number 54, Center for Global Development. Washington, DC. (see also powerpoint presentation, "Economic Implications of Epidemics Old and New").
- OIE. 2004. *Emerging Zoonoses and Pathogens of Public Health Concern*. Rev. sci. tech. Off. int. Epiz., 2004, 23 (2).
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- Schudel, A. August 2005. Tackling Avian Influenza at Source. Avian Influenza Technical Discussion & Coordination Meeting (powerpoint presentation). Washington, DC.
- Smolinski, Mark, Margaret A. Hamburg, and Joshua Lederburg (Editors). 2005. Microbial Threats to Pandemic Influenza. National Academies Press. Washington, DC.
- WHO. 2005. WHO Global Influenza Preparedness Plan: The Role of WHO and Recommendations for National Measures Before and During Pandemics. Department of Communicable Disease Surveillance and Response, Global Influenza Program. Geneva.
- WHO. January 2005. Influenza Pandemic Preparedness and Response: Report by the Secretariat. Executive Board, 115th Session, Agenda Item 4.17. Geneva.
- World Bank. July 2, 2004. Technical Annex for a Proposed Credit of SDR3.5 million to the Socialist Republic of Vietnam for an Avian Influenza Project. Washington, DC.



## Annex 12: Statement of Loans and Credits

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P084977	2006	HEALTH & SOC PROT	0.00	0.00	0.00	0.00	0.00	14.90	0.00	0.00
P083377	2005	SMALL TOWNS INFRA & CAP BLDG	0.00	12.00	0.00	0.00	0.00	13.85	0.66	0.00
P049724	2005	AGRIBUSINESS & MARKETING	0.00	8.10	0.00	0.00	0.00	7.66	0.09	0.00
P078976	2005	RURAL EDUC	0.00	0.00	0.00	0.00	0.00	13.87	1.79	0.00
P074881	2004	PYMNT/BANK SYST MOD	0.00	9.00	0.00	0.00	0.00	7.74	2.78	0.00
P073973	2004	VIP	0.00	0.00	0.00	0.00	0.00	9.38	-0.60	0.00
P083235	2004	DISASTER HAZARD MITIGATION	0.00	0.00	0.00	1.00	0.00	6.19	0.65	0.00
P071063	2003	GOV TA	0.00	7.78	0.00	0.00	0.00	7.20	2.47	0.00
P071061	2003	GOV SAC	0.00	20.00	0.00	0.00	0.00	16.09	13.60	0.00
P036977	2002	RURAL WS & SAN	0.00	15.00	0.00	0.00	0.00	8.04	2.59	0.00
P051372	2001	HEALTH 2	0.00	15.00	0.00	0.00	0.00	3.10	1.43	1.83
P069814	2000	CONSLD TA	0.00	5.00	0.00	0.00	0.00	2.68	2.44	-0.02
P049723	2000	ON-FARM IRRIGATION	0.00	20.00	0.00	0.00	0.00	9.55	5.84	0.94
P049719	2000	LAND REGISTRATION	0.00	9.42	0.00	0.00	0.00	2.87	2.39	2.39
P040721	1998	ASSP	0.00	14.98	0.00	0.00	2.03	1.78	3.31	1.24
P046042	1998	IRRIGATION REHAB	0.00	35.00	0.00	0.00	0.00	0.77	0.48	-0.30
P008519	1996	POWER & DIST HEAT REHAB	0.00	20.00	0.00	0.00	0.00	6.18	-8.39	-2.01
Total:			0.00	191.28	0.00	1.00	2.03	131.85	31.53	4.07

### STATEMENT OF IFC's Held and Disbursed Portfolio In Millions of US Dollars

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2004	AKB Kyrgyzstan	1.50	0.00	0.00	0.00	1.50	0.00	0.00	0.00
1996	Demirbank Kyrgyz	0.00	0.45	0.00	0.00	0.00	0.45	0.00	0.00
2003	Demirbank Kyrgyz	0.00	0.11	0.00	0.00	0.00	0.11	0.00	0.00
2001	FINCA	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
2004	Ineximbank	1.50	0.00	0.00	0.00	1.50	0.00	0.00	0.00
	KKB Kyrgyzstan	2.00	0.00	0.00	0.00	1.20	0.00	0.00	0.00
2001	SEF Akun Ltd.	1.28	0.00	1.00	0.00	1.28	0.00	1.00	0.00
1999	SEF Altyn-Ajydar	0.06	0.00	0.00	0.00	0.06	0.00	0.00	0.00
2005	SEF Altyn-Ajydar	1.00	0.00	0.40	0.00	0.30	0.00	0.40	0.00
2000	SEF KICB	0.00	1.40	0.00	0.00	0.00	1.40	0.00	0.00
2005	SEF KICB	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total portfolio:		9.84	2.96	1.40	0.00	5.84	2.96	1.40	0.00

		<b>Approvals Pending Commitment</b>			
FY Approval	Company	Loan	Equity	Quasi	Partic.
Total pending commitment:		0.00	0.00	0.00	0.00

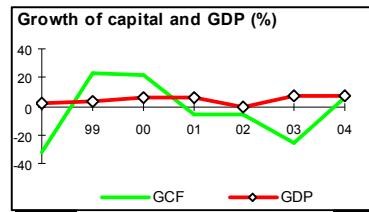
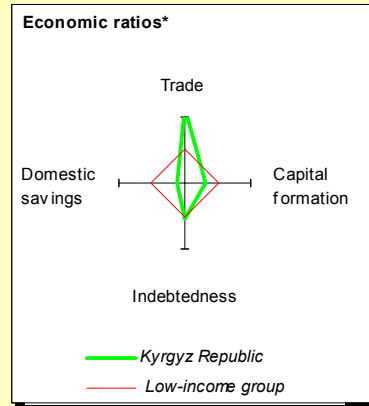
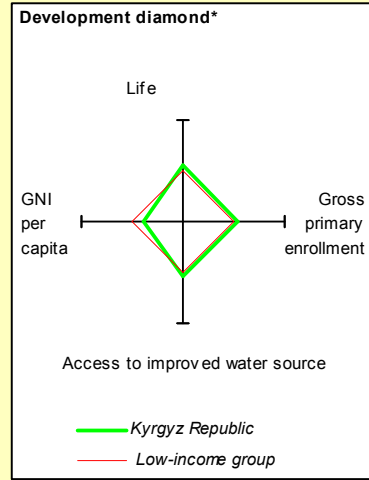
## Annex 13: Country at a Glance

### KYRGYZ REPUBLIC: Avian Influenza Control and Human Pandemic Preparedness and Response Project

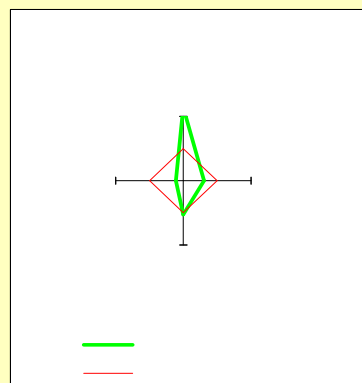
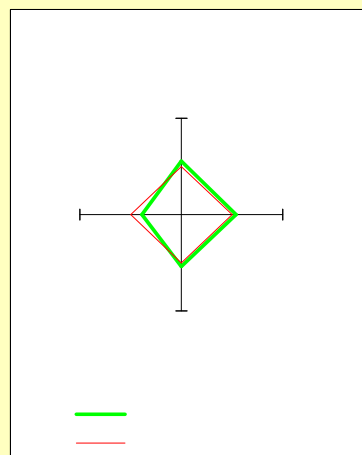
POVERTY and SOCIAL	Kyrgyz Republic	Europe & Central Asia	Low-income		
<b>2004</b>					
Population, mid-year (millions)	5.1	472	2,338		
GNI per capita (Atlas method, US\$)	400	3,290	510		
GNI (Atlas method, US\$ billions)	2.1	1,553	1,184		
<b>Average annual growth, 1998-04</b>					
Population (%)	1.0	-0.1	1.8		
Labor force (%)	3.3	-0.5	2.1		
<b>Most recent estimate (latest year available, 1998-04)</b>					
Poverty (% of population below national poverty line) a/	46	..	..		
Urban population (% of total population)	35	64	31		
Life expectancy at birth (years)	65	68	58		
Infant mortality (per 1,000 live births)	59	29	79		
Child malnutrition (% of children under 5)	12	..	44		
Access to an improved water source (% of population)	81	91	75		
Literacy (% of population age 15+)	99	97	61		
Gross primary enrollment (% of school-age population)	101	101	94		
Male	102	103	101		
Female	100	101	88		
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>					
	<b>1984</b>	<b>1994</b>	<b>2003</b>	<b>2004</b>	
GDP (US\$ billions)	..	1.7	1.9	2.2	
Gross capital formation/GDP	..	9.0	11.8	13.8	
Exports of goods and services/GDP	..	33.8	38.7	42.8	
Gross domestic savings/GDP	..	2.7	5.3	4.0	
Gross national savings/GDP	..	5.1	7.8	9.4	
Current account balance/GDP	..	-5.0	-4.2	-3.4	
Interest payments/GDP	..	0.7	1.0	1.2	
Total debt/GDP	..	26.8	103.3	95.6	
Total debt service/exports	..	3.3	15.9	12.0	
Present value of debt/GDP	..	..	75.3	63.9	
Present value of debt/exports	..	..	170.1	122.3	
	<b>1984-94</b>	<b>1994-04</b>	<b>2003</b>	<b>2004</b>	<b>2004-08</b>
<i>(average annual growth)</i>					
GDP	-4.0	4.4	7.0	7.1	4.9
GDP per capita	-5.4	3.2	6.1	5.9	3.7

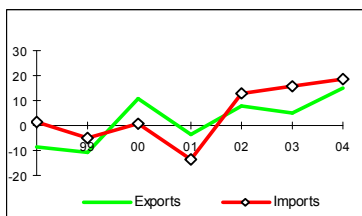
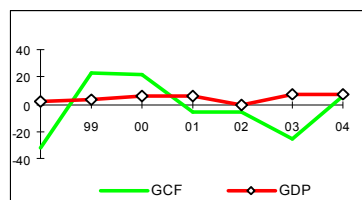
STRUCTURE of the ECONOMY	1984	1994	2003	2004
<i>(% of GDP)</i>				
Agriculture	..	40.9	37.1	36.6
Industry	..	25.5	22.3	21.1
Manufacturing	..	21.8	14.6	13.6
Services	..	33.7	40.6	42.3
Household final consumption expenditure	..	78.4	77.9	79.4
General gov't final consumption expenditure	..	18.9	16.8	16.6
Imports of goods and services	..	40.1	45.3	52.6
	<b>1984-94</b>	<b>1994-04</b>	<b>2003</b>	<b>2004</b>
<i>(average annual growth)</i>				
Agriculture	-2.3	5.9	3.2	4.1
Industry	-12.2	5.3	12.7	3.5
Manufacturing	..	8.1	17.8	1.6
Services	-0.9	1.2	7.3	11.7
Household final consumption expenditure	..	3.1	24.0	10.9
General gov't final consumption expenditure	..	1.4	1.2	3.7
Gross capital formation	..	1.1	-26.1	5.4
Imports of goods and services	..	-1.8	16.0	18.5



POVERTY and SOCIAL	Europe & Central Asia			
	Kyrgyz Republic	Central Asia	Low-income	
<b>2004</b>				
Population, mid-year (millions)	5.1	472	2,338	
GNI per capita (Atlas method, US\$)	400	3,290	510	
GNI (Atlas method, US\$ billions)	2.1	1,553	1,184	
<b>Average annual growth, 1998-04</b>				
Population (%)	1.0	-0.1	1.8	
Labor force (%)	3.3	-0.5	2.1	
<b>Most recent estimate (latest year available, 1998-04)</b>				
Poverty (% of population below national poverty line) a/	46	..	..	
Urban population (% of total population)	35	64	31	
Life expectancy at birth (years)	65	68	58	
Infant mortality (per 1,000 live births)	59	29	79	
Child malnutrition (% of children under 5)	12	..	44	
Access to an improved water source (% of population)	81	91	75	
Literacy (% of population age 15+)	99	97	61	
Gross primary enrollment (% of school-age population)	101	101	94	
Male	102	103	101	
Female	100	101	88	
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>				
	<b>1984</b>	<b>1994</b>	<b>2003</b>	<b>2004</b>
GDP (US\$ billions)	..	1.7	1.9	2.2
Gross capital formation/GDP	..	9.0	11.8	13.8
Exports of goods and services/GDP	..	33.8	38.7	42.8
Gross domestic savings/GDP	..	2.7	5.3	4.0
Gross national savings/GDP	..	5.1	7.8	9.4
Current account balance/GDP	..	-5.0	-4.2	-3.4
Interest payments/GDP	..	0.7	1.0	1.2
Total debt/GDP	..	26.8	103.3	95.6
Total debt service/exports	..	3.3	15.9	12.0
Present value of debt/GDP	..	..	75.3	63.9
Present value of debt/exports	..	..	170.1	122.3
	<b>1984-94</b>	<b>1994-04</b>	<b>2003</b>	<b>2004</b>
(average annual growth)				
GDP	-4.0	4.4	7.0	7.1
GDP per capita	-5.4	3.2	6.1	5.9



STRUCTURE of the ECONOMY	1984 1994 2003 2004			
	1984	1994	2003	2004
(% of GDP)				
Agriculture	..	40.9	37.1	36.6
Industry	..	25.5	22.3	21.1
Manufacturing	..	21.8	14.6	13.6
Services	..	33.7	40.6	42.3
Household final consumption expenditure	..	78.4	77.9	79.4
General gov't final consumption expenditure	..	18.9	16.8	16.6
Imports of goods and services	..	40.1	45.3	52.6
(average annual growth)				
Agriculture	-2.3	5.9	3.2	4.1
Industry	-12.2	5.3	12.7	3.5
Manufacturing	..	8.1	17.8	1.6
Services	-0.9	1.2	7.3	11.7
Household final consumption expenditure	..	3.1	24.0	10.9
General gov't final consumption expenditure	..	1.4	1.2	3.7
Gross capital formation	..	1.1	-26.1	5.4
Imports of goods and services	..	-1.8	16.0	18.5



\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

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## **Annex 14: Map**