

SECOND REAL TIME EVALUATION OF FAO's WORK ON HIGHLY PATHOGENIC AVIAN INFLUENZA

COUNTRY REPORT: EGYPT

17-22 OCTOBER 2009

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I. INTRODUCTION

Prof. Brian Perry, Dr Humphrey Mbugua, Dr. Emmanuel Camus and Mr. Carlos Tarazona visited Egypt from 17 to 22 October 2009 as part of the Second Real Time Evaluation of FAO's Work on Highly Pathogenic Avian Influenza. In line with the evaluation's terms of reference, the focus of the visit was to evaluate the relevance, efficiency, effectiveness, sustainability and likely impact of country level assistance provided by FAO through regional and national interventions in the past few years. The FAO Representation, through the ECTAD Unit, prepared a programme of meetings (see annex 1) and made logistical arrangements for the mission.

The First Real Time Evaluation also visited Egypt in 2007, and found that "*FAO has been able to show little impact until recently, despite the gravity of the epidemic (the highest rate of human cases - and deaths - outside of Asia)*". Although "*some activities have generated well produced outputs that will add value to planning meaningful activities in the future (e.g. the socio-economic work on market chains and compensation), internal institutional issues (e.g., leadership of the national efforts by the Ministry of Health) and lack of clear initiative and responsibility on the part of FAO staff in the country - in spite of the presence of the FAO Regional Office for the Near East in Cairo - meant that FAO's response was inadequate in the face of the rapid diffusion of the disease*". "As a result", the First RTE concluded, "*response was considered slow by stakeholders and not proactive enough to help the Egyptian authorities raise funding to implement control measures.*"

As elsewhere, the second RTE team has followed up on the findings of the first RTE and other relevant assessments (e.g. PVS, internal reviews, etc.). In view of the protracted disease situation, the second RTE has sought to assess FAO's past work with a focus on lessons learnt that could guide and improve the next stages of the response.

II. POULTRY SECTOR AND HPAI SITUATION

Poultry sector: dimension, characteristics, role in the economy, role on livelihoods

According to the National Agricultural Income figures by the Ministry of Agriculture and Land Reclamation (MoALR), poultry and eggs represent one quarter of the value of animal production. Poultry flocks comprise different species, with chickens being the most important in terms of the number of households keeping them (98%), followed in importance by ducks (83%), geese (64%), pigeons (53%), and turkeys (15%). About 80-85% of the poultry population is concentrated in North Cairo.

The Egyptian poultry sector is a combination of modern poultry rearing and a well-developed traditional (household) sub-sector. With the common FAO classification of poultry farming systems into four sectors being – according to many experts - of limited value in Egypt, it is important to distinguish two main types of chicken:

- *Traditional Balady*: local and/or domestic breeds which, despite having a longer production cycle and producing less, are preferred in rural and peri-urban areas. This preference is attributed to the belief that such species are more nutritious and tastier, as well as less sensitive to weather, diet, and the need for treatments. Balady hatchers receive eggs from egg production units or small scale producers, breed them according to old techniques using special incubating lamps, and finally sell the chicks when they are three weeks old;
- *Broiler breeds*: poultry that is bred under artificial circumstances (battery production systems) and are preferred in urban households and food industries.

Poultry farms provide about 90% of chickens produced in Egypt, with the remaining 10% provided by household (and roof top) poultry systems, abundant in village and cities. 40% of chickens are produced in medium sized farms (from 5,000 to 50,000 birds each), while small farms are the primary source of 70% of other poultry meats (principally ducks and turkeys). Chickens comprise 48%-52% of the total number of birds kept across households. Ducks represent 22%-25%, followed by pigeons, geese and turkeys.¹

¹ FAO/WFP Socio-economic Impact Assessment of HPAI in Egypt (2007)

Table 1: Poultry production in Egypt

Household Poultry (up to 100 birds)	<ul style="list-style-type: none"> • Serves as livelihood and asset base for millions of households • Present everywhere in village and cities • Lack veterinary services • Covering 10% of chicken production and 20% of turkeys and ducks
Small farms (from 100 to 5,000 birds)	<ul style="list-style-type: none"> • Concentrated in villages, but also present in towns and cities • Weak veterinary supervision done through independent veterinarians • Covering 15% of chicken production and 70% of ducks and turkeys' production
Medium sized farms (from 5,000 to 50,000 birds)	<ul style="list-style-type: none"> • Equipment varying from very low to very high level • Covering 40% of chicken production and 10% of turkeys and ducks
Larger sized farms (more than 50,000 birds)	<ul style="list-style-type: none"> • Most modern and well-equipped with closed systems • Covering 35% of chicken production

Poultry production in Egypt is heavily dependent on live bird markets (LBMs), due mainly to consumers' preferences and lack of slaughterhouse capacities. Before HPAI outbreaks occurred, some 80% of poultry were sold as live birds through transportation in open cages on cars to traditional markets and poultry shops. With the virus spread, and with a government decree to close LBMs, steps were taken to move towards selling frozen birds slaughtered in slaughterhouses. However, the poor capacity and location of slaughterhouses, together with the absence of other facilities such as refrigerators and a strong preference for fresh poultry meat, hampered the process. Most of the poultry farms have not introduced biosecure production systems either, with large numbers of live birds moving among communities in the Nile Valley, bought by traders and killed in local markets and/or kept in the households for slaughter. Although caging is now common and economically feasible, LBMs with poor biosecurity conditions continue to operate widely (and now underground because of the decrees).

The poultry sector has expanded substantially in the last 25 years. Low-cost poultry meat has become increasingly available to all, particularly the poor. Prior to the HPAI crisis, up to 2.2-2.5 million chickens were produced daily in Egypt by a national average of 45,000 licensed breeders. Traditional poultry production reportedly provides households with a net return representing a tangible part of the family's income (estimated to be 14%), with a household average return of 35 LE in 2000 and 72 LE in 2005. The commercial sector also provides many job opportunities, particularly among those lacking other skills. In the Balady hatcheries, the occupation is usually passed down from generation to generation, requiring rare traditional skills.

Income achieved from household poultry is reflected in the household nutritional situation, especially for children, with poultry rearing remaining largely a women's activity. Women are

the main caretakers of poultry, and birds and eggs are often the only way women in rural areas can generate income. The consumption of traditionally bred poultry meat forms the main, and sometimes the only, regular source of animal proteins (some 40% of the total) for a large portion of the Egyptian population. With agriculture limited by land and water availability, improving and intensifying household poultry rearing remains an important tool to reduce rural and peri-urban poverty.

HPAI situation in the country: outbreaks, spread of the disease, evolution

Egypt lies along the main migratory route between Asia, Europe and Africa for many migratory birds. The introduction of the disease into Egypt was said to have probably occurred some months before the simultaneous reporting of 18 positive cases in three governorates on 17 February 2006. Since the first cases of H5N1 viruses were reported, the virus was detected in 21 (out of 27) governorates. OIE² and FAO³ consider the disease “endemic”, with periodic outbreaks detected throughout the country.

The first case of HPAI in humans was reported in March 2006. Up to October 2009, there have been more than 3,000 suspected human cases (over 70% of which occurred in women) admitted to hospitals, of which 89 have been confirmed, with 27 fatalities. Egypt has one of the highest number of confirmed human cases in the world after Indonesia and Viet Nam. The age-specific infection and death profiles among confirmed human cases of influenza A (H5N1) infection in Egypt differ markedly from those recorded in other countries (Dudley, 2009⁴). The case fatality rate among human H5N1 cases in Egypt is 34%, versus an average of 66% in other countries. In Egypt, children younger than 10 years comprise 48% of reported cases, nearly twice the global average of approximately 25%, and no H5N1 fatalities have been confirmed among individuals in this age group as of 23 April 2009. Females outnumber males among confirmed H5N1 cases by a factor of nearly 2:1, and 90% of reported fatalities in Egypt have been females (Dudley, 2009).

Socio-economic impact of HPAI

The spread of the HPAI virus has had important socio-economic repercussions, resulting in a reduction in the consumption of poultry meat and eggs, especially by children. A study carried out by FAO in April 2006 estimated a 75% and 85% drop in egg and poultry meat consumption respectively. A subsequent FAO socio-economic impact assessment⁵ showed that the average number of chicken per family decreased from 38 to 2, and the number of ducks from 22 to 3. A sudden drop in prices as consumption declined affected poultry markets after the HPAI crisis. Chicken meat prices fell from 10 to 2 LE per bird, and those of ducks and turkeys from 50 and 80 LE respectively to 5 LE.

This trend became a vicious circle, as poultry producers increased the prices of most food items, in particular animal protein sources. Only households within the medium socioeconomic groups managed a modest increase in the consumption of fish and red meat compared to the pre-outbreak levels. These impacts on rural households came in an environment with limited alternatives option, especially for women, to poultry raising as a

² http://www.oie.int/wahis/public.php?page=disease_immediate_summary

³ Report Exercise on Highly Pathogenic Avian Influenza: FAO contribution to the UNSIC report (2008)

⁴ Dudley, J. 2009. Age-specific infection and death rates for human A (H5N1) avian influenza in Egypt. *Eurosurveillance*, 14, 1 – 2.

⁵ Conducted by Ellen Geerlings

source of livelihood. A study by FAO (2007) revealed that only 13% of households found alternative sources of income. The evaluation team was informed that the situation has not changed much since then.

III. NATIONAL HPAI RESPONSE FRAMEWORK

Institutional structure and capacity for animal health

Within the MoALR, the **General Organization for Veterinary Services (GOVS)** has the sole responsibility for the organization and implementation of veterinary services and all activities related to zoonotic diseases in Egypt. The GOVS was established by presidential decree (No. 187/1984). At HQ in Cairo, different technical departments and units (with some 600 vets employed) work on quarantine and inspection, slaughterhouses and public health, preventive medicine, animal care and treatment, extension and animal welfare development, epidemiology planning, etc. This structure is somehow replicated at the field level, with a representation in each of the 29 local governorates, but with evident problems of communications between central and governorate levels, and little authority of the central department over field staff.

The **Animal Health Research Institute⁶ (AHRI)**, which is an autonomous organization of MoALR, is engaged in conducting research and diagnosis on diseases of domestic animals, migratory and wild birds. The Institute is, among other things, charged with performing sero-surveys of endemic diseases, evaluating the efficacy of veterinary drugs, and establishing relevant national standards. Within this structure, after the HPAI outbreak in 2006, the Minister of Agriculture established the **National Laboratory for Veterinary Quality Control of Poultry Production (NLQP)** as the entity responsible for diagnostics and isolation of the Avian Influenza virus. The lab is in charge of the inspection of imported and locally produced fertile eggs and day-old chicks, the issuance of health certificates, regular inspection of poultry industry activities, etc. The lab reports positive cases to the GOVS, and local veterinary directorates, the Ministry of Health and Population, the Ministry of Environment, as well as the Technical Committee on confirmed HPAI in the MoALR.

After the disease reached Turkey, in October 2005 a **National Supreme Council to Combat Avian Flu** was convened to work on a detailed strategy in preparedness for a disease outbreak. With new members joining later, the Supreme Committee now includes - under a rotating chairmanship – representatives of different ministries, seven governors from the worst affected areas, members of GOVS, NLQP, staff of WHO, FAO, and NAMRU III. The Supreme Committee was initially led by the MoHP which reportedly caused a bias towards human health aspects of the disease during that era (see First RTE report). It appears that due in part to changes in leadership, and in part to the inadequate attention to poultry health aspects, other government entities have been taking decisions affecting influenza control without co-ordination and reference to responsible bodies (such as the decree banning LBM; the decree banning backyard poultry; the culling of the pig population, etc.).

Soon after the first outbreak occurred, a **Technical Committee** was also established within the MoALR, including 11 representatives of GOVS, NLQP, the Chairman of the Poultry Producers Union, and experts in poultry diseases and advisors to the MoALR. The Committee formed an internal task force that developed the draft strategy, monitored the developments of

⁶ <http://www.arc.sci.eg/InstsLabs/Default.aspx?OrgID=8&TabId=0&lang=en>

the disease and provided technical recommendations on how to control and eradicate the disease. FAO was consulted on an informal basis and has recently supported the drafting of new ToR for the Committee in consultation with GOVS.

At the same time, a multi-partner **AI Communication Committee** was formed to coordinate media and social communication interventions, with activities focused mainly on human health. The Communication Committee is chaired by the Ministry of Health and Population (MoHP) and includes representatives of WHO, World Bank, UNICEF, USAID, and Communication for Healthy Living (CHL). FAO was subsequently invited to join; recently the committee's activity has diminished.

A plethora of other national actors (governmental, semi-governmental, and NGOs) have been involved at different stages and with different roles in the prevention and control of HPAI in Egypt. Among them is the **Egyptian Poultry Association**, which: i) donated to the NLQP some equipment and kits for the diagnosis of AI (with a value of 7 million LE); ii) took part in the drafting of compensation schemes and in awareness campaigns; iii) was consulted during the implementation of a German-funded project (GCP/INT/010/GER). In addition, the **Organization for Reconstruction and Development of Egyptian Villages (ORDEV)** was similarly involved in training on data collection and awareness campaigns, under the OSRO/USA/701/EGY project umbrella. ORDEV - which operates within the Minister of Local Development, generally works on poverty alleviation (human, economic and infrastructure development) in rural areas through financing loans from the local development fund, with the advantage of having access to some 30,000 graduates trained in collecting data and employed in local development information centres. Finally, the **Central Laboratory for Evaluation of Veterinary Biologics (CLEVS)**, which is part of the MoALR's Veterinary Serum and Vaccine Research Institute (VSVRI), is recently playing a major role in the quality control of Avian Influenza vaccines currently in use in Egypt and takes part in FAO-NLQP implemented project (OSRO/USA/801/EGY).

Country Strategy/Planning/Documents for the prevention and control of the disease

In order to contain the disease spread, the first decision by the Government of Egypt was to undertake a **compulsory culling associated with compensation scheme**. It planned to include: i) the destruction of infected foci as well as farms in 1 to 3 km surrounding zones; ii) proper disposal of the destroyed carcasses, disinfection of the bedding and poultry houses; iii) vaccination in the next zone (3 to 7 km) using a homologous vaccine; iv) follow-up of the vaccinated flocks to assess the resulting immune response and monitoring of the sentinel birds for detection of active virus infection; v) nation wide surveillance. The evaluation team was informed that in practice, priority was given to vaccinating chicks from the large industrial production units, and to a lesser extent those of the small industrial production, with minimal attention to the traditional poultry sector in rural areas. Vaccine purchasing (mainly from China) and distribution began in March 2006 (some two months after the detection of the virus) with the delivery of 25 million doses (5 million of which were allocated to the traditional poultry sector, far less than the 300 million estimated to be required). In addition, in most rural areas, authorities only implemented culling in affected villages, or those within a 2 km distance from an affected farm. After the initial stages, culling processes took place on

the basis of clinical suspicion of the disease, without laboratory confirmation. Despite some resistance, the campaign continued⁷.

At the same time, existing health **communications** infrastructures in the MoHP and in the Ministry of Information prepared a full-scale response, with TV spots aired within hours of outbreaks. A communication strategy was prepared and focused on five issues: i) modes of transmission; ii) hygiene and safe preparation of poultry for consumption; iii) keeping children safe; iv) safe caging and household biosecurity; v) human symptoms and prompt health-seeking. It was almost exclusively focused on human, rather than animal health. The campaign was mainly channelled through TV/radio and printed materials (flyers, booklets, fact sheets, posters) distributed among clinics, community workers and NGOs, and pharmacies. A journalist workshop with media professionals was organized and a national hotline activated, as well as training and awareness initiatives organized in 21 highly-affected governorates, with more than 8,000 MOHP staff and 4000 school students/teachers involved. A website (birdflu.sis.gov.eg/html/index.htm) was also created⁸.

An **Integrated National Plan for Avian and Human Influenza** (2007-2008) was prepared in May 2007, with four overarching goals: i) increase resistance of poultry to HPAI, limit the spread of the virus in poultry through early detection and implement measures to contain the spread of the virus through vaccination; ii) minimize the likelihood of human exposure to infected poultry; iii) ensure early detection of human cases of AI and manage these cases effectively; iv) ensure preparations for an eventual pandemic through strong social mobilization via targeted information, education and communication strategies. The relative importance of the four planning sectors – animal health, human health, communication and inter-ministerial cooperation – is said to vary with the phasing of the pandemic, with the animal health sector considered as the most important component at the time the plan was issued (pandemic phase 3 – animal to animal with limited animal to human transmission).

The animal health component of the Integrated National Plan - the so-called **Animal Health and Livelihood Sustainability Plan** – is structured along three phases (2 years for control, 3 years for consolidation, and eradication to follow) and three objectives, with FAO acting as major partner:

- *Systems for HPAI regulation and monitoring* (surveillance, vaccination and vaccine production, condemnation and compensation, poultry farm census with appropriate numbering system, quarantine measures, regulatory legislative support). To overcome the above reported challenges and deficiencies which occurred previously, the Plan specifically envisages a blanket vaccination throughout the country (including backyard production), with campaigns being free of charge and repeated quarterly in each district by veterinary clinics. Vaccination was compulsory, but vaccinators did not have the right to vaccinate if the owners oppose it.⁹ Similarly, compensation is said to be soon re-established at current market prices for backyard birds in rural areas and at 75% of market prices for farms. The introduction of in-kind compensation is also envisaged, with the aim

⁷ As of December 2007, 21 companies had imported AI vaccines from 6 different countries (Italy, Mexico, Indonesia, USA, the Netherlands, and China), with a total of approximately 1.5 billion doses having entered the country.

⁸ FAO is not included in the “related sites” section of the website, while WHO is.

⁹ The Plan itself acknowledges the poor trust of some farmers in the value of vaccination, imputing this attitude to financial burdens and implemented surveillance that precede and follow vaccination. Other factors are said to hamper the success of the initiative and jeopardise the implementation of control measures, namely, poor motivations and financial incentives of vaccinators, little direct training on HPAI, as well as the lack of materials and facilities

of increasing disease reporting and to encourage trust between the public and veterinary services (see below the current initiative FAO is considering to support).

- *Systems to upgrade veterinary services* (capacity building of the veterinary services and laboratories. Here, support from FAO is explicitly requested to: i) develop detailed action plans and policies on vaccination and stamping out; ii) assess alternative measures for restructuring the poultry industry and estimate their costs implications on food security, and, iii) establish functional implementation modalities (including transportation).
- *Attention to vulnerability and socio-economic impact* (restructuring of poultry production industry, extend HPAI free compartments, extension and raising public awareness). Here, the focus is on setting up effective compensation schemes and strengthening the subsidy systems; Government is said to require external technical support and policy guidance for this.

HPAI is now endemic in poultry in Egypt and the country has been identified by WHO as a high-risk setting for human pandemic influenza. There is no conflict between experts and lay opinion on the level of risk and its perception. The Egyptian Health Communication Surveys (2006 and 2007) showed that the perceived severity of influenza infections among the Egyptians slightly increased from 66.4 to 68.9%, while the perceived susceptibility to H5N1 infection in turn diminished from 24.7% to 18.8% in the period considered.

IV. DONOR AND TECHNICAL ASSISTANCE SUPPORT

A number of donors and development partners have supported the national government and institutions on HPAI, with FAO undoubtedly playing a major role among them all. However, technical and financial support provided by the main donors (USAID, the European Union and the World Bank) has not been adequately coordinated, with poor information on respective field of expertise and areas of interventions circulated or discussed. In this context, USAID and FAO have recently attempted to use the SAIDR project (OSRO/EGY/701/USA) as a platform to promote co-ordination and harmonization of activities with some success.

At the beginning of the response, the Office for the Coordination of Humanitarian Affairs (OCHA) established a global Pandemic Influenza Contingency (PIC) to support efforts of the UN, national governments and the humanitarian community to be prepared to face an influenza pandemic. A regional coordinator for the Near East was appointed in Cairo, and national indicators developed to assess the UN system preparedness to face a prospective pandemic.¹⁰ A US\$ 75,000 **UNDP** project was approved early in 2007 to build on all the work undertaken at the national level and coordinate with all national and international stakeholders, in support of the UN Resident Coordinator Office.

HPAI activities are largely carried out by the Government with support from USAID (directly and through FAO), the European Union and the World Bank.

USAID has channelled around US\$ 7 m through FAO for avian influenza projects. It has also provided US\$ 3 m to the Government of Egypt (as counterpart of the SAIDR project) and is funding CHL and, more recently, STOP AI which are working on communication and biosecurity training in Egypt, respectively.

¹⁰ Please note, once more, that FAO is not listed among the “useful links” on the UN OCHA Near East web page, while WHO and OIE (among others) are.

Following the finalization of the National Integrated Plan for Avian and Human Influenza, a US\$ 7.14 million grant from the World Bank's **Avian and Human Influenza Facility** (AHIF) was approved with four envisaged components: i) improvement of disease management and surveillance; ii) review of regulatory and legal framework of veterinary services; iii) improvement of the Cairo laboratory service capacity; iv) project management. The project started a year later in April 2008 and has so far focussed only on laboratory strengthening through the provision of equipments and training, and on the provision of technical advice to support a compensation strategy.

The European Union (Directorate General for Trade and Health and Consumers) has organized training targeted at Egyptian laboratory technicians and has also provided € 2.5 million to the MoALR from the remaining funds of the Food Aid Counterpart Fund to carry out farm and home bird vaccination campaigns, purchase equipment and provide training to vaccination teams. Similarly, a reallocation from an ongoing WB Health Sector Reform Project in the amount of approximately US\$ 3.2 million to cover surveillance and laboratory diagnostics equipment was also approved in June 2007.

The work on communication was carried out through UNICEF and the USAID-funded Communication for Healthy Living (CHL) project.

In 2006, UNICEF together with the MOHP, the State Information Services (SIS), and CHL led the national efforts to put forth an avian influenza communication strategy with two distinct components: community mobilisation (led by MOHP and UNICEF) and mass media (undertaken by SIS and CHL with USAID funding). Since then, the role of UNICEF has so far been confined to the development of communication skills of health workers to be deployed in villages of 7 most affected Directorates; the CHL role has increased. UNICEF also undertook a national baseline survey in the late 2006 (and repeated it in 2007) to assess Knowledge, Attitudes, and Practices (KAP) and sponsored a national radio campaign echoing the messages disseminated at the community level. UNICEF funding for avian influenza has severely declined in the last couple of years. Its main field activity is now in the development of training materials for teachers in primary schools in rural areas.

Communication for Healthy Living (CHL), which is also funded by USAID and one of the implementing partner of the SAIDR Project, was involved on communication related to avian influenza (and other infectious diseases) from the early stages. Upon a request from the Minister of Health, CHL focused on the development of communication materials and media spots (to be released as soon as the first outbreaks occurred) and provided some technical advice on the national communication strategy on HPAI. The organization has worked mainly on human health-related issues (in support of the MoHP), in collaboration with UNICEF by using the same DHS sample frame to enter data.

On the laboratory side, the U.S. Naval Medical Research Unit No. 3 (NAMRU III) has worked on the isolation and identification of various influenza viruses (including the H5N1 strain) and on the confirmation of human cases. As one of the only two BL-4 labs on the African continent, NAMRU III has recently been confirmed as a reference lab for Egypt.

Finally, socio-economic studies have been jointly conducted by FAO, UNDP and WFP (as Chair of the UN Disaster Management Team in 2006). A partnership among the three actors was created to focus on reducing the negative impact of HPAI on the livelihoods of the poor and prepare an intervention strategy to better assist the most-affected vulnerable households.

V. ROLE AND ACTIVITIES OF FAO

FAO's main interlocutors are the Egyptian's GOVS and the National Laboratory for Veterinary Quality Control of Poultry Production. The USAID is the other main counterpart of FAO, and for several reasons (such as the high investments made, being the sole FAO country-specific donor and a degree of institutional mistrust given the little progress made to eradicate the disease) the local USAID office has reportedly tended to put pressure on FAO to deliver on the avian influenza programme. This has been a cause for conflict, and been directly linked to the early departure of previous CTAs and staff. As a result of the close engagement with this donor FAO activities are now reportedly aligned to the outcome of the USAID-led Strategic Review of HPAI situation in Egypt (the last one took place in June 2009 and focused on biosecurity, surveillance, outbreak investigation and management) which plan activities on a yearly basis. This also reflects the absence of a clear FAO vision and long-term strategy for how best support control of HPAI H5N1 in Egypt.

With regards to the Government, the evaluation team was informed that higher levels of Government attach great importance to HPAI. In the absence of a joint FAO-Egypt National Medium Term Priority Framework, however, it is difficult for the evaluation team to establish the actual importance these issues have in the broader development agenda. There is no doubt however that FAO's Work on HPAI in Egypt is very much appreciated by GOVS and NLQP staff and most partners, and by FAO Senior Management since it's the largest programme implemented in Egypt by the Cairo-based Regional Office for the Near East (RNE).

FAO Country Team

The FAO avian influenza programme started as early as November 2005, with a regional project intended to reinforce cooperation and strategies harmonization in the near east. As the ECTAD unit as a whole was set up only in June 2007 (upon arrival of an operations officer as team leader ad interim), most of the previous work on HPAI was managed (and later mostly supervised) by FAO HQs and – although with different responsibilities and with some quite abrupt interruptions – the FAO RNE office in Cairo. In 2006-early 07, two team leaders, an APO, an Animal Health Expert and a Field Disease Surveillance Manager were stationed in Cairo and collaborated with international and national consultants sent by Rome, with some emerging problems of coordination among them and with the former FAO Representative.

Since the deployment of an ECTAD unit in mid-2007 the programme has largely been managed by the country team under the overall supervision of the FAO representative (the main exceptions being the German-funded and other HQ based projects on biosecurity and public private partnerships which also report to the projects' leaders). Staffing levels in 2007 and early 2008 were very low compared to other FAO HPAI programmes in endemic countries (e.g. Vietnam, Indonesia, Bangladesh). Only in late 2008 the ECTAD unit was staffed by permanent technical experts, namely: a Team Leader, two Animal Disease Surveillance Experts, a National Project Coordinator for the German-funded project, an Operations Officer (working on regional projects as well) and a Monitoring and Evaluation Expert (plus two GS staff). The work of the Unit was complemented by the activities carried out by the Communication Expert, who initially was not considered a member of the ECTAD team, and eventual joint activities conducted with the FAO regional livestock officer for the near east.

In late 2009, mainly because of the new core team put in place, and the financial resources being made available by the main donor (USAID), the ECTAD unit increased its staffing to eighteen, including two senior (one technical and one operational) experts and one APO funded by Spain. These numbers might indicate that at last the required human resources are readily available, but in view of the evaluation team there are major deficiencies in the staffing profile (skill mix), expertise and seniority, particularly at the level of national staff. The RTE2 team was informed of past reticence from the Government in accepting longer-term international staff, but taking advantage of the new environment and relationships built by the new ECTAD team with the Government and the main donor, the shortcomings in expertise listed in this report will need to be addressed for the FAO-supported HPAI programme to be effective in the wide number of areas in which is now operating.

The table below lists the avian influenza projects implemented in Egypt as of October 2009. A detailed assessment of the main projects implemented in Egypt can be found in annex 3.

Table I. Avian Influenza Projects implemented in Egypt as of October 2009

Project	EOD	NTE	Donor	Total Approved Project Budget	Total Expenditures under the project	Budget Allocated for Egypt through FBA	Expenditures and Commitments under FBA for Egypt
National - (OSRO/EGY/801/USA)	09-Jun-08	29-Sep-10	USA	2,416,500	1,323,082	124,700	79,245
National - (OSRO/EGY/701/USA)	01-Oct-07	30-Sep-10	USA	9,000,000	4,576,213	3,209,550	1,688,553
Total National Projects:				11,416,500	5,899,295	3,334,250	1,767,798
Regional - (TCP/RAB/3006)	01-Nov-05	31-Oct-07	FAO	333,711	333,711	32,594	32,594
Regional - (TCP/RAB/3005)	01-Nov-05	31-Oct-07	FAO	310,230	310,230	4,688	4,688
Global - (OSRO/GLO/504/MUL BABY04)	01-Jan-06	30-Apr-07	France	5,930,420	5,869,949	49,264	49,264
Global - (OSRO/GLO/601/SWE BABY01)	30-Mar-06	31-Dec-09	Sweden	6,604,494	6,562,648	169,700	175,029
Global - (OSRO/GLO/604/UK) child	29-Mar-07	31-Mar-10	UK	5,388,655	4,439,887	10,700	9,259
Global - (OSRO/GLO/601/SWE BABY02)	28-Apr-06	31-Dec-09	Sweden	3,418,047	3,408,386	4,600	3,618
Global - (OSRO/GLO/504/MUL BABY06)	31-Jan-06	31-Jan-07	Saudi Arabia	1,000,000	959,843	31,661	29,155
Global - (GCP /INT/010/GER)	15-Aug-06	15-Nov-09	Germany	2,563,665	2,152,851	137,562	131,034
Regional - (OSRO/RAB/701/SWE)	28-Nov-07	31-Dec-09	Sweden	2,452,234	1,713,993	257,506	117,042
Global - (OSRO/INT/805/USA BABY03)	01-Jan-09	31-Jan-10	USA	312,000	86,331	245,036	27,304
Global – (OSRO/GLO/802/USA BABY01)	01-Jan-09	31-Jan-10	USA	575,000	213,592	549,000	204,409
Global - (OSRO/INT/603/USA Baby04)	01-Jul-06	30-Mar-09	USA	300,000	281,341	22,375	21,937
Global - OSRO/GLO/702/CAN	14-Mar-07	13-Apr-10	Canada	9,750,791	7,005,049	68,000	65,000 ¹¹
Total Global/Regional Projects:				29,188,456	26,332,762	1,514,686	805,333
Grand Total:				40,604,956	32,232,057	4,848,936	2,573,131

¹¹ Approximate figure awaiting the finalisation of the payments under this project

VI. SYNTHESIS AND DISCUSSIONS OF FAO's CONTRIBUTIONS AND ROLES

We review the contributions and roles of FAO under the headings presented in the TORs of the evaluation, and the Inception Report.

Relevance and Appropriateness of FAO's Strategy and Programme at country level:

In assessing the relevance and appropriateness of FAO's strategy and programme in Egypt, it is important to understand the environment in which the FAO programme operates, most notably the complexities of the GOVS operations, the apparent divisions in responsibility and authority in the HPAI response between the GOVS and the Animal Health Research Institute (NLQP), the devolution of many powers and responsibilities to Governorate level, and the trend for national decrees that are not necessarily based on the advice of the CVO. Although all of these are problematic issues, the main areas that probably need clarification are the mandates of GOVS, NLQP and of the MoALR's Animal Production Department which FAO can and should endeavour to support.

A joint FAO/WHO/UNICEF assessment mission was fielded in December 2009, and looked particularly into strategic, management and governance issues surrounding avian influenza control. This joint assessment has provided the Government and the FAO programme with an opportunity to draw attention to policy level issues hampering effective HPAI control. At the time of writing this report the final recommendations of the joint assessment mission were still under preparation, but the evaluation team envisages that follow-up intervention from FAO, as well as from the other UN agencies involved will be needed to support the implementation of the measures proposed by this mission.

In the context of this environment, FAO has attempted to provide a strong coordinating role for the different funded initiatives for HPAI control channelled through them. This role has been complicated by some disagreements between former FAO technical experts and other FAO and collaborator stakeholders, which coupled with other factors resulted in the departure of successive CTAs (4 in the past three years) and periods with a major leadership vacuum. In addition, some important technical contributions by FAO have been provided as one-off consultancies, rather than longer-term in country activities with sustained backstopping. Nevertheless, the reputation of FAO has progressively improved particularly in the past year.

Most relevant and appropriate is the SAIDR (phase III) project, targeted at strengthening the central capacity of GOVS in the responses to HPAI. This project provides an excellent opportunity to introduce greater coordination of HPAI control in different affected Governorates, and through the development of epidemiology capacity, to progressively provide a stronger evidence base to both surveillance and response activities. The evaluation team was also informed that within the SAIDR phase III project; monthly co-ordination meetings were being held, led by GOVS, with responsible offices from all Governorates. This initiative was found very relevant, particularly since it was initially funded by FAO, but now is being led and paid for by the Government of Egypt (through the SAIDR component managed by GOVS). However, this forum may not be enough to break the divide and pervasive incentives that affect the effectiveness of control activities.

Finally, and although the FAO's approach to address HPAI issues in Egypt is largely in line with the FAO/OIE global strategy, the evaluation team was made aware of major inadequacies in the FAO country strategy. For example, given the endemic/entrenched status

of the disease, the national plan to which FAO has aligned its work has not been revised to take into account the present disease dynamics; as a result, the focus of FAO activities has also been largely on traditional disease emergency control, and basically at central level, whereas the persistence of H5N1 calls for greater consideration to constraints beyond animal health issues and an enhanced presence at sub-national levels.

- Coherence and integration of regional projects into country programmes/activities;

The FAO programme in Egypt has benefited from a few global/regional project activities, which have been in place since 2005. These are funded mainly by Sweden (SFERA funds). These funds have been crucial in paying for international long-term personnel as national projects till recently were not covering the CTA and operations officer's salaries, and in occasions have been used as bridge funding to continue with surveillance activities and conduct workshops and training. A new initiative also funded with SFERA funds is promoting the "Development of cost-effective and feasible biosecurity measures for resource limited circumstances". A pilot activity with the NGO Care has just started and will be completed by December 2009.

In addition, Egypt participates along with Bangladesh and Indonesia in the Cleaning and Decontamination project (OSRO/GLO/802/USA) and the Private Partnership initiative (OSRO/INT/805/USA). Through the latter ECTAD Egypt has organized discussions on compensation and is now discussing ways to improve biosecurity in commercial farms with the public and private sector. The linkages with the former project are less obvious as LBMs are officially banned in Egypt.

The flexibility provided by SFERA funds was key to cover funding gaps in the country and helped to maintain an integrated country programme; and particularly important to fund key staff positions.

- Appropriateness of FAO interventions in terms of:
 - Approach: comprehensiveness;
 - Duration: short term inputs versus long-term technical assistance; and,
 - Focus: HPAI versus other Transboundary Animal Diseases

FAO's interventions in Egypt have been quite comprehensive in terms of the range of issues covered, and sustained, in terms of their continued engagement for more than three years. Given the continued occurrence of human cases of H5N1, the programme has been largely focussed on HPAI. While Egypt does have other animal diseases of priority, such as foot and mouth disease, a continued focus of HPAI can be well justified.

Efficiency

As reported by the First RTE, FAO's responses have not always been timely. The second RTE noted an improvement in the past year following the fielding of a new leadership and the strengthening of the operations unit. The evaluation team was informed that at the beginning there was a long delay in developing an initial response, and that discussions on vaccination policy and strategy were very extended, and decisions took a long time to emerge. This was probably reflective of the complicated decision making environment in Egypt, as commented earlier, and not necessarily the fault of FAO.

Egypt has huge challenges in terms of HPAI surveillance and control. A large component of the challenges is translating some of the well understood principles of surveillance and control into action in the field. Much of FAO's contributions have been at central national level, and there is arguable a case for greater focus in the field in certain high risk Governorates. This is not easy both for political reasons (having FAO technical teams in the field), for operational reasons (recruiting quality staff for extended field work contracts), and financial reasons (clearly greater engagement in the field would be expensive, particularly if covering the several high-risk Governorates).

The evaluation team noted that FAO has financial constraints to supplement its central policy and strategy support, but is of the view that the organization might eventually have to consider strengthening its activities in high-risk Governorates to develop some of the institutional cohesions that are lacking and have demonstrated in other decentralized countries to be essential for better prevention, surveillance and response.

- Timeliness and adequacy of technical and operational support from FAO Headquarters (HQ) and decentralized offices (including ECTAD units and RAHCs) to country level activities, including:
 - quantity and quality of co-ordination and support from HQ, decentralized offices and Regional ECTAD/RAHCs (in terms of backstopping/supervision missions);
 - quantity and quality of country level work undertaken by the ECTAD national units and, where relevant, the FAO Representations

Similar to other countries, FAO was criticized by some stakeholders for sending in so many short-term consultants in the early stages of HPAI emergence without a formal request or demand (such as for the GOVS restructuring study). Some of these studies however have reportedly been valuable in policy debates (e.g. FAO proposal for disease surveillance, FAO value chain analysis, FAO/WFP economic impact study; etc.).

The new FAO Representative in Egypt is fully supportive of the HPAI programme, and ensures an effective facilitating with Government and other stakeholders. The FAO programme has very limited interface with the FAO/OIE regional offices in Tunis and Lebanon, which are *de facto* the regional animal health centres for Egypt. Working relations at technical level with the FAO Regional Office in Cairo (RNE) are also not very strong.

The FAO programme in Egypt has been very fortunate in having a very experienced Operations group, led by an International staff member in Cairo who is also supported by an experienced officer in Rome and a small team of national consultants based in RNE.

As far as technical support arranged through FAO headquarters, this has been provided in a number of areas, including disease surveillance, poultry value chains, socioeconomic impact assessment, among others. With a few exceptions (such as the missions to review and design a new disease surveillance system) these have been one-off consultancies, arguably without the follow-up and continuity required to ensure that they have specific relevance in Egypt, and that recommended actions are taken and appropriate funding secured.

Effectiveness of individual country programmes

- Achievements in terms of outputs and outcomes, including:

- development of effective national policies, preparedness measures, communication and public awareness campaigns, surveillance systems, laboratory capacities and contingency plans to deal with the disease;
- new or strengthened institutional frameworks, organizational structures and processes, as well as knowledge, skills and competences acquired resulting in improvements in the performance of public and private veterinary services; and,
- enhanced preparedness and response capacities of the poultry sector to deal with the risk of HPAI outbreaks, and of other animal diseases

Although the evaluation team was informed about several positive changes and outputs produced in the past few months (such as the ongoing revision of the compensation policy, the strengthening of the technical committee, all in the latest “transition period”), the overall effectiveness of FAO’s programmes in Egypt at individual, organizational and institutional levels is difficult to evaluate.

Part of the problem in measuring the effectiveness of FAO’s support lies in that the indicators used are not well defined (ie, some outcome indicators of the SAIDR project e.g. “number of veterinarian trained” correspond to outputs; while others are not possible to measure: “Number of LBM surveillance reports submitted according to GOVS Field Manual”) and even those that would be useful to know (e.g. “Proportion of poultry farm workers who are practicing key behaviours”) are not being effectively measured. The M&E component of the SAIDR project is a relatively new initiative in the right direction but it is more amenable to measure achievements at output, rather than outcome, level.

The team noted that some FAO partners, and particularly donors, tended to assess FAO activities against progress at impact (e.g. number of HPAI outbreaks) and strategic objective level (e.g. outbreaks detected by surveillance); the lack of data on FAO’s contribution or role on these areas often led interlocutors to make negative assessments about the organization’s performance. The FAO country programme has arguably made several contributions to increasing GOVS and NLQP capacity to detect and control the disease but to show its results it has to identify where its strengths and weaknesses lies, and then work out a strategy of its own that outlines its contribution to the Government overall strategy. The FAO strategy will need to include realistic objectives and identify areas of focus for FAO in the country (if at central and/or Governorate level). It would also have to invest in the setting up of a stronger monitoring system, possibly within the epidemiology unit, that gathers and analyze the results of prevention, surveillance and control interventions carried out with FAO support.

- Extent to which improvements in these areas have contributed to increasing national capacities to prevent and control future outbreaks of HPAI and of other transboundary and zoonotic animal diseases

Although there are several areas for synergies (e.g. surveillance for H1N1, etc.), the evaluation team was not made aware of any example of case in which activities introduced by the HPAI programme helped or were applied in the context of other TADs.

Effectiveness of global/regional programmes at country level, in particular the extent to which the:

- Crisis Management Centre – Animal Health has improved early response and the design of follow-up interventions.

The CMC has not worked in Egypt.

- GLEWS information, analysis and technical expertise have improved disease response and understanding of HPAI epidemiology

GLEWS receives periodic updates on the situation in Egypt, but although the reports were considered useful by FAO staff it was often a one-way communication from ECTAD Egypt to the GLEWS unit at HQ.

- OFFLU scientific data exchange and technical expertise have improved national capacity for laboratory diagnostic, vaccine efficacy and development

OFFLU has been very active in Egypt through the national project on vaccine efficacy (OSRO/EGY/801/USA). The project is backstopped by OFFLU staff in Rome and has so far made some progress in identifying circulating H5N1 virus isolates and evaluating the efficacy of the vaccines available. OFFLU support has also been instrumental for establishing working relationships between NLQP/CLEBV staff and several international reference laboratories (such as IVZS, ERASMUS, SEPRL and CEVA)

- Regional networks have contributed to national capacity building and information-sharing

Regional networks were established by the sub-regional ECTAD unit in Tunisia. Although the country requested to be a part of this and other initiatives coordinated from Tunis, the RTE2 team was informed that meetings and discussions held were considered to be by technical staff of GOVS of limited value to Egypt.

- Research and technical expertise on wildlife has improved countries' understanding of the role of migratory birds in the spread of HPAI

FAO through ECTAD HQs has conducted research on wildlife together with Wetlands International and NLQP in 2006 and 2008. ECTAD Egypt carries out some follow-up to gain a better understanding of the interface between poultry and wild birds, particularly in resting sites through a LoA with NLQP, but in view of the widespread nature of the disease the role of migratory birds has not received the same level of attention than in countries with sporadic or at high-risk of infection.

Sustainability and Impacts

- The *likely* effect of FAO's work on the institutional, organizational and human capacity of affected and at-risk countries beyond HPAI

In spite of the absence of data, the evaluation team considers that FAO's support has likely had a positive effect on individual capacity of Government personnel (mainly GOVS) at central and field level as well as on some farms and poultry producers that have benefited from biosecurity training and equipment provided by the organization. The effect on the organizational systems and institutions is less obvious. It is too early to assess the impact of the "second generation" of projects (SAIDR phase III, the Public-private partnership and the biosecurity project) but given their short-term funding (from six to twelve months) and pilot nature it is unclear how sustainable and widespread is going to be the capacity built.

- Sustainability of the strengthening taking place in public and private veterinary services

It is also too early to assess the sustainability of the strengthening taking place in public and private veterinary services. The evaluation team noted that it will depend on a number of factors: i) duration, ii) counterpart support, iii) degree of ownership. Activities conducted in the early days (2005-early 08) were a combination of short-term consultancies (mostly organized by HQ) and specific project activity (funded by Germany or SFERA). These were activities of short duration, with weak counterpart support and generally led by FAO. The phase III of the SAIDR project has a better chance to achieving a lasting strengthening of individual capacities and promoting organizational changes in GOVS (through the creation of an epidemiology unit, the use of TADinfo for disease reporting, and the enlargement of surveillance coverage through the CAHO system) but to achieve institutional reform it will require not only a longer timeframe but also the political backing that is necessary to promote changes to the organizational and legislative framework recommended in the PVS and other assessments.

- Extent to which disease surveillance and control interventions have likely contributed to reducing HPAI prevalence

FAO-supported disease surveillance (CAHO system) is relatively new and has so far detected only a few cases of HPAI. Given the complexity of the situation, with widespread under-reporting, lack of private sector collaboration and absence of compensation, the evaluation team considers that the new system being piloted (a light version of the Indonesia PDS model) will in the short term help increase HPAI reporting. However, control of the disease will remain a major bottleneck since it involves a wider spectrum of actors (e.g. police forces, district and village authorities, etc) and requires different incentives than for surveillance. Also, FAO has not been directly involved in control activities, which take place at field (Governorate and district) level. If FAO were to make greater contributions towards reducing HPAI prevalence it will have to develop stronger working relationships with the field than at present.

- Likely macro-economic, livelihoods and food security impact of FAO's strategy and response to HPAI

It is hard to measure the impacts of FAO's strategy and response to HPAI on macro-economic, livelihoods and food security issues. FAO has conducted some research, which have proved useful to understand the negative effects of the disease in the poultry sector and the economy at large. Inclusion of wider development issues in the current FAO strategy has been at best unclear; in fact, the overall field programme seems to have been more opportunistic than strategic since programme activities were developed with a focus on emergency disease control which were the areas for which extra-budgetary funding was readily available. The Government strategy, in which FAO's work is based, is outdated and overall very optimistic since it envisaged disease control by the end of 2009. There is a need to review both the Government and the associated FAO's strategy considering the changing disease situation and the whole development context.

Partnerships

- The clarity of FAO's role, based on its comparative advantages and capacities, as well as the degree of complementarity, co-ordination and collaboration with regional and national partners, particularly:
 - Multilaterals: OIE, World Bank, Asian Development Bank, African Union's Inter African Bureau for Animal Resources, ASEAN, WHO and UNICEF.
 - Major Bilateral/donor agencies

FAO has limited collaborative work with OIE, and less so with the World Bank. In contrast, FAO has had several meetings and discussions with WHO and UNICEF in matters regarding HPAI surveillance and communication, respectively. FAO maintains a close relationship with USAID. As the main donor to FAO avian influenza programme and the main donor to the country, USAID is a very strategic partner for FAO in Egypt. The good relationship and fluid communication between ECTAD Rome and USAID Washington has however not always been replicated in Egypt. Leadership vacuums on the part of FAO, misunderstanding of each other's roles and organizational culture, and repetitive inquiries by USAID have together added up to a long standing source of friction at country level. The evaluation team noted that ECTAD Egypt was committed to improving this relationship but at the same time it noted that the heavy reliance on this particularly donor limited the scope for opening up to other funding and programme alternatives. ECTAD Egypt has now started a process of negotiation with the African Development Bank on future funding opportunities. The team should explore more possibilities like this and give due priority to mobilization of additional resources.

- FAO's contribution to the preparation of partners' HPAI regional and national strategies

FAO made substantial contributions to the 2007 integrated national plan, but more than two years later and under a more complex disease situation, this is a role which could undoubtedly be strengthened further.

In conclusion, the evaluation team have summarized the strengths and weaknesses of avian influenza programme in Egypt as follows:

Strength	Weakness
Strong commitment and support from FAO Representative and staff at HQ	FAO support has not prevented Egypt from remaining endemic; and be the most infected country in Africa, and with a high number of human cases
Dedicated team with good interface with Government partners	No clear and well articulated FAO strategy of detection and control based on global strategy guidelines
FAO national consultants engaged in competitive recruitment process	An apparent weakness of commitment to some of the principles of biosecurity, including among FAO field staff
FAO respected as leading organisation by majority of stakeholders	Limited participation of private sector in strategic decisions. The new PPP , project is trying to improve this situation and has so far developed a compensation strategy and a biosecurity guideline for sector 1 and 2 farms.
Solid diagnosis laboratory capacity; results within 6 hours, able to sequence virus isolates thanks to FAO and others support	Dependency of a single donor and on SFERA funds

CLEVB laboratory controlling the quality of vaccines	A higher staff turn over than desirable
SAIDR project groups most key aspects from detection to control	Governance of HPAI has to improve (there are 4 or 5 government bodies that can release decrees without much interaction among them)
PDS/CAHO pilot activities giving access to household outbreaks and information on bio-security	There is major concern regarding the capacity of GOVS and others to absorb new information and translate it into strategies. Examples of this are the limited influence of epidemiological analysis and awareness raising work.
FAO neutrality is a major asset.	A recent assessment study highlighted substantial weaknesses in the current immunisation programme and its lack of positive impact on the spread of infection or the maintenance of public health safety ¹² .
FAO international and national staff are seen as trusted partners	Prevention of human exposure at farm level is a concern, and needs attention; However the mandate for communication and behavioural change is not under the auspices of FAO. There is a need to include farms that are not registered in prevention and control activities. To this end all farms have to be geo-referenced and coded including those which are unregistered.
	Trace back has to be improved: poor information about sources of infection does not allow tackling the disease at high risk points.

The main recommendation of the evaluation team is that FAO needs to develop a long-term strategy in Egypt with a view of supporting the Government efforts to contain and control avian influenza in the next five to ten years. Donors and key Government partners would need to be part of its development to facilitate the alignment of short-term project funds and agreed activities. Actions that could be incorporated in the new strategy include the conduct of field work in selected high risk directorates (sub-national level implementation), the broadening of the current disease control approach to include other constraints to safe poultry production, the strengthening of prevention and control tools (including biosecurity, trace back, and the use of PDS/CAHO techniques).

FAO will also need to continue its efforts in diversifying its donor base, and be more proactive in partnering with multilateral (e.g. IFAD), IFIs (Islamic or African Development Bank) and country donors potentially interested in funding long-term livestock programmes

¹² Peyre et al., 2009. Avian influenza vaccination in Egypt; limitations of the current strategy. Journal of Molecular and Genetic Medicine, 3, 198 – 204.

in Egypt. In this regard, FAO can use the forthcoming GAP analysis exercise as an opportunity to promote reforms and engage with potential donors. FAO also has to continue with its efforts to increase collaboration between the public and private sectors, brokering and promoting joint activities and discussions on animal health issues.

Finally, FAO would have to strengthen its engagement with senior Government authorities to advocate for an update to the current policy and decision making mechanisms that guide avian influenza control in Egypt with a view of facilitating the revision and development of a national strategy that takes into account the endemic nature of avian influenza in Egypt.

Annex 1. List of People Met

Date	Time	Description	Arrangement Responsibility	Venue
Oct. 18	12:00	Briefing with Mr OuldAhmed Abdessalam, FAO-R, DRR- RNE	Yilma	FAO
	12:30	Lunch Break		
	13:30	Discussion on HPAI project activities in Egypt and in NE	Yilma/Toni/Gebril	FAO
	14:30	Meeting with ECTAD Project Coordinators and team members and discussion on HPAI project activities	Toni/Yilma/Gebril	FAO
	17:30	Review the schedule for subsequent days	Yilma/Toni/Gebril	FAO
Oct. 19	09:30	Meeting with Prof. Dr Hamed Samaha, Chairman of the General Organization for Veterinary Services, Egypt	Yilma/Ahmed	GOVS
	10:30	Meeting with Dr Amira Abd Elnabi, SAIDR Team and Epidemiology Unit	Yilma/Ahmed	GOVS
	11:30	Meeting with Dr Abd El Satar Arafa, Head of gene analysis unit and Dr Elham Fathy El Zoghby, Quality Manager of NLQP	Yilma/Abdullah	AHRI/NLQP
	13:00	Lunch Break		
	14:00	Group I: Meeting with General Hassan Hamida, Chairman of the AHI Supreme Council	Yilma/Toni	MoALR
	14:00	Group II. Meeting with Prof. Dr. Elham Ibiary, Director, CLEVB	Toni/Yilma	FAO
	15:30	Meeting with USAID Country Mission Team (Drs Holly Dempsey, Thomas Easley and George Sanad)	Yilma/Toni	STOP AI
Oct. 20	7:00	Group I. Field Visit to Kalubiya and Gharbia Governorates (Lower Egypt)	Ihab/Ahmed/Zahra	Field
		Group II. Field Visit to Fayoum Governorate (Upper Egypt)	Elsa/Safaa/Ihab	Field
	15:00	Group I. Meeting with Dr Chadia Wannous, UNSIC/UNRC Regional Coordinator.	Yilma	teleconference
		Group II. Visit to MoH (Dr Samir Refaey, MOH/ESU)	Yilma	MoH
Oct. 21	09:00	Meeting with Prof Dr Hassan Aidaros (former CVO and OIE Representative in Egypt)	Yilma/Toni	USAID
	10:00	Meeting with Dr Farid Hosny, Team Leader, STOP AI, Egypt	Yilma/Toni	FAO
	11:30	Meeting with Dr Ahmed Abdul Latif, WHO Representative in Egypt	Yilma/Toni	WHO
		Lunch Break		
	14:00	Group I. Meeting with the USDA-APHIS Team (Drs Eloisa Johns and Mamoud Orabi)	Yilma	American Embassy
		Group II. Meeting with Mr. Ron Hess (CHL)	Yilma/Aseel	CHL
	16:00	Discussion with ECTAD Team	Yilma/Toni/Gebril	FAO
Oct. 22	9:30	Group I: Visit to Wadi Holdings (Drs Maher El Azab)	Yilma/Toni	FAO
	9:30	Group II: Meeting with IFT Corporation (Dr Ahmed Nahrawy and Dr Mahmud Refaat)		
	11:30	Briefing FAO-R and O-i-C RNE		
	14:00	Wrap-up Discussion with ECTAD Team	Yilma	FAO

Annex 2. Documentation Reviewed

Aide Memoire, Joint United Nations Assessment of Government of Egypt H5N1 Control Efforts (December 2009)

Dudley, J. 2009. Age-specific infection and death rates for human A (H5N1) avian influenza in Egypt.

FAO/WFP 2007 Socio-economic Impact Assessment of HPAI in Egypt

Ghonem, M. 2007 Rapid Appraisal Assignment on Identifying Partners

Interventions for Improving Bio-security of small scale poultry producers in Egypt by Pagani, 2007 and Kilany

OIE's PVS Report (2006 and 2009)

Outcome of the Strategic Review of HPAI Situation in Egypt, June 2009

Peyre et al., 2009. Avian influenza vaccination in Egypt; limitations of the current strategy.

Journal of Molecular and Genetic Medicine

Rapid Assessment of Country Preparedness (Prevention and Control Capability) by Dr. Mohamed A. Shalaby

Report Exercise on Highly Pathogenic Avian Influenza: FAO contribution to the UNSIC report (2008)

Annex 3. Assessment of FAO Avian Influenza Projects in Egypt

Project Activities implemented from SFERA funds (OSRO/GLO/601/SWE, OSRO/GLO/504/MUL, OSRO/GLO/604/MUL, OSRO/RAB/701/SWE, OSRO/GLO/702/CAN)

SFERA funds have been systematically used in Egypt in view of funding uncertainties. ECTAD HQ fielded a first mission to **Cairo in February 2006**, a couple of days after the first HPAI outbreak occurred, followed by another assessment from HQs some six weeks after. However, the then recent appointment of the Ministry of Agriculture (January 2006) and the lack of earmarked funds for Egypt limited considerably the support FAO was able to provide.

In the first year since the first HPAI outbreak occurred, much of the work FAO carried out was on preparedness and control, by providing technical assistance and advice to national authorities on strategies and structure to deal with HPAI. Support by FAO in 2006-07 could be indeed broadly split up into three main components: i) institutional reforms and restructuring of national veterinary services to deal with the emergency in the long term; ii) studies and policies for a better understanding of the poultry sector and related biosecurity challenges; iii) field (surveillance) activities (when Swedish SFERA funds came in).

A first **“Rapid Assessment of country preparedness in Egypt”** was commissioned to a national consultant (under the OSRO/GLO/504 MUL BABY 06 project umbrella) in April 2006, followed by a four month-mission by an epidemiology expert with the purpose of reviewing, assessing and making recommendations on strategies to prevent and control HPAI in the country.¹³

Around US\$ 315,000¹⁴ were allocated to Egypt in 2006 to carry out a number of activities, namely:

- A compensation study on reimbursement strategies of backyards and industrial poultry producers after the outbreak (*Dr. Shalaby, October 2006*);
- Another “Rapid Assessment of HPAI procedures for Reimbursement of Backyard and Industrial Poultry Producers after the HPAI outbreak” (*Magda Ghonem, November 2006*);
- A study on the “Structure and importance of the commercial and village-based poultry systems in Egypt” (*Farid Hosny, November 2006*)¹⁵;
- A study on “Market impacts of HPAI outbreaks: a rapid appraisal process in Egypt” (*Dr. Ali Ahmed Ibrahim., L. Albrechtsen (FAO RNE), J. Rushton (FAO HQs) et al, November 2006*);
- An analysis of the structure and role of the Egyptian Academy of Sciences to assess its potential role in HPAI research (*Dr. Shalaby, January 2007*);
- A study on the impact of HPAI markets regulations on poultry sectors 3 and 4 (*Farid Hosny, May 2007*);
- A report on Comprehensive Compensation Policy for the Avian Influenza Disease in Egypt (*May 2007*);

¹⁴ 46% were used for equipments (central offices, computers, phones, and field transport); 44% to pay consultants and travel; 15% for training on TADInfo; and a remaining 2% for the organization of a workshop

¹⁵ This informed the following Poultry Sector Review developed by ECTAD HQ (AGAP)

- A rapid appraisal of partners for future collaboration, including those organizations that at the time had little impact on decision making but could be encouraged to play a greater role in the future (*Magda Ghonem, August 2007*);
- A rapid assessment of the industrial layer sector in Egypt - Development of poultry value chains and review of duck production - (*Ali Ahmed Ibrahim*);
- A study on poultry companies, where data about chickens' movement and trade/market practices were collected (*Salem Sallam, November 2007*).

SFERA funds were also used to fill in “field-level work gaps” too, by financing a number of missions to work closely with the Ministry of Agriculture and the FAO Representation in Egypt on different capacity building initiatives.

- **Technical support to field surveillance** was carried out by the Field Disease Manager. Although his ToR expected him to focus on strengthening reporting and surveillance at local level (with pilot initiatives carried out in Tanta), priority was instead given to a rapid assessment of the implementation of the newly conceived vaccination campaign, due to the high priority given by GOVS to this activity and a subsequent request of the team leader to focalise on it. In addition, in December 2006, the Field Disease Manager visited different governorates in Upper and Lower Egypt to identify affordable interventions for improving biosecurity of small-scale poultry producers. Together with two studies produced¹⁶, a field survey was set up with the purpose of obtaining a quantitative data baseline that would contribute to improve the knowledge on rearing practices in the small holder poultry sector. As recommended by the mission, an outline for training and extension of farmers was proposed. In collaboration with the Regional Communication Officer of FAO RNE, the ToR for the recruitment of a national communication and extension expert was drafted, although no further work was accomplished on the extension message technical report.
- At the same time, starting from December 2006, a three-month inception mission by Ian Douglas went to Cairo to assist with the **restructuring of the animal health sector** “in order to reduce the chances of a disease introduction and make Egypt more capable to respond to TADs”. This was followed by an additional backstop mission from HQs (M. Nosseir, February 2007) at the end of Dr. Douglas' assignment and by a national consultant (Bayoumi Awad) hired to continue with the work after the consultant's departure. A final follow-up mission was organized in June 2007 to progress earlier activities in regard to the agreed restructuring of the animal health sector.
- In addition to the above consultancy, the work plan for the first year envisaged the use of three international consultants to provide inputs into: i) the quarantine policy; ii) emergency management training and further development of TADInfo ; iii) Brucellosis program development as a pilot initiative of the new structure. No specific record of the three above mentioned activities was found during the country visit, although evidence from FPMIS shows the deployment of two related missions (by Vincent Martin and Lorenzo De Simone, in January and March 2007) in the framework of the FAO-GLEWS work plan of activities for disease analysis and risk

¹⁶ P. Pagani and W.H.Kilany, Interventions for improving biosecurity of small scale poultry producers in Egypt and P. Pagani, Strengthening the animal health system at local and central levels to prevent, control, and eradicate HPAI H5N1 in Egypt.

assessment. The missions' main objective was to **assist** the Epidemiology Unit of GOVS and the Central Laboratory **in processing animal health data collected** through passive and active surveillance, with the ultimate goal of making information and risk assessment outcomes available to decision makers. **Training** of three epidemiologists in **the use of TADinfo in FAO HQs and deployment of TADInfo in Egypt** followed, as well as a statistic analysis of data collected to identify disease emergency and diffusion risks. In August 2007 – as part of a mission to Cairo by an FAO consultant (W. Taylor) to assess the resources and elaborate a **phased development plan for the Government Epidemiological Unit** - a training session on data collection was organized with the aim of seeking information and feedback on how HPAI was handled at field level by the animal health personnel.

FAO also held a **focus group meeting with female veterinarians** in October 2007 organized by the German Project coordinator (Dr. Zahra Saleh Ahmed) on the use of Personal Protective Equipments. The workshop was meant **to explain the importance and use of PPEs**, getting at the same time a feedback on the degree of acceptance, real use and practicality. The occasion was also used to provide some 80,000 PPE kits to the MoALR (see USAID 701 project below).

In October 2007, an FAO Consultant (Nick Taylor) was sent on mission to: i) work with local State veterinary staff to introduce ideas about **value chains** in poultry production systems and identify places in these chains that carry risk of disease introduction and/or spread; ii) gather information on Egyptian duck production systems; iii) provide guidance on value chain and risk analysis to assist disease control.

Since then, most of the activities on HPAI have been accomplished within a specific national project framework (as described in the following sections) with a few exceptions such as:

- The **Media Fellowship project**, which is a relatively new activity funded by CIDA Canada. It was originated in the ECTAD HQ Communication Unit and will be implemented, starting from November 2008, by the national team with backstopping from the HQ units. This project expects to award 10 journalists/people working in media a fellowship to attend training on how to do communication on avian influenza. Final results of the project were expected by the end of 2009.
- The **Development of cost-effective and feasible biosecurity measures for resource limited circumstances project**, which is a new initiative aimed at supporting the adoption of sustainable biosecurity measures by poultry keepers and others in the poultry production and marketing chain. The NGO Care has just been hired to tailor and test sets of locally sustainable biosecurity measures with producers and vendors in el Fayoum and Qalioubia.
- The Joint WHO-UNICEF-FAO Mission to Assess the Performance of the Egyptian National Control Measures for HPAI; participation of FAO representatives was covered by a regional project funded by Sweden.

GCP/INT/010/GER project “Promoting strategies for prevention and control of HPAI that focus on smallholder livelihoods and biodiversity”

The USD 348,775 Animal Health Breed Livelihoods (AHBL) project addressed “the growing problem of TADs emergence, which particularly affects livestock producers and rural societies in developing countries and endangers genetic resources in poultry”. The project

intended to achieve veterinary policies and strategies against HPAI that take into account the needs of smallholder producers and biodiversity conservation. Together with Cambodia and Uganda, Egypt was chosen by the project team as a case study country, given the importance of traditional poultry system in the country.

Despite the official EOD set in August 2006, the inception workshop was organized only in April 2007, and the project agreement signed in July 2007. At that time, an **FAO/WFP rapid assessment of the socio-economic impact of HPAI on vulnerable households** was carried out. The aim of the study – conducted by the two organizations in partnership with UNDP's sister organization BEST, Catholic Relief Services and with the Egyptian Demographic Association responsible for data collection – was to gain a better understanding of the traditional poultry system, poultry keepers' livelihood strategies and the impact of HPAI on the livelihoods of vulnerable households. FAO's role was to provide technical assistance and training to local enumerators on socio-economic impact assessments. The Livestock Information Sector Analysis and Policy Branch (AGAL) and the Gender and Population Division (SDW) collaborated on developing gender-sensitive guidelines and tools.

The National Project Coordinator (Dr. Zahra Saleh Ahmed) was appointed in January 2008. Since then, a number of pilot activities have been carried out to cover four research components, namely:

- Animal health. A **Live Bird Market Survey** was jointly conducted by the GOVS and NLQP in the Tanta district (Gharbia Governorate), with FAO technically supporting the exercise. Information from 10 LBMs was gathered on location, source of traded birds, sanitary measures during trading, and more than 700 live birds were sampled. In addition, a national consultant (Dr. A.M Ali) was hired to work on **mapping 80 traditional hatcheries** in three governorates and gather information on production capacity, seasonality, source and type of breeds, sanitary measures, etc.
- Animal production. Some 440 interviews were conducted by the Egyptian Poultry Society Association in three governorates (August 2008), with the twofold aim of **characterizing Baladi chicken and ducks** and **gaining an overall better understanding of the village poultry production system** in Egypt. Activities were suspended during Ramadan (2008) and were finalized with a refreshing training workshop in early 2009.
- Poultry breed diversity. The Egyptian Poultry Society Association was also charged with physical **examination of phenotypic characters and the collection of blood samples for molecular characterization**, in collaboration with ILRI Nairobi. Information was gathered from some 2,500 birds by means of a pre-designed checklist, and some 400 blood samples collected and blotted onto filter paper to be sent to ILRI.
- Livelihood impact analysis. Following the previous joint study by FAO and WFP (finalized in April 2007, see above), a **field survey** was designed and implemented, including focus group discussions and rural rapid assessment in two governorates, in collaboration with the Egyptian Demographers Association as implementing partners. The collected data covered **areas of importance of poultry** in terms of income provision, food source, fulfilling social role, and coping strategies so far realized.

The preliminary results of the above components were used in the preparation of a paper ("An Integrated Approach to Controlling Highly Pathogenic Avian Influenza") submitted to the

Egyptian Poultry Journal for publication and for presentation in a meeting in Taba, Egypt. FAO staff noted that the main outcome of this project is the poultry breed diversity study which was considered “an important contribution towards incorporating poultry genetic resources into the national programmes for HPAI prevention and control programmes”. Besides the knowledge generated and the linkages developed with some local NGOs through the project, the evaluation team was informed that there is not much left in terms of capacity developed. Although the project rationale and objectives were found to be very relevant by the team, the lack of clear linkages with other ongoing activities during implementation was said to be partially responsible for the lack of follow-up.

OSRO/EGY/701/USA project “Strengthening Avian Influenza Detection and Response (SAIDR) in Egypt”

The SAIDR project officially started in October 2007, with an estimated duration of 3 years and an annual contribution by USAID of US\$ 4 million (3 million allocated to FAO and 1 to the GOVS). A Project Management Unit was established within the GOVS, with 6 officers (including the project manager) collaboratively acting as counterparts to FAO ECTAD staff. The FAO share of the project in fact covers about 10 national consultancies but till recently had no financial provision for long-term international staff.

The overall objective of the project is to “minimize the risk to human health and to reduce the impact on people’s livelihoods from HPAI through its effective prevention and control”. Planned activities are articulated around five intermediate results and 11 objectives (see Box 1), that - according to the GOVS Project Manager - can be altogether grouped into five areas: i) preparedness and prevention; ii) institutional capacity building and training; iii) surveillance (assessment, plan, and implementation); iv) biosecurity and communication; v) response.

Box 1: SAIDR Project Objectives and Outputs (as in the Prodoc)

Objective 1 – Improve preparedness and planning to contain bird-to-bird and bird-to-human transmission of H5N1

- 1.1. Ensured use of the regularly updated National Integrated Plan (NIP) for design of project involvements where viral load reduction can be addressed

Objective 2 – Prevent future outbreaks in poultry

- 2.1. Improved biosecurity to reduce virus circulation in all production sectors of the poultry industry but especially in sectors 3 and 4 where viral load is entrenched
- 2.2. Reduced virus load by implementation of a comprehensive vaccination programme, from selection of vaccine to administration in the field;
- 2.3. Limited circulation of virus in the value chain

Objective 3 – Improve detection of H5N1 in poultry and wild birds

- 3.1. Assured functioning of the HPAI hotline
- 3.2. System for active surveillance established
- 3.3. Surveillance in wild and migratory bird population strengthened
- 3.4. Laboratory capacity for detection of virus improved

Objective 4 – Improve containment measures in poultry populations

- 4.1. HPAI outbreaks in poultry to reduce viral load dealt with effectively
- 4.2. Ability to respond rapidly and effectively to small or large outbreaks improved

Objective 5 – Limit exposure of bird-outbreak investigators, poultry cullers, and poultry vaccinators to H5N1 virus

- 5.1. Health of personnel working in presence of virus, both in field and laboratory conditions, protected

As poor coordination among donors and development partners affected past efforts to control the spread of HPAI, the second phase of this project has strategically been used as a platform where the contribution of different players (e.g. MoHP, MoE, NAMRU3, CHL, the World Bank, the EU, etc)¹⁷ to the project's objectives is indicated.

Given the ambitious objectives of the project, FAO had limited the scope of its intervention to a restricted number of (sub)activities such as:

- Assessment of the current national plan for HPAI and review of preparedness realities (disease detection, outbreak response, compensation policy, communication strategy);¹⁸
- Assess present surveillance system, design an overall surveillance plan, and develop a data system to store information (while waiting for TADInfo to be set up);
- Initiate PDS later on renamed as CAHO (as pilot activity in 6 governorates);
- Enforce data management and provide training on epidemiology/surveillance;
- Develop and field test alternative (more biosecure) husbandry practices;
- Ensure supplies, PPEs and cold chain equipment, transportation, and storage.

The focus of the project has so far indeed been on surveillance and participatory epidemiology but has also dealt with institutional issues, outbreak response, communication and coordination of activities.

At the end of 2007, an FAO Epidemiologist Consultant (Tony Wilsmore) was contracted to assess the design, management and human resource requirements to proceed with **restructuring the GOVS epidemiology task force**. Following previous work by Taylor and Douglas (see above), the consultant was asked to provide a detailed overall HPAI-related surveillance plan for the country (including methodologies for passive surveillance, sentinel birds, country-wide monitoring of all sectors, live-bird market monitoring, outbreak-related surveillance patterns, post-vaccination sero-surveillance, etc) and indicate the required inputs in terms of human resources, logistics, equipment and consumables.

Dr. Wilsmore was also asked to **appraise the quality of the ongoing vaccination campaign**, with the objective to draft a plan on how to determine the efficacy of the vaccines and vaccination strategies. At the same time, further to the study-mission accomplished in October 2007 (see above), a population and vaccination model was developed by Dr. Nick Taylor to predict the level of the annual flock immunity and inform the national vaccination strategy in sector 4 in Egypt. This **vaccination model** was **fed through data collected according to Participatory Epidemiology (PE)** techniques on simple random basis in 36 villages by a cadre of 12 trained veterinarians.

PE tools were also utilised to initiate **Participatory Disease Surveillance (PDS)** in 6 pilot governorates. 10 decisions makers nominated by the GOVS were sent to Indonesia in August 2008, with a final workshop organized in collaboration with ILRI to plan the integration of PE into the HPAI prevention and control programme in Egypt. Training courses and ILRI (Briony Jones) supervised field work were conducted in early 2009.

¹⁷ The last SAIDR Platform meeting was attended by 36 delegates representing 15 different players (including governmental ministries, national laboratories, international organizations and NGOs).

¹⁸ In collaboration with the Ministry of Health and Population and CHL on communication

To date the project has achieved the following results:

Strengthening the institutional capacity of veterinary services:

Epidemiology Units have been established in central and governorate (10) veterinary services. The system has contributed in the development and smooth functioning of epidemiological data flow from district and governorate to the central EPI Unit in GOVS.

Human resources:

- Various skill enhancement trainings were provided to Epi-Unit team (Risk analysis, GIS, Database management, Statistics, Applied epidemiology, etc) which have substantially enhanced the functioning and performance of the epidemiology unit at the central level. As a result, the unit:
- Has developed a dependable capacity to efficiently identify outbreak locations, conduct risk analysis and risk mapping, develop risk-based surveillance plan for HPAI and other TADs.
- Has started to effectively utilize the database system that was earlier developed by SAIDR project. The system allows to collection and analysis of epidemiological data
- is capable to analyzing data and generate sound technical reports for key decision makers
- Able to establish and expand downstream networks up to district level.
- Has customized the TADInfo system for use at governorate/district levels. The Epi-Unit teams at Governorates (10) levels are capable to use TADInfo system independently.
- Effectively use SMS gateway message system to receiving information on suspect outbreaks from field veterinarians.

Inputs (infrastructure):

Through the SAIDR project, central and governorate level epidemiology units have been provided with equipments (127 computers, 10 laptops with required software, 125 printers, 10 fax machines and internet facilities), detailed GIS-based digital map and received copies of books on Avian Influenza and Participatory Epidemiology.

Strengthening surveillance capacity:

At central level:

- The project has supported the development of a national HPAI surveillance (passive, active, LBM, vaccine monitoring) plan, which was approved by GOVS and disseminated to veterinary directorates.
- Surveillance activities were carried out in LBM and village (household) poultry production sectors. The community-based animal health outreach (CAHO) (modified PDS) was proved to be useful as it has detected 33 out of 239 positive HPAI outbreaks reported in poultry.

At governorate level:

- Due to the series of trainings provided to field veterinarians on proper case definition, sampling, use of rapid field test kits, and disease reporting mechanisms, local capacity for conducting active and passive HPAI surveillances has slowly been improved.

Inputs/procurements:

- Support provided to database development and data analysis, coupled with provision of tailor-made training to key data handlers

- Sampling kits and equipments for sample shipment (transportation)
- NLQP provided with RRT PCR kits sufficient for testing 12000 pooled samples.
- AI Rapid diagnostic kits (75,000 kits) for field level use.
- Vehicles (4 station wagons and 5 pick ups) for use in field surveillance and outbreak investigation.
- Database software for active, passive surveillance activities.
- 500 mobiles and 100 GPS provided to GOVS to improve rapid notification.
- SMS gateway developed and in place for rapid disease reporting from the field.

Improve HPAI outbreak containment and response:

AI vaccination strategy: A comprehensive assessment of AI mass vaccination program in Egypt was undertaken and a recommendation of an elaborated sound strategy, with operational plan and exit strategy. Standard Operating Procedures (SOPs) encompassing selection of vaccines, organization and implementation of vaccination campaigns and its monitoring were also developed. This work is expected to lead to a change in government policy from mass to risk-base targeted AI vaccination. Also, tailor-made outbreak response training has been provided to key veterinary staff.

Support for the improvement of HPAI containment measures:

- 250 Refrigerators, 250 freezers and 550 cool boxes with required maintenance services to ensure and support cold chain.
- 60 outbreak investigation Kits with replacements 81 Sprayers and 28 mist-blowers.
- Disposal equipments (12,000 kg Plastic bags, 2000 pair of boots and 5000 boxes of gloves).

Gaps in outbreak response and management still prevail due partly to the lack of identified critical control points (CCPs) and weakness in veterinary services governance (command chain and legislative reinforcement).

Communications and public awareness:

Enhanced animal health communication and dissemination of key messages were implemented at village levels especially through extension personnel in agriculture and local development ministries. A KAP survey was conducted in late 2009 (results will be available in early 2010)

As discussed earlier, considerable communications efforts were made at the start of the crisis and emphasis was generally given to the prevention of human exposure. Animal health communication and outreach is however still a major gap as projects arrangements were not favourable in view of implementing activities that promote/support HPAI response in various poultry production sectors. SAIDR Year III identified animal health communications and outreach as a major gap and is designed in such a way to respond accordingly.

Enhance coordination:

Monthly HPAI-EGYPT News Review were regularly published and disseminated to all partners working on HPAI in Egypt and to FAO/HQ. The News Review is also posted on SAIDR website (www.saidr.org) and the AHI page on the UNDP website.

Meetings are being held to harmonize and streamline activities between central and governorate-level veterinary authorities.

Ministry of Health receives all information upon confirmation of any HPAI outbreaks in poultry. In most instances, field epidemiological investigations in the health sector are conducted based on these information and shared by the animal health sector.

Wild bird surveillance

The project supported a wild bird surveillance study aimed to investigate the migratory ecology and host status of avian influenza amongst waterfowl from Manzala Lake in the Nile Delta. That was conducted as a joint effort between the US Geological Survey (Western Ecological Research Center) in collaboration with the US Naval Medical Research Unit, the Egyptian Ministry of the Environment and FAO. The third phase of the SAIDR project will continue the support and collaboration with the above-specified partners. In addition, surveillance activities in domestic poultry in wild-bird resting sites will still be carried out.

The SAIDR project is still ongoing; the project was largely doormen for the first year and half; most of the activities illustrated above have been conducted in the past twelve months. The SAIDR phase 3 project will have the same conditions (a US\$ 3 m one-year project) but a narrowed scope which reflects the donor implicit view that FAO should only implement few selected activities (such as biosecurity, surveillance and outbreak investigation) while other partners (CHL and STOP AI) will carry out complementary work.

OSRO/EGY/801/USA project “Vaccine efficacy for the control of Avian Influenza in Egypt”

The OSRO/EGY/801/USA project – planned to start in June 2008 but only started in early 2009 – has a twofold objective: i) to **identify antigenic variants** among field ones, including existing and newly isolates collected, to obtain a representative sample of circulating HPAI viruses across all sectors; and ii) to **determine the ability of currently available/used vaccines to provide information against each identified isolate**.

The project is still ongoing, but major achievements already obtained by the project include:

- The capacity of NLQP in terms of quality of service and speed for delivery of diagnostic results has substantially increased
- Linkage with various FAO-implemented projects, particularly with SAIDR (OSRO/EGY/701/USA) was maintained, and is proved to be valuable in terms of improving HPAI surveillance and diagnosis in Egypt.
- Sequencing data and phylogenetic map of Egyptian HPAI H5N1 isolates (2006-09) are now available through the project. This is beneficial for studying and understanding of viral gene mutations and in order to score the level of drift (change) over time.
- A cartography map will soon be made available and is believed to enhance the understanding of the virus mutation on the level of antigen; the relation and effects of mutation on the level of nucleotide and/or gene. This is a new (the first time) technological trend to be applied in Egypt. Selection of the Egyptian HPAI H5N1 strain for challenge test is tentatively planned to take place at the end of October, 2009.
- Skill enhancement trainings provided at SEPRL has enhanced the laboratory institutional capacity of NLQP through standardization of protocols according to the OIE reference labs. This was unequivocally proved when NLQP participated and succeeded in all international proficiency tests.

- Local training functions as technology transfer means have significantly contributed to the biosecurity/biosafety improvement of the Satellite (governorate) laboratories and in availing local HPAI diagnostic capability in different parts of the country.
- International communication has been established between NLQP and the OFFLU experts, as well as with OIE reference laboratories such as SEPRL, Erasmus University, IZSV Padova, NAMRU-3.
- Egyptian virus isolates are shared with international community, and sequencing of data is published in gene banks.
- The progress towards selection of Egyptian HPAI H5N1 strain for a potential use in vaccine production (in case of vaccine efficacy failure) to be achieved by the end of the project is progressing very well.

OSRO/INT/805/USA project “Developing and Maintaining Public-Private Partnerships for the Prevention and Control of Highly Pathogenic Avian Influenza H5N1 and other Emerging Infectious Animal Diseases (PPP)”

The overall objective of this project was to “Create, strengthen and maintain private-public partnerships to support poultry health and production systems in Egypt that is worse affected by HPAI, within a functional animal health system led by official veterinary services.”

The specific objectives of the project are:

- Initiate/re-establishing dialogue between the public and private sectors.
- Discuss and agree on a clear distribution of roles in the combat against the disease
- Put all the ‘players’ at the same level of technical information regarding the prevention and control of HPAI.
- Discuss together partnering mechanisms in key areas of the prevention and control of the disease

The main outputs to date include:

- (1) Public and private sector stakeholders have been identified; their capacity in controlling HPAI and the relationship between the sectors has been described.
- (2) Two workshops were conducted in Cairo during the month of September; they were facilitated by an international consultant (Mr. Bob Burden) and aimed at developing a “Compensation Strategy for Egypt”.

Following these events a compensation strategy for Egypt including the principles, the elements of policy application and fund governance for compensation program has been developed.

OSRO/GLO/802/USA project “Improved biosecurity and hygiene at production points, including decontamination”

The main project objective is to develop and implement an integrated programme for cleaning and decontamination of selected production and collection points in target Governorates. The project strategy is drawn on biosecurity principles and guidelines to develop a programme for cleaning and decontamination of selected sites.

To accomplish the above mentioned objective, the implementation of the project activities was based on four pillars as follows:

Output 1. Identify and prioritize the target commercial poultry farms

Output 2. Develop and agree upon cleaning and/or disinfection guidelines and protocols
Output 3. Train Sufficient staff/workers adequately and implement cleaning and/or disinfection operations
Output 4. Implement cleaning and disinfection operations and monitor at commercial poultry farms or collection points

The project has encountered several challenges during implementation; for instance, the banning of LBM have delayed the starting date; the issuance of a Ministerial decrees on closure of unlicensed poultry farms has posed another obstacle to implement project activities.

Regional Projects

Regional funds were the first to come in, as early as November 2005 through the TCP/RAB/3006 project - with the primary objective to “strengthen the capacity for generating and sharing HPAI disease intelligence and using this to mount emergency preparedness planning against the eventuality of HPAI being introduced into the region, specifically in relation to migration of and trade in wild birds”.

Ongoing activities at regional level are funded mainly by Sweden through SFERA funds. They mainly deal with prevention, preparedness and surveillance, with workshops and training organized to share national policies and information and improve local capacities to detect, respond, and contain a prospective HPAI outbreak.

Government officers from the Egyptian Veterinary Services and the Lab have been invited to take part in the above mentioned training and workshops. Given the disparities between Egypt and the other countries in the region in terms of risk and actual spread of the disease, regional projects have tended to not focus on Egypt but rather on strengthening prevention and harmonization in the Maghreb area. This has resulted in less interest and attention being given by the Egyptian authorities to those activities when compared to the national projects.