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Evaluation of:

Restoration of Veterinary Services in Iraq

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Final Report – November 2009

ABBREVIATIONS

AUSAID	Australian Agency for International Development
CTA	Chief Technical Advisor
EMAI	Elizabeth Macarthur Agriculture Institute
FAO	Food and Agriculture Organisation of the United Nations
FMD	Foot and Mouth Disease
GPS	Global Positioning System
GSCVS	General State Company for Veterinary Services
HPAI	Highly Pathogenic Avian Influenza
HQ	Headquarters
KRG	Kurdistan Regional Government
MoA	Ministry of Agriculture
OIE	Office of International Epizootic
PCR	Polymerase Chain Reaction
PVS	Performance of Veterinary Services
TCE	FAO Emergency Operations and Rehabilitation Division
UK	United Kingdom
UN	United Nations
UNDG ITF	United Nations Development Group Iraq Trust Fund
UNDG ITF	United Nation Development Group Iraq Trust Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
USA	United States of America
VLA	Veterinary Laboratories Agency
WHO	World Health Organisation

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EXECUTIVE SUMMARY

Like many public facilities and functions the veterinary services have been severely affected during the latest Gulf War and the outburst of looting that followed. An FAO assessment carried out after the end of major ground operations (May-June 2003) indicated that veterinary services, including veterinary hospitals and district clinics, diagnostic facilities as well as the cold chain storage and distribution system were either damaged directly by the war or more frequently, extensively looted immediately thereafter. There is also a serious deficit in disease intelligence and emergency preparedness which are essential elements in meeting the challenge of epidemic and exotic animal diseases.

The project development goal is to improve animal production by reducing economic losses and threat to public health originating from livestock diseases through rehabilitation and strengthening of veterinary services in Iraq. The project is meant to address problems associated with the breakdown of all branches of the Veterinary Services in Iraq, particularly the serious threats to livestock posed by infectious diseases, as well as the increased public health concerns arising from the occurrence of zoonotic diseases. The project immediate objectives were therefore to:

- Provide professional training updates for veterinary staff in animal disease control issues and strategies.
- Restore the veterinary infrastructure and re-supply its various branches with materials and equipment to improve delivery of animal health services in the country. Special emphasis was to be given to restoration of the veterinary cold chain.
- Evolve an effective control policy for major animal trans-boundary and zoonotic diseases
- Re-establish and strengthen the laboratory capacity for disease investigation, diagnosis and surveillance.
- Enhance national capacity for quality control of veterinary products and animal food safety.

The evaluation was conducted towards the end of the project life and used the following methods: document analysis, field survey by Iraqi surveyors, telephone interviews and individual meetings with available FAO personnel that handled the project. However, the evaluators were not able to go to Iraq, see achievements on the ground and meet with beneficiaries in person, which put significant limits to the depth of analysis and precision this evaluation could achieve.

Towards the attainment of the above objectives, important results have been achieved, including:

- *Professional training updates provided to veterinary staff in animal disease control issues and strategies:*

23 professional training courses abroad including workshops and study tours for 196 veterinarians have been carried out in the fields of quality control of veterinary drugs, vaccines and animal food products as well as in epidemiology, virology, bacteriology, quarantine, emergency preparedness plans, disease control, data management, risk analysis procedures and change management for the state veterinary services.

- *Veterinary infrastructure restored and its various branches re-supplied with materials and equipment to improve delivery of animal health services in the country:*

The supply and delivery of essential equipment, goods and materials such as 7 cold storage rooms, refrigerated trucks, pick-ups, motorcycles, forklifts, personnel

protective cloths, disinfectant, mist blowers knapsack and sprayers, computers and communication tools, has been completed according to the schedule. Special emphasis was directed towards rebuilding an effective cold chain. As a result all central veterinary services and the 18 regional veterinary hospitals are currently functional. In addition, and due to an outbreak of Highly Pathogenic Avian Influenza (HPAI) in 2006, this project used funds initially earmarked for brucellosis control to support the Iraqi Ministry of Agriculture (MoA) capacity in diagnosis and control of this devastating zoonotic disease.

- *Laboratory capacity re-established and strengthened for disease investigation, diagnosis and surveillance:*

The supply and delivery of essential laboratory equipment and supplies as well as refresher technical trainings to laboratory staff have enhanced the laboratory capacity for disease investigation and diagnosis especially for brucellosis and HPAI surveillance. As a result the central and all the regional veterinary laboratories are functioning.

- *Restoration of veterinary services through upgrading with new equipments*

These services (General State Company for Veterinary Services, central and regional laboratories, Governorate veterinary hospitals) are now fulfilling their important functions. As a result these services are able now to deliver an effective disease prevention services to farmers throughout Iraq, although some respondents mentioned access to farmers is a major constraint, either because of lack of transportation means or poor security.

From a review of the project expenditures, more than 68% of the project expenditure was on deliverables (equipment, infrastructure, capacity building and supplies) that were needed to restore the veterinary services in Iraq. This is a good ratio for a project that also had a strong technical assistance component.

However, the mission also noted constraints in the project, which have affected its operations and could have limited its impact:

- Lack of security in Iraq prevented the execution of major activities of the project. The on-site delivery of procured equipments proved a significant but manageable problem. Due to the difficult security situation, FAO was not in a position to check the location, installation and functioning of the procured equipment. Some equipments were delivered with damages. A few others are currently not in use because of failure to install properly or failure to maintain, due to either unavailability of technical support from the manufacturer or to unavailability of spare parts in the local market.
- The project was remotely managed by the CTA from Amman, together with two full-time national project coordinators (one in Baghdad and one in Erbil). Respondents to the questionnaires (including MoA personnel) indicated that they hoped for more direct interaction with FAO to solve problems related to selection of trainee. It was also felt by the same respondents that a stronger FAO presence in Iraq would have allowed for more local training sessions, rather than the almost systematic reliance on organizing training abroad. However, it was the security situation that hampered national training, not the limited FAO presence in Iraq.
- The project funds have been released only partially and funds had to be temporarily relocated from other projects¹ to implement some of the activities. This partial funding (US\$ 8.7ml was received out of a planned budget of US\$ 10.5ml) resulted in

¹ Money to complete some of the activities was temporarily borrowed from other projects (livestock rehabilitation and community irrigation projects) and returned as funding became available.

cancellation of some activities related to disease surveillance and control.

- Longer term activities listed in the project document, such as developing an appropriate institutional veterinary structure and animal health policy, are likely to take more time than the project duration allows. Realizing this, FAO had formulated a successor project (OSRO/IRQ/707/UDG - Strengthening the capacity of the Iraqi Veterinary Services for control of Zoonotic and Transboundary Animal Diseases) for which funds have been acquired successfully.
- Transportation and reaching out to farmers has been indicated by most respondents as major constraints to operate properly. The project provided the MoA with 6 pickups and 100 motorcycles to compensate for this constraint. However, and because of the big area that each veterinary clinic need to cover, more pickups could have been useful.
- Training was a major objective in this project, focusing on helping the ministry redefine its role away from the direct provision of veterinary services towards animal disease surveillance, quality control and food safety. Most interviewed trainees were satisfied but a few of them indicated that the period of training, especially for the overseas training, was too short. Others indicated that the contents of the training sessions were mainly theoretical and wished for more practical ones. In some cases, laboratory personnel wished to receive more training on the equipments that they acquired through this project.
- More attention should now be directed towards disease surveillance and vaccination campaigns. Infectious diseases constitute major production constraints and disease surveillance falls squarely within the mandate of the State. However, except for some priority diseases (brucellosis, FMD), little information is available on the prevalence of infectious diseases in Iraq. Drawing an epidemiological map for major infectious diseases is an essential issue when planning for control strategies. Iraq used to be a major exporter of small ruminants to the region and adequate disease surveillance is required to re-gain this important role and secure external markets for small ruminants farmers.

The project was closed in December 2008. It is obvious that several constraints could not be addressed by the project and that more work remains to be done. The following recommendations are intended to provide guidance to the development of a successor portfolio of projects to support Iraqi veterinary services, of which part has already materialized under the recently started Zoonotics and Transboundary disease project.

Recommendations:

1. As a way to maintain a constant, independent channel of information open between beneficiaries and project staff, FAO should set up via one or several third parties (Iraqi companies or NGOs) a monitoring capacity within Iraq able to perform frequent monitoring missions throughout the country.
2. If future funding prospects materialise and if the security conditions continue to improve, FAO should try and re-gear its training provision capacity towards more in-country training in order to make training events more client-oriented and relevant to local conditions.
3. More emphasis should be placed on allowing a fairer share of training opportunities for staff working at the decentralized and/or governorate level, including those under the Kurdistan Regional Government.
4. Capacity building should also reach the private sector since it plays a unique role in delivering veterinary services to farmers in post-war Iraq.

5. An external evaluation of the current veterinary services is required to plan for subsequent capacity/institution building and animal health policy development. It could be achieved using the OIE tool for assessing the Performance of Veterinary Services (PVS).
6. If future funding prospect materialise, FAO should try and re-start its support to national vaccination efforts.
7. All the recently re-written regulations and disease control measures should be published and distributed to both public and private veterinary clinics.
8. The set-up and use of a disease information system, including drawing epidemiological maps for major infectious diseases, is an important activity that should be followed up. More training and supervision from FAO will be needed in this area.

1. INTRODUCTION AND BACKGROUND

The national herd of domestic livestock in Iraq stands at approximately 2.5 million head of cattle and 17 million head of sheep and goats. The livestock production system is characterized by an extensive system and seasonal migration throughout Iraq and into neighbouring countries. Animals provide by far the most important source of dietary protein for the Iraqi people through meat and milk products. Moreover, the livelihoods of the nomadic and semi-nomadic population of Iraq depend entirely on the well-being of their livestock. There is also an extensive poultry industry (broilers and eggs, from intensive farms, turkeys and geese at the village level) that makes a major contribution to the protein supply of poorer people.

Veterinary services in Iraq have been traditionally supplied by the government. They have consisted of specialised central facilities and co-ordination functions located in Baghdad, veterinary hospitals at the governorate level and district veterinary clinics at over 200 decentralised locations. The major functions of the animal health service have been provision of vaccines and drugs through a veterinary distribution chain down to the district level², disease diagnosis and surveillance, animal quarantine, quality control of veterinary products and animal food safety.

Like many public facilities and functions, most essential government services in the veterinary sector which were already severely weakened as a consequence of previous political conflicts and international sanctions, have collapsed during the last war in 2003. An FAO assessment carried out in May-June 2003 using baseline investigation conducted by the Iraqi MoA indicated that veterinary services, including veterinary hospitals and district clinics, diagnostic facilities as well as the cold chain storage and distribution system were either damaged directly from the war or, more frequently, extensively looted immediately thereafter. At the end of major military operations, state veterinary staff found themselves unable to deliver even basic services due to lack of infrastructure, material and funds, poor security, lack/unreliability of electrical supply, problematic logistics and transport, etc.

There was also a serious deficit in disease intelligence and emergency preparedness which are essential elements in meeting the challenge of epidemic and emerging exotic animal diseases. The Website of the Office of International Epizootic (OIE) indicates that no information is available on Iraq regarding disease occurrence and animal disease prevention strategies since 2001.³

This situation and the current instability in the country increased the risk of occurrence and spread of contagious and infectious diseases. Any significant increase in the occurrence of livestock diseases will have a detrimental effect on the supply of essential protein-rich food (milk, cheese, yoghurt, meat, eggs) to the nation and have a severe negative impact on food security as well as food safety. In addition, it is to be emphasised that failure to control trans-boundary animal diseases in Iraq has inevitably implications not only within Iraq but also to neighbouring countries and the region.

² 18 Governorate veterinary hospitals are reportedly working. There also used to be some 220 "veterinary clinics" in the Center and South and 45 equivalent "veterinary centres" under the Kurdistan Regional Government.

³ <http://www.oie.int>

2. PROJECT OBJECTIVES AND DESIGN

2.1 Objectives and outputs

The developmental objective of this project was phrased as: “to improve animal production by reducing losses originating from livestock diseases through rehabilitation and strengthening of veterinary services in Iraq.”

The *immediate objectives* were to:

- Provide professional training updates for veterinary staff in animal disease control issues and strategies
- Restore the veterinary infrastructure and re-supply its various branches with materials and equipment to improve delivery of animal health services in the country. Special emphasis will be given to restoration of the veterinary cold chain.
- Evolve an effective control policy for major animal trans-boundary and zoonotic diseases
- Re-establish and strengthen the laboratory capacity for disease investigation, diagnosis and surveillance
- Enhance national capacity for quality control of veterinary products and animal food safety.

The outputs were formulated to help achieve the Immediate Objectives, although there is no one-to-one relationship between Immediate Objectives and outputs:

1. Improved food security by reducing the threat of infectious livestock diseases within flocks owned and managed by small-holder producers, as well as improved food safety of animal products⁴.
2. A sufficient number of veterinary and laboratory staff with increased skills for disease intelligence and surveillance, laboratory diagnosis and disease control.
3. Veterinary hospitals and clinics reactivated with the capacity to deliver effective animal health services.
4. Effective cold chain facilities for storage and distribution of vaccines re-established and improved.
5. Vaccination and treatment campaigns supported and implemented to protect 12 million sheep and goats, 2 million cattle and a large number of poultry farmers from endemic and diseases that limit the production potential.
6. Strategy and emergency preparedness plans being drafted for implementation to control and prevent major diseases of livestock and poultry
7. Disease data generation, data management and analysis procedures introduced.
8. Laboratory capacity strengthened for investigation, diagnosis and surveillance of major livestock and poultry diseases.
9. Laboratory capacity strengthened for quality control of locally produced and imported veterinary vaccines, drugs and animal food products (animal food safety).

While the development goal and the immediate objectives of the project stressed the restoration of veterinary services in Iraq, the project outputs emphasized a more developmental outlook. This being said, the development objective mentions: “rehabilitation *and strengthening* of veterinary services in Iraq” (emphasis added). It appears that the objectives of the project were of course to rebuild, but also *help reform* the veterinary services, as evidenced in outputs 6 and 7 above and by the topic of an important training curriculum (Change Management, see below). This implicit reform objective was certainly a good thing and could have been more explicitly stated in the project document.

⁴ This output, phrased as an objective, was later dropped from the project output list because it is achieved through other outputs rather than by some other, specific activity.

2.2 Work plans, assumptions and risks

The first batch of Iraqi projects after the war was planned rather quickly based on Government information for needs assessment. There was a strong pressure to get reconstruction under way, coupled with significant political instability, with a rapid succession of interim governments and ministers.⁵ The project documents were therefore conceived as provisional plans, with priorities understood to be subject to regular updates and modifications after project signature, as would be the case for the present project (see section 3. Project Implementation Status).

The work plan (short activity listing) of the project document reflected a logical sequence of events. Evidently, the project designers did not consider the delays related to funding, nor delays that occurred in equipment procurement (especially issues related to delivery and re-routing through different countries).

Only limited risks (“deterioration in political and security conditions”) were foreseen for this project, without sufficient analysis of their possible consequences. Risks associated with delays in delivery of procured goods, difficulties in securing visas for trainees and the need for “remote management” due to a seriously worsening security situation were not properly addressed in the project document.

2.3 Institutional arrangements

Institutional arrangements were not outlined in great detail in the project document. Project reports indicate that the main implementing partners have been the Iraqi Ministry of Agriculture and the General State Company for Veterinary Services in particular. These institutions are directly responsible for all veterinary issues and activities inside Iraq and are close counterparts of this FAO project. The MoA was involved through a National Coordinator in all aspects of implementation, including selection of beneficiaries, procurement, training modules, and distribution plans. Similarly, a full time project coordinator was active in Erbil all throughout the project. A Training Committee was established within the Ministry to screen and select candidates for the training offered by the project.

2.4 Relevance

At project design time, priorities were set opportunistically rather than based on a comprehensive needs assessment that could not have been organized anyway. More could perhaps have been done to cover other sub-sectors within agriculture in the first batch of projects. This issue has been taken into consideration in the more recent projects which cover a wider array of issues (micro-industry promotion, vegetable and cereal seed industry, palm trees, food safety, fisheries and aquaculture, decentralization, public sector reform, etc.).

Within the livestock sector, the objectives of the project were certainly of high priority. The rehabilitation of a disease diagnosis, surveillance and control capacity and the emphasis placed on the restoration of the veterinary cold chain appear amply justified by the circumstances. The entire animal husbandry sector was under the threat of uncontrolled

⁵ There has been four Ministers of Agriculture since the war: Abd al-Amir Rahima al-Abbud from September 2003 to June 2004 under the Iraqi Governing Council; Sawsan Ali Magid Al-Sharifi from June 2004 to May 2005 under the Iraqi Interim Government (she was deputy minister under the IGC); Ali al-Bahadili from May 2005 until May 2006 under the Iraqi Transitional Government; and Yaroub al-Abodi from May 2006 to April 2007 under the first Government of Iraq. Ali al-Bahadili was reappointed after the ministers belonging to the Sadrist Movement left the Government in October 2007, and again left his post during early spring 2009. The Ministry is currently headed by a caretaker from another ministry.

contagious diseases possibly spreading from governorate to governorate, which would have endangered the livelihoods of a majority of Iraqi farmers. It is worth mentioning that Iraq used to be a major exporter of small ruminants to the region and adequate disease surveillance is required to re-gain this important role and secure external markets for small ruminant farmers. Besides, many animal diseases are transmittable to humans. HPAI attracted much attention in this project due to the documented fatalities and international dimension of the disease. However, Brucellosis too can be passed from livestock to human beings (the disease is called Malta fever in humans), and there must be a significant number of fatalities from this disease in Iraq. Finally and as stressed in the project document, any large epidemic would have resulted in reduced supply of protein-rich food (meat, milk and dairy products, eggs) to the Iraqi market, and hence could have had detrimental nutritional consequences nation-wide.

The training component was also quite relevant. Iraqi veterinarians have not had the opportunity during 12 years of UN sanctions to keep themselves up-to-date in terms of new practice, research and information and participate in recent developments in disease control and surveillance strategies. The topics selected were all very pertinent to the Iraqi context, including the focus on helping the state redefine its role away from the direct provision of veterinary services and towards animal disease surveillance, quality control and food safety.

In this respect, one weakness in terms of relevance and project design was not to have included in the project activities geared to private veterinarians. The private sector plays a unique role in delivering veterinary services to farmers in Iraq nowadays.

Another weakness according to the evaluation team was the absence of a public health awareness effort under the brucellosis component. The project concentrated in building capacity on brucellosis and HPAI control, including training on public health issues related to these two diseases, but could have planned and done more to inform the public on safe handling/cooking of animals and animal products, in collaboration with WHO and the Ministry of Health. The need for such an awareness effort was fortunately addressed by project OSRO/IRQ/601/UDG - Food Safety Re-Building the food safety capacity in Iraq, shared with WHO and UNIDO, under activity 4.1.1 ("conduct campaigns and educate consumers on the risks of unsafe food on health", implemented by WHO).

3. PROJECT IMPLEMENTATION STATUS

The project priorities went through a number of changes during its execution. The foreseen construction/rehabilitation of district veterinary clinics was cancelled under request from the Ministry since other funding sources were available for that. Priority was given to developing and launching a national Brucellosis Control Programme. A national sero-prevalence was conducted to determine the prevalence of the diseases (benchmark sero-prevalence) but due to the funding shortage at that time, procurement of the massive amount of vaccines had to be postponed and the vaccination campaign was put on hold. The procurement of vaccines was eventually cancelled and replaced by support to the control of the outbreak and future HPAI prevention and preparedness measures following an HPAI outbreak in January 2006⁶.

⁶ The outbreak occurred on 18 January 2006 in Dawaw and Sarkapkan, 2 villages of Raniyah district in Sulaimaniyah Governorate near the border with Iran. Three commercial farms were affected, as well as backyard poultry flocks. There were 650 reported bird deaths and 2,500 birds were culled by the MoA. In addition, large numbers of poultry (at least 200,000) were destroyed in Iraqi Kurdistan after the declaration by Turkey of confirmed occurrence of avian influenza near the border. The first confirmed case of human bird flu in Iraq (a 15-year-old girl, in a household where 18 chicks died) occurred in the village of Sarkapkan. Two human fatalities were deplored.

3.1 Project budget and expenditure⁷

Project funds were released late and only partially, making planning difficult and leading to slowdowns and even a freeze on project activities from mid-2006 until mid-2007. Due to this long freeze in combination with the late availability of the last tranche of funds, an extension of the project until July 2008 was required and approved.

Despite an approved budget of US\$10,565,843 to be funded by the UNDG ITF, only US\$8,758,964 was eventually received. Some activities had to be dropped as a result. This shortfall was reportedly due to the UNDG ITF not receiving all the funds pledged to it, although it is unclear why budget cuts fell only on this project. The first and only direct UNITF allocation of US\$ 5 million was received in June 2004. FAO was informed on 8 December 2005 that the rest of the fund for this project would not be available anymore⁸. US\$ 2.2 million was borrowed from the livestock project and the community irrigation budget to settle outlays and conclude the project in the best possible fashion. This amount was later returned to the two projects after receiving addition funds from Australian Agency for International Development (AUSAID).

As of 26 March 2009, 99% of all received funds have been spent or committed. Unsettled commitments amounted to US\$610,860, i.e. 7% of all committed and spent funds (actual expenditures: US\$8,682,194, total committed or spent: US\$8,682,194).

The main unsettled commitments as of 26 March 2009 were:

- THEFAF AL RAFIDAIN COMPANY FOR GENERAL CONTRACTING (BAGHDAD); Contract: 214510; Contract Description: OSRO/IRQ/601/UDG: Construction of three new agricultural and food import border check points in Iraq (Zerbatia, Safwan and Rabiia); Actuals: 66,882; Commitments: 270,180; Total: 337,062. This was a joint activity to construct veterinary border checkpoints shared with OSRO/IRQ/601/406/UDG - Food Safety Project. The number of posts was reduced from 3 to 2 sites due to inaccessibility of one site (Rabiia).
- JOVAC - JORDAN BIO INDUSTRIES CENTER (AMMAN); Contract: 228516; Contract Description: 2,400,000 doses of Brucellosis vaccine; Contract Amount: 310,000. This was cancelled for various reasons: lack of funds, MoA insisting on own quality control, and changing priorities to HPAI control and preparedness. Negotiations on cancellation charges still ongoing with Jovac.

Equipment procurement consumed 52% of all expenditures, more than two thirds of which being in non expandable equipment, as follows:

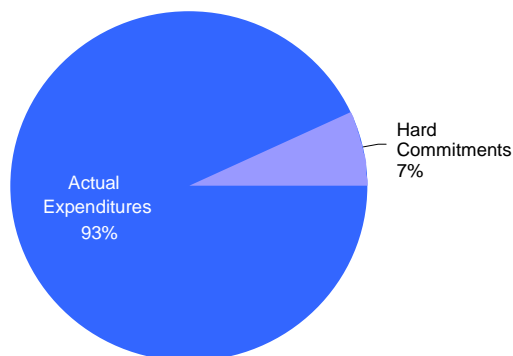
- Veterinary laboratory supplies (72,000 US\$)
- Veterinary field supplies (124,000 US\$)
- Veterinary laboratory equipment (647,000 US\$)
- Veterinary chemicals (41,000 US\$)
- Veterinary laboratory freeze dryer (75,000 US\$)
- Reagents (87,000 US\$)
- 2 Forklifts (61,000 US\$)
- 15 Refrigerated trucks (694,000 US\$)
- 6 Pickups (162,000 US\$)
- 100 motorcycles (345,000 US\$)

⁷ The budget and expenditure figures are based on the project document, the project accounts and available reports, including final report written by the CTA. All data in US\$, expenditures as of 26 march 2009.

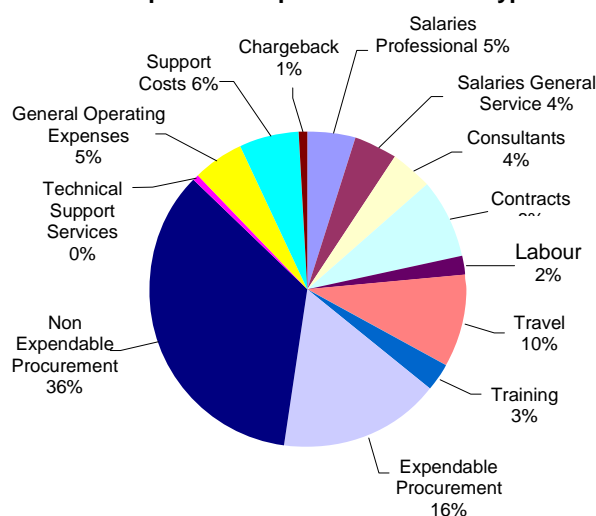
⁸ Six monthly progress report number 4 - OSRO/IRQ/406/UDG - Restoration of Veterinary Services in Iraq, 1 January to 1 July 2006. FAO kept asking for the balance until 2008.

- 7 Cold storage rooms (1,300,000 US\$)

Hard Commitments and Actual Expenditures
(as of 26 March 09)



Expenditures per FAO Account Type



Additional procurements may have been classified and

er other accounts such as contracts (e.g. the contract for the construction of the two border points). Project reports indicate that 60% of the project's budget went into the provision of equipment and supplies.

Most of these goods were delivered before June 2005 and distributed to the Veterinary Hospitals of the 18 Governorate. Additional tenders were issued for goods worth an estimated 3.0 million US\$, including bacterial and viral vaccine strains for the restoration of Iraq's veterinary vaccine production, and the construction of 9 new veterinary centres throughout Iraq. These had to be cancelled due to unforeseen reduction of funds and changing priorities (HPAI). The main suppliers are listed in Table 1.

Regarding transport and insurance arrangements, FAO normally prefers to have the good it procures shipped and delivered at final destination under Delivered Duty Unpaid terms (DDU). However, as a result of the worsening security situation, less and less suppliers were willing or able to ship into Iraq, as it has become increasingly difficult for them to find freight forwarders and insurance companies that wanted to take up the job and cover the risks. As a result, FAO had no choice but to take charge of the goods ex-factory and hire a freight forwarder separately for the transport and delivery. In most cases, use has been made of a standing contract with the company Kühne & Nagel (see Table 1), resulting from a worldwide tender that UNICEF floated and to which also FAO adhered. Shipment through this company, which makes use of local forwarding agents inside Iraq, also includes adequate insurance of the goods.

Ninety percent of all expenditures and commitments were processed at Headquarters, usually by the FAO Emergency Operations and Rehabilitation Division (TCE). Local outlays effected by the office in Amman are significant in account 5020 - Locally Contracted Labour (98%) and 5023 - Training (69%).

Table 1: Largest vendors / contractors:

Vendor / contractor	Goods and Services	Total Payments (US\$)
LUAI A AL-ABDUL RAZZAK &	7 Cold storage rooms for the storage and	1,317,298

PART GEN TRAD & CONTR CO	handling of vaccines & heat sensitive drugs. Distr: to Veterinary Hospitals of 7 Governorates	
AMEX EXPORT- IMPORT GMBH	Laboratory equipment and supplies	893,721
EMAD ABDULLATIF - EM MOTORS	15 Refrigerated Trucks and 6 Toyota Dual Cab Pickups	817,094
BUKKEHAVE LTD	100 Motorcycles Suzuki DR200SE On/Off-Road	345,565
KUHNE & NAGEL A/S	Freight, insurance and transport of equipment	212,861

Table 2: Expenditures per organizational unit and FAO account type

Account	FAO Rep office in Amman	HQ Emergency Division	HQ Technical (Agriculture Department)	HQ Admin. (Administrative and Finance Department)	Total	Of which hard commitments
5011 Salaries Professional	8,290	213,991	64,832	149,967	437,079	-
5012 Salaries General Service		140,224		235,382	375,606	(0)
5013 Consultants	37,100	328,660			365,760	579
5014 Contracts	71,826	625,274			697,100	290,297
5020 Locally Contracted Labour	162,872	4,108			166,980	
5021 Travel	77,112	755,326			832,439	5,473
5023 Training	168,733	77,318			246,051	-
5024 Expendable Procurement	53,533	1,370,463			1,423,996	310,281
5025 Non Expendable Procurement	67,422	2,961,955			3,029,378	0
5027 Technical Support Services		42,532			42,532	
5028 General Operating Expenses	163,076	300,434	1,227	2,326	467,063	4,230
5029 Support Costs	56,698	439,280	4,624	27,137	527,738	
5040 General Overhead Expenses		582			582	
5050 Chargeback		69,890			69,890	
Total	866,662	7,330,037	70,683	414,812	8,682,194	610,860

The share of expenditures classified under account 5023 - Training appears very low (3%) but this is an artefact which reflects the automatic accounting of various training-related costs under other accounts such as “5013 - Consultants”, “5014 - contracts” and “5021 – Travel”, depending on the *type* of expenditure rather than their *purpose*. For instance, Letters of Agreements are always recorded under “5014 - contracts”, even when they are with training institutions. Fortunately, expenditures related to training have been carefully compiled in the financial systems by way of a “baby project”⁹. The total of all expenditures related to training is of US\$ 972,626, or 11% of all project costs.

Similarly, a baby project was created to record all security-related expenses, amounting in total to US\$ 943,325. The recourse to these “baby projects” allowed the project staff to report expenditures against UNDG ITF budget categories, which are totally different from the FAO chart of accounts. This explains the differences between data presented in Table 1 above, using FAO account structure, and the financial data presented in the final report for the project using the UNDG account structure.

⁹ In FAO financial systems, “baby projects” are an accounting device allowing to keep track of budgets and expenditures for sub-projects or project components.

3.2 Implementation status

The actual project implementation started in July 2004. Initially, the specifications of the supplies and equipments were finalized and tenders were analyzed together with the MoA. All necessary documents were forwarded to FAO Headquarters which – quite rightly given the size and complexity of the tenders – effected most of these procurements. Purchase orders totalling over 4.4 million US\$ were concluded and delivered before June 2005, sometimes delayed by poor transport option and security constraints, including the occasional detention of motorcycles by customs authorities at the border.

A number of later tenders had to be cancelled due to reduction of funds and changing priorities. The MoA requested the cancellation of the reconstruction of the 9 veterinary clinics (for which other funds were apparently available) and chose to direct funds towards brucellosis control.

During the period January-June 2006, it was decided to change priorities again and give attention to the country preparedness to face an outbreak of HPAI in January-February 2006. Thereafter, an emergency procurement of HPAI equipment worth US\$ 190,000 was processed and delivered. During the same period, 25 publications covering many aspects of the veterinary science were translated into Arabic, published and distributed in the country (US\$ 12,000).

Capacity building took place throughout the project implementation period. Due to security constraints, training was in majority carried out outside Iraq, often in Jordan. The list of the 23 training activities conducted or contracted out by the project is provided in the section 5 on project results.

The project is now essentially complete even if the project is not administratively closed yet.

4. SUPPORT BY GOVERNMENT, TECHNICAL AND OPERATIONAL BACKSTOPPING, PROJECT MANAGEMENT

4.1 Support by government/national institutions

The MoA and its General State Company for Veterinary Services (GSCVS) were the line ministry responsible for project supervision and implementation on site. The project received good support from the MoA in Baghdad as well as in Erbil.

The presence of two national project coordinators based in the MoA in Baghdad and Erbil, who actively pursued their mandate to liaise with the Government and validate decisions about the project, seemed to have paid off. The MoA received, inspected, dispatched and installed all project equipment and supplies. They also implemented the nation-wide *Brucella* sero-prevalence survey among sheep, goats, cattle and buffalo during June and July 2005¹⁰, as well as the HPAI monitoring plans.

4.2 Technical and operational backstopping

Overall, the project received an adequate level of technical support from FAO Headquarters. Seven backstopping visits to Amman were made by different technical staff from FAO Animal Health Division at HQ. Additional technical support from FAO came in the form of clearances for the tenders prepared by the project, emails and telephone conversations to discuss specific points.

Constant operational backstopping was provided by the Emergency Operations and Rehabilitation Division (TCE) at Headquarters, which supervised most procurements and recruitments, and backed up travels and visas, a particularly important task given the high number of Iraqi trainees trained abroad by the project.

4.3 Project management

The project was placed under the purview of a Chief Technical Advisor covering both this (OSRO/IRQ/406/UDG) project and project OSRO/IRQ/407/UDG on livestock services. However and due to the insecurity prevailing in Iraq and the restrictions placed on UN staff movement in the country¹¹, the FAO management staff had to reside and work in Amman during the entire length of the project. Even if activities were followed on site by a nationally recruited consultant who acted as the eyes and ears of the project CTA, the fact that the CTA had to manage the projects remotely, from Amman due to security issues, might have affected the implementation of the project and delayed some of its activities¹².

Over the implementation period of the projects, 4 CTAs occupied this position. This could have contributed to the changes in priorities noted above. Frustration with their inability to travel in Iraq, supervise work and witness progress on site was reportedly one important reason behind the high turnover of CTAs.

¹⁰ Approximately 1,200 sera samples were collected from livestock in each governorate (~ 21,000 samples in total) in a survey weighted by population in each governorate. All samples were tested in Iraq by the Rose Bengal test (RBT) and positive samples tested by ELISA test. Overall unbiased mean prevalence for brucellosis in Iraq based on RBT testing was: 8.59% in sheep and goats, 5.37% for cattle and 5.53% in buffalo. Some governorates have very high prevalence rates (>20%), such as the Basrah governorate bordering Kuwait. Back to Office Report, David Ward and Ahmed El-Idrissi, 5 September 2005.

¹¹ International staff can be posted in Baghdad Green Zone and in Erbil, although the UN security system puts severe restrictions on the number of people that can be present at any given time (and therefore on the duration of their stay). Only short travels within Iraq are permitted, under protection from coalition forces.

¹² This issue was mentioned by the CTA in his regular 6 months reports and on the End of project report.

The CTA prepared detailed and comprehensive mission (progress) reports every 6 months. When compared with the difficulties and constraints experienced, the reports tend to present a rather idealized picture of the project performance.

Recommendation 1: As a way to maintain a constant, independent channel of information open between project sites / beneficiaries and project staff, FAO should set up via one or several third parties (Iraqi companies or NGOs) a monitoring capacity within Iraq able to perform frequent monitoring missions throughout the country.

5. ACTUAL AND POTENTIAL RESULTS

The original project document listed nine outputs. The first one (Improved food security by reducing the threat of infectious livestock diseases within flocks owned and managed by small-holder producers, as well as improved food safety of animal products) was phrased as an objective and later dropped from the project output list because it is achieved through other project outputs. Outputs actually produced are detailed below.

Output One – A sufficient number of veterinary and laboratory staff with increased skills for disease intelligence and surveillance, laboratory diagnosis and disease control

The project provided training to 196 veterinarians in the fields of quality control of veterinary drugs, vaccines and animal food products as well as in epidemiology, virology, bacteriology, quarantine, strategy and emergency preparedness plans, disease control and data management and risk analysis procedures. Twenty three training/workshop sessions were held abroad, as follows:

- Training abroad of senior technical and veterinary staff. Five Modules for Change Management training were held in Amman, Jordan:
 - Module I, 17 trainees, training in responsibilities of veterinary services and identification of most significant diseases present in Iraq (5 - 9 December 2004).
 - Module II, 25 trainees, training in Disease investigation, diagnosis, reporting and recording (6 - 16 March 2005).
 - Module III, 18 trainees, training in trans-boundary disease control and emergency preparedness, using FMD and Rinderpest as examples (15 - 19 May 2005).
 - Module IV, 29 trainees, training in drafting a National control plan for Brucellosis and developing the concept of Standard Operating Procedures of activities for effective disease control and eradication (21 - 31 August 2005).
 - Module V, 18 trainees, training in Import Risk Analysis and Quarantine (12 - 15 February 2007)
- Four trainees, eight weeks training in Production and Quality Control of Veterinary Drugs and Vaccines; Morocco (23 May - 15 June 2005).
- Four trainees, two weeks training in Delivery of public and private veterinary services; Morocco (19 - 28 June 2005).
- Three senior MoA staff, participation to the World Veterinary Congress, Minneapolis, USA (15 - 21 July 2005).
- Five trainees, seven weeks training of trainers in Practical Epidemiology; Australia

various locations (Nov - Dec 2005).

- Six trainees, two weeks focused technical training in Veterinary Public Health; Berlin, Germany (14 - 29 November 2005).
- Two trainees, eight weeks training in Avian Disease Virology ; Pennsylvania, USA (25 February - 22 April 2006).
- Eight trainees, two weeks extraordinary technical meetings with FAO (Rome) and OIE (Paris) to discuss technical issues on surveillance and control of priority Trans-boundary diseases in Iraq (20 February - 04 March 2006).
- Two trainees, two weeks training in Brucellosis and Mycoplasma diagnostic procedures and techniques; United Kingdom, VLA laboratories (23 April - 5 May 2006).
- Six trainees, two weeks training in quarantine and veterinary inspections procedures Study Tour; Germany, Berlin (8 - 20 May 2006).
- Six trainees, six weeks training in bacteriology and virology; Australia, EMAI institute (19 June - 28 July 2006).
- Ten trainees from MoA media department, one week training on “HPAI, the Communication Challenge”. This was for improving practical skills for information and better communication with the media on Avian Influenza issues; Jordan, Amman (14 - 17 November 2006).
- Ten Iraqi and 7 Palestinians trainees, all veterinary epidemiologists, one week training of trainers in veterinary epidemiology and disease surveillance; Jordan, Amman (11 - 15 November 2007).
- Two trainees, one week training in wild birds and Avian Influenza. Training in wild birds handling and sampling techniques; Jordan, Amman (12 - 15 November 2007).
- Three senior staff, one week training in preparation of final dossier on accreditation of Iraq Rinderpest free country to be submitted to OIE; Jordan, Amman (14 - 21 May 2008).
- Four trainees, one week training in Polymerase Chain Reaction techniques (PCR Real Time); Lebanon, Beirut (10 - 16 June 2008); postponed to (7 - 14 July 2008).
- Nine trainees, one week training of trainers in Animal Health Information System to re-establish an Animal Disease database; Jordan, Amman (14 - 21 June 2008).
- Three senior staff, one week meeting to review and finalize Iraqi Avian Influenza Contingency Plan; Jordan, Amman (24 - 30 June 2008).
- Two senior MoA staff, participation to a regional meeting on Food and Mouth Disease, Sheraz, Iran (9 - 13 November 2008).

The training subjects covered all fields related to veterinary services and support, with emphasis on policy setting and reform, disease control strategy development, surveillance and laboratory capacities and HPAI control.

Only two of these training events had an evaluation on file (the two study tours in Australia and Germany). Some trainees interviewed by surveyors indicated that the training periods were too short and/or the contents too theoretical. From this limited record, a certain fatigue with training abroad was perceptible, notably when it came to training subcontracted by FAO to other organisations or academic institutes.

According to survey respondents and project records, the Change Management Modules stand out as having been most appropriate, with ample time for reflection and discussion about future delivery of veterinary services in Iraq. The fact that these modules were organised directly by FAO rather than sub-contracted probably added to their relevance, in that the Organisation showed more flexibility to reorient and modify modules based on the

feedback received from participants than contracted academic institutions usually did. These modules also offered an opportunity for senior animal health officials to discuss and plan for project activity with FAO staff and consultants involved in managing or backstopping the project.

Not much information is available regarding the trainees' selection criteria. The selection of trainees went reportedly through three different steps (technical selection committee; approval by MoA officials; and clearance by FAO Technical Division), a rather long process. Background of selected trainee was considered and checked. A significant number of trainees were high-ranking officers in the MoA, something which may be appropriate given the policy orientation of many study tours and trainings, but which also underscores the fact that few actual and active veterinarians benefited from these trainings. In addition, the MoA in Erbil pointed out that training was performed almost only for the officials in the central and southern parts of Iraq and that none of the Kurdistan Regional Government (KRG) MoA staff were invited. Available records indicate that the total share of trainees from the KRG area is about 6% of the total number of trainees.

Obtaining visas for Iraqi trainees emerged as a significant constraint to overseas trainees. While visas for Europe, Australia or the US took some time to secure, the most difficult countries in this regard were from Northern Africa and the Middle East. One training event on virology and ELISA, planned to happen in Cairo, had to be cancelled because visas could not be secured.

One training on "re-establishment of animal health services in Iraq" planned for 2008 could not be conducted due to shortage of funds.

Finally, the support provided to the preparation of a dossier to the OIE on rinderpest yielded positive results. Iraq was declared "provisionally free from rinderpest in April 2006."¹³

Recommendation 2: If future funding prospects materialise and if the security conditions continue to improve, FAO should try and re-gear its training provision capacity towards more in-country training in order to make training events more client-oriented and relevant to local conditions.

Recommendation 3: More emphasis should be placed on allowing a fairer share of training opportunities for staff working at the decentralized and/or governorate level, including those under the Kurdistan Regional Government.

Recommendation 4: Capacity building should also reach the private sector since it plays a unique role in delivering veterinary services to farmers in post-war Iraq.

Output Two – Veterinary hospitals and clinics reactivated with the capacity to deliver effective animal health services

Essential equipment, goods and materials such as vehicles (pick-ups and motorcycles) and veterinary field supplies were procured and dispatched to 18 regional veterinary hospitals to refurbish their veterinary treatment capacities. The national consultant indicated that an informal baseline study was done before the execution of the project to determine what equipment was needed.

The interviewed personnel of the MoA complained of lack of field equipments and transportation constraints to explain why governmental hospitals did not receive more cases. However, most interviewed farmers ranked veterinary services in their area as being weak or

¹³ http://www.oie.int/eng/info/hebdo/AIS_24.HTM#Sec10

very weak. That feedback was sometimes explained to refer to the lack of free drugs and subsidised feed which the system used to provide before the war.

Recommendation 5: An external evaluation of the current veterinary services is required to plan for subsequent capacity/institution building and animal health policy development. It could be achieved using the OIE tool for assessing the Performance of Veterinary Services (PVS).

Output Three – Effective cold chain facilities for storage and distribution of vaccines re-established and improved

To achieve this output, 7 cold storage rooms were procured. Five were installed in the governorates of Basrah, Thi Qar, Kerbala, Hilla, Wassit and two are still to be installed by the MoA in Baghdad and Diyala, due to the poor security situation there. In addition, 15 refrigerated trucks, 6 Pickups, 100 Suzuki motorcycles and 2 forklifts were procured to ensure maintenance and use of the cold chain which ensure adequate storage and delivery of vaccines and other materials that require cold environment during transportation. The cost of this cold chain equipment was quite significant: US\$2,562,000 in total, of which US\$1,300,000 were for the 7 cold storage rooms.

The fact that the envisaged procurement of brucellosis vaccines did not materialise (see output 4 below) did not render the cold chain equipment useless. These facilities are a strategic investment to restore cold chain in Iraq for storage and distribution of *all* heat sensitive drugs and vaccines under the responsibility of the General State Company for Veterinary Services (GSCVS), including the various campaigns implemented by the GSCVS under the national budget since 2007.

Output Four – Vaccination and treatment campaigns supported and implemented to protect 12 million sheep and goats, 2 million cattle and a large number of poultry farmers from endemic and diseases that limit the production potential

This output was not achieved. A national *Brucella* Rev-1 vaccination campaign was planned for spring 2006. After preparing tenders for about US\$1.5 million and agreeing on them with the MoA in Baghdad, FAO was informed that the project would not receive all the funds as per the approved project document to complete the vaccination. In spite of last-minute efforts to identify additional sources of funds, the tenders for *Brucella* vaccine and field equipment had to be put off and the campaign cancelled. This activity was apparently re-launched by the Government in 2007 under the national budget.

Recommendation 6: If future funding prospect materialise, FAO should try and re-start its support to national vaccination efforts.

Output Five – Strategy and emergency preparedness plans being drafted for implementation to control and prevent major diseases of livestock and poultry

This output was supported through specific sessions on disease strategy development in the Change Management modules (e.g. Brucellosis, FMD and Rift Valley Fever), epidemiology training of a few MoA officials, and by providing technical advice in the form of technical backstopping from Headquarters and international consultancies to the MoA for the drafting of a National Disease Control Programme for HPAI and the preparation of the OIE dossier for Rinderpest freedom accreditation.

Other National Disease Control Programmes were prepared by the MoA independently from FAO, based on pre-war sero-surveillance and vaccination campaigns. They include national plans for:

- Brucellosis
- Avian Influenza
- FMD
- Tuberculosis
- Rabies
- Hydatid Cyst
- Leishmaniosis
- Old World Screw Worm (OWS)
- Rift Valley Fever (RVF)

Recommendation 7: All the recently re-written regulations and disease control measures should be published and distributed to both public and private veterinary clinics.

Output Six – Disease data generation, data management and analysis procedures introduced

Among the five training modules on change management held in Amman, Module 2 in particular focused on disease investigation, diagnosis, reporting and recording (March 2005). Additional training on Animal Health Information Systems was executed in Amman, Jordan for nine trainees for one week in June 2008. 25 computers, 2 colour printers, 23 USB storage device, 23 printers, 23 UPS, 100 cellular phones and 100 GPS were procured to support data generation and management. All procurements were delivered to the Iraqi MoA except for the 100 GPS which were confiscated at the Baghdad airport due to security concerns.

The Ministry is now equipped to set up a national Animal Health Information System. A national animal disease reporting system and a resumption of epidemiological surveys are the required next steps.

As of evaluation time, the OIE database show no information on Iraq when it comes to animal diseases. It should be stressed that the set-up and use of a disease information system is no easy task and requires enormous efforts.

Recommendation 8: The set-up and use of a disease information system, including drawing epidemiological maps for major infectious diseases, is an important activity that should be followed up. More training and supervision from FAO will be needed in this area.

Output Seven – Laboratory capacity strengthened for investigation, diagnosis and surveillance of major livestock and poultry diseases

Most laboratory equipments were delivered to the Sheikh Omar Central Diagnostic Laboratory in Baghdad. HPAI diagnostic kits, personal protection equipment, disinfectants, sprayers and motorbikes and were also delivered in Erbil. However, respondents from the Northern part of Iraq complained that they received less attention than Baghdad with regards to laboratory (and veterinary) equipments. The rationale for this was that the Veterinary Service in the North did not suffer from the gulf wars as much as it did in the Center and South.

The premises of the Sheikh Omar Central Diagnostic Laboratory were rehabilitated with GOI's own resources. Laboratory equipment for animal sample testing was provided by the project under this output.

According to survey respondents in the MOA (Baghdad and Erbil) and in the Sheikh Omar Central Diagnostic Laboratory, the received equipments are of high quality and most of them are working properly. However, some of these equipments are currently not working due to lack of biological standards. The Laboratory staff also mentioned that some equipment had been damaged during transport to Baghdad, without explaining which equipment in particular. This appears to contradict superintendence reports. Whatever is the case, the equipment that are not working satisfactorily are reported below, as per the answers to the field survey¹⁴.

Equipment not working properly or not used:

- Spectrophotometer (memory cards missing)
- Co2 incubator (lack of adapters)
- Astell autoclave (not used, needs technical help)
- Micro clave (frequent failures)

The capacity building part for the laboratory staff was already discussed in Output one. However, it is important to note here that laboratory technicians surveyed wished for more training on the use of the laboratory equipments that were delivered to them. Technical training courses to laboratory staff have focused mainly on the use of ELISA and other virology-related equipment for Avian Influenza disease surveillance.

The data on the number of diagnostic test performed provided in the project final project report suggest active veterinary services in the country¹⁵. However, the questionnaire from the Sheikh Omar Central Laboratory indicated that they were analysing about 10 samples per week, which is not that high. The level of activity is apparently highly variable and dependent on the presence or absence of national epidemiological activities, such as in HPAI surveillance or brucellosis surveys.

The fact that project funds were released only partially resulted in cancellation of some activities related to disease surveillance, thus affecting the degree to which the created laboratory capacity has been used and limited on-the-job training. Rehabilitating the veterinary diagnostic capacity was an important step toward restarting disease surveillance, but in a way it was only the easiest step. More difficult will be to put his capacity to good use through effective and efficient sample collection and disease surveillance throughout the country.

Output Eight – Laboratory capacity strengthened for quality control of locally produced and imported veterinary vaccines, drugs and animal food products (animal food safety)

Similarly to output 7, laboratory equipment for the testing of vaccines and pharmaceuticals was provided to the Sheikh Omar Laboratory by the project under this output. Most provided equipments were found satisfactory. Those currently not working are reported below as per the responses to the field survey¹⁶.

Equipment not working properly or not used:

- Mixer Hamilton-Beach (staff needs technical help)
- Co2 incubator (failure in the control board)
- Water path n.2 (failure in heat control)
- Egg incubator (not working)

Intensive training for six weeks for 4 trainees on quality control on drugs and vaccines was held in Morocco. This training was tailored to be training of trainers style. Although the

¹⁴ Dr. Fahim Daher, Director of the Animal Health Department.

¹⁵ Source is indicated as being the General State Company for Veterinary Services.

¹⁶ Dr. Nidal Sudani, Director of the Pharmaceutical Control Department.

national consultant of the project indicated execution of some training inside Iraq, the reports does not show any information on this issue.

8. SUSTAINABILITY

The project has sustainability potential as per the created laboratory testing capacity. The future use and maintenance of this capacity is now mainly in the hand of the MoA and will make national epidemiological surveys possible. However, the respondents to the survey indicated that lack of biological standards and chemical reagents on the national market prevented them from operating at full capacity. It is unclear what would prevent the different laboratories to import reagents and viral or bacterial strains.

9. COST-EFFECTIVENESS

The project implementation was costly but in general cost-effective because it mainly targeted re-storing long-lasting and needed services. In-country training could in theory have been more beneficial and less costly, but this was not possible to arrange because of the security situation. Transport of equipment within Iraq was also expensive but this was unavoidable.

More than 50% of the project's budget went into the provision of equipment and supplies, a ratio which seems high enough for a reconstruction project. The project also delivered a significant training component and when one includes training costs, the percentage of deliverables reaches at least 65% of all project expenditure.

However, changes in project priorities extolled a cost on project outcomes because some outputs or activities were started but not completed, such as the brucellosis vaccination campaign.

10. SPECIFIC CONSIDERATIONS AND ISSUES

10.1 Gender equity in project implementation and results

Both men and women had benefited from the activities of the project including its training programmes and extension activities¹⁷. However, the ratio of trained females to males is not available since the available records on training do not always show the gender of the trainees.

10.2 Intra cluster cooperation and goods/services other agencies supplied/common services utilised

FAO cooperated closely with WHO and UNICEF during and following the HPAI outbreaks in 2006 and 2008. Also for issues of food safety, meat inspection procedures etc, FAO coordinated closely with WHO in the framework of both this Veterinary project and the related UNDG ITF funded D2-17 Food Safety Project, implemented by WHO, UNIDO and FAO together with the Ministries of Health, Industries and Agriculture.

11. CONCLUSIONS AND RECOMMENDATIONS

¹⁷ As some of the respondents to the survey were women and received training in and outside the country.

11.1 Conclusions

The project was implemented under very trying circumstances, and even if important results have been achieved in terms of rebuilding important government services, it must be recognised that these results are only preliminary. The project rebuilt the *capacity* of the Government to collect and analyse epidemiological data, with all the necessary pieces functioning again (diagnostic labs) or newly set up (surveillance systems, disease info centre) but it is too early to tell how much of this capacity will be put to work. So far, the project hasn't made an impact on diseases prevalence in the country, which was its development goal ("improve animal production by reducing losses originating from livestock diseases"). The planned brucellosis vaccination campaign was cancelled and little epidemiological data was collected, a necessary prerequisite to define effective control policies.

It is of course unclear how this ambitious development goal could have been achieved under the security and political situation prevailing during project implementation. Lack of security prevented the execution of some project activities, limited impact and raised costs substantially (e.g. in training). The project had to be remotely managed by the CTA from Amman, which severely limited contacts between FAO and the MoA in Baghdad and Erbil. Very little if any contact was possible between FAO and governorates to coordinate equipment delivery and training activities. Iraqi respondent to the evaluation questionnaires (including MoA personnel) indicated that they wished for more direct interaction with FAO to solve problems related to equipment, selection of trainees, etc., and this frustration was shared by FAO staff. Difficulties in arranging for transport, either because of poor security, lack of transport equipment or lack of fuel, were also mentioned by some respondents as a major constraint to reach out to farmers and collect samples from local veterinary hospitals.

Training was a major objective in this project, focusing on helping the ministry redefine its role away from the direct provision of veterinary services towards animal disease surveillance, quality control and food safety. In a country that has been very much isolated from the rest of the world for two decades and which suffered since 2003 from massive brain drain, the requirements for training continue to be enormous and the project could only respond to a fraction of the needs. Private veterinarians are currently the main service providers to farmers and they will require much refresher training on field diagnosis, modern drugs and treatment protocols, surgical interventions and other practical veterinary issues.

More attention should also be directed towards disease surveillance and vaccination campaigns. Infectious diseases constitute major production constraints. As correctly emphasized in the change management training modules imparted by the project, disease surveillance falls squarely within the mandate of the State. However, except for brucellosis, little is known regarding the prevalence of major infectious diseases in Iraq. Drawing an epidemiological map for major infectious diseases is an essential issue when planning for control strategies.

Longer-term activities such as developing an appropriate institutional veterinary structure and animal health policy were initiated by the project but will take more time than the project duration allowed.

Finally, FAO will have to adapt its offer of services to the new situation created by the new US policy to gradually hand over security duties to the Government and withdraw foreign troops, initially from most urban areas (a step planned for June 30) and eventually from the country. The following recommendations are premised on the hope that this transition will proceed safely and result in a progressive improvement of the security situation in the country, allowing for a more diversified portfolio aiming at a resumption of developmental activities.

11.2 Recommendations

1. As a way to maintain a constant, independent channel of information open between beneficiaries and project staff, FAO should set up via one or several third parties (Iraqi companies or NGOs) a monitoring capacity within Iraq able to perform frequent monitoring missions throughout the country.
2. If future funding prospects materialise and if the security conditions continue to improve, FAO should try and re-gear its training provision capacity towards more in-country training in order to make training events more client-oriented and relevant to local conditions.
3. More emphasis should be placed on allowing a fairer share of training opportunities for staff working at the decentralized and/or governorate level, including those under the Kurdistan Regional Government.
4. Capacity building should also reach the private sector since it plays a unique role in delivering veterinary services to farmers in post-war Iraq.
5. An external evaluation of the current veterinary services is required to plan for subsequent capacity/institution building and animal health policy development. It could be achieved using the OIE tool for assessing the Performance of Veterinary Services (PVS).
6. If future funding prospect materialise, FAO should try and re-start its support to national vaccination efforts.
7. All the recently re-written regulations and disease control measures should be published and distributed to both public and private veterinary clinics.
8. The set-up and use of a disease information system, including drawing epidemiological maps for major infectious diseases, is an important activity that should be followed up. More training and supervision from FAO will be needed in this area.

Annex I: Terms of Reference for the Evaluation of Five FAO Projects Implemented in Iraq

20 March 2008

A. Background

Towards the end of January 2008, TCES requested PBEE to investigate whether, how and at what cost could five FAO projects implemented in Iraq be evaluated during the year 2008. The projects are the following:

- OSRO/IRQ/402/UDG - Assessment and rehabilitation of community irrigation schemes and restoration of irrigation water supply in rural areas (US\$5.1 ml)
- OSRO/IRQ/403/UDG - Improvement of water supply and drainage provisions through the rehabilitation of pumping stations (US\$25.1 ml)
- OSRO/IRQ/404/UDG - Assessment, emergency maintenance and rehabilitation of the community irrigation schemes and restoration of water supply in rural areas (nearly US\$17 ml)
- OSRO/IRQ/406/UDG - Restoration of veterinary services in Iraq (US\$8.7 ml)
- OSRO/IRQ/407/UDG - Restoration and Development of Essential Livestock Services in Iraq (US\$8.5 ml)

All these were funded out of the UNDG-managed Iraq Trust Fund (ITF) as part of the International Reconstruction Fund Facility for Iraq (IRFFI)¹⁸, and were prepared and approved rather rapidly in 2004, leaving ample flexibility during implementation to adapt the project objectives and priorities to a rapidly changing environment.

The **first three projects above (402, 403, 404)** are dealing with the same issues of irrigation and drainage. Agricultural production in central/southern Iraq relies almost entirely upon irrigation. However, salinization and waterlogging have affected most of the irrigation schemes built over the years between the Tigris and Euphrates rivers. The shallow water table complicates the management of salinity by restricting the downward leaching of salts through the soil profile. The construction in the 1980's of the Main Outfall Drain (MOD) collecting drainage waters and channelling them to the Arab Gulf was in response to the overall drainage problem. However, due to the sanctions and conflict during the last decade many connections of primary drains to the MOD were not implemented. The lack of maintenance of drainage canals and the operating problems on many of the drainage pumping stations during the last decades (including lack of electrical power during large parts of the day, poor design, lack of maintenance, and looting during the latest conflict) have contributed to further worsening of the drainage problem. In affected areas, yields of wheat and barley crops have decreased substantially. Important areas are not cultivated, affecting severely farmers' revenues and income generation. The Iraqi Ministry of Water Resources (MoWR), following its restructuring after the last war, has placed high priority in reclaiming irrigated agricultural lands from perennial flooding and salinity due to poor drainage.

¹⁸ The IRFFI was launched early in 2004 by the United Nations and the World Bank to help donor nations channel their resources and coordinate their support for reconstruction and development in Iraq. The Facility has two trust funds for donor contributions, each with its own characteristics and procedures: the World Bank Iraq Trust Fund, administered by the World Bank Group and the United Nations Development Group (UNDG) Iraq Trust Fund (ITF), administered by UNDP on behalf of Participating United Nations Organizations. As of 30 November 2007, deposits in the UNDP ITF amounted to US\$1.274 billion, most of it from the EU and Japan.

The **fourth and fifth projects above (406 and 407)** deal with the restoration of veterinary and animal production support services, which were much affected by looting in 2003. This situation increases the risk of occurrence and spread of contagious and infectious diseases, which could have detrimental effects on livestock-based livelihoods and on the supply of protein-rich food (milk, cheese, yoghurt, meat, eggs) to the population, thus endangering food security as well as food safety. The collapse of the livestock extension services and governmental breeding and artificial insemination programmes was reported to have serious consequences on the livelihood of Iraqi pastoralists and livestock or poultry farmers.

A summary of these projects as designed is provided in Annex 1.

The status of implementation of the projects can be summarized as follows:

OSRO/IRQ/402/UDG - Assessment and rehabilitation of community irrigation schemes and restoration of irrigation water supply in rural areas:

- Initially the project was located at Ramadi, for which FAO undertook a feasibility study and tender. This was subsequently changed to Hilla-Hashimiya at the request of the MoWR, resulting in substantial delay.
- A contract for excavation work on the main drain of the Hilla-Hashemiya system was awarded to an Iraqi company. By mid-2007, the total excavated materials amounted approximately to 1.7 ml m³ which represent 85% of the total contract quantity. However, FAO ended the contract as the Al Shomally pumping station dewatering the drain broke down and was not being repaired by the MoWR. The contractor could not continue the excavation works and was charging the Organization hiring costs of the equipment. The contracted quantity of excavation is sufficient to drain out more than 90% of the irrigation schemes surrounding the Hilla Hashimiayh drain but would in any case be insufficient to complete the rehabilitation of the drain due to higher than expected levels of siltation.
- The component dealing with water user associations and the training of farmers were dropped considering the poor security of the area. These activities were also deemed less critical in the Hilla-Hashimia project than they were in originally-planned Ramadi.
- The following equipment was procured: one excavator, two tipper trucks, one fuel tanker, two water tankers.
- One training course on "Operation and Maintenance of Irrigation and Drainage Schemes" was held for 10 MoWR engineers at Cranfield University, England.
- No progress has been achieved yet on the installation of piezometers for monitoring the water table and salinity.

OSRO/IRQ/403/UDG - Improvement of water supply and drainage provisions through the rehabilitation of pumping stations:

- The project was originally intended to rehabilitate 125 priority pumping stations, a figure not based on precise assessments of each pumping stations. A complete and detailed status report for the first 12 priority pumping stations to be rehabilitated was later produced, and a risk management study completed in 2004 indicated that for all these, equipment to be replaced would have to be manufactured specifically, as original models were not in production anymore. This led to significant unit cost escalation. As a result it was subsequently agreed to rehabilitate only 12 stations, later reduced to 8, with work one additional station being conditional on further funding.
- The status of work is as follows:
 - Kirkuk pumping station: spare parts in value of US \$ 1,180,511 have been procured and delivered.

- Mandali 1 pumping station: Replacement of pumps in value of US \$ 3,815,836 have been delivered to site, installed and handed over to the MoWR .
- Al Sijilla, North Suwira and Al-Amiriyah: the pumps and other equipment have been delivered in 2007. MoWR have agreed to undertake their installation, in 2008.
- Salman Pak, Al Hussainyah and Hutaman: equipment was manufactured and delivered in 2007. While for Salman Pak installation of the delivered equipment will be performed by MoWR due to security situation, installation of the other two stations will be completed in 2008 by FAO.
- Al Shomally: survey report and tender for services completed. Rehabilitation of this station is subject to further funding.
- Formal training programme successfully completed.
- A pumping station database was designed and is being filled, covering all 305 pumping stations under the MoWR.

OSRO/IRQ/404/UDG - Assessment, emergency maintenance and rehabilitation of the community irrigation schemes and restoration of water supply in rural areas:

- The rehabilitation of the Hiran scheme (145 ha; 180 farming families) was completed early in 2006.
- The equipment for Mussaib pumping station (Drain 22) will be installed on site in early 2008. The rehabilitation of Mussaib Irrigation Scheme (3,000 ha; 2,500 farming families) is well under way and by mid 2007 95% of drain cleaning, 80% of the irrigation canal lining, 80 % of the road and 80% of the culverts had been completed.
- The originally planned work on Al-Thraima scheme was replaced under MoWR request by the supply of grouting equipment for urgent rehabilitation works at the large Mosul Dam, where foundations require continual grouting to maintain the dam's stability. The current machinery is old and unreliable and cannot keep pace with erosion under the dam. A purchase order for drilling rigs, spare parts and materials was placed in September 2006 and the rigs were delivered to site May/June 2007. MoWR will complete works using their own resources.
- Seeds and fertilizers in value of US \$ 5.3 million were procured and distributed.
- The Kalar Irrigation Project rehabilitation remains indefinitely postponed, following a weak technical dossier for which both MoWR and AGLW requested major changes requiring detailed field studies, which were not practical under the deteriorating security situation. There were also inadequate funds in the budget to take implementation any further.
- Three aquatic weed harvesters and complete surveying instrumentation including ten survey stations, computers and plotters have been procured. Three Iraqi engineers have been trained by the manufacturer in the maintenance and use of the recently delivered harvesters.
- A total of 30 Iraqi engineers have attended and successfully completed 6 to 8 weeks training programmes in the Netherlands and Italy.
- Training of Water Users Associations is being undertaken in March 2008

OSRO/IRQ/406/UDG - Restoration of veterinary services in Iraq:

- Project funds were released late, only partially and in several installments, making planning difficult and leading to slowdowns and even a freeze on project activities from mid 2006 until mid 2007. Due to this long freeze in combination with the late availability of the last tranche of funds, an extension of the project until July 2008 was required and approved.¹⁹

¹⁹ Despite the project being approved with a budget of 10.5 million US\$, only 8.7 million were eventually given to FAO.

- Five training modules about change management were organized by FAO for Iraqi veterinary managers from the central Veterinary Services in Baghdad and from the border inspection posts.
- 25 veterinary publications covering many aspects of the veterinary science have been delivered.
- Equipment for Avian Influenza disease prevention, diagnosing and control has been delivered. FAO has facilitated and advised the MoA during the outbreak of HPAI in northern Iraq in 2006, and is currently (late February 2008) again doing so for a suspected new case in Basra.
- Review of disease control policies, and drafting of strategy papers. The HPAI preparedness plan as now prepared by the MoA will again be reviewed in May 2008. For Rinderpest, FAO is advising and assisting the MoA in its OIE application for a disease-free status.
- The foreseen construction of nine new veterinary clinics did not materialize. First, MoA requested to cancel the veterinary clinics since other funding sources were found for that, and to give priority to assistance to a national Brucellosis vaccination campaign. Then, due to the funding shortage at that time, procurement of the massive amount of vaccines had to be postponed, and was eventually replaced by support to control measures for the HPAI outbreak and for future HPAI prevention and preparedness measures.
- Almost 200 veterinarians from central, provincial and district level have been trained abroad (Jordan, USA, Australia, Morocco, Egypt, UK, Germany) on a wide range of veterinarian topics and disciplines.
- 2 Central and 18 Governorate veterinary laboratory hospitals have been equipped and are available for disease control and surveillance work.
- A national disease information system has been set up and equipped.
- A wide range of required goods was identified with and provided to the MoA Veterinary Department and the State Veterinary Company, such as seven cold stores, 15 refrigerated trucks, six pickup trucks, two forklifts, 100 motorcycles, a freeze dryer, seed strains for livestock vaccine production, reagents, veterinary field supplies, and veterinary laboratory supplies, chemicals and equipment.

OSRO/IRQ/407/UDG - Restoration and Development of Essential Livestock Services in Iraq:

- 30 Holstein Friesian bulls were imported from Australia and have started production of high quality semen, which is being distributed in liquid nitrogen for artificial insemination in the district veterinary centres nationwide. One of the two procured liquid nitrogen plant came into production in February 2007, and staff was trained on its installation and maintenance at the supplier's premises in the Netherlands. Due to the prevailing security situation in Abu Ghraib where the livestock centre is located, MoA has decided to install the second liquid nitrogen unit in Mosul or Basra. Training courses on artificial insemination were given in France and Morocco.
- 1000 Awassi sheep from Turkey and 200 Shami goats from Cyprus were procured and the construction of the required Livestock Breeding Center in Abu Graib, Baghdad, finished by the end of 2006. Both have produced already two generations of offspring for distribution, and part of the increasing breeding flock has also been transferred to the Mosul Breeding Centre.
- Similarly, the MoA changed the location of the Central Feed Analysis Laboratory from Abu Ghraib to the Baghdad city centre. Construction of the premises was completed in the second half of 2007. All the planned equipment has already been delivered and some final additional requested equipment was procured and will be delivered in the first half of 2008. A company was contracted for installation, training and maintenance. Staff has been trained on feed analysis techniques in the UK, the Netherlands and Egypt.

- Two training of trainer courses on extension, husbandry and small ruminant production took place in Syria and Morocco for a group of 20 Iraqi livestock extension specialists. This group of trained staff on its turn has delivered ten training courses for 95 field staff from all governorates extension centers and three courses for 36 farmers have been conducted. Various local symposiums in the field of animal production (calf fattening, artificial insemination, etc.) have been organized.
- A 3.5 week training course on bovine embryo transfer technologies and applications in genetic improvement was also delivered to three Iraqi veterinarian specialists in Wageningen University, the Netherlands. Necessary equipment to put this technology into practice has been provided to the Abu Graib livestock centre.
- In order to support the implementation of a national livestock survey (a top priority of the MoA/Livestock Department), a planning workshop was organized followed by a training course on survey techniques, interviewing, data collection, data analysis, etc. All required communication, GPS and computer equipment has been procured and delivered to the MoA which is planning to start the survey in 2008

B. Purpose of the Evaluation

The five projects have all been formulated together and will all come to an end at various points in 2008. They also deal with the same thematic area: rehabilitation of agriculture support services and infrastructure, and would hence benefit from being evaluated as a cluster.²⁰

The evaluation is intended, as the projects draw to a close, to provide accountability to and issue recommendations for the Government, FAO and the donor on the further steps necessary to consolidate progress and ensure achievement of projects objectives. Any further need for external assistance should also be identified.

C. Scope of the Evaluation

The mission will assess the:

Project identification, design and planning issues:

- a) Quality of project design; clarity, consistency and realism of the project's inputs, activities, outputs and objectives, including specification of targets, identification of beneficiaries, prospects for sustainability, realism and clarity of institutional and managerial setup, feasibility study and assessment of risks;
- b) Appropriateness of subsequent changes in project locations or technical options;
- c) Relevance and technical soundness of the projects as designed and later amended to the rehabilitation and development priorities of the Government of Iraq and the target population.²¹

²⁰ It should be noted that a sixth project, OSRO/IRQ/702/UDG – Rehabilitation and Maintenance of Traditional Irrigation Schemes in Resettled Areas, could also be included in the current evaluation in order to review the work of FAO on smaller, farmer-managed irrigation schemes in addition to state-managed ones.

²¹ The evaluation should take into account the fact that the original project design was rushed in view of the launching of IRFFI and the immediate need for project proposals. This, as well as evolving requirements from the Iraqi authorities and a fast deteriorating security situation, necessitated significant modifications in project design. Therefore, more attention should be given to the relevance of the projects as amended than to the quality of the original design, recognised as rather weak.

Project management:

- d) Efficiency and adequacy of project implementation modalities; in particular, assess how the project teams managed to ensure project monitoring and oversight in spite of having to operate from Amman, Jordan due to the adverse security situation in Iraq.
- e) Availability and timeliness of funds from the donor and the Government (as applicable) and its consequences; extent of national support and commitment; quality of administrative and technical support by FAO;
- f) Efficiency of implementation: quantity, quality, cost and timeliness of FAO and counterpart inputs and activities;
- g) Effectiveness and use of monitoring and self-evaluation for project steering and adaptive management;

Project results and impact:

- h) Project results, including a full and systematic assessment of outputs produced to date (quantity and quality as compared with workplan and progress towards achieving the immediate objectives).
- i) Degree of utilisation of significant equipment procured under the projects, notably the installed pumping equipment, aquatic weed harvesters, the cattle semen production plant, laboratory equipment, etc.
- j) Assessment of the number of counterpart staff trained, effectiveness and sustainability of human resource development activities for counterpart ministries, usefulness of such technical training, study tours and change management training courses.
- k) Assessment of the number of beneficiaries²² and of their degree of vulnerability; equity issues in the distribution of projects benefits, e.g. female-headed households vs. male-headed ones, small-holders vs. large land owners.
- l) Impact of the projects, e.g.:

Livestock and veterinary projects:

- impact on the capacities and capabilities of veterinary and AI services, on production levels and rural livelihoods, and (to the extent possible) on the sanitary situation of livestock in the country and on food safety;

Irrigation schemes and pumping stations rehabilitation:

- impact on the area put under cultivation (including through ad hoc, farmer-built system extensions, which appear to be numerous), on production levels, on farmer's livelihoods and food security, and (to the extent possible) on water quality downstream (reduction of pollution of water for human and livestock consumption?);
- progress achieved towards the creation or capacity building of water users associations; participation of farmers in operation and maintenance of the rehabilitated irrigation systems; policy lessons in this regard;

General:

- impact on the capacities and capabilities of the various national implementing partners, in particular within Government.

²² The project documents were prepared by technicians with little attention devoted to social and economic dimensions. The number of beneficiaries is generally estimated based on technical ratios, e.g. seven persons or one family per hectare of land rehabilitated.

- m) To the extent possible, cost-effectiveness, project cost per beneficiary, economic profitability and sustainability of the projects, notably of the rehabilitated irrigated schemes. Are these costs reasonable and can the schemes be sustained economically, without the recourse to state or international assistance?
- n) Prospects for sustaining projects' benefits after the termination of the project.
- o) Prospects for the replication of the projects in other regions, if applicable;

Based on the above analysis the mission will draw specific conclusions and make proposals for any necessary further action by Government, FAO and/or the donor to ensure sustainable development in these areas, including any need for additional assistance in general and specifically with respect to activities of the individual projects prior to completion. The mission will draw attention to any lessons of general interest, e.g. on the relevance of similar rehabilitation projects in a country suffering from severe insecurity, or on how to manage and monitor projects in insecure countries.

D. Proposed Methodology

The methodology is premised on the fact that the international evaluators will most likely *not* be allowed to travel inside Iraq, except perhaps in the North of the country. Even national consultants will find their capacity to move within the country severely limited. This may have implications on the type of information that can be collected, its quality and the time needed to collect information. Some flexibility in conducting the evaluation will have to be built on in the process.

The general approach proposed is therefore to combine an evaluation mission by international consultants (and/or FAO staff) to Amman, Jordan, with as many means of independent verification as possible. The following tools are recommended to this end:

- Preparatory work by the Amman Office would consist in informing the relevant Iraqi counterparts about the evaluation, as well as collating all necessary documentation and lists / contacts of beneficiaries.
- One or several²³ missions by international consultants (and/or FAO staff) to Amman, Jordan, in order to interview project staff, review project documentation, and meet with counterparts from the Government of Iraq who will have to be flown in. If a trip to northern Iraq is possible, a visit to the Erbil governorate would prove particularly useful to verify service provision in the field, e.g. veterinary services and the rehabilitation of the Hiran irrigation scheme.
- A survey of selected projects sites by independent teams would be the best way to ascertain progress and results. Three Iraqi teams would probably be needed, each operating in a broad region: north, centre, and south. These teams could visit rehabilitated irrigation schemes and interview farmers groups there. They could also try to interview beneficiaries of the veterinary and artificial insemination services as well as the recipient of the goats and sheep, at least if lists of beneficiaries can be made available for these projects and components.²⁴
- These national surveyors, with the assistance of farmers, could photograph and sketch the visited rehabilitated irrigation schemes, indicating where are the main infrastructure that were rehabilitated, the farmer-constructed sub-schemes, the cultivated and non-cultivated land, and where are the low-lying, water-prone areas.

²³ The international consultants will have to meet at various points in time (for preparation, discussion, triangulation and reporting) with their national surveyors/consultants.

²⁴ Tracking and interviewing a sufficient number of users of veterinary and AI services could prove a significant challenge, depending on the quality of book keeping in vet clinics and the AI centre. Another factor is transhumance: some of the clients could be quite mobile. The livestock element of the survey will be dropped if it proves unfeasible.

These sketches will prove useful to interpret satellite images but also might constitute useful, quick-and-dirty documents in their own right to gauge impact.

- Satellite imagery of selected project sites where an impact can hopefully be evidenced from such images, i.e. for irrigation and drainage projects that have started delivering benefits by early 2008. The sites of Hiran, Hilla-Hashimia, Al Mussaib and Mandeli have tentatively been selected based on implementation progress, and a review of available images and costs is underway thanks to FAO/NRCE (see Annex 2). On the images accessed so far, free standing water and saline areas seem to be easily identified (Annex 3). The best period of year for taking the “before” and the “after” pictures would probably be spring, as it is the period of year with both the highest chances of flooding and the greatest vegetative growth.
- Email or telephone survey of Government staff having undergone training, so as to assess the quality of the training and the degree to which it was useful to the staff in question; the extent to which the current “brain-drain” in Iraq has affected capacity building efforts could also be assessed through telephone interviews.

E. Human Resources for the Evaluation

The following consultants and staff resources are envisaged:

- Evaluation Team Leader: a specialist in evaluation of agriculture rehabilitation programmes, possibly a staff from PBEE or an independent consultant (50 days in Rome, Amman and possibly Erbil). Knowledge of Arabic would be an asset.
- Irrigation Specialist: an international consultant with experience in large-scale irrigation projects and equipment, tasked with the assessment of all the available data about projects 402, 403 and 404 and with the evaluation of their technical quality and likely impact (25 days, mostly in Amman and possibly Erbil).
- Livestock Specialist: an international consultant, possibly a veterinarian with experience in both animal health and artificial insemination programmes, tasked with the assessment of all the available data about projects 406 and 407 and with the evaluation of their technical quality and likely impact (25 days, mostly in Amman and possibly Erbil).
- Remote Sensing Specialist: an international consultant who would be hired by FAO/NRCE for the analysis of procured satellite images (tentatively set at 15 days pending NRCE estimate).
- National Survey Coordinator: an independent consultant of Iraqi nationality, he or she will be in charge of coordinating the field surveys, controlling data quality, and reporting on the survey and data entry process. He or she should be able and willing to travel to all parts of the country. If that is impractical for security reasons, one survey coordinator could be hired for the central regions around and south of Baghdad, while another coordinator deals with northern areas. This solution would be sub-optimal though as it could increase surveyor bias (60 days in total).
- Surveyors: an estimated 15 surveyors would be hired (20 days each). Ideally, all the surveyors should be trained in Amman by the Team Leader and the National Survey Coordinator. If visas cannot be obtained for 15 people, then only two or three supervisors could be trained in Amman. The teams should be equipped with digital cameras and with GPS handsets in order to ground-truth satellite images, e.g. identifying water-logged land in some irrigation schemes.

The Survey Coordinator and the Surveyors could of course be contracted through the same consulting company.

F. Timetable

	Feb. 08				March				April				Mai				June				July				August				Sept.				Oct.				Nov.				Dec. 08			
Activities	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TORs preparation	■	■	■	■																																								
Decision to go ahead with evaluation							■	■																																				
Procurement of satellite images																																												
Analysis of satellite images																																												
Preparation of background doc. by FAO Amman																																												
Call for interest for consultancies / impact assessmt.																																												
Selection & contracting of evaluators / impact assessmt. teams																																												
Training for impact assessment (Jordan)																																												
Impact assessment surveys																																												
Impact assessment: analysis and report writing																																												
Evaluation team: consultations at FAO Headquarters																																												
Consultations in Amman / possible mission to Erbil																																												
Debriefing in Rome																																												
Drafting of Evaluation Report																																												
Comments on the draft																																												
Final report																																												

G. Reporting

The evaluation is primarily addressed to FAO (and notably TCES), to the Government of Iraq, and to the UNDG ITF Steering Committee.²⁵

A draft version of the report will be prepared by the Team Leader and presented to FAO/TCES. Based on comments received from FAO colleagues, PBEE will then prepare a second draft for broader circulation to and discussion with the Government of Iraq and the ITF Steering Committee.

The procedures for the UNDG ITF request individual project reports. However, these five individual reports will use some common material especially on management issues (funding, planning, monitoring, etc.), since the peculiar form of management of FAO Iraqi projects reflects the security conditions in the country and hence applies equally to all projects.

²⁵ Important donors of the ITF could also be included in this group of primary stakeholders.

Annex II: List of Reviewed Documents

- Stocktaking Review of the International Reconstruction Fund Facility for Iraq. Volume One: Summary Report Draft Report, JANUARY TO NOVEMBER 2008. Volume Two: Project Performance Reports, October 2008 - Scanteam

- Memorandum of Understanding Between The Participating UN Organizations and The United Nations Development Programme regarding the Operational Aspects of the UNDG Iraq Trust Fund, January 2004

- End of Assignment Report - Khaled Ben Khaled, period 06 August 2007 - 22 Dec. 2007
- End of Assignment Report - Khaled Ben Khaled, period 25 January - 11 July 2007
- End of Assignment Report - Khaled Ben Khaled, period 16 May 2006 - 10 January 2007
- End of Assignment Report - Khaled Ben Khaled, period 14 February - 30 June 2008
- Hand-over Report, Rod Kennard, Livestock Project Manager, February 14 2006
- Hand-over Report, James Airey, Livestock and Veterinary Projects Coordinator, 29 May 2005
- Handover Notes, Raymond Frederick Webb, Project Manager, 21 May -19 Nov. 2005

- Project document for project OSRO/IRQ/406/UDG / C5 – 08
- 6-monthly progress reports and final completion reports for same

Annex III: Persons Met and Interviewed

FAO:

Vinet, Rodrigue	Senior Project Coordinator, TCES, FAO Rome
Rudi Van Aaken	Operation Officer, TCES, FAO Rome
Fadel El-Zubi	FAO Representative, Amman Office
Dr Hilal Mohammed	CTA Veterinary and Livestock Projects
Rajan Chhabra	Assistant FAOR Programme
Anwar Jahfar Ahmed	FAO Coordinator in Erbil
Dr. Khaled Ben Khaled	ex-CTA for 406 and 407

Government:

Baghdad:

Basem Al-Adhadh	Director of Animal Health, MoA Director, State Company for Animal Resource Services
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Erbil:

Anwar Omar Qader	Director of Planning, MoA
Abd Ameer	Director of Monitoring, MoA
Ibrahim Mustafa	Director of Veterinary Services, MoA
Bahman Hasan Ali	Director of Pharmaceutical Stores, MoA
Rifat Hidayat	General Director for Livestock, MoA
Ramadan Mohd	Director for Livestock, MoA

AI Centers in Governorate Hospitals:

Dr. Faris Ibraheem	Director, Abu Ghraib AI Center
Dr Kamel Herash	Assistant to the Director, Abu Ghraib AI Center
Dr. Abas Jameel	Chief, Animal Health Unit, Abu Ghraib AI Center
Dr. Mohammad Mashhadani	Veterinarian, Abu Ghraib AI Center
Dr. Amer Bahjat	Veterinarian, Abu Ghraib AI Center
Dr. Salah Khaleel	Director, Fadeliah AI Center
Dr. Iman Shaker	Veterinarian, Fadeliah AI Center
Dr. Mshtaq Azizi	Director, Basra AI center
Dr. Majeed Abadi	AI chief, Basra AI center
Abdalameer	Store manager, Basra AI center
Abdelkareem Tomah	Responsible for vaccination, Basra AI center
Mohammad Hamdan	AI technician, Basra AI center
Abdelkareem Zahra	Director, AI-Mothana Governorate Veterinary Hospital
Kareem Hamadi	Director, AI unit in AI-Mothana
Mohammad Mohammad	Veterinarian, AI-Mothana
Jamal Nader	Director, Erbil AI Center
Dr. Monadhil A. H. Kareem	Director, Taji Veterinary Hospital
Dr. Noori Falih Naseef	Veterinarian Consultant, Taji
Mohammad Ziyara Mushjal	Agriculture Senior Advisor, Taji
Dr. Mohammad Akram	Artificial Insemination Officer, Dhok
Dr. A. R. Sami Ahmed	Senior Insemination Artificial Officer, Dhok
D. Raheem Rasn Abu Dakka,	Director, Missan Veterinary Hospital
D. Ahlam Abdel Globe	Director, Artificial Insemination Division,
D. Jamil Hussein	Veterinarian, Missan
Sabah Abdul-Hassan Kazem	Senior Artificial Insemination Officer, Missan
Dr. Mothafar Dawood	Director, Wasit Veterinary Hospital
Dr. Iman Abdul Rasiq	Assistant Director, Wasit Veterinary Hospital
Dr. Mohammad Bzoon	Director, Livestock Division, Wasit
Dr. Sadiq ja'far Issa	Director, Artificial Insemination Division, Wasit

Dr. Khaleel Amin Wajid Director, Nasiriyah Veterinary Hospital
Dr. Majid Khadhim Ghaseeb Veterinary & Administrator, Nasiriyah
Moahmmed Sajit Abdul Ridha Artificial Inseminator, Nasiriyah
Adnan Nasir Husein Artificial Inseminator, Nasiriyah

Breeding Stations:

Hamoud Ejel Director, Abu Ghraib Breeding Station
Nizar Khalel Director, Al-Dowar Breeding Station
Ahmad Taha Director, Physiology Laboratory, Abu Ghraib Breeding
Station

Central Veterinary Diagnostic Laboratory (Sheik Omar):

Dr. Fahim Daher Director, Health & Food Safety Dept.
Dr. Diao Owni Assistant director, Health & Food Safety Dept.
Dr. Nidal Sudani Director, Pharmaceutical Control Dept
Dr. Ali Hamood Assitant Director, Pharmaceutical Control Dept
Mohammad Ahmad Laboratory technician

Others:

Dr. Hydar Mahmmoud Private veterinarian