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**[IRFFI/UNDG IRAQ TRUST FUND (UNDG ITF)]  
MPTF OFFICE GENERIC FINAL PROGRAMME NARRATIVE REPORT  
REPORTING PERIOD: FROM Oct.2008 TO Dec. 2012**

<b>Programme Title &amp; Project Number</b>
<ul style="list-style-type: none"> <li>• Programme Title: Modernization and Development of the Dairy Cattle Sector in Iraq</li> <li>• Programme Number : A5-24</li> <li>• MPTF Office Project Reference Number:<sup>2</sup></li> </ul>

<b>Country, Locality(s), Priority Area(s) / Strategic Results<sup>1</sup></b>
Iraq - National
Agriculture and Food Security Sector

<b>Participating Organization(s)</b>
<ul style="list-style-type: none"> <li>• Food and Agriculture Organization of the UN (FAO)</li> </ul>

<b>Implementing Partners</b>
<ul style="list-style-type: none"> <li>• Iraq Ministry of Agriculture</li> </ul>

<b>Programme/Project Cost (US\$)</b>	
Total approved budget as per project document:	<b>USD 4,424,670</b>
MPTF /JP Contribution <sup>3</sup> : by Agency	<b>USD 4,424,670</b>
Agency Contribution	
Government Contribution:	<b>USD 13,400,000 (in kind under MOA)</b>
Other Contributions (donors)	
<b>TOTAL:</b>	<b>US\$ 17,824,670</b>

<b>Programme Duration</b>
Overall Duration ( <i>months</i> ): <b>50 Months</b>
Start Date: <b>15 October, 2008</b>
Original End Date: <b>15 October, 2010</b>
Actual End date : <b>31 December, 2012</b>
Have agency (ies) operationally closed the Programme in its (their) system? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Expected Financial Closure date: <b>31 December, 2013</b>

<b>Programme Assessment/Review/Mid-Term Eval.</b>
Evaluation Completed
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date: <i>dd.mm.yyyy</i>
Evaluation Report - Attached
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date: <i>dd.mm.yyyy</i>

<b>Report Submitted By</b>
<ul style="list-style-type: none"> <li>○ Name: Hilal Mohammed</li> <li>○ Title: Project Manager</li> <li>○ Participating Organization (Lead): FAO</li> <li>○ Email address: <a href="mailto:hilal.mohammed@faoiraq.org">hilal.mohammed@faoiraq.org</a></li> </ul>

## EXECUTIVE SUMMARY

The project aimed at continuing support to the development and adoption of embryo transfer technologies, establishment of regional antennas to the central artificial insemination facilities and setting-up efficient systems of milk collection as well as semen distribution to small-medium size dairy farmers. Milk collection services were organized around regional dairy producers groups with linkages to milk processing facilities. Performance recording schemes linked to the milk collection and delivery process will be initiated with participating farmers.

The project used a strong participatory approach, involving MoA, farmers, NGOs, civil society representatives and other stakeholders at the local level, and made building of their institutional capacity a priority. It was implemented with full participation and significant resource inputs from the Iraqi Ministry of Agriculture and allied institutions. FAO provided technical assistance, expertise and management services to the project.

The project directly supported and linked up to the ICI priority to develop a stable, competitive and sustainable agriculture to enhance food security and rural incomes, generate rural employment, diversify economic growth and protect the natural environment, by:

- Strengthening critical public support organization through capacity building for agricultural planning, monitoring, oversight, research, extension, disease control, and quality standard.
- Developing capacity of small agricultural producer groups, small agricultural marketing intermediaries, small processors and value adding chains.

The program directly supported and contributed to increase production and improve productivity in the agricultural and livestock sectors to achieve self sufficiency in the major food commodities and secure food security for the Iraqi population.

The project focused on the following main interventions to address these constraints:

- Development and adoption of embryo transfer technologies, along with generalization of artificial insemination techniques for accelerated breeding and genetic improvement of the dairy herds;
- Strengthening extension services to achieve an increased milk production and productivity;
- Organizing the production base through the formation of producers groups and associations;
- Setting-up efficient milk collection and marketing systems.

### I. Purpose

The project builds upon achievements of completed FAO emergency assistance programs to Iraq in re-establishment of essential livestock services which have collapsed due to widespread looting and damage during the last war in 2003. The program introduced innovative techniques for efficient cattle breeding and management and worked closely with government institutions and producers to build their capacities in organizing the production base at grassroots level with the aim of increasing milk production quantitatively and qualitatively, reducing post-harvest losses, and creating market and employment opportunities along the dairy value chain in both rural and urban areas. The Iraqi population benefited from improved income, nutrition, health and well being.

Outcomes of the programme in relation to the appropriate **Strategic UN Planning Framework (e.g. UNDAF) and project document (if applicable) or Annual Work Plans (AWPs) over the duration of the project.**

## **NDS:**

The project is designed to directly contribute to Iraq's National Development Goal number 1 to "Eradicate Hunger and Poverty" through its first pillar (Strengthening the foundations of economic growth), which foresees to:

- Transform the structure of the Iraqi economy to allow for a greater role for Agriculture, and;
- Establish agricultural demonstration sites throughout Iraq to reinvigorate crop and livestock production and boost rural job creation.

In the light of this project, the following NDS prioritized actions taken for this:

- Development of a viable agricultural research and extension service to develop and disseminate ...successful production practices;
- Increasing production and productivity.

Moreover, the project also increased primary milk production and availability on the market of milk and milk products, thereby alleviating the people's dependency on the Public Distribution System (PDS) which is also an intention cited in the NDS.

## **ICI:**

The International Compact with Iraq in its Agriculture Strategy has specified goals and objectives as follows: "To develop a stable, competitive and sustainable agriculture to enhance food security and rural incomes, generate rural employment, diversify economic growth and protect the natural environment."

The following ICI benchmarks with indicative actions are relevant to the project:

- Benchmark # 4. Improve institutional and regulatory underpinning of public agriculture;  
Indicative actions: over 2008-2010, strengthen the technical and management capacity of agricultural organization (priority action) JMM 4-2008
- Benchmark # 5. Carry out investment plans;  
Indicative actions: By 2008, develop financing plans and mechanisms including public and private sources (priority action):
  - Rehabilitate damaged physical infrastructure;
  - Improve delivery of public agriculture services
  - Improve the efficiency of agricultural information services.

## **Sector Team Outcome(s):**

The project will contribute to the following Agriculture and Food Security Sector Outcome:

- Enhanced Production and Productivity in the Agricultural Sector

## **Programme/Project Outcome(s):**

The project outcomes are as follows:

- Enhanced production and increased productivity of milk and meat of the dairy herds in Iraq
- Strengthened rural and institutional technical and management capacity in the context of dairy herds
- In large the private sector base for participation in the development of dairy sector

## **II. Programme Results Assessment**

### **IP Outcome 1: Enhanced production and increased productivity of milk and meat of the dairy herds in Iraq.**

- IP Output 1.1: Regional semen distribution centers established, equipped and active.

The establishments of the regional semen distribution centers were cancelled due the budget constraints. In the second project steering committee meeting the Ministry of Agriculture decided to give priority for other activities and put the implementation of the activities under this output on hold pending on additional funding, which was not received.

- IP Output 1.2: Embryo transfer techniques implemented for dairy cattle breeding.

The project Identified beneficiaries in five sub districts related to Wast and Salah ALdeen governorates, using results of Livestock survey. Due to delay in releasing the data from MOPD, an initiative was taken by the field staff and a data regarding the all mobile facilities, equipment exist for embryo transfer technologies were collected.

Field demonstrations were organized for small and medium size farmers. Local training sessions and demonstrations conducted in Iraq on good practices in milk quality and production and dairy production system especially the embryo transfer techniques for farmer's organizations into groups. The training conducted in late January-early February, 2013 in 5 different locations (Swera, Eshaki , Al-Taji, Haffriya and Wehda) for 120 participants in total. The reason behind conducting this activity after project completion goes to the agreement reached with Ministry of Agriculture to postpone this activity until the completion of the embryo transfer training course. That was conducted in Amman in January, 2013. In order to make sure that the capacity of the ministry staff is developed to the level qualifies them to organize and conduct the field demonstrations successfully.

Procurement of frozen embryos: Two batches of the frozen embryos were delivered to the MoA, in which 600 embryos were imported.

Training on Embryo Transfer Technology in Baghdad. Embryo transfer training course was conducted in Al-Nahrain University on the 15/02/2010 for twelve staff from GSCLS/MOA. Several Iraqi experts lectured in this course which lasted for 21 days. The course offered trainees the opportunity to observe and to practice the standard procedures of flushing, ova collection and embryo implantation. The participants will have the chance to build and strengthen their practical skills by practicing the techniques directly. A series of presentations completed the training by focusing on the relevant aspects and good laboratory practices. 4 to 5 participants selected for advance training abroad.

Embryo Transfer Training Course Australia. Five Iraqi officials from MOA/SCLS were attended a training course during the period 14-28/6/2009 in Australia. The lectures and laboratory work were held on the campus of the CY O'Connor ERADE Village Foundation at 11 Erade Drive, Piara Waters, Western Australia. The animal practical work was done on the farm of Professor Roger Dawkins at North Dandalup.

The aims of this course were to teach:

- The art of flushing super ovulated cows to obtain multiple embryos from each cow,
- The classification of embryos to determine which ones would be suitable for implantation into a recipient,
- The process of freezing and thawing embryos.

Additional Embryo Transfer Training in Amman. The training course conducted in Jordan from 20-24 January, 2013 for five Iraqi vets from MoA. This activity has been carried out based on a special request received from Ministry of Agriculture explaining the importance of such training to ensure the sustainability.

The training focused on the practical side of the embryo transfer technique by implanting the embryos in the wombs of cows.

The training course aimed to ensure that the capacity of the ministry staff who already trained on the same topic in Australia is developed to level qualifies them to perform the implantation of embryos in good and successful way.

- IP Output 1.3: Efficient milk collection and outlet systems established.

Six milk collection centers were identified, namely Al-Eshaki, Al-Wehda, Al-Sewara, Al-Lije, Al-Taji and Al-Hammamiat. Assessment of rehabilitation need of the six centers completed. According to agreed criteria, three most suitable centers have been chosen. The three locations have been rehabilitated (Al Sewara, Wehda & Taji). All rehabilitation works was completely done.

The following equipment had been procured by FAO after completion of specifications together with MOA:

- 2 milk tanker trucks
- Milk collection and cooling equipment for three milk collection centers.
- 2 vehicles for embryo transfer work (Two pickup vehicles were delivered)
- Frozen dairy cattle embryos.
- Laboratory & Field Equipment: Purchase order to procure two Vacuum pumps and two Sonar devices.
- Local procurement for extra equipments requested by MoA, the list includes Incubators and other equipments which are necessary for the adaptation of embryo transfer technology.
- Complementary equipments including water cooling units were requested by MOA/MOI for three milk collection centers, procurement these equipments were completed and delivered to Iraq.

**IP Outcome 2: Strengthened rural and institutional technical and management capacity.**

- IP Output 2.1: Strengthened rural and institutional capabilities.

Artificial insemination training course for four Iraqi officials from MOA/SCLS was conducted successfully during the period 14-28/6/2009 in Tunisia.

local training sessions and demonstrations that were successfully conducted in Iraq by Iraqi participants in international trainings organized by the project in Tunisia, Morocco and Lebanon on good practices in dairy herd management, milk quality, hygiene and benefits of farmer's organizations into groups.

Study tour on the dairy genetic improvement\_for four Iraqi officials from MOA/SCLS was conducted successfully during the period 14-28/6/2009 in Morocco.

An additional international training course on pregnancy diagnosis (using sonar device) for nine vets in Amman, Jordan, FAO-Iraq in coordination with National centre for agricultural research and extension (NCARE) provided the participants with the knowledge and skills that contribute to the development of ministry of agricultural capabilities and raising the effectiveness of their performance, and promoting positive attitudes they have towards their responsibilities in the field of Pregnancy Diagnosis, the training took place between 20-23 May, 2012.

**IP Output 2.2: Milk performance recording and monitoring schemes initiated at farmers level.**

Study tour on the organization of the producers groups in the dairy cattle sector was successfully organized with National Association of Cattle Breeders (ANEB) in coordination with FAO-HQ for 7 days, the participants composed of the National Project Officers and representatives of the MOA and local councils will be involved in the selection of participating farmers.

**IP Output 2.3: Efficient milk collection and outlet systems established.**

An advance study tour in Morocco on the legislations and Regulations within these production groups had been completed in November, 2011.

## ii) Indicator Based Performance Assessment:

	Achieved Indicator Targets	Reasons for Variance with Planned Target (if any)	Source of Verification
<b>Outcome 1:</b> Enhanced production and increased productivity of milk and meat of the dairy herds in Iraq.			
<p><b>Output 1.1:</b> Regional semen distribution centers established, equipped and active.</p> <p><b>Indicator 1.1.1:</b> Number of distribution centers established  <b>Baseline:</b> Not Available.  <b>Planned Target:</b> 8 semen distributions centers.</p>	Not Achieved	The establishments of the regional semen distribution centers were cancelled due the budget constraints. In the second project steering committee meeting the Ministry of Agriculture decided to give priority for other activities and put the implementation of the activities under this output on hold pending on additional funding, which was not received.	MoA reports on distribution centers.
<p><b>Indicator 1.1.2:</b> Number of frozen semen straws of high genetic potential delivered  <b>Baseline:</b> 0%  <b>Planned Target:</b> 100% of the total needs covered by providing 480 000 frozen semen straw through 8 established semen distributed centers.</p>	Achieved	N/A	Monthly reports from the semen distribution centers
<p><b>Output 1.2 :</b> Embryo transfer techniques implemented for dairy cattle breeding  <b>Indicator 1.2.1:</b> Number of demonstration units set-up  <b>Baseline:</b> Not available  <b>Planned Target:</b>            Central laboratory equipped equipment installed and functional.            Five mobile laboratories procured with full equipment as well as imported 10 000 frozen embryos.            Development &amp; adaptation of Embryo transfer and implantation techniques finalized.            Training of technical staff completed.</p>	Partially Achieved	It was decided in the second project steering committee meeting to reduce the number of frozen embryos from 10,000 to 600. The reason behind this decision is due to dramatically increase in the prices of embryos in the recent years that preceded the project inception.	Monthly reports from the General company for live stock services and results of field surveys with farmers
<p><b>Output 1.3:</b> Efficient milk collection and outlet systems established.  <b>Indicator 1.3.1:</b> Number of field demonstrations and training sessions for the benefit of small and medium size farmers  <b>Baseline:</b> Not available  <b>Planned Target:</b>            At least 1 training received or 1 field demonstration attended by every project beneficiary.            At least 6 milk collection centers re-equipped and functional in areas where important dairy herd populations exist.            At least 1 training course organized for and attended by each involved technical MoA staff member.</p>	Partially Achieved	Six milk collection centres were identified, namely Al-Eshaki, Al-Wehda, Al-Sewara, Al-Lije, Al-Taji and Al-Hammamiat. Assessment of rehabilitation need of the six centres completed. According to agreed criteria, three most suitable centres have been chosen. The three locations had been rehabilitated and equipped.	Monthly report from the General company for live stock services
<b>Outcome 2:</b> Strengthened rural and institutional technical and management capacity			

<p><b>Output 2.1:</b> Strengthened rural and institutional capabilities</p> <p><b>Indicator 2.1.1:</b> Number technical staff trained and number of training sessions and study tours</p> <p><b>Baseline:</b> Not available</p> <p><b>Planned Target:</b> Three training courses organized abroad on dairy development, breeding techniques, milk collection and post harvest handling, processing and marketing for MoA staff, extension technicians and NGO staff</p>	Achieved	N/A	Monthly field reports from the State Board for Extension Services.
<p><b>Indicator 2.1.2:</b> Number of identified model dairy farmers for initial field implementation of the techniques</p> <p><b>Baseline:</b> Not available</p> <p><b>Planned Target:</b> Two study tours organized abroad on setting up and managing dairy producers groups and associations</p> <p>Six field demonstrations and awareness campaigns organized for the benefit of small and medium size farmers.</p>	Achieved	N/A	Monthly field reports from the State Board for Extension Services.
<p><b>Indicator 2.1.3:</b> Number of field demonstrations for the benefit of small and medium size farmers</p> <p><b>Baseline:</b> Not available</p> <p><b>Planned Target:</b> In-country training of model farmers and producers groups leaders and local livestock extension agents on the above topics</p>	Achieved	N/A	Monthly field reports from the State Board for Extension Services.
<p><b>Output 2.2:</b> Milk performance recording and monitoring schemes initiated at farmers level</p> <p><b>Indicator 2.2.1:</b> Set-up performance recording schemes linked to milk collection &amp; delivery process.</p> <p><b>Baseline:</b> Very limited or nonexistent performances recording in previous large dairy production stations</p> <p><b>Planned Target:</b></p> <p>A national milk performance recording and monitoring scheme proposed and officially adopted</p> <p>Progeny testing criteria established and officially adopted for the purpose of selection of artificial insemination bulls</p>	Achieved	N/A	State Board for livestock Services, monthly reports Number of farmers involved Number cows considered Number of data entries
<p><b>Output 2.3:</b> Efficient milk collection and outlet systems established</p> <p><b>Indicator 2.3.1:</b></p> <p>Number of field demonstrations and training sessions for the benefit of small and medium size farmers.</p> <p><b>Baseline:</b></p> <p><b>Planned Target:</b> At least 1 training received or 1 field demonstration attended by every project beneficiary</p>	Achieved	N/A	Monthly report from the General company for live stock services
<p><b>Indicator 2.3.2:</b> Number of equipment procured, installed and functional</p> <p><b>Baseline:</b> Sixteen collection centers (out of order) in different locations.</p> <p><b>Planned Target:</b> At least 6 milk collection centers re-equipped and functional in areas where important dairy herd populations exist</p>	Partially Achieved	Six milk collection centers were identified, namely Al-Eshaki, Al-Wehda, Al-Sewara, Al-Lije, Al-Taji and Al-Hammamiat. Assessment of rehabilitation need of the six centres completed. According to agreed criteria, three most suitable centers had been chosen and equipped.	Monthly report from the General company for live stock services
<p><b>Indicator 2.3.3:</b> Number of technical staff trained</p> <p><b>Baseline:</b></p> <p><b>Planned Target:</b> At least 1 training course organized for and attended by each involved technical MoA staff member</p>	Achieved	N/A	Monthly report from the General company for live stock services

### iii) Evaluation, Best Practices and Lessons Learned

Field staff conducted a field survey to identify project beneficiaries and to quantify the number of dairy cattle and lactating cows, the quantities of milk production per day, and the percentage of breeders using artificial insemination in the five districts which the project focused on for this activity. 1399 questionnaires were filled with the beneficiaries in Al-Sewara, Al-Haffriya, Al-Eshaki, Al-Taji, Al-Wehda. The following data was collected for each of the district:

#### 1) Sewara District:

- a-The estimated number of Dairy cattle is about (4362) cows.
- b-The estimated number of Lactating cows about (1944) cows.
- c-The estimated quantities of milk production per day is about (19440) lit / day.
- d-The estimated percentage of Breeders who's using A/I in the area is about 70%.

#### 2) Haffriya District:

- a-The estimated number of Dairy cattle is about (3433) cows.
- b-The estimated number of Lactating cows about (2380) cows.
- c-The estimated quantities of milk production per day is about (23800) lit / day.
- d-The estimated percentage of Breeders who's using A/I in the area is about 70%.

#### 3) Eshaki District:

- a-The estimated number of Dairy cattle is about (528) cows.
- b-The estimated number of Dairy Cattle about (1500) cows and those recorded at 2006.

#### 4) Taji District:

- a-The estimated number of Dairy cattle is about (10952) cows.
- b-The estimated number of Lactating cows about (6279) cows.
- c-The estimated quantities of milk production per day about is (62790) lit / day.
- d-The estimated percentage of Breeders who's using A/I in the area is about 20%.

#### 5) Wehda District:

- a-The estimated number of Dairy cattle is about (1551) cows.
- b-The estimated number of Lactating cows about (472) cows.
- c-The estimated quantities of milk production per day is about (4720) lit / day.
- d-The estimated percentage of Breeders who's using A/I in the area is about 30%.

#### • Challenges

- There was a delay in the procurement of the embryo transfer material, because the supplier has some difficulty with the delivery dates of embryo transfer. This material cannot be procured locally and has to be produced in a specific season of the year and through international tender, this procure item is the core item of whole project, the training will be completed after the material has been received. Based on all the above, a time extension until 17 July 2011 was requested by FAO to complete the remaining activities.

- Security status and slow responses at times from MOA have caused some delay in the implementation according to the work plan, in particular on the rehabilitation of the milk collection centers and on the embryo transfer component.
  - Also the identification of additional required equipment and the subsequent preparation of technical specifications for large amounts of equipment and supplies through the agreed collaborative process between FAO and MOA experts were important but time consuming. Moreover so since the given budget limitations required certain priorities and strategic choices to be made.
- Lessons Learned

The project will benefit the future projects in terms of proper planning of project activities, dealing with security constraints and limitations, early recruitment of project national and international staff and involving the implementing partners in all stages of project development and delivery. Among the lessons learned, the following may be cited:

- Selection of the implementation sites within Governorates should be done in full coordination with MoA and other reliable sources of security information. .
- Remote management and monitoring requires well-qualified and motivated national staff in the field and working with the in-country counterpart organizations in order to link the Amman management structure with the field activities.
- Training courses and study tours outside Iraq, albeit in the region, provide an extra and valuable added dimension as they allow for learning from more technically advanced and diversified countries with more sophisticated livestock systems. Utmost care should be taken that nomination of trainees is started as early as possible given current constraints and time required for visa, travel etc.