

On-The-Ground – A training, development, and extension program assisting the sheep sector in Iraq

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Abstract. In 2010, the Iraq On-The-Ground (OTG) Sheep Reproduction Technologies project was conceived and implemented as a training and development partnership between the Iraq Ministry of Agriculture and the Australian Government; aimed at assisting the rebuilding of Iraq's agriculture. The OTG methodology was developed to enable Australian agricultural capability, experience, and support to be transferred to Iraq without the security risks of in-country travel by providing: intensive training in Australia; resources to establish on ground projects in Iraq; E-mentoring and online support; and bi-annual workshops in Jordan for 'refresher' training, and program review, evaluation, and planning. The OTG project was piloted in two technical disciplines: i) sheep reproduction technologies, and ii) irrigated horticulture. This paper reports on the outcomes of the OTG Sheep Reproduction Technologies project that aimed to develop capacity in assisted reproduction technologies, and application of the technology to assist producers to improve sheep genetics, management, and farm income.

Keywords: AusAID, International Development, Agriculture, Artificial Insemination, Embryo Transfer, Participatory Extension.

Introduction

After the war in Iraq that commenced in 2003, the Iraq sheep industry suffered considerably. This followed on from a period of continued decline of the industry (Figure 1), and although sheep numbers have recovered somewhat following the end of main hostilities towards 2007/08, Iraq has continued to struggle to provide professional agricultural support services since the war began.

As a partner of the Multi-National Force, the Australian Government subsequently implemented a significant aid program to assist with Iraq's recovery (DFAT 2015). At that time, the Iraq Ministry of Agriculture (MoA) also commenced planning to rebuild the sheep industry and developed a partnership with the Australian government to train Iraqi staff in improved technologies of high importance to the country, including extension methodology, to support their implementation on return to Iraq.

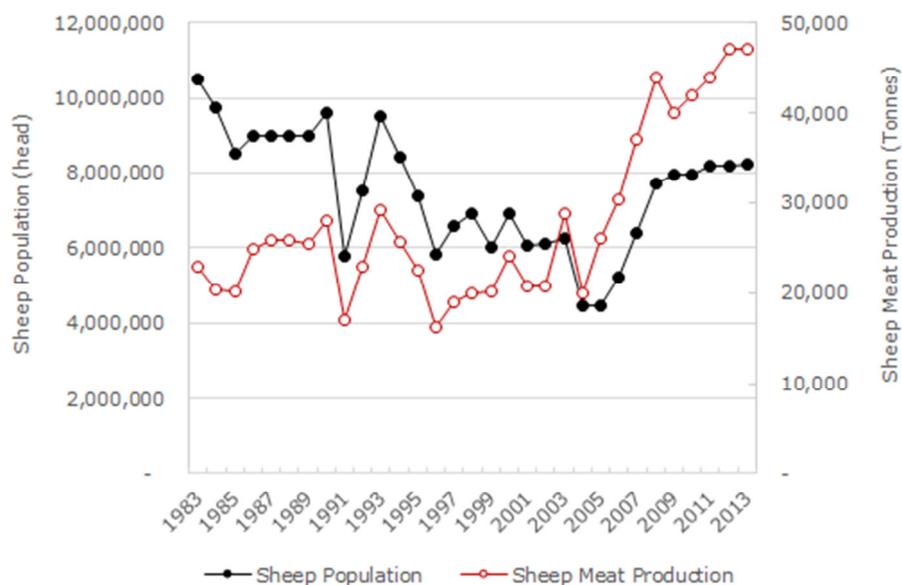
Many projects were developed and implemented, including by countries other than Australia. However, one of the most successful projects has been the AusAID funded On-The-Ground (OTG) Sheep Reproduction Technologies project.

The OTG program

In 2008, the Australian Government sponsored a number of short course training programs in a range of agricultural disciplines. These courses provided professional agriculturalists from Iraq with exposure to new agricultural systems and technologies. However their short duration, the large number of participants on each course, and the wide breadth of experiences offered provided little opportunity for the participants to gain any more than an awareness of the systems and technologies observed.

The OTG program was developed as a specific response to the obvious shortcomings of the short course training programs. It also proposed a novel methodology to allow selected participants in the short course programs an opportunity to develop knowledge, skills, and capability in the new systems and technologies via a capacity building program in targeted disciplines identified by the Iraq MoA. Importantly, the OTG methodology also proposed an aid modality that enabled the benefits of Australian knowledge and support to be deployed without the need for the Australian training and support group to step foot in Iraq; a region still considered too dangerous at the time to travel to and work in at the level required to achieve equivalent outcomes.

Figure 1. Changes in the sheep population, and the production of sheep meat from indigenous sources in Iraq between 1983 and 2013.



Source: FAOSTAT.

The OTG project therefore aimed to improve the skills and capabilities of the MoA staff and to empower them with on-demand, remote support, a modest contribution of equipment and operating expenses, and the support of the MoA to train and educate other Iraq staff in the new systems and technologies using a train-the-trainer approach to organisational capacity building.

In the case of the Sheep Reproduction Technologies project, it aided in transferring the reproduction technologies and systems that have been developed in conjunction with Australian sheep industry; to assist Iraq's sheep sector. In addition, an extension plan was developed and applied to assist Iraq's sheep farmers to improve sheep genetics and increase farm income.

Components of the OTG program

The Intensive Training Experience

The first stage of the OTG project started in May 2011. For a 10 week period, four Iraqi livestock officers were provided hands-on tuition in assisted reproduction technologies for sheep by the expert livestock reproduction group of the South Australian Research and Development Institute (SARDI).

A custom program was delivered with the assistance of a full time Arabic translator in attendance. Although all four participants had some English language skills, the presence of the translator throughout the training program in Australia ensured that all participants were able to fully communicate with and understand the trainers.

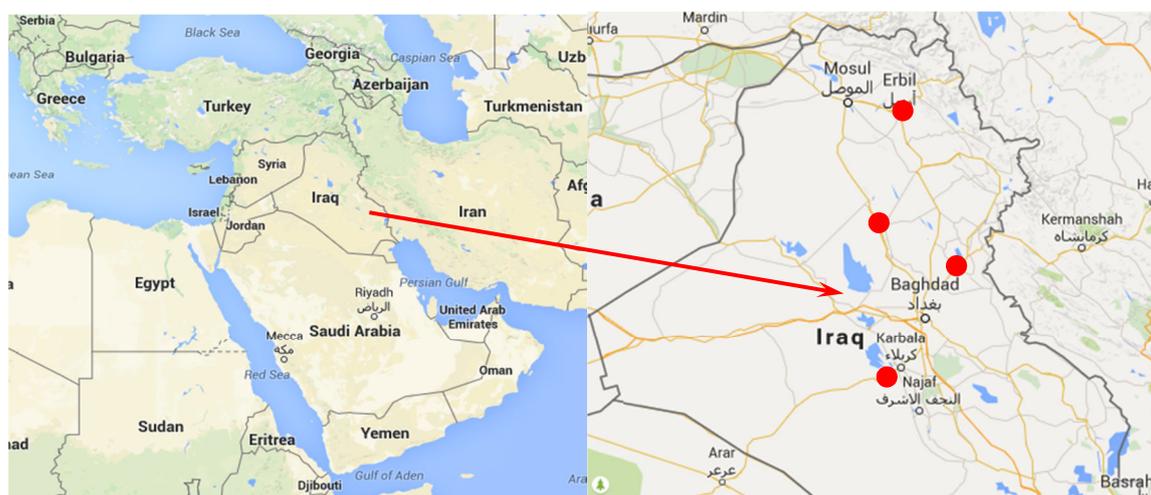
The training program provided an opportunity for the participants to develop competency in sheep semen collection, surgical and non-surgical artificial insemination, pregnancy scanning, and embryo collection and transfer (Plate 1). During the program, the group also received training in project development and management, including monitoring and project governance, and participatory extension. A comprehensive training and technical manual was also developed and translated to Arabic for use in Iraq.

In addition, each participant planned a specific project to be implemented on return to Iraq that would utilise their new skills, and that would be aided by the supply of a small quantity of project-specific equipment by the OTG program, and a modest operating budget. These projects would culminate in the establishment of four regional breeding and reproduction centres in key sheep production zones in Iraq, including Karbala (west of Baghdad), Salah Al Din (north of Baghdad), Diyala (north east of Baghdad), and Erbil in the Kurdistan region of northern Iraq (Plate 2).

Plate 1. The author performing artificial insemination on indigenous sheep at the Karbala Research Station (left), and local farmers attending an OTG discussion group (right).



Plate 2. The Middle East (left), and location of the four OTG project sites in Iraq (right).



Return to Iraq

Returning to Iraq was a significant challenge for all of the participants. As part of their commitment to the program, each was required to identify a colleague willing to participate in the OTG project as a training partner who would then learn the same skills acquired by the four participants in the Australian program. Together, the four regional teams would then receive a complete set of equipment from Australia to establish their own breeding centre, and a small operating budget to initiate projects that would engage local sheep producers in their individual programs.

During the training period in Australia, the participants worked with the Australian trainers to identify an 'equipment set' that would be sourced from Australia and provided by OTG project funds. This equipment was subsequently sent in a shipping container to Iraq, with the assistance of the MoA to facilitate entry and customs clearance upon arrival.

The establishment of the local team and the regional centre was supported by the MoA, and required that the OTG staff achieve local engagement with the regional Directorates of Agriculture, including existing livestock extension staff, and sheep producers themselves. Program level assistance was also provided locally by a supportive senior level Program Management Group to assist the participants to 'manage upwards' within their regional ministry structures.

Support Provided by the OTG Program

Australia Following their departure from Australia, a program of responsive e-mentoring commenced that ranged across a wide range of enquiry; from those of a specific technical

nature, through to project planning and development, extension strategies to engage with local farmers, and dealing with line management issues within the MoA.

Iraq The program was supported at the highest level of the MoA, and saw the active participation of the Deputy Minister of Agriculture, Dr Madhi Al Kaisey, in program development, oversight, and monitoring. The day to day implementation on the ground in Iraq was managed and supported upwards through the Ministry by a senior Iraq OTG Program Manager. Two other professional staff from the MoA and the Ministry of Water Resources contributed to the broader strategic management of the OTG program, including the concurrent irrigation and horticulture OTG project, as delegates of the Deputy Minister.

It was critically important that the participants involved in the training program in Australia, and their co-opted training partners, staff, and line managers gained the support and cooperation of the MoA management structure. The early involvement of the senior level administration of the MoA underpinned the development of the trust within the program, on both the Iraq and Australian sides. This was further strengthened as the participants began to deliver services and training on their return to Iraq, and their individual achievements and project outputs drew the attention of colleagues and the wider farming sector. Amongst other examples, the strength of the support of the program became evident during the process of the import of the container of equipment from Australia in achieving inter-Ministry cooperation to secure the approvals required to clear and release the container from customs, including the waiving of import duties.

Staff of the Australian Embassy in Iraq also provided critical support to the program throughout its developmental stages, through on-site communication and liaison with the Ministry of Agriculture. This support ultimately ensured that the level of cooperation and approval required to implement the project was achieved. At the completion of the formal funding period, the OTG program was subsequently endowed with additional support, offered through the Embassy and facilitated by AusAID, to enable a post-program workshop to be hosted with Iraq's Deputy Minister of Agriculture and senior Ministry staff; to facilitate a process to 'embed' the OTG training platform in future Iraq Government training programs.

Jordan On three occasions during the duration of the formal OTG program, the four Iraqis involved in the Australian training program, the four locally trained colleagues, and the senior Iraq program management group reunited with the Australian training team in Jordan for a week-long project debriefing, planning, and refresher training program. On each occasion, four days were allocated to project briefing and planning activities. A fifth day was devoted to a hands-on practical refresher training day, during which the Australian training team were able to provide technical instruction to refresh and further develop the skills of the four original trainees.

The Australian team were also able to meet with and provide technical assistance to the four Iraqi training partners who had been learning their skills from the four original participants, who acted as trainers for other staff in Iraq. This training was conducted at the Faculty of Veterinary Science of the Jordan University of Science and Technology (JUST) campus at Irbid in northern Jordan.

Achievements of the OTG program

Several key achievements are noteworthy over the course of the program. These include:

- establishment of reproduction laboratories in Karbala and Erbil, and reproduction extension services at the Diyala and Salah Al Din sites
- more than 300 individuals engaged and trained in assisted reproduction technologies, ultrasound pregnancy detection, reproductive synchronisation, and livestock production and nutrition, involving farmer groups, MoA staff, and university students
- Awassi lambs bred at Karbala by artificial insemination, and using surgical and non-surgical techniques with fresh, local semen
- establishment of an export protocol for sheep genetic material to Iraq from Australia, and supply of approximately 2,000 straws of semen of elite Awassi and East Friesian breeds
- successful cross breeding of Australian East Friesian with Karadi sheep in Erbil using laparoscopic AI and imported Australian semen
- integrated development of the Karbala sheep station, and hosting of the Australian Ambassador to Iraq at Karbala
- integration of MoA staff from other Australian short course and post graduate training programs into the Karbala OTG project.

Further progress is also currently planned in Iraq and elsewhere, including local funds sourced to maintain the OTG cross-breeding project in Erbil (achieved to the end of 2015), the author

undertaking a Master of Science in Agriculture (sheep breeding) at the University of New England (current), and plans to investigate linkages between Iraq and Australia to improve the genetic basis of Iraqi sheep.

Participants views on the OTG Program and lessons learned

The Australian training program

The intensive training in Australia was a critical platform for the success of the OTG project. By mixing the theory with practical application, and observing the benefits of these technologies on Australian farm businesses the Iraq participants were able to develop the ability and confidence to apply their Australian experiences back in Iraq.

Having the equipment, site resources and dedicated technical experts available for the time required in Australia allowed the trainees to successfully grow their knowledge and skills. It had the added benefit of building relationships, trust and teamwork amongst the participants who were from different areas and would not usually work together, apart from this project, which has been clearly evident in the way the project has continued to function through the past and current security difficulties in Iraq.

Project implementation in Iraq

Several factors affected the rate and extent of implementation of project activities in Iraq. Firstly, the delivery of the container of equipment was significantly delayed to the project sites. Despite strong cooperation from the MoA in Iraq, the container experienced a long delay in the customs clearance process. This meant that consecutive breeding seasons were lost to the project, limiting the on-ground outputs and outcomes during the AusAID funding period. However, each member of the group was able to develop some on-ground activity in anticipation of the arrival of the equipment, despite the delay. This included training of MoA staff in their region and across the country, establishment of farmer groups to applying aspects of the reproduction services, and training and education of university students in sheep reproductive biology and breeding programs.

Once the equipment arrived and was installed in Iraq, the OTG staff gained an important standing within their farming, technical and academic networks because they were the ones applying the expertise and were not reliant on foreign experts coming and going to make things happen.

In general terms, some aspects of the implementation in Iraq was also limited by the historic structure and function of the MoA, and the post-conflict instability and security issues. In addition, although the OTG project was strongly supported at senior levels in the Ministry, the same was not always the case at the local level, where local priorities tended to override OTG objectives on some occasions.

E-support and mentoring

The use of E-mentoring was highly beneficial to the function of the project, and was evidenced by the large number of emails shared both within the Iraq group, and between the Iraq group and the Australian training team. Although not reliable on a day-to-day basis, internet access and service in Iraq was sufficient (and improving) during the project to enable email communication to be the primary mode of internal and external electronic support. By comparison, the group found it prohibitively expensive to utilise mobile phone services to communicate between sites within Iraq due to local phone services being expensive, and the requirement for often long conversations with colleagues.

Early in the program, a shared internet 'cloud' file storage and distribution site was arranged to serve as a repository for program records. This site, *Dropbox*, proved very effective for project folder organization, the posting of large files, and direct access to all project communications, events, and reports by the whole team. Both Arabic and English language files were able to be stored and shared across the entire OTG team, and the project site remains in operation at the time of writing this paper.

Without the ability to communicate and support the team regularly using these electronic platforms it is likely that the project would have ground to halt on many levels due to both large and relatively small issues. The transfer of pictures and videos has been particularly useful in the demonstrating both problems and achievements, particularly with the Australian team's inability to visit the sites directly.

Refresher programs in Jordan

The team meetings in Amman were a valuable opportunity to update skills in critical areas, particularly because of the delayed arrival of the equipment prevented the implementation of much practical on-ground activity until about 12 months after the training program in Australia was completed. These training sessions also strongly facilitated the sharing and resolution of project related issues within the teams, as well as keeping the project on track despite the many difficulties.

From the Iraq perspective, getting the whole team together regularly in Jordan was also important to continue the momentum of the project, and also crucial to ensure ongoing engagement and support between the OTG staff, the Iraq OTG Steering Committee, and the Australian support group.

For the four training partners of the Australia-trained participants, it was also their only direct contact with the Australian specialists and provided them with the expertise to further build their confidence in their understanding and implementation of technologies taught to them by their Iraqi trainers.

Improving the OTG model

Most of the on-ground problems during implementation in Iraq were identified to be related to Iraq's hierarchical systems within the Government Ministry structure. Whilst not unusual in a post-conflict environment, developing project specific mechanisms to overcome these types of limitations proved to be a rate-limiting challenge. Examples of these issues included gaining approval to travel, and gaining access to resources such as day-to-day transport, livestock, fuel and electricity.

A key success of this project has been the OTG team's ability to patiently and resolutely work through various delays to reach the desired outcomes. This has included AusAID extending project deadlines to support the achievement of key milestones.

The majority of the on ground activity at each site was only able to commence in the 6 months following the delayed arrival of the container of equipment. Although the funding agreement with AusAID was completed in 2013, E-mentoring has continued on a voluntary basis with the support of all of the Australian training team throughout 2014 and 2015 (to date). This has been driven by the shared desire by all involved to continue the development of Iraq's capability and capacity to apply of these technologies as all the Iraq OTG participants continue to grow their experience and confidence, and to help maximize the impact and benefit of this investment.

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