

**AG:GCP/AFG/046/ITA**  
**Terminal Report**

# **FAO/GOVERNMENT COOPERATIVE PROGRAMME**



## **DEVELOPMENT OF INTEGRATED DAIRY SCHEMES IN HERAT PROVINCE**

### **AFGHANISTAN**

**PROJECT FINDINGS AND RECOMMENDATIONS**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**

**ROME, 2014**



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## DEVELOPMENT OF INTEGRATED DAIRY SCHEMES IN HERAT PROVINCE

### AFGHANISTAN

### PROJECT FINDINGS AND RECOMMENDATIONS

Report prepared for  
the Government of Afghanistan  
by  
the Food and Agriculture Organization of the United Nations

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 2014

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The Food and Agriculture Organization is greatly indebted to all those who assisted in the implementation of the project by providing information, advice and facilities.



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## LIST OF ABBREVIATIONS

AI	-	Artificial Insemination
FMD	-	Foot-and-mouth disease
IDS	-	Integrated Dairy Schemes
IFAD	-	International Fund for Agricultural Development
HLDU	-	Herat Livestock Development Union
MAIL	-	Ministry of Agriculture, Irrigation and Livestock
MCC	-	Milk Collection Centre
NGO	-	Non-governmental organization

## A.1 PROJECT PROFILE

Country	Afghanistan
Project Symbol	GCP/AFG/046/ITA
Project Title	Development of Integrated Dairy Schemes in Herat
Resource Partner	Ministry of Agriculture, Irrigation and Livestock(MAIL) and Heart Livestock Development Union (HLDU)
Reporting Period	May 2007 – December 2013
Actual EOD	1 May 2007
Actual NTE	31 December 2013
Budget Holder (name)	Ousmane Guindo
Lead Technical Officer (name)	Anthony Bennett
Participating Organizations	FAO Afghanistan
Implementing Partners (List)	HLDU and MAIL
<b>Contribution to Programmatic Framework</b>	
<i>Indicate the reference number and title of each higher level result to which the project contributes</i>	
Regional Priority Area	Effective programmes addressing members' priority needs developed, monitored and reported at global, regional and national levels
Country Programming Framework Outcome(s)	CPF Priority Areas 1, 3 and 5 - Fostering of agricultural productive capacity - Support to the formulation and implementation of effective agricultural policies and institutional capacity-building - Support to food and nutrition security
UNDAF Outcome(s)	Increased agricultural output and access to diversified food at household level

## A.2 FINANCIAL DATA in USD

(As at: 31 December 2013)

Budget	USD 4 378 097
Cash received	USD 4 378 097
Delivery	USD 4 328 609

### A.3 EXECUTIVE SUMMARY

Livestock is a key part of Afghanistan's integrated farming system and an important contributor to the country's economy, both in terms of domestic consumption and the sale of products. Recent research by the FAO Livestock Programme has shown that cattle constitute the most important animal species for a large proportion of the rural population, with many families considering increased milk production to be an important opportunity to generate income. Farmers, meanwhile, see a rise in production as a significant development opportunity. With an increasing proportion of the population living in cities and incomes gradually rising, demand for livestock products has also increased, creating opportunities for investment in the sector and production for urban markets.

Over the last seven years, FAO has practically demonstrated the opportunities and successes of small-scale Integrated Dairy Schemes (IDS) in three locations. This has resulted in the following key achievements:

- increasing the quality of available fodder through the selection and distribution of new and improved plant fodder varieties, conducting demonstrations with selected farmers and establishing producer groups to organize the production of seed of improved fodder types;
- facilitating breeding improvement through the provision of quality sires and imported semen at artificial insemination (AI) centres in strategic locations;
- improving access to markets for milk and milk products by establishing milk collection schemes on the fringes of major cities and linking them with processing centres to ensure that the products are hygienic, safe and available to customers at an affordable price;
- assisting in the formation of milk producer groups in order to raise knowledge, particularly of feeding regimes, animal husbandry and care and coordinating milk collection;
- raising knowledge of the impact of animal parasites and disease and actions to combat them; and
- increasing the availability of local support services for sustainable increased animal production.

On the basis of the successful ongoing experience with IDS development, the governor of Herat province requested assistance from FAO in the development of a tailored programme helping local farm households, women in particular, to enhance dairy farming practices and conditions. These efforts were designed to produce safer milk and generate regular income through the provision of training, milk collection and processing services.

### **Response**

This project was based on the earlier successful application of the IDS approach in other areas of Afghanistan between 2004 and 2010. The IDS enables farmers to respond to domestic market demand for milk and milk products through better knowledge, tools, organizations and market linkages, while providing consumers with safer milk and dairy products.

- Improving production and efficiency of milk production by developing a commercial dairy production system in selected locations in Herat province;
- Developing and establishing functional milk collection, processing and marketing structures for milk and dairy products for the Herat Dairy Scheme; and
- Creating and developing sustainable organizational structures for the management of the Herat Dairy Scheme.

The dairy project team worked with the dairy and cooperative offices of the Ministry of Agriculture, Irrigation and Livestock (MAIL), the main project partner at provincial level, both in Herat and at central level, together with a range of cooperative companies and Non-governmental organizations (NGO) with which FAO had established strong productive relationships on behalf of farmers and rural women.

One of the major achievements of the project was the establishment and organization of enterprises owned and operated by smallholders. This was achieved with a cooperative structure and overseen at provincial level by the Herat Livestock Development Union (HLDU), which now consists of over 2 000 farm families and, in recent months, has operated sustainably as a standalone enterprise.

The HLDU is fully owned by member families and consists of three business units, focused on milk processing and value addition, feed milling and fodder and animal inputs and services. This enables and drives the sustainable future management of the dairy schemes through the development of marketing facilities and community-based organizational structures. Through training and the supply of basic inputs, dairy farm families in target areas received support in the improvement of their enterprise skills, the organization of community

structures, inputs and services and the strengthening of both the efficiency and scale of dairy production, with a view to increasing household income. Significant investments were also made in the development of the local market for milk and milk products.

### **Outputs**

- Development of processing facilities in Herat for milk and yoghurt established for a minimum capacity of five metric tonnes and a maximum of ten metric tonnes;
- Marketing of milk and dairy products in Herat through dairy scheme agents or shops;
- Collection of a minimum of 3 000 litres of milk per day through village Milk Collection Centres (MCCs), involving at least 1 100 families in Herat province, with farmers remunerated on a weekly basis for collecting milk according to quality and quantity;
- Development of village structures for the dairy scheme, cooperatives and member farmers organized through MCC groups and milk producers' cooperative societies;
- Effective management and ownership structures for the dairy scheme put in place;
- Dairy cattle of member farmers protected from infectious and non-infectious disease through preventive measures and training, resulting in safer milk for local customers;
- Extension services established for over 2 000 male and female members of the HLDU;
- Genetic potential of dairy cows strengthened through provision of improved sires through artificial insemination and improved monitoring of the effects of the breeding programme; and
- Dairy farmers assisted through the cultivation of improved fodder crops and supply of concentrate and mineral feeds established.

### **Outcomes**

- Village-based cooperative structures established, with 11 MCCs operational and working efficiently;
- Over 2 104 members of the HLDU, with 11 dairy cooperatives represented. 25 representatives in the general assembly (including six women). Nine members elected to the executive committee and establishment of a monitoring committee.
- 87 percent of income from milk sales received by housewives;
- Increased access to regular and dependable raw milk market for cooperative members and other farmers;

- The participatory approach encouraged community participation, which in turn led to the establishment of cooperatives and dairy unions by the communities themselves;
- Farmers encouraged to participate in the dairy business;
- Improved fodder crop seed cultivated by 75 percent of farmers in project target areas both for domestic consumption and for sale;
- Farmers, their groups and local service providers trained in improved animal husbandry and animal health practices;
- 70 percent of households supported have cross-bred milking cows;
- 95.93 percent of cases of foot-and-mouth disease (FMD) and tick-borne diseases controlled, with zoonotic diseases and mastitis also under control in the project area; and
- As of December 2013, 20.93 million afghani (AFA) – approximately USD 366 000 – of urban money has gone back to rural areas through the sale of 1 131 342 litres of good quality raw milk by cooperative member farmers to their dairy plants.

## **Conclusions**

The major outcomes of the project included increased access to a regular and dependable raw milk market for farmers in the project area, higher participation by women in livestock production, increased household food security and income from livestock production and a higher level of employment at grassroots level.

Rural women take ownership of over 84.5 percent of the regular cash income earned from milk sales and have full authority to decide how the income earned is spent. In order of importance to the communities, the income is currently spent on the following: education, diversification and enrichment of the food basket, medicine, clothes and feed for dairy animals.

The milk processing plant is now regularly operating at a profit, while inputs such as veterinary services are provided in a sustainable manner under a revolving fund established as part of the project and now operated by the HLDU.

In addition, around 95 percent of FMD, tick-borne diseases, zoonotic diseases and mastitis are controlled in the project area. More than 65 percent of selected farmers improved their breed of cattle, while more than 75 percent cultivated improved fodder crop.

The full impact of the project will only be felt once the HLDU is economically viable and operationally sustainable. The dairy supported by the project has already demonstrated its presence in the market, with consumers showing their appreciation for the quality of fresh

milk-based pasteurized products, which have contributed to the partial substitution of imports. Additional support for one more season, as recommended during the independent evaluation mission, would make the dairy business operation fully sustainable.

The Herat integrated dairy project is based on a successful model for inclusive smallholder-oriented dairy industry development that has previously been demonstrated in the Afghan provinces of Balkh, Kabul, Kunduz, Logar and Wardhak. The IDS model is well accepted by farmers and recognized as successful by the MAIL. The experience in Herat is currently being replicated in Nangarhar with funding by the International Fund for Agricultural Development (IFAD) and the MAIL.

### **Follow-up actions**

The HLDU is now the full owner and operator of the milk processing unit, the feed mill and the milk collection business. While the organization provides good prices for members, pays regularly for milk and organizes inputs and services, it has only limited practical, managerial and operational experience in running a high-return but potentially high-risk enterprise. Additional support has been recommended to ensure the sustainability of the organization. It is estimated that HLDU will be economically viable and operationally sustainable within one more production season.

### **Recommendations to the Government**

The success stories and lessons learned from the project should be expanded to other provinces of the country with high potential. A series of requests for the expansion and start-up of integrated dairy development have been pouring in to the MAIL from numerous areas of the country since 2007. These requests should be given due consideration by the MAIL and its partners.

In addition, greater support for a further season, as recommended by the independent evaluation mission, would make the dairy enterprise operations of the HLDU more sustainable. Through the Office of Italian Cooperation in Kabul, requests for time extensions in this regard have been made to the Government of Italy by direct beneficiaries, namely the HLDU, local directorates of the MAIL and the governor of Herat province.

If MAIL were to take the lead in liaising with the donor for additional funding for a further production season, the project could be phased out once future sustainability is secured at the end of 2014.

Appendix 1

## PROJECT STAFF

<u>Name</u>	<u>Function</u>	<u>Dates of Service</u>	
		<u>Starting Date</u>	<u>Concluding Date</u>
<u>In-country project team</u>			
Tek. B. Thapa	Senior dairy advisor	May 2007	Dec. 2013
Lutfullah Rlung	National field manager	May 2007	Dec. 2013
Shamsull Haq	Admin. finance assistant	June 2007	Dec. 2011
Abdul Qayum Nasrat	Senior cattle management advisor	June 2007	Dec. 2013
Noor Ahmad Burhani	Feed and fodder crops advisor	July 2007	Dec. 2013
Mohammad Tayeb	Animal health and AI advisor	July 2007	Dec. 2013
Fazal Hamed Salimee	Dairy processing/marketing advisor	Aug. 2010	Dec. 2013
Parwin Asady	Women's training advisor	July 2007	Dec. 2013
Shekillah Azimi	Women's training advisor	July 2007	Dec. 2013
M. Qasam Mansori	Driver	July 2007	Dec. 2013
M. Hanif Padar	National cooperative consultant	June 2009	Dec. 2009
M. Esaq	Driver	July 2007	Feb. 2012
Nasrat Mir	Driver	Jan. 2012	April 2012
Ahmad Jan	Cleaner	Oct. 2011	April 2012
Nasar Ahmad	National evaluation mission	Nov. 2012	Dec. 2012
Halima Aqshin	National gender consultant	Nov. 2013	Nov. 2013
<u>International consultants, FAO representation and lead technical unit</u>			
Sonam Tobgay	Dairy marketing study consultant	Jan. 2009	Jan. 2009
Anthony Fitzherbert	Evaluation mission team leader	Dec. 2012	Dec. 2012
Mario Tavalaj	Evaluation mission member	Dec. 2012	Dec. 2012
Ruxandra Maria Boros	Gender consultant	Oct. 2013	Nov. 2013
Anthony Bennett	Livestock Industry Officer	May 2007	Dec. 2013

Appendix 2

## TRAINING AND STUDY TOURS

Training and study tours abroad

Training in milk collection, processing and marketing. Karnal, India. March 2010. 24 participants.

Tour of small to medium-scale dairy processing operations (2 000 to 15 000 litres per day) under cooperative and private ownership, as well as small-scale dairy farms, dairy cooperatives, small to medium-scale dairy equipment manufacturers and suppliers. Mashhad, Iran. November 2009. 11 participants.

Tour of small to medium-scale dairy processing operations under cooperative and private ownership, as well as small-scale dairy farms, dairy cooperatives, small to medium-scale dairy equipment manufacturers and suppliers. Annad, Dehli and Karnal, India. December 2012. 15 participants.

In-country training

Increasing capacity-building and male leadership in the farmers' community. Mazar, Balkh province. May 2009. 13 participants.

Increasing capacity-building and female leadership in the farmers' community. Mazar, Balkh province. January 2013. 13 participants.

Marketing survey. Herat province. July 2007. 16 participants.

Training of trainers. Herat province. July 2007. 24 participants.

Marketing survey. Herat province. July 2007. 16 participants.

Training of AI technicians. Herat province. September-October 2007. 6 participants.

Cattle management. Herat province. October 2007. 28 participants.

Fodder crop and cattle management. Herat province. January 2008. 27 participants.

Cooperative, fodder crop, stable improvement .zoonosis disease. Herat province. June 2009. 133 participants.

Cattle management, with focus on calves. Herat province. November 2008. 45 participants.

Feeding and fodder crop field days. Herat province. August-September 2009. 120 participants.

Reproduction, infertility, asexual physiology, pregnancy testing. Herat province. March 2009. 17 participants.

Fodder crop and cattle management. Herat province. September 2009. 650 participants.

Dairy processing training course. Herat province. April-May 2012. 200 participants.

Management of dairy union. Herat province. November 2012. 10 participants.

Animal feed and dairy marketing. Herat province. November 2012. 16 participants.

Refresher training course for milk collectors, dairy workers and milk quality test processing. Herat province. September 2013. 19 participants.

Increase capacity of primary and secondary cooperatives members. Herat province. October-December 2013. 2 017 participants.

Gender knowledge management. Kabul province. December 2013. 2 participants.

Appendix 3

## MAJOR ITEMS OF EQUIPMENT PROVIDED

<u>Quantity</u>	<u>Item</u>	<u>Cost (USD)</u>
1	Vehicle, Toyota Land Cruiser	87 500
1	Animal feed plant	29 750
1	Vehicle, Dyna truck 300 W/C DSL + RAD 4 000 CC	28 910
2	Vehicle, Toyota HiAce	27 400
1	Vehicle, Dyna truck 300 W/C DSL	27 222
1	Generator, FG Wilson, 110 KVA	22 500
2	Vehicle, JAC truck	17 100
1	Cold room for dairy products	15 750
1	PET stretch blow machine with 100 litre water tank	14 420
1	Transformer, 100 KW	8 850
1	Vacuum packing machine	7 850
1	Water reverse osmosis plant	6 900
1	Yoghurt machine	5 250
1	Packing machine, Shrinak 300	4 250
3	Container for liquid nitrogen, 47 litre capacity	3 480
1	Shell-type boiler	3 260
1	Milk analyser	2 200
2	Cold room for dairy products, 1.5 metric tonnes	2 139
3	Container for liquid nitrogen, 36 litre capacity	1 960
1	Container for liquid nitrogen, 20 litre capacity	1 770
1	Powered hand tools	1 725
1	Laptop computer, Dell Latitude 430	1 630
2	Desktop computer, Dell Optiplex GX960	1 300
1	Laptop computer, Dell Latitude D830	1 295
3	Three-wheel motorcycle, Zaranj	1 100
1	Desktop computer, Dell Optiplex GX755	1 100
1	Satellite telephone, Thuraya SV2520	1 000
1	Multimedia projector, Sony	750
1	Desktop computer, Dell Optiplex 320	750
1	Data projector, Sony	620
2	Air conditioner, Samsung BTU 18 000	590
1	Air conditioner, Hier BTU 18 000	500

Appendix 4DOCUMENTS PRODUCED DURING THE PROJECT

Dairy marketing study report in Herat. S. Tobgay. February 2009.

Dairy cooperative and management in Afghanistan. V. Mayur. May 2010.

Implementation methodology and planning workshop report. L. Rlung. May 2007.

Guidelines on how to train farmers. (In local language). L. Rlung. June 2007.

Guidelines on organization and management. (In local language). L. Rlung. October 2008.

Manual for fodder cultivation in Afghanistan. (In local language). M. Bashir. October 2007

Reproduction and infertility of cows. (In local language). L. Rlung. July 2009.

Guidelines for good manufacturing practices and marketing of dairy products. (In local language). L. Rlung. May 2011.

Five-year business plan. May 2011.

Common infectious diseases in Afghanistan. (In local language). L. Rlung. June 2012.

Hygienic milk production and supply. (In local language). L. Rlung. October 2010.