

Improving Milk Collection and Processing in Qena Governorate

Egypt Network for Integrated Development

Case Study 002

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Introduction:

Animal production in Egypt is highly concentrated in the hands of small farmers. About 16.1% of the buffalo herd and 7.3% of the cattle herd are owned by landless farmers. Nearly 89% of the buffalo herd and about 76% of the cattle herd are owned by small farmers who operate landholdings of 5 acres or less. In fact, livestock assets could be considered as a substitute for land assets. Landless farmers and small farmers who cannot expand on the farm size rely on livestock as the main source of income. Some studies postulate that more than 85 percent of livestock GDP in Egypt is earned by landless and smallholder farmers, representing the poorest households. Meanwhile, in Upper Egypt, total milk production represents about 35% of Egypt's total milk production, and buffalo's milk production represents about 37% of total buffalo's milk production in Egypt (Figure 1).

Figure (1): Milk Production 2011 (1000T)

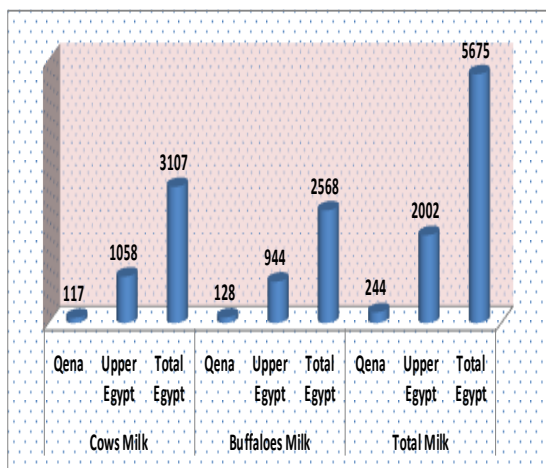
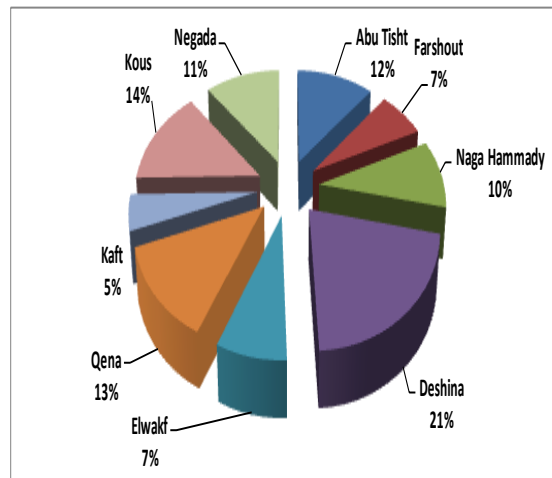


Figure (2): Total Milk Production by District (%) (Qena 2011)



In the Governorate of Qena, milk production is concentrated in the districts of Dishna, Kous, Qena, Abu Tisht and Naga Hamadi (Figure 2). Buffaloes milk production from a small animal holdings size of about 1-2 heads is the dominant patter representing about 57% of total milk production in the Governorate, while milk production from local cows represents about 34%. The remaining 9% are produced by foreign and hybrid breeds. Also, buffaloes milk production is much higher in specific districts reaching 76%, 78%, 67%, 64% and 63% of total milk production in Farshout, Naga Hamadi, Deshna, El Wakf and Kous districts, respectively.

About 23 percent of milk production is auto-consumed by farmers' families and about 45 percent is processed into dairy products such as butter and cheese. The remaining 32 percent either wasted, given away as gifts or very recently and in specific places sold in liquid

form. Unfortunately most of the home produced and consumed dairy products constitute a health hazard due to high bacteria count, bad handling practices and limited hygienic standards. Most of these products are sold in the village markets by women using primitive ways for handling (Figure 3). The dairy market is mainly dominated by village women or informal enterprises which reap high profit margins and offer little value added. Both do not comply with food safety regulations. Diseases common in Egypt due to unpasteurized milk include diarrhea, hepatitis, malnutrition, and tuberculosis.

Figure (3): Dishna Village Market for Dairy Products – Marketing by Village Women



Existing Models:

The Ministry of Agriculture and Land Reclamation (MOALR) through its Agriculture Research Center (ARC) has introduced a successful model for milk collection and processing in Khattara Village, District of Nagada (Figure 4). ENID support will benefit from such best practices in Qena.

Figure (4): A Model for the District Milk Processing Plant (Khattara Village - Nagada District)



Opportunity:

There are great opportunities for improving the dairy sector in Egypt in general and in Upper Egypt in particular. The areas that need immediate attention include animal feed, animal health, artificial insemination, and dairy marketing and processing. Indigenous cattle represent around 60% of the total cattle population in Egypt, compared to 37% for mixed breed cattle.

ENID is providing Qena with pilot initiatives in recycling of crop residues to animal feed, in veterinarian extension services, and in dairy processing and marketing. ENID pilot unit of dairy processing will help improve the efficiency and safety of the dairy sector in Qena Governorate. It is also hoped that the dairy unit will be replicable by private investors and non-government organization.

Approach:

ENID plans to establish small modern dairy processing units at the district level in Qena which is one of the least privileged governorates in Upper Egypt. The units will help overcome the problems of dairy marketing and the risks of food safety. The dairy units will produce safe and high-quality products and at the same time it would provide a forum for training and information dissemination. It will provide employment opportunities and income to women. ENID approach is to locate plants in most important district through the management of active and efficient NGOs. A stress was made from the beginning on ensuring the full participation of all stakeholders including women at the household, Active NGOs in the community and extension officers. ENID also ensured that the activity has a built-in sustainability element to ensure profitability, continuity and possible scaling-up in the future.

Few small dairy processing units will be established in three Districts of in collaboration with NGOs - Community Development Associations (CDA). For each, the land area of the collection and processing plant will be around 40 square meters. The plant will include: milk collection unit, unit for the sale of fresh pasteurized milk, unit for refrigeration and pasteurizing unit and a unit for cheese making. About 100kg are expected to be collected in the morning and about 150kg at night. The land will be made available by the CDA while ENID will furnish all of the required equipment and supplies. The CDA will manage the unit with support from ENID in the early phase of the project. Eventually, the whole responsibility of managing the dairy unit will be in the hands of the CDA.

In collaboration with ARC-MOALR, ENID will provide technical and managerial capacity building to the management of the selected NGOs including accounting and book-keeping measures in addition to training in operation and maintenance. ENID will also provide support to monitoring the technical and financial performance during the initiation period.

Benefits and Possible Impact:

Economic viability is an important consideration for the sustainable utilization of the dairy unit. About half of the collected liquid milk will be processed into yoghurt and the rest will be divided equally between pasteurized milk and cheese. The capacity of the plant is about 250 liter/production shift/day. The economic analysis of the proposed unit indicates that investment in dairy processing is quite profitable. This will enhance possibilities for sustainability. The benefit cost ratio is about 1.12 and the capital recovery/cycle is almost one year. The internal rate of return (IRR) on the proposed investment is pretty high reaching about 92 %.

Above all, the project will hopefully prove to be a success story that attracts the attention of the local community. Processing of dairy milk with the appropriate technology will help enhance the marketability of this perishable product on one hand and will help eliminate the health hazards associated with unpasteurized loose milk. It will also contribute to the food and nutritional security in Upper Egypt in addition to enhance employment opportunity and income for women in the poor villages of Upper Egypt.