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# The Egyptian experience in developing the red meat industry

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**SUMMARY** - During the 1960's, the Egyptian government faced a severe shortage in red meat stocks. This critical position in 1964 obliged the government to import large amounts of live fattened calves and sheep. The General Organization for Milk and Meat Production (GOMMP) had the task to conduct an integrated project for fattening buffalo calves. The project goal was to protect suckling calves from slaughter at a low weight (50-80 kg) and help farmers to fatten their calves for 8-10 months. In return farmers would get a subsidized loan, milk replacer and concentrate feed. Afterwards the GOMMP continued finishing the calves up to 450-500 kg. This policy increased meat production from weaned calves about seven times. This increase accounted for 17% of the red meat production at national level. Total short and medium loans for animal production reached LE 1,356 million in 1990. Due to some constraints and the adjustment to a free market system, the project was nearly stopped in 1991. In 1992 the same project was resumed under new regulations with \$US 50 million as a revolving fund.

**Key words:** Egypt, red meat, production, buffalo, green forages.

**RESUME** - "L'expérience égyptienne pour le développement de l'industrie des viandes rouges". Pendant les années soixante, le gouvernement égyptien a dû faire face à une très forte réduction des stocks de viande rouge. En 1964, l'Etat égyptien avait été dans l'obligation d'augmenter l'importation des veaux de boucherie et des moutons. L'Organisation Générale pour la Production de Lait et de Viande (GOMMP) avait reçu la tâche de préparer un projet pour l'engraissement des jeunes buffles. Le même projet avait ainsi pour but d'éviter l'abattage des jeunes veaux (de 50-80 kg) et d'aider les éleveurs à engraisser leurs veaux durant 8 à 10 mois. En contrepartie, les éleveurs obtenaient des prêts subventionnés, du lait et autres aliments concentrés. Le GOMMP continua ensuite le finissage des veaux jusqu'à 450-500 kg. Cette politique avait fait augmenter la production de viande au niveau national. Les prêts à court et moyen terme, pour la production animale, avaient atteint 1 356 millions de livres égyptiennes en 1990. A cause de certains problèmes et des politiques d'ajustement structurel, le projet a été arrêté en 1991. En 1992, il a été de nouveau mis en place avec un fonds de dotation de \$US 50 millions.

**Mots-clés :** Egypte, viande rouge, production, buffle, fourrages verts.

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## Introduction

Red meat production in Egypt depends on the available cattle stock and feed resources. An efficient management of those two resources contributes to obtain high domestic production of red meat. This paper wishes to contribute to highlight the goals, policies, and organization, with regard to the problem of red meat shortage.

The Egyptian population, during 1947-57, was increasing at the annual rate of 0.5 million, as shown in Table 1. Rate of annual increase jumped to 1.0 million during the period 1992-94. Population growth had the effect of increasing the demand of red meat (Fig. 1).

In Egypt, beef and veal are predominant in the red meat industry as well as in consumption. Small farmers in Egypt produce about 80% of the total red meat. Beef and veal production account 58% of the total meat production, while poultry accounts only 32%. Sheep, goat and camel production provides an extra 10% of red meat.

Table 1 provides with an overlook of cattle, sheep and goat, buffalo and camel numbers from 1947 to 1995. Buffalo population was less by 10.8% in 1993 compared to 1991, due to the end of "The National Project for Fattening Buffalo Calves".

Table 1. Human and ruminant populations in Egypt during 1947-1995 (in thousands)

Year	Human population	Adult cattle	Adult buffalo	Young calves	Grow. cattle	Grow. buffalo	Camel	Sheep and goat
1947	19,000	-	-	-	-	-	-	-
1957	24,600	-	-	-	-	-	-	-
1967	30,800	-	-	-	-	-	-	-
1970	-	-	-	-	-	-	127	3,221
1982	-	-	-	-	-	-	135	6,118
1983	-	42,531	79	189	434	141	-	-
1985	-	-	78	212	461	189	-	-
1987	-	-	93	182	482	236	-	-
1989	-	-	79	317	457	254	136	5,482
1990	-	-	69	179	486	-	-	-
1991	-	-	135	396	511	322	147	6,550
1992	56,192	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	220	6,951
1994	58,181	-	92	322	454	164	-	-
1995	-	-	111	407	436	239	13	7,352

Source: Central System for General Mobilization and Enumeration (1993); Economic Affairs Section, Ministry of Agriculture (1993); for 1994 and 1995: General Organization for Veterinary Section (1996)

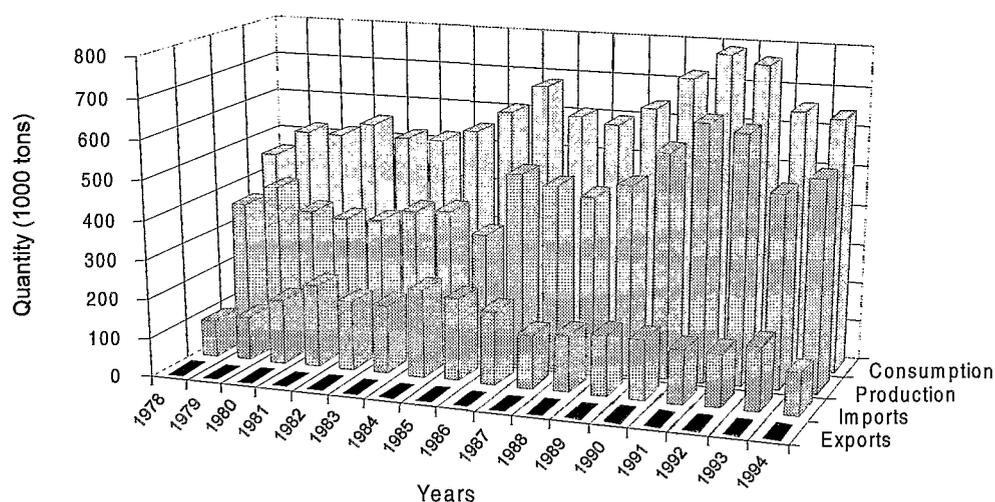


Fig. 1. Local production, imports, exports and consumption of red meat during 1970-1994 (Source: General Organization for Controlling Exports and Imports, Ministry of Economy and External Commerce, 1995).

### Past outlook

The severe shortage of red meat registered in Egypt in 1964 was the combination of different marketing and production problems.

Furthermore, red meat prices were increasing as the domestic demand did get stronger.

Recorded meat per capita consumption in 1961 was 8 kg, which was lower than the nutritive recommendations (33 g/day, or 12 kg/year).

National authorities found out that the causes of the meat crisis in 1964 were mostly structural. However, there were difficulties to provide Artificial Insemination to animals herds owned by small farmers. In fact, the use of non-registered breeding bulls lowered qualities and led to a slumpy genetic structure and low productivity in local breeds.

The strong urban demand induced breeders to move close to the cities and shift their production from milk to meat. Typical is the example of farmers that were selling calves to improve their cash flow during early lactation. This practice reduced the risk for high mortality rates of newly born calves, which reached 40% under bad management conditions.

Urban consumption was mostly lead by the improvement of living standards, which increased people awareness to consume animal protein and red meat.

Shortage of feed resources compared to feed requirements, occurs specially in the summer season, as mentioned by Abou-Akkada (1984) and shown in Table 2.

Table 2. Animal feed balance in Egypt in 1982

Item	TDN/ton	DCP/ton
Nutritive value of feed resources	9,623,736	1,535,230
Requirements of animals	12,730,358	1,367,258
Deficit or surplus	-3,106,649	126,972
Self sufficiency (%)	75.6	112.3

Source: Abou-Akkada (1984)

Inefficient use of Berseem (*Trifolium alexandrinum*), which represents 90% of the total area cultivated with green forages during winter (Table 3). This practice provides an excess of feed forages during winter. Instead, during summer animals do not get sufficient feed and forages.

Table 3. Cultivated areas with green forage crops in 1994

Crop	Area feddan <sup>†</sup>	Crop	Area feddan
Berseem, permanent	1,784,497	Rye-grass	57
Berseem, temporary	736,777	Sordan grass	190
Berseem for seeds	151,434	Maize, (Darawa)	229,795
Alfalfa	28,882	Sorghum, sorgo	9,097
Fodder-beet	255	Cowbea, sweet	1,802
Elephant grass	414	Barnyardgrass	1.805
Stagnina (Amshout)	3.987		

<sup>†</sup>2.5 feddan = 1 ha

Source: Economic Affairs Section, Ministry of Agriculture (1994)

There was also a wide spread practice of avoiding to use some crop residues which are produced in huge amounts, in feeding animals as corn stalks, sugarcane tops, rice straw.

Most of the sold buffalo weaned calves were slaughtered at low live weights (50-80 kg).

However, farmers were fattening cattle calves rather than buffalo calves since cattle meat was being preferred by the Egyptian consumers more than the buffalo meat.

## Project goals and adopted policies for the development of the red meat sector

After the big meat crisis of 1964, five main goals were identified to redress the shortage of red meat production in Egypt. Some policies were adopted and some procedures were followed to achieve these goals. The main goals were:

- (i) Increase the local production and decrease the imported quantities of red meat.
- (ii) Persuade farmers to fatten buffalo calves for 8-10 months to a weight of 150-300 kg, which would have improved farmer's income. Encourage farmers to invest in meat production by making credit with a subsidized rate of interest.
- (iii) Protect young buffalo females from slaughter. If fresh and cheap meat is available on the market, farmers would not fatten heifers for slaughter.
- (iv) Minimize epidemic diseases, which entered to the country through the imported live or slaughtered animals, and improve health care through vaccination and treatment.

The following policies were adopted to promote local red meat production:

- (i) Improve the genetic potentiality of local ruminants by using Artificial Insemination.
- (ii) Improve animal nutrition, quantitatively and qualitatively through the extension services feeding packages and concerning: the correct feeding; mixing leguminous and cereal forages to obtain balanced rations; conserving the surplus of green forages and crop by-products as silage; using barriers to dry Berseem to obtain improved hay; introducing new forages in animal feeding especially multi-cut summer forages; increasing the areas of oil-seed crops to use oil for humans and cakes for animals; add new areas cultivated by grain crops as energy sources; and improve the nutritive value of crop by-products mechanically, chemically or biologically.
- (iii) Improve animal management through improved of housing conditions.
- (iv) Improve marketing conditions and improve storage conditions for meat.
- (v) Improve extension and training services.

The procedures followed to organize the activity were as follows:

The General Organization for Milk and Meat Production (GOMMP) was established in 1964 for rearing large numbers of cattle, buffalo and sheep, for milk and meat production. The Organization was directed to conduct "The National Project for Fattening Buffalo Calves". The project was the most successful integrated project for fattening buffalo calves. This activity was sponsored by the Ministry of Agriculture and the Ministry of Supply and Internal Commerce (MSIC). The main procedures, which the project followed, were based on:

- (i) Contracting with interested farmers to fatten calves for 8-10 months in return of suitable credit and other facilities.
- (ii) Calves under contract were to be insured for 75% of their cash value at time of death or risk.
- (iii) Farmers would sell the calves to GOMMP at weights of 150-300 kg for finishing on its stations until reaching the live weight of 450-500 kg.
- (iv) The following facilities were available to the farmers:
  - Milk replacers and services concentrate feed mixtures with subsidized prices.
  - General Organization of Veterinary Services supervised health care of animals through vaccination and treatment, besides meat inspection in the slaughterhouses.

(v) Organizing marketing conditions of live mature calves by MSIC, which had its own selling outlets spread all-over, the country. Prices were decided by specialized committees headed by the Minister of Agriculture.

## Project achievements

The project was very beneficial for increasing red meat production considerably by a number of 275,033 fattened calf during 1989-90. This represented 19% of the total number of slaughtered buffaloes and cattle heads (Table 4). Red meat production represented 17% of the national production of fattened calves in 1990 (Table 5). Developing the animal wealth through the small farmers added a gross value of more than LE 500 million (250,000 calf x LE 2,000/head) to the agricultural production at the national level. It also contributed to the stability of meat prices during the project life. The project covered 16 out of 26 province in Egypt. Fig. 2 shows that the contracts reached 100% of the designed plan in 1989/90.

Increasing the available feeds in 1992 than the required TDN by 15%, and CP by 11.5%, (Di-Bouier *et al.*, 1995).

Table 4. Number and weight of slaughtered animals in governmental abattoirs (1991-1993)

Slaughtered animals	Years	No. of slaughtered heads	Average carcass weight/kg	Produced meat/ton
Bovines (Buffaloes and cattle)	1991	1,440,590	225	324,133
	1992	1,503,132	225	338,205
	1993	1,219,963	225	274,492
Sheep and goat	1991	624,920	20	12,498
	1992	639,377	20	12,788
	1993	524,341	20	10,487
Camel	1991	89,534	300	26,860
	1992	90,214	300	27,064
	1993	61,914	300	18,574
Total production of red meat	1991	-	-	363,491
	1992	-	-	378,057
	1993	-	-	303,553

Source: Economic Affairs Sector, Ministry of Agriculture (1995)

Table 5. Number of fattened calves at the national level during 1981-1990

Year	Number of fattened calves	Year	Number of fattened calves
1981	934,900	1986	1,341,470
1982	987,000	1987	1,581,160
1983	980,000	1988	1,186,291
1984	1,130,200	1989	1,080,280
1985	1,146,700	1990	1,263,943

Source: Economic Affairs Section, Ministry of Agriculture (1993)

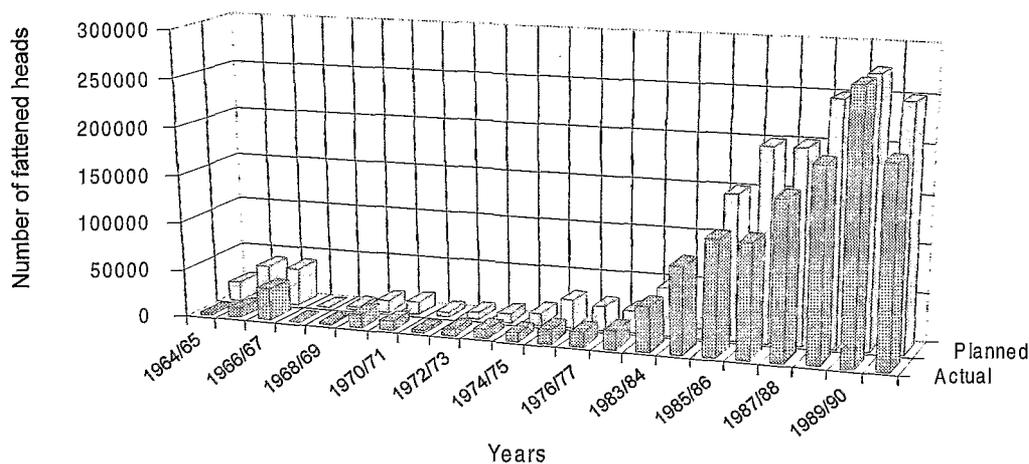


Fig. 2. Number of buffalo calves fattened during the project life (1964-1991) (Source: Khattab, 1992).

Important amounts of crop-residues were used to feed the animals. This minimized the environmental pollution created by burning those residues for household purposes as it was currently done in the past.

Also high amounts of dung were recycled as fertilizers, which reduced the need for chemical fertilizers, decreased cost of crop production and produced more healthy and safe crops.

About 250,000 farmers and workers were involved in the fattening process and subsequent works in the animal production.

Increased slaughtering resulted in high production of animals by products as fat, skin and bone. Industries were activated as feed plants, packing, producing vaccines and drugs. Furthermore, crops had also been improved increasing the production of corn, sorghum, Egyptian clover, forage crops and grain crops.

Expanded animal wealth practices contributed to plan suitable policies for red meat imports and exports based on real figures of local production.

Using milk replacers and concentrate starters for feeding suckling calves released large amounts of milk for human consumption.

The fact of minimizing hazards and the spread-out of epidemic diseases through imported animals and meat, contributed to improve the general level of health. In fact a large number of animals were vaccinated and treated regularly against different diseases.

The project contributed also to decrease the imported quantities of low quality meat due to the long periods of storage before consumption. In addition 642 tons of meat were exported on 1991.

On the other side, it helped to increase the share of red meat per capita to 12.2, 14.3 and 14.6 kg annually during 1991, 1992 and 1993 respectively.

Besides the previous achievements, the awareness of farmers to improve buffaloes production increased the productivity of milk and meat, and consequently increased farmers income.

### Constraints and weaknesses

The ex-post analysis of "The National Project for Fattening Buffalo Calves" confirms that the project reached its objectives. The project ended in 1991 due to the governmental decision of

adopting free market policies in the agricultural sector, which concurred to almost all the subsidies on inputs. Subsidies for concentrate feed were phased-out gradually in 1986. This led to a very big increase in prices of concentrated feed of more than seven times the price of 1982 (Table 6).

Table 6. Changes of concentrate feed mixtures prices during 1981-1992

Year	Price of concentrate LE/ton	Year	Price of concentrate LE/ton
1982	38	1987	138
1983	43	1988	149
1984	51.5	1989	180
1985	69	1990	235
1986	83	1991	270

Source: Animal Production Sector, Ministry of Agriculture (1995)

The drop in performance was decreasing as farmers gradually took over the governmental responsibility. They were adjusting their enterprises to match the free market policies. The number of fattened calves started to rise up under this new policy and a more sustainable development was promoted. The constraints, which impaired the project, were: (i) importing meat without accurate evaluation of the local production and needs for imports; (ii) weakness of freezing capacity which affected negatively quality in many areas; (iii) shortage during certain of milk-replacers, concentrate starter, or concentrate feed mixtures in some periods; (iv) complete dependency on the governmental channels for marketing the produced meat; (v) absence of active network of cooperatives to organize this activity; and (vi) depending on a large amount of governmental subsidies for running this activity.

## Conclusion

To secure their nutritive resources (red meat production) to the respective countries, small farmers in developing countries need to be encouraged. This could be done by grouping them in a responsible union, organization, or co-operatives. The union should organize farmers for obtaining credits, technical assistance, production inputs. Assisting farmers to market live animals it is very important in order to protect them from the monopoly of traders.

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