EXPANDING POULTRY PRODUCTION

IN

EGYPT

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Prepared For:
The Agency for International Development
August 1976

A.I.D.
Reference Center
Room 1856 NS
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The Government of Egypt (C.O.E.) is determined to increase the output of poultry products to satisfy the expanding demand for high protein foods resulting from continuing population growth. The poultry industry, under the direction of the Ministry of Agriculture, has moved forward rapidly, principally through the efforts of the Poultry Company, a public sector enterprise, commonly referred to as the Company.

This year the Company expects to produce a total of 45,000,000 chickens, 25,000,000 as dressed broilers and 20,000,000 day old chicks sold to the broiler farms of the Private Sector.

The Ministry of Agriculture has established a production goal of 100,000,000 broilers by 1980.

The U.S. Agency for International Development (U.S.A.I.D.) agreed with the Ministry of Agriculture to contract for a team of consultants to assess the general status of the poultry industry and make recommendations as to the general feasibility of expanding poultry production. This contract was awarded to Experience Incorporated (E.I.) of Minneapolis, Minnesota.

Experience Incorporated assigned the following team for the Egyptian study:

Minor C. Conn, Leader: Management and Marketing
Dr. Filmore E. Bender, Agricultural Economist
Lee W. Herrick, Poultry Consultant.

The team arrived in Cairo on June 15 and immediately embarked on a program, arranged by Dr. Khaled el Shazly, Deputy Minister of Agriculture, of assessing all segments of the industry: village flocks, public sector and private commercial sector. The team spent more than 18 days in the field in direct contact with key individuals in the sectors mentioned, various government research institutions and service divisions serving the industry as well as cooperatives, both governmental and private. The team was hampered throughout the study by a lack of reliable statistics.

The team is hopeful that its conclusions and recommendations will assist the C.O.E. in reaching their poultry production goals and in enabling the industry to take advantage of the latest technology thereby avoiding some of the development problems which other countries have experienced in expanding their poultry industries.
II SUMMARY AND RECOMMENDATIONS

A. Summary

The government of Egypt is determined to increase the available supplies of chicken meat and eggs available to Egyptian consumers. Considerable resources have been devoted to the construction of public sector production facilities. Given the current situation, the team has attempted to assess present facilities, institutional arrangements and societal infrastructure in order to recommend a program of action that would result in achieving existing government goals in the most effective manner possible.

Although eggs are an important sector of Egyptian poultry production, it is the drive to increase broiler production that holds center stage for the Egyptian government. Investment in broiler production facilities is already extensive with further expansion planned. These facilities represent a substantial capital investment. In addition, the importation of feeds and other materials represents a serious and continuing drain on scarce foreign exchange.

A preliminary assessment indicates that domestic production is greatly preferable to the importation of broiler meat. In order to meet the anticipated needs of 1977 with imported broilers would cost more than 63 million dollars. On the other hand, importing all needed feed should cost less than 33 million dollars, thus reducing foreign exchange outflow by about 50%. It is probable that even this can be further reduced.

There is considerable room for improvement in all sectors of poultry production. Current cost of broiler production is reported to be 53 piaster/kg* with considerable government subsidies. The equivalent U.S. cost is approximately half of this without subsidies. It would not be unreasonable to expect a cost of production in Egypt of 37 pt/kg without government subsidies. Such a cost reduction can be achieved through increased efficiency.

B. Recommendations

1. This report recommends a broad-based program designed to bring these efficiencies to Egyptian poultry production. Among the key elements of this program are:

   a. The construction of turn-key production facilities for integrated broiler and egg production by the private sector.

   b. The establishment of commercial vaccine production to meet industry needs.

   c. The establishment of a marketing program to effectively distribute the anticipated increased production.

2. In addition to these three key recommendations, the recommended courses of action describe a number of parallel and supportive programs designed to provide cross support and reinforcement.

*1 piaster = 1.5 U.S. cents
a. Five of these are wholly within the Ministry of Agriculture.

b. Two of these are focused on expanding village level output.

c. Three of these are involved with improving the operation of the Poultry Company.

d. Two of these are focused on expanding private commercial output.

Of these twelve projects only three are clearly enough defined that action can be taken with little additional effort. The remaining nine projects will each require a six month planning period utilizing a total of 22 American consultants and 24 Egyptians. This implies a coordinated planning effort before these projects can begin in 276 man months. Although not all of these planning efforts will require six months, none will be less than two months.

The primary beneficiary of these projects will be the Egyptian consumer. The expansion of supply envisioned will result in steady supplies of poultry meat and eggs at moderate costs.

In addition, the flow of cash income to rural areas will result in important changes in the level of living for Egyptian farmers.
Poultry production in Egypt is primarily concerned with the production of broilers for meat and rearing of chickens for egg production. Ducks, turkeys, pigeons and rabbits are all produced in the country but are not of major importance. This report confines itself to an analysis of broiler and egg production.

Egypt is a meat deficit country. Because of the lack of pasture and forage, it is unrealistic to attempt large increases in red meat production. Consequently, the G.O.E. has embarked upon a broad program designed to significantly increase poultry meat production. Although such an industry will be based on imported food ingredients, it can be beneficial to the Egyptian economy.

A. General State of the Industry

The poultry industry can be divided into three broad sectors: Village flocks, the Public sector and the Private Commercial sector. The government has placed a high priority on increased poultry production. In general, the constraints upon expanding output are: inadequate supplies of feedstuffs, limited foreign exchange to import feed ingredients and selected equipment, limited supplies of vaccines, and limited supplies of high quality baby chicks. In addition, the poultry industry in general, but the public sector in particular, has a tendency to "overbuild" on physical facilities. Nearly all of the housing observed by the team appeared to be built to last for a thousand years. The public sector poultry housing had an additional burden of using automated equipment in a country with a surplus of unskilled labor and a shortage of skilled maintenance personnel.

Factors which hinder expanded poultry output but which also affect other sectors of the agricultural economy include: an Extension Service with a great deal of ability but limited means; the establishment of cooperatives which are more concerned with implementing government policy than with improving the welfare of farmer members; and the lack of an effective marketing system.

B. Village Flocks

More than 90 percent of the eggs and 80 percent of the chicken meat produced in Egypt comes from the village flocks. At this level, the primary constraint to increased production is the lack of adequate nutrition with most birds living as scavengers. Chicken meat is a by-product of egg production. The second most important constraint is the lack of vaccines and medication. Third, there is a long term need to upgrade the genetic stock of village flocks.

C. Poultry Company

1. Purpose

The Egyptian Poultry Organization (now known as Poultry Company) was created in 1964 for the purpose of increasing the production of chicken meat and eggs. Originally, the Company planned a completely integrated operation from grandparent and parent stock through to the processing of dressed birds. There is an apparent internal contradiction of goals and actions. It was reported that the Company is going to increase supplies of day old baby chicks and feed to the
private sector and de-emphasize production and processing. At the same time, new grow out facilities and processing plants are still being built by the Company.

2. Broiler Production

The facilities observed were substantially overbuilt resulting in large amounts of capital being tied up in houses and related equipment. In general, physical layout, distances between farms and buildings on the same farm reflected careful planning and an understanding of disease control, ventilation, etc.

The processing plant observed had poor sanitation standards and careless handling of birds both live and on the line.

The feed mill appeared to be operating at more than capacity. Plans are to expand capacity to relieve the current bottleneck. With both feed and feed ingredients stored on the ground outside and on the floor inside, feed contamination and mill losses must be substantial. Using bags to haul ingredients from Alexandria and bags to deliver finished feed results in additional handling costs and feed losses. It is estimated that mill losses exceed 5 percent.

The dependence of the Poultry Company on a single breed is a matter of considerable concern. Although assurances were given that other breeds are evaluated from time to time, it is apparent that only a single breed is being utilized.

3. Egg Production

Public sector production of eggs did not begin until 1972. There is a single production complex at Helwan. As in the case of broilers, there is extensive use of automatic feeders and waterers with the concomitant requirement for skilled maintenance. There is also dependence upon the same breeder supplying broiler breeder stock. These difficulties seem to be endemic to the nature of a public sector corporation.

4. Administrative Structure

The Poultry Company appears to be overstaffed. The administrative structure shown in the organizational chart (Appendix) appears reasonable. However, operating efficiency could be increased through the establishment of profit incentives at the various production stages. The current structure does not provide incentives for middle management to innovate or try to improve their operations.

D. Private Sector

The commercial private sector buys day old baby chicks and feed from the Poultry Company in order to produce broilers for the urban free market. In general, the owners of these installations are middle and upper income individuals. Growth has been very rapid in the last three years. Until recently profits were very high (as much as 30 pt/bird). Current levels of production are considered excessive in that prices at the farm level have dropped from 85 pt/Kg. to 60 pt/Kg. These reduced prices imply a profit of approximately 5 pt/bird.

Because of the rapid expansion of production and the downward pressure on prices, many growers are expressing a considerable interest in engaging in marketing activities. This may in part reflect a reaction to the current marketing
system which in Cairo is apparently dominated by four organizations each formed around a nucleus of relatives. With only four major buyers of poultry at the wholesale level, it is conceivable that both producers and consumers could benefit from a modified distribution system.
IV PROBLEMS FACING THE EGYPTIAN POULTRY INDUSTRY

The poultry industry in Egypt faces a broad range of problems. Some of these are general throughout the Egyptian economy. Some are specific to agriculture. Some are specific to poultry. Some are specific to village flocks, the public sector of poultry production or the private commercial sector. There is little that can be done about those problems that are endemic to the total society. However, they should be noted. Among these are the serious overstaffing of government agencies. Salaries absorb much of the budgets of various agencies leaving far too little for actual operations.

In addition, throughout the economy there is a shortage of skilled technicians (carpenters, plumbers, electricians, etc.), because of the higher pay available for these skills in other Arab countries. As a result, maintenance is extremely poor – at times reaching the point where production must cease. Also, an overvalued foreign exchange rate causes distortions concerning the use of imported goods. Finally, many of the economy's resources are being devoted toward rebuilding the Suez Canal area, rebuilding war damaged areas and maintaining military preparedness. These factors are considerably beyond the scope of this study. However, their presence does affect the ability of the country to increase its output of poultry and eggs.

Among the problems that are specific to agriculture the following can be included:

a. - Egypt has a very limited land base for agriculture. Animal feeds compete for land used to produce food for humans.

b. - Communications between Ministries of the government and within the Ministry of Agriculture appear to be very poor. It is readily apparent that there is little delegation of authority and responsibility. As a result, relatively little action takes place at the farm or village level particularly in the area of extension services.

c. - After four weeks, the team was unable to obtain an organization chart of the Ministry of Agriculture. This prevents the team from being sure that the relevant agencies have been contacted. It is also an indication of the lack of effective communication within the Ministry.

d. - The government has maintained strict price controls on some agricultural commodities and not on others. These controls have caused considerable distortions in resource allocations in the agricultural sector.
Among the problems that limit the expansion of poultry production that are specific to this industry are:

a. a shortage of poultry feeds;
b. a chronic shortage of vaccines and medicines;
c. a shortage of foreign-exchange for importing feeds, feed ingredients and other critical items;
d. a shortage of day old chicks for broiler production and improved genetic stock for egg production;

e. in many ways the most important constraint is the size of the total market which at this time is completely unknown.

Within the poultry industry, the different sectors face different problems. Village birds exist largely by scavenging. Production is estimated to be 40-80 eggs per bird per year. Given adequate nutrition, native birds are capable of 180-200 eggs per year. Adequate nutrition could result in a doubling of egg production with virtually no other changes. The number two priority for village flocks would be an adequate supply of vaccines and medicines. The third and longer range priority would be an upgrading of genetic stock through the distribution of research developed improved breeds and improved hatching operations.

The public sector is already expanding output at a rapid rate. The problems of the public sector are not those of expansion but rather of efficiency. Many facilities appear to be underutilized, yet more are being built. The entire structure of the public sector discourages innovations and improvements in efficiency. There is a vital need for training in management and administration in order to improve their operations.

The private commercial sector is willing and able to expand output of broilers rapidly. The number of privately owned grow-out facilities increased from 200 units in 1974 to 600 units in 1976. There are 3,500 individuals with permit applications waiting for approval to build broiler houses. Existing houses are producing about three batches per year instead of the five batches per year that would be possible with adequate supplies of chicks and feed. However, the private sector is already experiencing declining revenues as a result of the very rapid expansion in output in the last three years. It appears that the private sector broiler production represents investment by middle and upper income individuals to produce a semi-luxury food item for middle and upper income urban dwellers. Consequently, their market may not be as large as originally anticipated.

As indicated in the preceding paragraphs, the local poultry industry is beginning to experience growing pains. Part of the recent decline in prices received by the private broiler farmer is seasonal, but the team is convinced that most of this decline can be attributed to excess supplies of broilers on the Cairo market.

This is one of the cyclical patterns which was so common in the American market during the early periods of its development. This is a new experience for the Egyptian industry. The excess supply can be leveled out by some of
the producers going out of business, but this could retard the growth of an industry which the G.O.E. is making an all out effort to expand.

It is reasonable to assume that the government is going ahead with its program to reach a production of 100,000,000 broilers in 1980; already they are projecting 200,000,000 by the year 2000.

The team also heard that it is the intention of the government to force down the prices for broilers, thereby reducing the profit margin of the private grower to roughly 5 pts. per bird. In their opinion, this is a reasonable margin. This is one of the reasons why the Poultry Company has increased their allocation of day old chicks to the private sector during the present year. This has been done with the full realization that overproduction might create some dislocations in the private sector. Some of the growers will get out of business.

We were told that the Minister of Agriculture has petitioned the Minister of Supply to:

a. - Abolish the subsidy price for yellow corn.

b. - Remove the present ceiling of 58 pts. per kilo dressed for broilers sold through the Government Coop Stores.

It is their intention to let the law of supply and demand govern prices in the poultry industry. This determination will be costly; it will cause peaks of overproduction and dips when broilers will be in short supply. Over-expansion will create marketing problems; at present broilers are only being sold in the Cairo and Alexandria areas which embraces about one quarter of the country's total population. No studies have been made as to what the per capita consumption of broilers is in these cities or price needed to achieve maximum consumption. Other markets will have to be developed at interior points which will require a distribution system and central storage points.

Efficiencies will have to be achieved to bring production costs in line with other poultry producing countries. The G.O.E. realizes a thriving poultry industry will be based on importation of basic raw materials for feeds. They are using Lebanon as an example which during the last 20 years has established a prosperous broiler industry based on imported rations. They have become an important exporter to the Middle East markets.

The Egyptian industry can grow and achieve efficiency by trial and error, but this is a costly procedure which the economy can ill afford. They need help principally in practical training, modern management techniques, marketing, and feed formulation. It is difficult to assign priorities; all are of equal importance. It is gratifying to note that the G.O.E. already recognizes the need to solve the supply and quality problems of vaccines. They appear to be taking the necessary steps to correct this situation.

The G.O.E. also recognizes that Foreign Exchange for the ingredients required for poultry feed is the keystone to developing a thriving poultry industry and seems confident that it will be able to resolve this problem. How this will be accomplished was not revealed to the team. The government
has projected some basic requirements for the year 2000 as follows:

TABLE 1

<table>
<thead>
<tr>
<th>Annual Consumption</th>
<th>Meat</th>
<th>Dairy &amp; Dairy Products</th>
<th>Fish</th>
<th>Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Average</td>
<td>48.3</td>
<td>61</td>
<td>9.7</td>
<td>3.3</td>
</tr>
<tr>
<td>Egyptian Average</td>
<td>9.5</td>
<td>40</td>
<td>2.7</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Egyptian Goal for year 2000

|                     | 14   | 48 | 4 | 3.4 |

TABLE 2

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Meat</th>
<th>Poultry</th>
<th>Dairy</th>
<th>Fish</th>
<th>Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>37</td>
<td>287</td>
<td>88</td>
<td>1,500</td>
<td>100</td>
<td>46</td>
</tr>
<tr>
<td>Estimated</td>
<td>70</td>
<td>550</td>
<td>154</td>
<td>2,813</td>
<td>190</td>
<td>90</td>
</tr>
<tr>
<td>2000</td>
<td>70</td>
<td>550</td>
<td>480</td>
<td>3,000</td>
<td>300</td>
<td>240</td>
</tr>
</tbody>
</table>

What it should be by 2000

A/Millions

The team believes the proposals for assistance as commented on in the following sections of this report falls within the scope of A.I.D.'s objectives and merits their consideration for funding and other assistance.
V ECONOMIC EVALUATION OF POULTRY PRODUCTION IN EGYPT

It is difficult to provide an economic analysis of Egyptian poultry production. Reliable statistics are simply unavailable. This section of this report utilizes those statistics obtained in Egypt, plus published data available in the United States.

As indicated in the previous section, the egg industry is primarily a village flock activity with eggs being consumed in the rural areas as well as being shipped to urban markets. The meat that is produced as a by-product of egg production is the preferred chicken meat of rural consumers. That is, it is a tough, stringy meat that, when boiled, retains its character as meat. In contrast, broilers are a very tender meat unsuitable for traditional cooking methods and consumed primarily by urban dwellers. Because of the different production techniques involved and the different final consumers, it is the growth of the broiler industry that must be carefully examined.

At this time, broiler meat is considered a semi-luxury good. As Appendix 4 shows, the current market price of broilers is 97.5 pt/kg. This was the prevailing price in urban markets in July, 1976 and was considered a depressed price by producers. As Table 3 shows, it would be possible to import broiler meat from the U.S. at a cost of 84.8 pt/kg at the tourist rate of exchange. The cost would be 49.3 pt/kg at the official rate of exchange. At these prices, broiler meat could become a staple in the diet of middle income people. The question facing the government of Egypt is whether or not these more favorable prices can be achieved.

The alternative to importing broiler meat would be domestic production with importation of selected inputs primarily corn and soybean meal. Table 3 shows current U.S. prices and expected costs for these key ingredients delivered to Egypt. Table 4 shows the cost of a ton of feed utilizing current prices and the feed formulation presently used by the Egyptian Poultry Organization. Shipping costs were provided by an American shipping firm. Ingredient prices were taken from Feedstuffs and The Wall Street Journal.

The government of Egypt is anticipating production and consumption of 50 million broilers in 1977. At one kilogram per bird, this represents 50,000 metric tons of meat. The importation of this quantity of meat would cost 63.3 million dollars.

To produce this quantity of meat would require approximately 157,143 metric tons of feed, assuming a dressing percentage of 70 percent and a feed conversion of 2.20 pounds of feed per pound liveweight. This would cost 35.4 million dollars. However, even this reduced figure is too high. Current feed cost in the U.S. is $140/ton or $154.32 per metric ton. Delivered in Alexandria as finished feed, this would cost only $204.32/mt as opposed to an ingredient cost alone of $225.32/mt as shown in Table 4. A major part of this difference is probably due to the current policy of the Egyptian Poultry Organization where the goal is to formulate a feed that meets a government standard rather than a feed
that produces desired results at least cost.

The foreign exchange drain that the feed represents could be reduced even further through the utilization of least cost feed formulation and innovative exploration of alternative feed ingredients through feeding trials. Sorghum from the Sudan, domestic corn and other ingredients may partially or completely substitute for imported American corn.

The problem as seen by the E.I. team is whether or not Egyptian agriculture can achieve the efficiencies experienced in other countries — notably the U.S. In interviews with producers in Egypt, the E.I. team was told that the cost of production was as follows:

| Cost of chick | 15 pt |
| Administration | 5 pt |
| Vaccination | 5 pt |
| Feed | 51 pt |
| **Total cost per bird** | **76 pt** |

With a dressed weight of 1 kilogram and a liveweight of 1.429 kg, this budget implies a cost of 53 pt/kg liveweight.

The comparable cost in the U.S. today is reported by G.B. Rogers in the Poultry and Egg Situation Report, June, 1976, pp. 32-33, as 21.3¢/lb. An independent study reported in Broiler Industry, May, 1976, pp. 30-35, indicates a cost of production of 20.5¢/lb. Using 21.3¢/lb yields a cost of 47.0¢/kg or 31.5 pt/kg (tourist rate) or 18.3 pt/kg (official rate).

In summary, current costs and prices are relatively high in Egypt. The primary cause appears to be a lack of profit incentive to strive for greater efficiency and a lack of modern management techniques. It appears reasonable to assume that production costs could be reduced by more than 30 percent with aggressive use of modern technology and still yield a reasonable return to producers without any subsidies from the government. Such a situation could result in a substantial improvement in the Egyptian diet. The next section of this report outlines a program of action that would channel poultry production in Egypt into a more efficient structure.
## Table 3

**ESTIMATED COST OF CORN, SOYBEAN MEAL AND BROILERS DURING 1976-77**

<table>
<thead>
<tr>
<th>Item</th>
<th>U.S. domestic price</th>
<th>Conversion to metric tons</th>
<th>Price in dollars/metric ton</th>
<th>Shipping cost dollars/MT</th>
<th>Delivered cost in Alexandria dollars/MT</th>
<th>Delivered cost 67 pt/dollar</th>
<th>Delivered cost 39 pt/dollar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$2.75/bu.</td>
<td>39.36825 bu/MT</td>
<td>108.26</td>
<td>50.00</td>
<td>158.26</td>
<td>106.03</td>
<td>61.72</td>
</tr>
<tr>
<td>Soybean Meal</td>
<td>$200.00/ton</td>
<td>1.1023 tons/MT</td>
<td>220.46</td>
<td>50.00</td>
<td>270.46</td>
<td>181.21</td>
<td>105.48</td>
</tr>
<tr>
<td>Broiled Broilers</td>
<td>45¢/lb.</td>
<td>2,204.6 lbs/MT</td>
<td>992.07</td>
<td>273.11</td>
<td>1,265.18</td>
<td>847.67</td>
<td>493.42</td>
</tr>
</tbody>
</table>
Table 4
ESTIMATED COST OF BROILER FEED DELIVERED IN ALEXANDRIA

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Weight (kg)</th>
<th>Price per MT (€)</th>
<th>Total Cost (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>600</td>
<td>158.26</td>
<td>94,956</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>250</td>
<td>270.46</td>
<td>67,615</td>
</tr>
<tr>
<td>Cottonseed meal</td>
<td>40</td>
<td>270.46</td>
<td>10,818</td>
</tr>
<tr>
<td>Fishmeal</td>
<td>60</td>
<td>473.99</td>
<td>28,439</td>
</tr>
<tr>
<td>Animal fat</td>
<td>20</td>
<td>424.78</td>
<td>8,496</td>
</tr>
<tr>
<td>Premix</td>
<td>30</td>
<td>500.00</td>
<td>15,000</td>
</tr>
</tbody>
</table>

Total ingredient cost per metric ton = $225,324

1 $200.00/short ton
   $220.46/MT + $50.00 shipping

2 $430.00/short ton
   $473.99/MT

3 17¢/lb
   $374.78/MT + $50.00 shipping

4 Assumed to be $500.00/MT
VI RECOMMENDED COURSE OF ACTION

A. Ministry of Agriculture

Within the Ministry, clear lines of communication and responsibility should be established. Currently, there is confusion and conflict over which agency should be talking to the farmer about what subject. Reductions in staffing with concomitant increases in operational budgets would greatly increase the effectiveness of this Ministry. Research on feed improvement and nutrition appears to be of a high professional caliber. The lack of meaningful statistics hampers research efforts in Egypt. Given the current state of affairs it is not possible for agricultural economists to estimate the extent of the potential poultry market. Because of the social goals of the Egyptian government, income distribution and economic participation throughout the society are important factors in any governmental action. Other countries have found agricultural cooperatives an important means of raising agricultural productivity and simultaneously increasing the income of small farmers. The Ministry of Agriculture directly controls the supply of a critical input for poultry production - vaccines. Throughout our visits, the quality and quantity of vaccines was constantly raised as an issue. The Poultry Company has bypassed domestic supplies and imports vaccines and medicines in order to satisfy its needs. As a result of these factors, the team recommends the following courses of action:

a. Using modern management techniques, establish clear lines of authority and responsibility within the Ministry of Agriculture. This is a long term continuing problem and will require sending top and middle level government administrators to schools of business (e.g. Harvard, Stanford or Northwestern University).

b. Establish a program of joint U.S. - Egyptian research in poultry breed improvement and nutrition including exchange of personnel and genetic stock. This must be parallel with an extension program designed to distribute this improved stock and the knowledge gained on nutrition.

c. Work should be initiated immediately on upgrading the statistical data base available and the published agricultural economics research. This could be started with assistance from AID but the continuing program would necessarily be an Egyptian responsibility.

d. Training programs in the use of cooperatives to facilitate agricultural production and economic/social development should be started immediately. AID might provide a team of cooperative advisors with broad experience in such training programs. Contact might also be made with Dr. V. Kurien, Chairman, National Dairy Development Board, Anand, Gujarat, India where training facilities exist to expose individuals to cooperatives in action. Groups sent should be approximately 20 percent government individuals responsible for cooperatives and 80 percent farmers who will serve as nuclei of cooperatives in Egypt.
e. The Ministry of Agriculture should immediately establish a facility capable of commercial production of vaccines. This means a separation of research and production facilities. This team urges that the new facility be a commercial venture with foreign capital cooperating with Egyptian capital or the Egyptian government. However, it is conceivable that a public sector cooperation comparable to the Poultry Company could satisfy the need. In the event that no satisfactory means of providing adequate supplies of vaccines can be formed, the free importation of vaccines and medication by the public and private sector must be authorized.

B. Poultry Industry

At the industry level, the primary course of action must be the facilitation of importing feed ingredients and other critical items unavailable in Egypt. This will require careful government analysis of the impact of freer importation.

1. Village Level

It appears that adequate nutrition is the single most restrictive factor holding back the increased production of eggs at this level. It is recommended that the following course of action be taken:

a. The establishment of a coordinated program to work at the village level on poultry meat and eggs. This would concentrate on establishment of cooperative feed mills (or public sector produced feed distributed through local centers) to upgrade nutritional levels and the establishment of cooperative marketing facilities to channel the increased egg production into urban centers. Such a program would also include a comprehensive effort in extension education in flock management, bird health, housing, etc.

b. The medium and long term action of increasing supplies of vaccines and upgrading the genetic stock of village flocks could be handled through the coordinated team effort which would initially be focused on feed, nutrition, flock management, housing and marketing.

2. Public Sector

The Poultry Company has been able to expand its production of broilers and eggs at a rapid rate because it has been given autonomy of action and the resources to do the job. It has been able to sell all that it produces because its production is sold at about half the prevailing market price. However, the Poultry Company suffers from the same difficulties experienced by other public sector enterprises caused by a lack of incentive to innovate and strive for greater efficiency. For the public sector the following course of action should be taken:

a. The Poultry Company should slow down its expansion of grow out and processing. It should concentrate on supplying feed and day old baby chicks to the private sector.

b. A contract should be made with a reputable, fully integrated
U.S. poultry company for training in the U.S.A. of selected Egyptian personnel for an agreed period of time. Holly Farms has submitted a proposal for this service at a cost of $390,000 per annum for two years. This firm is reputable and could provide this service but their charge should be more specific. A statement should be furnished as to how the charge was calculated, personnel involved and benefits which the G.O.E. could expect to receive. To accomplish this, top and middle level management in the Poultry Company should be exposed to short and long term training.

i) Short term courses (e.g. one week) should be offered in Egypt by the American Management Association or similar organization.

ii) Long term courses should also be utilized. Typical of these would be the three month courses offered by the previously mentioned Business Schools of Harvard, Stanford or Northwestern Universities.

3. Private Sector

The private sector is concerned primarily with the production of broilers for the urban markets. The critical shortages experienced by this sector are feeds, day old chicks and medication. It has already been recommended in earlier parts of this section the course of action necessary to increase the production of these critical inputs. However, in the long run the private sector must move toward a fully integrated complex including an active program in marketing. Therefore the following course of action would be the most appropriate:

a. The construction of a turn-key, fully integrated poultry complex should be undertaken. This should include a feed mill, processing plant and breeder-hatchery operation for broilers, the grow out facilities would be owned by individual Egyptians. The central facilities would eventually be owned by a cooperative of such growers. This facility should be constructed and operated by a foreign (preferably American to benefit from the technology) firm. Each foreign executive would have an Egyptian counterpart. The goal would be a five-year transition with eventually an all Egyptian operation, foreign investment repatriated and a model facility in existence which others in Egypt could duplicate for further industry expansion. A Cal-Maine subsidiary AZL International has submitted a proposal to the G.O.E. estimating a total capital investment of $14,000,000 over 7 years. The cost appears reasonable but it should be broken down into its component parts with explanation as to how much would be spent for imported machinery, equipment, etc. and amount of investment in Egyptian-currency. Some of their projections as to feed costs should be checked out - are they going to use local grains or imported? Cal-Maine is competent and one of the leaders in the USA poultry industry, but their projected cash flow should be closely checked to see if it is realistic. The team did not have the time or facilities to do this.
b. Closely related to (a) would be the establishment of an aggressive marketing program to move dressed broilers into urban markets. This would require the use of foreign expertise in marketing of meat products.

c. Both (a) and (b) will require detailed plans showing timing of operations, location of facilities, cash flow of projects involved, etc.

4. Study of Broiler and Egg Markets

In broilers, a rapid expansion of output is currently underway. If the course of action outlined above is implemented, broiler production will continue to expand rapidly and will be paralleled by an equally impressive increase in egg production. The greatest obstacle to increased output is the quantities which the market can absorb at prevailing prices. As output expands, prices will be reduced. Much more needs to be known about demand before a projection can be made. The only demand study found by this team indicated that poultry meat was a semi-luxury good with an income elasticity of 1.58. However, this 1967 Master’s Thesis was based on the 1964 family budget survey. No more recent studies could be found.

In summary without knowing more about the market than is currently known, the team cannot recommend that poultry production be increased at breakneck speed. The course of action outlined above yields a moderate broad-based program designed to yield long term continuing benefits to the Egyptian economy including both consumers and producers.
VII TIMETABLE AND PERSONNEL FOR IMPLEMENTING THE RECOMMENDED COURSE OF ACTION

A. Overview

As indicated in the previous section which presented a recommended course of action, very little in the way of increased investment in the public sector needs to take place. The only major public investment in physical facilities anticipated was bulk handling capability for bringing grains into Egypt. This work is already underway.

However, in the private sector it was previously recommended that a fully integrated broiler and egg complex be established to serve as an industry model. This will represent a substantial new investment in Egypt. The recommended vaccine production facility will represent new investment by either a public sector corporation, a foreign private investor or a joint venture. This section of this report presents a timetable for action listing specific inputs.

Figure 1 (found at end of this section) shows the integrated program of action recommended by the team. Each section has a cross-hatched area to represent a six month planning and organization period. These planning efforts should be by joint Egyptian-AID groups. The Egyptian personnel are needed to make explicit the problems they see and the personnel involved. The AID members of these planning teams would be aware of funding possibilities as well as training and other resources available in the U.S.

As components of this schedule of action are presented, recommended teams and project outlines will be given.

B. Ministry of Agriculture

1. Improve Internal Organization and Communication

This project will require two years of intensive study and analysis followed by one year of implementation with continuing action beyond that time as needed to maintain effective organization and operation. The first phase of two years would involve sending selected top level government administrators to the U.S. for training or further training in modern management techniques. Using the three month study programs, eight sets of administrators could be sent. Parallel to this would be a two year study of the current organizational structure, lines of communication, clientele groups, etc. During the second year, Egyptians who participated in the first year of foreign study in management could join the study group and assume responsibility for implementing the final recommended organizational structure.

To initiate this effort, it is recommended that a team be established that would spend six months developing the detailed three-year program. Such a study group should be composed of four Americans, four Egyptians from the Ministry of Agriculture and two Egyptians affiliated with the Arab League of Management or reputable business schools.
2. US-Egyptian Coordinated Poultry Research

This project would result in the re-establishment of a cooperative effort and exchange of personnel which took place in the 1950's. The goal of this effort would be the advance of science in both countries with the additional goal of upgrading poultry breeding, disease and nutrition research in Egypt. This project would have four inter-related phases: sending Egyptian researchers to the U.S. for post-doctoral work, bringing American experts to Egypt to assist in on-going research efforts, the importation of new genetic stock and the sending of Egyptian students to the U.S. for graduate study. This project would provide the impetus for a continuing, long-term improvement in bird health and productivity in Egypt.

To initiate this project, it is recommended that a team be established that would spend six months developing a detailed 42 month program. Such a study group should contain four Americans (one involved in poultry research by the federal government-and three involved in different aspects of poultry research) and at least four Egyptians involved in poultry research. (The team recommends that Drs. Madkour, Housaini and Sabban be considered.)

3. Agricultural Economic and Statistical Data/Research

The study team was continually hampered by the lack of meaningful data and recent analysis of such data. Other research and planning groups face this same obstacle. Although this problem has been addressed by a separate USDA study team, it is still appropriate to present the team's recommendation. This effort to upgrade available statistical data and agricultural economics research would require a 42 month intensive effort followed by a continuing Egyptian program. The three and one-half year project would be in four phases. The first phase would involve sending selected personnel to work with American counterparts in the Statistical Reporting Service both in Washington, D.C. and at various state offices as well as participate in specialized courses in agricultural statistics offered by the Bureau of Census. It may also be appropriate to send selected personnel on post doctoral studies in agricultural economics. Paralleling this would be a second effort of bringing experts in the collection of agricultural data to work with the Ministry of Agriculture on plans for systematic data collection and publication. Consultants from the Federal Market News Service, the Statistical Reporting Service, the Bureau of Census, etc. should be utilized. Finally, in order to maintain the momentum established by this intensive effort, a program of sending students to receive graduate training in agricultural statistics and agricultural economics should be initiated and maintained.

To initiate this project, it is recommended that a team be established that would spend six months developing a detailed three and one-half year program. Such a study group should contain four Americans (one from the Statistical Reporting Service, one from the Bureau of Census and two agricultural economists and four Egyptians. (It is suggested that Dr. K. Hindy, Ministry of Agriculture, Dr. O. Kholy, Tanta University and Dr. M. A. Zaki, Assiut University be considered.)

4. Cooperative Development

Cooperatives mean different things to different individuals. In this report, the term cooperative means a farmer owned, organized and run entity. Such structures have been instrumental in raising farm incomes and increasing agricultural productivity in the U.S., in Scandinavia and in India.
This program involves three phases over a period of 30 months. It begins with sending selected government personnel to the U.S. to work with their counterparts in the Farmers Cooperative Service and to observe cooperatives in action. Parallel to this would be a program of sending government personnel and Egyptian farmers to India to be trained by the National Dairy Development Board in how to initiate and run farmer cooperatives. This would be especially useful to Egyptian poultry farmers because of the stress on effective marketing programs and development of managerial skills that prevades the NDDB program. Study teams sent to India should be 80 percent farmers who will be actually involved in cooperatives and 20 percent government personnel. The third phase would be somewhat delayed. It would involve bringing consultants to work with poultry cooperatives on the development of production and marketing efforts.

To initiate this project it is recommended that a team be established that would spend six months developing a detailed two and one-half year program.

Such a study group should contain four Americans and four Egyptians. (The team suggests that Mr. M. M. Abd el Magid el Abd, Mr. H. M. Sirry and Abd Razek el Abd be considered.)

5. Vaccine Production

There can be no question but that vaccine production in Egypt is currently inadequate. Immediate action must be taken. The team has no preconceived notions about the best method to achieve the needed increase in quality and quantity of supplies. Therefore we recommend that a quick but thorough and intensive study be made for the Ministry of Agriculture to consider the impact of the following choices:

a. Permitting a foreign company to set up manufacture in Egypt either alone or as a joint venture.

b. Permitting the free importation of unlimited quantities of vaccines and medication.

Such a study could be made under AID auspices. It would be necessary to explore commercial opportunities and would, therefore, require such expertise in the study group. It is recommended that such an AID funded study be undertaken at once.

C. Village Level Activities

1. Establish a Coordinated Extension Program

This project is related to the first program listed under the Ministry of Agriculture recommendations above. However, these are aspects of this effort which qualify it for unique consideration focused on the needs of poultry at the village level. Attached appendices detail many of the technical suggestions appropriate for village level extension activities. The primary obstacle faced in this area is the limited operational budget available for extension work in the field. This project would have three phases and would cover three and one-half years. It would focus on bringing the available knowledge on flock management, nutrition, sanitation, etc. to the village farmer. An important part of the project would be the establishment of an adequate support budget and transportation facilities provided by AID. The first phase of this project would be a two year program where Egyptian personnel are sent to the U.S. on a rotation basis to observe American poultry extension personnel in action. A parallel
effort of bringing American expertise to Egypt would be carried on during the first two years. In addition to the American expertise, this phase of the program would provide budgets for transportation, educational materials, etc. in order to get the message to the field. Somewhat delayed would be a three year program of sending Egyptian students to the U.S. for graduate training in agricultural extension education.

To initiate this project, it is recommended that a team of three Americans (a poultry extension specialist, a representative of the Federal Extension Service, a representative of AID) and four Egyptians (a representative of the extension service, a representative of ORDEV, a representative of veterinary services, a representative from the Ministry of Agriculture, Division of Animal Health) be established. This team should develop a detailed plan of action including personnel and supporting resources needed in order to accomplish this important task.

2. Upgrade Genetic Stock

If recommendations for the Ministry of Agriculture (1), (2) and (3) and those for Village Level Activities (1) are followed, this program will be achieved. The only point in stating it explicitly is to ensure that this important long term goal is not omitted.

D. Public Sector Activities

1. Planned Public Sector Output

The Egyptian Poultry Company has stated that it will increase sale of day old baby chicks and feed to the private sector and curtail their own growth rate. This is consistent with the recommendation of several international study teams including this one. Planned output for 1976 is 25 million broilers finished by the Poultry Company, 20 million broilers sold to the private sector and 67 million table eggs produced.

The team recommends that the Poultry Company produce with its own facilities a maximum of 35-40 million birds per year, continuing to expand sales to the private sector as long as a demand exists. The Poultry Company can raise and process broilers unwanted by the private sector. It is further recommended that table egg production by the public sector not exceed 130 million eggs per year since the other recommendations should result in greatly increased egg supplies.

2. Technical Training

This project has two broad phases. The first phase has two components. It is recommended that these two components which involve the sending of Egyptians to the U.S. and the bringing U.S. technicians to Egypt be done through a contractual arrangement with a reputable integrated poultry firm. This would involve sending selected personnel to the U.S. to work in normal day-to-day operations of a modern poultry firm. After a period of six or eight months, American technicians could be brought to Egypt to act as advisors to their Egyptian counterparts in the Poultry Company. The last phase of this program would involve sending employees of the Poultry Company to the U.S. for training in universities or short term working assignments in operating firms. Since at least one proposal of this nature has been made to the Ministry of Agriculture by Holly Farms, the establishment and implementation of this project should require little additional planning.
3. Management Training

This project is intended to improve the caliber of management in public sector poultry production. It will be carried on in two concurrent phases. The first phase will be short courses conducted in Egypt in both English and Arabic in an attempt to bring modern management techniques to a large number of Poultry Company personnel. The second phase would entail sending selected individuals from upper and middle management to the U.S. to participate in three month courses at reputable schools of business. The short courses would be typically one week courses on various aspects of management, inventory control, production control, etc. These could probably be offered through the American Management Association and/or the Arab Management League.

To implement this program it is recommended that a team be established consisting of two Americans. (The team suggests that Mrs. Seifi be considered.) This team would spend six months making arrangements with the necessary organizations, choosing individuals to go to the U.S., the scheduling of short courses in Egypt and the development of a two year budget.

E. Private Sector Activities

1. Construction of Fully Integrated Complex

This project will provide a nucleus around which the private sector production can grow and develop. In addition, this venture will serve as a model for others in the poultry industry to emulate. It is envisioned that a fully integrated broiler and egg complex would be established. This would be a turn-key operation and would be built and manned initially by Americans. For each foreign manager and/or technician there would be an Egyptian counterpart. At the end of five to seven years, the foreign participation could be phased out and the project would be wholly Egyptian owned and operated. There are currently several proposals before the Ministry of Agriculture to implement a project of this nature. The team urges the Ministry to adopt and implement one of these subject to a satisfactory time-table, cash flow statement, agreement on repatriation of foreign capital, etc.

2. Establish Marketing Program

The team cannot place enough stress on the need for an effective marketing program for Egyptian poultry. If the current plans for increasing output come to fruition, it is conceivable that the industry will experience severely depressed prices and may suffer a major setback. It is essential that planning be started at this time to handle the greatly increased flow of poultry meat and eggs that will be forthcoming. The team recommends that an AID contract be let to study the existing marketing structure, size of market, etc. This should be coordinated with, but independent of the upgrading of economic and statistical analysis recommended in Ministry of Agriculture (3) above. It would be appropriate to utilize the services of a single consulting firm in developing the plans for both the market study and the implementation of the forthcoming marketing plan.

F. Summary

The timetable for action presented in this report provides a broadbased thrust aimed at increasing productivity of poultry and eggs in the three primary sectors: Village flocks, Public Sector and the Private Commercial Sector. If these recommendations are followed, the result should be a substantially
improved diet for rural and urban consumers as well as an important cash flow into the rural sector of the economy.
Figure 1. Timetable for action to increase poultry production in Egypt

Ministry of Agriculture

1. Improve internal organization and communication
   - Send selected personnel
   - Bring management experts
   - Reorganization

2. US-Egyptian coordinated poultry research
   - Send researchers
   - Bring experts
   - Import stock
   - Send students for training

3. Agricultural economic and statistical data/research
   - Send selected personnel
   - Bring experts
   - Initiate data collection and analysis
   - Send students for training

4. Cooperative development
   - Send personnel to U.S.
   - Send farmers and personnel to India
   - Bring U.S. experts to Egypt

5. Vaccine production
   - Study alternatives and recommend action
Figure 1 - Cont.

**Village Level Activities**

1. Establish coordinated extension program

2. Upgrade genetic stock

**Public Sector Activities**

1. Planned public sector output

2. Technical training

3. Management training

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<tbody>
<tr>
<td>Send selected personnel</td>
<td>Bring experts</td>
<td>Send students in extension education</td>
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<tr>
<td>Systematically introduce improved breeds</td>
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<td>Reduced growth</td>
<td>Stable output</td>
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<tr>
<td>Continuing sales of chickens and feed at reduced growth from current rate</td>
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<tr>
<td>Send selected personnel</td>
<td>Bring experts</td>
<td>Send students to universities and private firms</td>
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<td>Short term programs in Egypt</td>
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<td>Longer term training in the U.S.</td>
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Private Sector Activities

1. Construction of fully integrated complex

2. Establish marketing program

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<tbody>
<tr>
<td>1</td>
<td>Construction of facilities</td>
<td>Operation by foreign personnel with Egyptian counterparts</td>
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<tr>
<td>2</td>
<td>Market research</td>
<td>Implementation of marketing plan</td>
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</table>
VILLAGE FLOCKS

Village flocks supply most of the eggs consumed in Egypt and there appears to be no egg shortage in rural areas. The relatively high price of eggs of approximately 5 pts per egg, may limit consumption. Village flocks, managed by the housewife, are her main source of income and contribution to sustaining family life.

The average flock is around 30 hens. Mortality is high and egg production low. There is a nutritional deficiency. The birds are scavengers.

The Government, through Research Institutes, Veterinary Services, Extension Services and Cooperatives, has tried to assist the housewife and teach her modern methods and techniques in the raising of poultry. There are a few success stories but unfortunately the vast wealth of knowledge available in Cairo has not gotten down to the village level.

The Poultry Research Division since 1954 has carried on experiments directed toward the improvement of native birds (See Appendix No. 2) and it claims that "unfortunately the managerial conditions in the villages were not ready to receive such standard birds and consequently no improvement in the genetic make up of the native birds occurred".

The Nutritional Division has carried on many experiments in nutritional feeding using feed ingredients available at the village level as well as various formulation of commercial poultry feeds. All of these tests have shown that the mortality rate can be sharply reduced and egg production per hen increased from 80 eggs to 150 eggs per annum.

The Veterinary Services have instituted a national program of poultry vaccination at the village level but apparently there are problems in getting this program to work effectively including a lack of vaccine when needed.

One of the successful operations which the team saw was the Coop at Fayoum which has improved hatchability, distributed improved native birds to the village housewife and given her an economic source of nutritional feed, milled at their own mill, using local ingredient. This has resulted in a sharp increase in egg production, not to mention poultry meat from the cockerels and old hens, which the Government fails to recognize.

The Extension Service has a large number of technicians available but lacks transportation for field workers. Everybody wants to help but there is a very apparent lack of a coordinated effort to get the job done at the village level. The E.I. team also gets the impression that poultry does not rate the top priority within the agricultural structure of Egypt. This low priority is understandable with the need to increase crop production and bring new land into production.
The team believes that the Government has not recognized the benefits which would be derived from increasing the income of the village housewife by teaching her how to raise more chickens and doubling egg production. This source of national wealth and increased per capita income should be exploited.

The team strongly recommends the establishment of a coordinated program to get the know-how now available down to the village housewife. This would probably be a two step program. First the employment of a consultant with expertise in this field to study the present situation and develop a national plan of action. Second the appointment of a National Poultry Coordinator to administer this program with authority to coordinate the efforts in the various Government Division now involved. The Coordinator could be part of the Extension Service.

We would also suggest that this plan should use the present strengths; where there is a successful organization like the Coop in Fayoum, apply their know-how to a cooperative in another village area. Let the Extension Service use their abilities in one given area, the Veterinary Services in another under the direction of the National Coordinator.
Poultry Research Supporting Village Flocks

The poultry farms belonging to the Animal Production Research Institute have been in operation aiming at the improvement of the native birds in the hands of the farmers. Many foreign breeds, including White Leghorn, Rhode Island Red and White Plymouth Rock, were imported and a trial was made to distribute these breeds in different villages. Unfortunately, the managerial conditions in the villages were not ready to receive such standard breeds, and consequently no improvement in the genetic make-up of the native birds occurred.

Recently great attention has been focussed on the improvement of poultry production as it is the shortest way to meet the increasing demands for animal protein. The Poultry Research Division drew an ambitious plan for increasing the capacity of the poultry farms which are located in different areas of the Republic. This plan aims at increasing the day-old chicks produced yearly from two million to ten million during the next five year plan...

These farms are carrying on research work to improve:

1. The egg laying abilities.
2. Adaptability of foreign breeds to local conditions and resistance to endemic diseases.
3. Developing new breeds.
4. Efficiency of feed utilization.

The local breeds, Fayoumi and Dandarwi, are raised mainly in the Upper Egypt Farms.

1. Fayoumi Breed:

This breed is located in the Fayoum area after which it is named. It is characterised by a uniform, distinct and sexual dimorphical plumage of black and white barred like, single comb is generally found. The skin is blue in colour while the beak and shanks are dark grey. The Fayoumi is an active and hardy type of foul.

2. Dandarwi Breed:

It is named after a village called Dandara in the Upper Egypt. This breed is characterised by a crest, muffs and a beard. It can stand well in the zones of high alinaspheric temperature. The beak and shanks are white, the birds usually have five toes. The comb is large and cup shaped in the male, while it is small and single in the females.

The new breeds developed by the poultry division are:

1. Dokki 4:

This breed was developed in 1958 in the Dokki Farm, by crossing the Fayoumi breed with the Barred Plymouth Rock breed. It resembles morphologically to a
great extent, the Fayoumi. It has been mainly developed for the elimination of the blue skin colour of the Fayoumi, and thus improving its table quality. The difference between the two breeds (Fayoumi & Dokki 4) is the type of barring. Sexes of day-old chicks could be distinguished phenotypically by down colour.

2. **Matrough**

Matrough is the name given to a new breed which has been developed in 1974 in the Borg-el Arab Poultry farm (Matrouh Governorate) by crossing the White Leghorn with the Dokki 4. This breed is autosexed and resembles the White Leghorn in body shape, and the Barred Rocks in Plumage colour. It has a single comb and white ear lobes.

3. **Montazah**:

This variety was developed in 1974 in Montazah Poultry Farm in Alexandria from crossing the Rhode Island Red with the Dokki 4. There are two sub varieties which are:

   a - Golden Montazah: the birds are buff in colour, each feather is carred by light bars. The beak is yellowish crow, the shanks and the skin is yellow and the comb is single.

   b - Silver Montazah: This variety resembles to a great extent the Light Sussex breed in Plumage colour.

The aim of developing this variety (Montazah) is a trial to utilize a foundation stock for the process of establishing a hybrid for egg production.

4. **Sinai**:

The Sinai breed is a new breed originated from a natural hybrid of birds in which the Leghorn genotype is much prominent. Its name comes from the Sinai Desert where this faul had been raised for a long time.

Breeding, coupled with selection is carried out for a uniform strain with buff plumage, and large egg size with white shell.
### Appendix 1A

**Location and capacity of the farms**

<table>
<thead>
<tr>
<th>Name of the Farm</th>
<th>Location governorate</th>
<th>Capacity of Farm Birds</th>
<th>Capacity of Incubator</th>
<th>Breeds Reared</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Borg El-Arab</td>
<td>Matrouh</td>
<td>1800</td>
<td>8500</td>
<td>W. Leghorn-Dokki-Matrouh</td>
</tr>
<tr>
<td>2. El-Moutazah</td>
<td>Alexandria</td>
<td>1600</td>
<td>1200</td>
<td>W. Leghorn-Dokki-Montazah</td>
</tr>
<tr>
<td>4. El Serw</td>
<td>Doniat</td>
<td>1600</td>
<td>17000</td>
<td>R.I.R. Sinai</td>
</tr>
<tr>
<td>5. El-Gemmeiza</td>
<td>Gharbia</td>
<td>1800</td>
<td>8500</td>
<td>W.P. Pock</td>
</tr>
<tr>
<td>8. Inshass</td>
<td>Sharkia</td>
<td>4500</td>
<td>45000</td>
<td>R.I.R. Dokki-Montazah</td>
</tr>
<tr>
<td>9. Sids</td>
<td>Beni-Suef</td>
<td>3000</td>
<td>45000</td>
<td>Fayoumi-Dandarawi</td>
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<tr>
<td>10. El-Fayoum</td>
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<td>45000</td>
<td>Fayoumi</td>
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<td>11. Mallawi</td>
<td>El-Minia</td>
<td>3000</td>
<td>45000</td>
<td>Fayoumi-Dandarawi</td>
</tr>
<tr>
<td>12. El-Mataana</td>
<td>Ka</td>
<td>3000</td>
<td>45000</td>
<td>Dandarewi</td>
</tr>
<tr>
<td>13. Mehalet Moussa</td>
<td>Kafr El-Sheik</td>
<td>1500</td>
<td>8500</td>
<td>Bronze white Holland</td>
</tr>
</tbody>
</table>

Turkey Farm
PRIVATE SECTOR

During the last two years the number of private broiler farms have increased from approximately 200 to 600 farms, the maximum capacity of their houses is 5000 broilers. These farmers are dependent on the Poultry Company for their day old chicks and feed. Their facilities must be approved by the Company before they are granted an allotment of chicks. The team was informed that there are 350( applications pending from private individuals to construct houses and get on the approved list.

The supply of one day old chicks offered to the private sector doubled in the years 1974/75. This year the Poultry Organization expects to sell triple this number, or approximately 15-20,000,000 chicks. This rapid growth indicates the excellent profits that have been derived from broiler raising and the new group of private entrepreneurs emerging in the Egyptian society, looking for opportunities to invest their money.

We met with a group of these growers just before completing our study. Out of this group there was only one who was a farmer, the rest were professional men, top government officials, merchants and others with excess funds. They are not happy with the recent drop in prices which has reduced their margin of profit. One grower flatly stated that unless the situation changed he would not put another flock in his house when the present lot was grown out.

The usual complaints were expressed in our meeting.

1. Irregular and poor quality supplies of vaccines.

2. Low nutrition value of feeds supplied by the Poultry Company. (Many growers were adding supplements to the feeds in an effort to improve their conversion ratio).

3. Only one type of broiler chick available from the Company.

4. High mortality experienced from time to time in lots of day old chicks delivered to them.

5. Lack of practical know-how in the industry, need for outside specialists and training courses.

6. Concern about marketing production - see Appendix No. 4 - Marketing.

The private sector is dependent on the Jobber or Wholesaler to move his broilers to market - they have performed this service for years. The jobber does perform a service - he furnishes the crates, picks up the broilers at the farmer, pays cash at time of pick-up, absorbs all the risks of transportation to market.
All thought the jobbers share of profit from producer to retailer was excessive, but none of the growers were interested in by-passing the jobber, they seemed to feel that the jobber was too firmly entrenched and could block individual growers from going direct to urban retailer.
POULTRY COMPANY

A. Management/Operations

The Poultry Company was established in 1964 and their growth has been rapid as follows: Broiler production was 2 million the first year (1964), rising to about 19 million between 1974/75, with a projection for 1975/76 of about 25 million. Sales of day old chicks went from none in 1964 to about 5 million during 1974 and 1975, with a low estimate for 1975/76 of 16 million and a high estimate of about 21 million.

Their success can be attributed to the following factors:

1. They have operated as an autonomous unit of the Ministry of Agriculture.
2. Feed ingredients have been made available to them at subsidized prices.
3. Their production has been sold at prices well below the retail market level - another form of subsidy. See Appendix No. 4 - Marketing
4. They have had good management.

Unfortunately there has been little incentive or requirement to operate efficiently. Too much capital has been tied up in costly, massive buildings in all sectors of their organization - in some instances with sophisticated automatic or semi-automatic equipment. These buildings, constructed to last for an indefinite period of time, are more adapted to manufacturing activities than to poultry production. This construction is contrary to the trend in the world's poultry industry where technological advances dictate new building design every 5-10 years.

Hatchery operations appeared to be good with sanitation more than acceptable. Machinery and equipment was in a good state of repair. Elsewhere, good mechanical maintenance was conspicuous by its absence.

The North Tahrir complex is being constructed without adequate planning. Costly, massive buildings, equipment with a poor performance record, a meaningless timetable and buildings started which will take years to complete.

The Poultry Company is suffering from a lack of communication within the organization, lack of incentives at all management levels to operate at the lowest practical cost as well as a lack of delegation, of authority.

Marketing can and should be an important management tool. With the sharp increase in production of broilers and day old chicks, consideration should be given to initiation of a Marketing Program. More knowledge is
needed as to what the market can and will consume at varying prices and where the markets are. If production exceeds the demand of the Cairo and Alexandria areas, expanded distribution system will have to be implemented or production will have to be reduced.

B. Broiler Operations

Parent Farms are located throughout the Delta starting at Alexandria and going up to Cairo. At present, 27 farms are in operation and 3 more are due to start operations by the end of 1976. Each farm consists of 8 to 10 houses:

<table>
<thead>
<tr>
<th>Number of Farms</th>
<th>Type</th>
<th>Capacity of Houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Open</td>
<td>3200 Laying Hens</td>
</tr>
<tr>
<td>20</td>
<td>Closed</td>
<td>3600 Laying Hens</td>
</tr>
</tbody>
</table>

Broiler Farms are also located in Alexandria and Cairo. At present, there are 37 farms in operation, each consisting of 8 to 14 houses: some are open type and others are closed. The capacities of the open type is 10,000 broilers and the closed have a capacity of 15,000.

The Broiler Operation is supported by eight hatcheries with a total capacity of about 53 million eggs.

The Poultry Company's Broiler Unit at Tahrir was visited. With a goal of 20 million broilers, they now have five million a year capacity. The farm complex is in the construction stages, with a planned goal of 16 parent stock farms, 32 broiler farms, two hatcheries, a processing plant, two feed mills, started in 1974. By 1975, nine parent stock farms, eight broiler farms, a temporary hatchery in a broiler house, were operating. Seven parent farms and 24 broiler farms are now under construction. Building priority for the Canal area hampers rapid construction here as at many other projects. Equipment was obtained from Bulgaria, some of which is still in storage, by a special loan purchase plan requiring only two and a half percent interest beginning after three years. Bulgarian technicians came to assist, and two are still on the project to assist with equipment maintenance. The comment was made that in Bulgaria private poultrymen use imported equipment, and definitely not Bulgarian equipment, which raised questions. All houses were 12 m. x 84 m., all uniform in size and arrangements, and all farms the same. Decisions as to size, site, when, what, are made in Cairo. The area includes 16 square miles. Environmental control with temperature control included is used only in the hatchery and egg room. Layer and broiler houses are not environmentally controlled houses, but cooled with desert coolers which work very well in hot dry climates.

It is reported that desert coolers lower the chicken house temperature 10°C (18°F), a big help, but still when temperatures go above 43°C (110°F), a temperature lowering of only 10°C only brings the temperature down to 33°C (92°F). At that high temperature, egg production, feed efficiency, chicken growth, whether meat or egg birds, is adversely affected. It would be well to consider using environmentally controlled layer houses and broiler houses,
figuring costs, amount and length of times temperatures go that high, and other factors, to provide an estimated cost/benefit picture. The present incubator capacity in their temporary hatchery was 272,000 eggs, in eight machines.

Planning of the whole unit, with its sanitation precautions of space between farms, between houses, other features, and the lay-out is excellent.

C. Processing Plants

The Poultry Company has two processing plants, one near Cairo and the other in Alexandria. Two others are under construction: one outside of Cairo and the other at North Tahrir on the West Desert Road, south of Alexandria.

The E.I. team visited the plant near Cairo. It was built in 1970 and has Danish equipment which unfortunately has not been maintained. The capacity of the plant is 6000 per hour on two lines, 4500 for broilers and 1500 on the duck line now used for chickens.

Lack of maintenance has created serious problems. Birds are continually falling off the line, some into the open drainage troughs. At one point on the duck line, the mechanical dropper into the chill tank is broken and birds have to be removed by hand and the operator therefore is unable to keep up with the speed of the line. The chill tank is simply a water cooling system which barely removes body heat.

There are many other inefficiencies, the first of which is at the unloading area for live chickens. The original conveyor line installed for hanging birds on the line does not fit the size of crates used in Egypt, so live chickens are carried from the truck by hand to the hanging point. The conveyor line should be extended to the unloading point so birds can be transferred directly from the truck to the line.

The plants operates two seven-hour shifts. The late shift spends the last two hours in clean up, so actual processing time is twelve hours per day.

In general, the sanitary conditions are not up to normal standards. Veterinarians were in evidence, but not on the line inspecting broilers as processed. Broilers are chilled approximately 24 hours before delivery to the Coop stores, but they are not hard frozen. On delivery to the stores, the broilers are fairly well thawed, indicating a need for improved refrigerated transport.

The team could develop no cost figures for processing operations, but judging from the inefficiencies noted the cost must be extremely high.

Unless the Poultry Company implements a system of mechanical maintenance, the new plants will also soon be in an inefficient operating state after coming into production.
The second processing plant, at North Tahrir, has a capacity of 2500 birds/hour. Total processing capacity at the two plants is 8500 birds/hour.

D. Feed Mill Complex

The team visited the Poultry Company feed mill complex, just outside of Cairo, composed of an old and a new mill. The old mill was being operated in excess of its capacity, equipment was poorly maintained and in danger of breaking down and the safety factor was nil. The new mill has automated mixing and filling equipment from Germany. The flow layout of this mill is poor.

Inefficiencies of these mills were obvious. Raw materials, principally yellow corn, handled in second-hand bags and rehandled. There was much grain on the ground and floor which was being swept up. This could create a problem with salmonella.

There is no bulk storage facility at the port, so grain is received from the U.S.A. in the second hand bags mentioned and transported to Cairo by truck. The team estimated transit loss from steamer discharge to the mixing bins at the mill to be in excess of 5%. The G.O.E. has plans for constructing bulk grain facilities at Alexandria.

The Poultry Company feed mills received their supplies of yellow corn through the Ministry of Supply. Billing price to the mill is L.E. 30 per ton, actual cost is L.E. 85.

Supplies are not always available as needed. Recently they were without imported corn for two months and had to use local ingredients. The problem is further complicated by the crowded conditions at the Port of Alexandria. It is not unusual for a steamer to wait 30 days before a discharge berth is available. The Manager agrees the feed mills should be located at the port of discharge. However it will be several years before bulk facilities will be available.

The Poultry Company in the meantime is building two new mills, one at Cairo and the other at Alexandria, both near or part of the broiler production centers. Both are to have a capacity of 10 tons/hour and are expected to be completed by December 1977. When these are in operation, the Company's total feed mill capacity will be 52 tons/hour.

With the pressure under which the mill complex is operating, formulation is done on the most expedient basis possible which will meet government standards. No thought is given to producing an improved feed or lower operating costs. The mill uses its own laboratory for formulation; Government labs are too scientific and not practical in their opinion.

Production involves formulation of 24 different rations and also premixes for other mills who are importing their own ingredients. In addition to feeds prepared for the Poultry Company, the mill also sells to 750 private farmers. Sales of broiler rations to the private sector are estimated at 150 tons daily. Sales are made to this sector based on information received.
from the Poultry Company Hatchery concerning their sales of day old chicks to private farmers.

Present selling prices to the farmer are L.E. 103 per ton for Starter and L.E. 101 per ton for Grower. Cost of imported mixed feed runs approximately L.E. 150 per ton.

The Manager admitted that growers in the private sector are getting better conversion ratios because they were adding ingredients to improve nutritional value. He apparently has no incentive or means to improve formulation for lower cost and/or higher nutritional values.

E. Egg Operations

Location: The whole project is located at Helwan – Cairo.

Parent Farms:
4 each consisting of 3 houses. Capacity of each farm is 10,500 hens & 1050 males.

Rearing Farms:
3 each consisting of two houses. Capacity of each farm 45,000 poulets.

Laying Farms:
3 each consisting of 6 houses. Capacity of each farm 135,000 layers.

Hatchery:
One consisting of 13 incubator of a capacity of 19,000 eggs.

Total Production:
This year around 70 million
Next Year around 90 million
Next step doubling the production up to 180 million/year.
EGG PROJECT

Parent
10,500 Hens - 1,050 Cockrels
Each House

22,500 Poullets
Each House

22,500 Hens
Each House

Future Expansion
POULTRY CO.

CHAIRMAN

LEGAL AFFAIRS

DIRECTOR GENERAL TECHNICAL AFFAIRS

DEPARTMENTAL HEADS

PRODUCTION
- Hatcheries
- Grandparent Farms
- Parent Farms
- Broiler Farms
- Feed Mills
- Egg Production

ENGINEERING

FINANCE

VETERINARY SERVICES
- Processing Plants

PERSONNEL

PLANNING
### PRODUCTION

<table>
<thead>
<tr>
<th>Year &amp;</th>
<th>Distributed to the Private Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Finished broilers (000)</td>
</tr>
<tr>
<td>1965-66</td>
<td>2,691</td>
</tr>
<tr>
<td>1966-67</td>
<td>5,111</td>
</tr>
<tr>
<td>1967-68</td>
<td>4,517</td>
</tr>
<tr>
<td>1968-69</td>
<td>5,520</td>
</tr>
<tr>
<td>1969-70</td>
<td>7,633</td>
</tr>
<tr>
<td>1970-71</td>
<td>9,740</td>
</tr>
<tr>
<td>1971-72</td>
<td>11,974</td>
</tr>
<tr>
<td>1972</td>
<td>6,631</td>
</tr>
<tr>
<td>1973</td>
<td>15,421</td>
</tr>
<tr>
<td>1974</td>
<td>16,844</td>
</tr>
<tr>
<td>1975</td>
<td>19,795</td>
</tr>
<tr>
<td>1976a</td>
<td>25,000</td>
</tr>
</tbody>
</table>

a Fiscal year of July 1 - June 30 is used until June 30, 1972 with the transition period of July 1, 1972 - December 31, 1972 and calendar years thereafter.

b Feed distribution based on an assumed 3 kg/chick.

c Projected.
MARKETING

A. General Observations

The term "Marketing" and its many ramifications is not generally understood within the poultry industry of Egypt.

The phrase is often heard: "We have no problem, we can sell everything we can produce"; this has been the philosophy of the Poultry Company but their position is different. They have been distributing their production through the Government cooperative stores in Cairo and Alexandria at a price below their cost. The cooperative stores in town sell at a price well under the going market price for broilers. This difference in price based on current market values is outlined below:

<table>
<thead>
<tr>
<th>Lived and Dressed Prices, Public and Private Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price per kilo</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Public Sector</td>
</tr>
<tr>
<td>Poultry Co. Dressed</td>
</tr>
<tr>
<td>Government cooperative stores, includes, pts per kilo transportation</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Private Sector</td>
</tr>
<tr>
<td>Broiler Farmer to Urban</td>
</tr>
<tr>
<td>Poultry Dealer to Consumer</td>
</tr>
<tr>
<td>Liveweight 1.3 kilos</td>
</tr>
<tr>
<td>Consumer Dressed Cost</td>
</tr>
<tr>
<td>0.910 kilos 70% yield</td>
</tr>
<tr>
<td>Native Chickens</td>
</tr>
<tr>
<td>Dressed Cost 70% yield</td>
</tr>
<tr>
<td>First Quarter 1976</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Private Sector</td>
</tr>
<tr>
<td>Urban Poultry Dealer</td>
</tr>
</tbody>
</table>

This table highlights two important points:

1. The wide difference in price between the subsidised Public Price and the Private Sector realization. There would appear to be no economic satisfaction for this difference.

2. The recent drop in retail prices at the Urban Poultry shops indicates an excess supply of broilers.

3. Even at the lower sales prices, the profit margin is large enough to attract private sector investment in the raising of broilers.

One of the groups the team talked with is already thinking in marketing terms. Traditionally live chickens have been gathered at the producing centers by 4 or 5 men or groups. When an excess occurs, the farmer has no alternative but to accept a lower price for his broilers.

He has no processing facilities for dressing, freezing and storing his excess production until the market improves or exporting them to another country.

The group mentioned has already made tests of dressing their broilers, freezing them in home cabinets and selling them to their cooperative members in Cairo at a dressed price of approximately 100 pts per bird.

They are also considering the purchasing of second hand processing equipment and installing this in a small plant with freezing and storage facilities.

Thirdly, they are considering marketing their birds direct to the central retail outlets.

The team strongly favors such actions. There is also the possibility that as the Poultry Company phases out their processing operations or when these are not running to capacity that the Government should:

1. Buy up the excess broilers from the private sector, process them and sell the dressed birds to the cooperatives. This might increase the loss on the subsidy program but the Government would then know the actual loss of the subsidy program.

2. Process, freeze and store the excess broilers on a fee basis for the producer.

There is another Marketing question which must be confronted:

1. What is the number of broilers which can be absorbed in a given market area and at what price?
metropolitan areas, with an estimated population of 10,000,000 persons. The projected sales of one day old chicks for 1976 of 15-20,000,000 chicks indicated a per capita consumption of 1½ - 2 broilers annually.

As these metropolitan areas become oversupplied, consideration should also be given to opening up new markets in the interior. This would require central storage points and a distributive system.

The points mentioned all lead to one conclusion: the broiler industry of Egypt is facing some very serious development problems. Unless these are resolved through a comprehensive marketing plan, the future growth of the industry can be seriously retarded. The team strongly recommends that the Ministry of Agriculture immediately employ a competent Market Manager to study all segments of this problem and develop a plan of action with employment of additional staff as required.

The situation in the Egg segment of the industry is not so serious. Egypt seems to be self sufficient as regards the supply of eggs. The distributive system while it follows the traditional pattern is effective. If the plans of the various divisions of the Government to increase the number of eggs per hen by more efficient flock management at the village level are effective, the supply of eggs on the market might become burdensome, although exports could be an important outlet for excess egg.

The Marketing Manager should also look at the sale and distribution of eggs as the expected increase in production takes place.
DISTRIBUTION CHANNELS
Broilers

Poultry Co. -- Day Old Chicks → Private Farmer

Government Cooperative Stores

Jobber

Retailer

Village Flocks

Jobber

Consumer

Egg Production Follows the Same Pattern.
POULTRY CO. SALES OUTLETS

GOVT. INSTITUTIONS

HOSPITALS  MILITARY

CO-OP SOCIETIES

CAIRO

ALEXANDRIA

PRIVATE SECTOR

FEED  DAY OLD CHICKS  PULLETS

GENERAL FUND

INCOME
Throughout our visit to the various segments of the poultry industry, both public, private or village the subject of vaccine always came up. Comments usually concerned irregular supply, quality and the overall fear that in case of a serious disease outbreak, there would not be sufficient vaccine to control the outbreak.

We visited the Vaccine Research and Production Center under the direction of the M.C. El Sabban. The center has adequate research facilities but equipment for commercial production is minimal. Some expensive latest type freeze-dryers received last year from England have yet to operate because the water cooling equipment necessary for the operation of this equipment is missing and its delivery date is still months away. There is a shortage of ampules and vials for packing local production.

The Institute's Budget is insufficient to operate either the research or commercial sections of the Center. The facilities are basically oriented towards research. The Poultry Company imports all their vaccine requirements and like others in the private sector, refuses to depend on the Vaccine Center for supplies.

The team understands there is sufficient demand for vaccine in Egypt to support a private commercial operation, which could be financed by foreign capital or a joint venture with Egyptians. We recommend this be established without further delay or if not socially and/or politically acceptable, the free importation of vaccine from any source should be permitted.

The Research Center might better confine their efforts to research and be given sufficient funds to operate a meaningful investigative center.
EXTENSION POULTRY VILLAGES

The Plan of the Agriculture Extension Service is for every village to have the part time services of an Extension Advisor. One Advisor is scheduled to serve 3 villages. There are 200 workers in Cairo and 100 in each Province. Lack of transport restricts their efforts, and many are unable to perform their duties. There are no extension workers with professional poultry training or extension personnel who work exclusively with poultry.

The Extension Service has plans for "Extension Poultry Villages" under which they would provide special poultry help. Their plan is as follows:

1st - Vaccinate all chickens in the village before any chicks are distributed.

2nd - Distribute chicks to farmers requesting them to the extent of their supply. Chicks are obtained from the Poultry Company and Animal Production Stations.

3rd - Make a record of distribution, with name of farmer and number received.

4th - Vaccinate against Newcastle disease within the first 3 days.

5th - Use the Komoroff Newcastle vaccination after 45 days.

Plans call for 100 "Extension Poultry Villages" in several Provinces. There are 10 villages in 1 circuit, 3 or 4 circuits in one Province and 4,000 villages in Egypt.

The Extension Service described the current poultry situation as depending on local hatcheries for 90% of the one day old chicks, using local varieties as Fayoumi, Dokki IV, etc. Problems in raising village poultry flocks were given as follows:

1. Lack of an adequate supply of good quality food.

2. Lack of a good source of disease free hatching eggs in villages for the local hatcheries.

3. The vaccine supply is often inadequate.

4. Chicks are infected by older birds in the village, increasing over-all high mortality.

5. Egg type chicks and/or hatching eggs are difficult to obtain. The Poultry Company sells only meat type chicks to Extension. They now cost 5Pt. per hatching egg.

6. Raising chicks during the first month is the villager's most difficult period.
7. An estimated 75% of the chicks die.

8. The number of one day old chicks produced is only 10% of the village needs.

There have been no U.S. fellowships in Extension since 1967. Prior to that time there were 5 to 8 yearly. The Headquarters Office staff in Cairo understands the Extension Service work quite well, but practical field men with adequate transportation are needed to do the work.

Female agents who vaccinate poultry now go to the provinces by train, are picked up by the local office, and taken to the villages. Trains do not go to all provinces and Extension feels that they need more vehicles to transport the vaccinating teams.

Two "Extension Poultry Villages" were observed in the Tanta area, Meat Khassal Village and Rackdia Village. At Meat Khassal, a village with 9,000 people, the Extension man lives in the village. It was estimated that there were about 7,000 chickens obtained through the Extension Services and local hatcheries.

Extension sold many villagers 15 to 20 Dokki IV chicks, and enough feed made in Tanta for the first 3 weeks. The small number of chicks per flock sold to villagers was due to their limited supply, which came from the Government Experiment Stations and the Poultry Company. After the first month the villagers had to make their own feed as best they could with ingredients available. Rations appeared to be only ground grain. Some villagers marked the feathers of their growing birds with a dye to identify them as they wandered around the village scavaging.

There were three large flocks visited with from 75 to 100 birds each, which were kept in the owner's houses, totally confined. They were given feed, mostly ground grain. These chickens need a balanced feed if they are to survive and produce eggs. The size of these flocks indicate that the owners are interested, and they are potential commercial producers. Proper guidance by the Extension workers will help them attain larger and more efficient flocks.

At Rackdia Village, Extension was brooding 2,000 Dokki IV and Nichols chicks about 1 week old. The flock was well managed, being brooded with "Buta" gas brooder stoves, fed and watered in regular commercial equipment made in Egypt, and feed made in Tanta. These chicks are sold to villagers in flocks of 20 to 30. Each farmer could have as many chicks as he wanted, up to a maximum of 100. Some who desired larger numbers would have to wait for the next brood.

The village has an Agricultural Committee to coordinate their work and problems with Extension Veterinary Services and other agencies.
POULTRY PROJECT BY ORDEV
(Organization for Reconstruction and Development of Egyptian Villages in the Ministry of Local Government)

ORDEV plans to produce one month old chicks for sale to villagers. The first year that poultry was included in village development plans was 1975, and 34 brooding houses were built. In 1976, 17 more are planned. Each village unit will have a hatching egg flock, hatchery, and brooding facilities at one site. Chicks are sold reasonably, depending upon costs: usually at 8¢c. per day old chick, 15 Pt. per 21 day old chick to villagers, and 21Pt. to those not living in the village, if there are enough extra chicks to sell. Section 204 of PL 480 funds from U.S.A. are used to buy locally made equipment such as incubators, feeders, waterers and battery brooders. CARE is the U.S. cooperating agency assisting the G.O.E. implement this project.

The project at El Hayatem Village, Governorate of Gharbeya, near Tanta, is a complete poultry unit, and has egg producing flocks of 800 White Leghorns, 1,200 Dokki IV, three combination incubator-hatchers with 6,000 egg capacity each, a total of 18,000 egg capacity, and battery brooders. They are presently hatching, but not brooding. The project is very good and is a big help to the villagers. A hospital and school are also on the site.
Appendix No. 8

TECHNICAL OBSERVATIONS

1. Many good management practices were observed in all phases of poultry production (Experiment Stations, government commercial poultry production/farms, private commercial poultry farms, and small village flocks of 10 to 100 birds) but these were interwoven with gaps of weaknesses.

2. Government subsidies are probably not very helpful to the industry. It does not help most consumers, as such a small percent of the industry is involved with subsidies. The Poultry Company produces only 5% of the chickens.

3. Both the poultry processing plant and feed mills operated by the Poultry Company urgently need improved work efficiency and sanitation. See separate appendices on these.

4. Many people informed us that there was only one source of breeding stock available to large farms. Poultrymen expressed the desire to "try" other good sources, and this would be desirable.

5. One person informed us that a joint venture with Shaver Poultry Co. of Ontario, Canada (via a European branch) and a Farmers' Cooperative Society representing 2,000 people is in the planning stages. Approval is being requested of the Government Economic and Cooperative sector. The farm would be located on a 20 acre site at Amreia, near Alexandria. This is a private sector activity and not connected with Government.

6. A price of 45 Pb per layer chick and 25Pb per broiler chick imported, whether for production or for parent stock use, was given.

7. There is a real or felt need by producers to use additives in feed. These could help if the poultryman knew what ingredients and their quantities were missing, and if he were able to obtain the ingredients in the proper quantity, quality and timeliness. Additives could cause an imbalance and be useless or even harmful if used to excess. This is a "shotgun" approach to nutrition, often felt necessary in beginning industries, where feed mills are not mature or reliable, lack competition and government regulatory inspection.

8. Several poultrymen, both village flock size and private commercial broiler growers, complained about high chick mortality for the first three to six days of age. Some causes could be:
   a) Breeders infected with pullorum disease. This is transmitted through the egg to the chick, and causes early mortality. A strict breeder blood testing program is necessary. There seems to be no national program of testing breeders producing hatching eggs, on commercial breeding farms or in villages, though the Poultry Company reports that they test their breeding flocks and that they are pullorum free.
   b) Poor hatchery sanitation, resulting in Omphalitis, or increased Pullorum disease infection.
c) Nutrition of breeders producing hatching eggs.

d) Handling of chicks between hatchery and farm.

9. Vaccine production is not adequate. Problems include shortage of vials and ampules. Besides this shortage, some people accuse the vaccine of being "bad" and of actually causing death in flocks sometimes. Death loss in flocks vaccinated may be due to:

a) Improperly made vaccine.

b) Improper storage handling, transportation to site of use.

c) Improper application.

d) Disease for which vaccine is used may already be in the flock, though not showing symptoms prior to vaccination. Determining the exact cause is very difficult even for the experienced poultry pathologist.

10. As to who administered the vaccine, we received several replies, and assume it varies from location to location as follows:

a) Only Veterinarians vaccinate the chickens.

b) Used "under Veterinary supervision", and if the Veterinarian does not inject each chicken, at least he was present and supervised.

c) Some large flock owners do their own vaccinating, as many U.S. poultrymen do.

d) Laborers vaccinate with no supervision, and sometimes even "water down" the vaccine so that they'll have some for sale.

11. At Tanta, vaccine is stored in the freezer of the refrigerator, but the electricity goes off 4 to 5 hours each day.

12. Some people complained that the Poultry Company took all the vaccine, and leaves little or none for the village.

13. Vaccine comes in 500 and 1000 dose ampules, resulting in much waste when village chickens or other small flocks are vaccinated. It would be better to put up a portion of the vaccine in 100 dose containers also.

14. All Poultry Company farms have a good sanitation program. including:

a) Farms are at least ½ Km. apart.

b) The "all in - all out" system is used for broiler production units.

c) No visitors are allowed on farms, except with special permission. Then, good sanitation precautions are used.
d) Farm management includes a good hygienic program.

e) A vaccination program is followed.

f) There is 20 meters space between houses on the same farm.

g) One square meter of floor space is provided for ten broilers.

15. The procedure for one to become a large private poultry producer is as follows:

a) Obtain permission from the Ministry of Agriculture to build a poultry house and to buy chicks and feed from the Poultry Company.

b) Build the poultry house.

c) Notify the Poultry Company they are ready, and a man is sent to the farm to check the site, buildings, equipment. They must meet the same requirements listed for the Poultry Company farms (Item 14 above). This is excellent. In addition, "open houses" must have window space equal to 20% of the floor space to provide adequate ventilation.

d) Buy the chicks and feed from the Poultry Company.

16. We were informed that there were 116 private broiler farms in 1973, and 587 in 1975, most in 5,000 bird units. All chicks and feed were supplied by the Poultry Company.

17. During the team's visit a remark was made that "Chicks are just as scarce as gold and diamonds." Lebanon used to supply chicks also. Now, with the short supply, producers can only grow out three cycles per year instead of their normal five.

18. Poultry housing for Government Experiment Stations and the Poultry Company are extremely well built and costly. Cement for poultry house construction is difficult to obtain, because the canal area has priority. Commercial private farms are well built, but appear less costly in general using fire baked clay bricks. All appear satisfactory for the comfort of the chicken, which is the essential in poultry housing.

19. Fuel for brooding observed included kerosene, bottled gas (Butogas), and on an experimental basis at Fayoum, infra-red electric heat bulbs.

20. During the early part of our assignment in June, marketing problem potential was not recognized. Everyone said there was no problem, they could sell all they could produce. No problem had arisen yet. We repeatedly informed our contacts that all expanding poultry industry areas, including U.S., Nigeria, etc., go through marketing problems sooner or later. It was reported that private producers had been making from 30 to 50Pt profit. In July, several days before we departed Cairo, the prices dropped to a point where profits were reportedly only 5Pt a broiler in some cases, and this was viewed with panic. There was talk of overproduction by those not understanding the ups and downs of poultry marketing. It emphasizes the need for a sound long-term marketing program.
21. Villagers feel that big poultry producers are "stealing their right" to the egg market. Present large private poultry producers might feel the same way when a large commercial integrated poultry company begins production. No one likes competition, especially from more efficient competitors who could sell for a smaller profit per unit.

22. Government research stations have many highly trained dedicated men. They are working under difficult conditions, including insufficient funds, poor equipment maintenance due to the "brain and skill drain" to other Arab countries for higher compensation. Also there is poor or no coordination and communication between other government stations, and between stations and other scientists working in the same field, as for example the feed mill manager/nutritionist and the experiment research nutritionist.

23. In village poultry production, 50 and 90 percent mortality was reported. Reasons given were that the hatching egg producers were not blood tested, and Pullorum disease was present. Newcastle vaccination teams work in some villages, but not in all. In some, the villagers must carry their birds to a vaccination center in a neighboring village. Often no balanced feed or medication is available. Newcastle and coccidiosis were mentioned as the most common diseases.

24. Local Egyptian hatcheries in villages report 65 percent hatch of all eggs set for eggs obtained from villages. They claim a higher percentage of hatch with eggs from government farms, equal to or exceeding that obtained in modern incubators.

25. The Agriculture Extension Service has plans for poultry work. They have no one trained in poultry and limited funds severely restrict their activities. See Appendix #6, "Agriculture Extension Service".

26. Credit is extremely difficult to obtain for poultry loans.

27. The Poultry Cooperative Society in Fayoum impressed us very well. With 1,900 members, they produce about 25% of the poultry in the area. Service provided members includes feed from their own mill, chicks from a local hatchery, equipment, supplies, and feed additives, with plans to have modern incubators later. The Government helped them establish it in 1969 and continues to assist with advice, but the control and finance comes from the members. They had L.E. 2,000 shares at the beginning. In 1976 they had L.E. 20,000 with a feed mill which cost then L.E. 17,900 but with a value of L.E. 60,000 as the land was furnished at a low price. The mill capacity is 15 tons per day. They plan to build another mill costing L.E. 150,000 from profits from feed sold, which is L.E. 2 per ton. Members are limited to 100 shares each. Members receive a refund of profits in proportion to business done each year, but to date they have returned this money to the Co-op for its expansion each year. Future plans include helping poultry producers with credit, as bank loans are difficult or impossible to obtain.

28. An employee social branch of the Misr Spinning and Weaving Co., Mehalla El Kubra, has housing capacity of 100,000 broilers, and with five cycles per year, could produce one-half million broilers. The textile mill has 5,000
looms, employs 36,000 people, and multiplied by five persons in the average family involves 180,000 people. They could consume a large amount of chicken. This chicken social branch is one of their many fringe benefits which encourages continuity of employment. Chickens are housed in well constructed cement buildings two and three stories tall, built at a cost of L.E. 20 per square meter. Broilers are sold at 45 to 50 days age, weighing 1.2 to 1.3 Kg. for 45Pt./Kg. to members and 70 Pt./Kg. to non-members. They have a feed:meat ratio of 2.5:1, and production cost of 48Pt./Kg. Feed comes from the Poultry Company, but more additives and protein are put in at the farm. Problems observed were:

a) there is very little chance of using the "all in - all out" system of broiler growing with such a large capacity in houses close together on one site. This could cause serious disease problems in later years, especially with respiratory diseases.

b) There were sick pens in each house which held many birds affected by nutritional deficiencies. These birds should be sacrificed.

c) Feed additives were used to so great an extent we wonder if an imbalance might result with detrimental effects.

They had no equipment maintenance problems. All seemed to be working well, and this may be due to the higher pay scale and fringe benefits of the employees.

29. The Meat Manned Cooperative Society started ten months ago with 20 members, all government employees who live in Cairo and have farms in a village 100 Km. away. The minimum number of members required by Government Decree to form a cooperative is 20. This Co-op is not subsidized by the Government. It was reported that there are 120 Co-ops producing poultry, plus 600 private producers, plus 3,500 other people waiting to purchase their share of chicks and feed from the Poultry Company. In this Co-op, a person can have a maximum of 5,000 broilers; no minimum, but probably the smallest flock is 500. Services offered by the cooperative include purchase of equipment, feed additives, supplies, and marketing. They have 12 chest type freezers, each holding 500 chickens weighing from 1 Kg. to 1.1 Kg. each. Several are now full of frozen chickens, and several freezers are not yet uncrated. The Co-op processes, or arranges for the processing of, their own birds, doing 500 per day using manual methods, with no machinery. Farmers' production costs are 55-60 Pt./Kg./Live, they sell to the man who dresses them for 70 Pt./Kg./Live. After dressing, the man sells at L.E. 1/Kg./Dressed to the Co-op store. The difference between 70 Pt. and L.E. 1 represents the 30% dressing loss, his costs and profit. The store sells either fresh or frozen dressed & drawn broilers for L.E. 1/Kg. No special ration card is necessary: anyone walking into the store may purchase. This is in contrast to the 58 Pt. charged at the Poultry Company stores, or L.E. 1.30 charged in independent groceries. Regarding management practices, it was stated that most farmers did their own vaccinating for Newcastle, as American farmers do. The Co-op sells bottles of distilled water for this use. All above prices were quoted by the man at the Cooperative Society, and may differ from quotes received elsewhere.