Report, Evaluation FY 80

Mathtech The Technical Research and Consulting Division of Mathematica, Inc.

February 27, 1980

John Swanson, Ph.D.
Agency for International Development
Room 6484
New State Department Building
NE/TECH/AD
Washington, D. C. 20523

Dear Doctor Swanson:

Enclosed is a copy of the recent MOA Evaluation mentioned during our recent telephone conversation.

Yours truly,

George R. O'Day

George R. O'Day, Director
Food, Agriculture, and
Nutritional Services

GRO/fi

Enclosure

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Ministry Of Agriculture

Egyptian Evaluation Report

Poultry Improvement Project
Preliminary Evaluation Report

Introduction:

The poultry improvement project aims to develop programs which will assist Egypt to reach her national targets for increasing meat and egg production.

Objectives of the Evaluation:

The main purpose of this preliminary evaluation is to determine the status of the project in achieving the six main tasks outlined in the AID Project Paper dated May 1977. It should be also noticed that this evaluation will serve as the basis for determining the course for further project activities. An additional evaluation will be carried out in April 1980.

There are six principle tasks have to be completed in present Poultry Improvement Project:

1- A principal task is the poultry sector assessment in order to accomplish targeted national goals.

2- A second equally imported task is the improvement of three state Breeding/Hatching farms from the 13 Ministry operated poultry farms.

3- A third major task is recommendations to the Ministry of Agriculture for a national breed and hatchery improvement program responsive to the requirements of both commercial and rural aspects of a poultry development program in Egypt.

4- Another aspect of this project is recommendations to the Egyptian General Poultry Company aimed at more efficient management of company operations.

5- Another vital task is to provide a national plan to the Ministry of Agriculture for increasing the availability of pharmaceuticals inculding vaccines and feed additives to the poultry sector.

6- The final task is to examine the village flock productive sector with the purpose of determining the role it plays in finishing poultry meat and eggs to the economy and its degree of efficiency.

Evaluation Methodology:

As a part of ensuring food security for the Egyptian inhabitants, the Government of Egypt has undertaken a program of improving its poultry production. In that respect, assistance from USAID and other donors, as well as from potential foreign joint venture has been sought.

In response to the Government of Egypt's request for assistance in that field, AID in June-July 1977 requested experience Incorporated to recruit and field a poultry survey team to visit Egypt for the response of analyzing and assessing the present state of the industry, and to recommended technical assistance AID might provide.

The team's report, expanding poultry production in Egypt, August 1976 provides a broad and comprehensive view of Egypt's production components, both for egg and meat production, and indentifies a number of recommendations for improving production efficiencies, as well as total outputs.

Another AID/Washington team visited Egypt between October-November, 1976 for further investigation. The project indentification document prepared by this team was approved by the Near East Bureau Project Review committee on January 1977.

This project is in response to the Government of Egypt's request for assistance in this area. A USAID grant of 4.542 million dollars has been approved to cover the total costs of the project number 263-0060.

A contract was signed between the Ministry of Agriculture represented by Dr. Mahmoud M. Dawood, the Minister of Agriculture and Mathtech Company, represented by Mr. Norman Agin, the president of Mathtech Incorporation, dated in July 20, 1978. According to the contract, the contractor has to provide services in accordance with and as described in detail in Appendix A of the project paper.

To accomplish these end results, the contractor has to study and to use all segments of the Egyptian Poultry Sector. This will be accomplished through the coordinated use of a team of U.S. Poultry specialists, experienced management personnels and qualified technicians, as outlined in section 5 of the contract general provisions.

The evaluation was conducted by three (3) teams: four(4) persons representing the MOA, four (4) from USAID and three (3) from Mathtech. Each person was given the project paper, the first and second interim report, the contract work statement and all special project reports.

Summary:

The second interim report for the poultry improvement project contains the findings of the project team the status of the project, major problems which prevent poultry production from reaching desired levels, and recommended solutions for those problems area.

The evaluation team found that the project to be basically on the schedule and making good progress toward achieving its purpose. Problems have been identified and solutions developed as specified in the orginal paper. Supplements a-tion will be required to implement some of the conclusions and to complete the remaining elements of the Egyptian Poultry Improvement Project as outlined in the Project Paper.

The project is within budget, and the remaining original paper tasks should be completed within the allocated funds. Identified supplemental and expanded tasks will require additional funds.

Due to the dynamic nature of the project, it will be necessary to reallocate some funds between line items in order to match needs. This will also allow the contractor to complete the project with necessary efficiency and within realistic task budgets.

The initial phase of the sector analysis has been completed; and major recommendations, which the American consultant's team believes will stabilize the economic factors associated with poultry production and distribution in Egypt were developed. There is a great need for slaughter houses for private sector. If poultry consumption is to increase in Egypt it must be from availability of dressed local broilers in local shops.

A review of the breeding programs of the Ministry of Agriculture has been made, and proposals for a breed evaluation program presented to the MOA. The General Poultry Company (GPC) has been examined thoroughly, and problem areas identified. A number of specific recommendations in the areas of broiler breeder management, feed and nutrition, production and poultry processing were submitted to GPC.

For hatchery improvement the team recommended several programs to be immediately initiated, strain testing program, blood test program and poultry health practices program for all hatcheries public and private.

Summary (Cont.)

For the scope of GPC consultancy the contractor's team believes that there are significant opportunities for improvement in poultry husbandry, nutrition, disease control, hatching, breeding, processing, by-product handling, maintenance program, product mix and product flow and distribution which would substantially increase production without additional out-puts. Team members propose to continue working in these opportunties with Egyptian counterparts.

In the field of nutrition and feed manufacturing the team submitted several recommendations to improve the situation in this important section which is considered one of the major contraints limiting efficiency and improved poultry production in Egypt.

The village flock team has studied the different aspects of this sector and has developed appropriate recommendations. The poultry health team has identified primary constraints and possible solutions to the poultry disease situation, which has had a major impact in the productivity of the poultry sector.

The initial objectives of the poultry health task were specified as the development of a national plan for the availability of poultry vaccines and pharmaceuticals. During the course of activities by team members in assessing the conditions within the poultry sector and particularly within the sources from which vaccines and pharmaceuticals were available in Egypt, it was decided to convert the objectives of this task force into the poultry health overall. The team has developed the basic structure of a national poultry health program. The financial part of a prefeasibility study for a new vaccines producing plant which would be adquate to provide the needs of the Egyptian Poultry Industry for at least 10 years has been estimated. The team reported that it will be for less expensive to produce the poultry vaccines locally than to depend on importation.

The new revised training program based on the U.S. Commercial Poultry Industry rather than being university based, should provide a better training comparable to that being given before. Also, the new programs will be directed to providing a basis of helping to solve problems in the Egyptian Poultry Industry. Although, the training is behind schedule but it can be completed within the alloted time.

The hatchery breed farm expansion program cannot be completed within this project's lifespan, as originally scheduled. The vehicles and hatchery requests for bid are reportedly scheduled for publication in CBD in December 1979.

Recommendations:

1- The project should be continued. The project budget should be adjusted to allow transfer of remaining funds to appropriate categories within the existing budget. The remaining project activity should be devoted to completing the training, hatchery expansion and econometric tasks.

2- The completion and formalization of the comprehensive National Poultry Plan is of highest priority. Such a plan has to be implemented in the earlist possible time in order to be practiced within the lifespan of this project.

3- A special program for technical assistance to GPC should be developed and implemented as soon as possible. Special attention should be directed to practices aiming at more efficiency management of the company operations. Technical assistance should be extended to ORDEV, Agrarian Reform and to all the Governorates, since these are important sectors participating in poultry production.

4- A model-farm National poultry training center should be established for in-country training for various poultry sector. The center would provide training for maintenance for modern poultry technology, feed mill and breeder farms operations, layer and broiler production poultry health basic, and all the pertinent aspects of poultry husbandry.

5- An important program for the Abbasia vaccines production unit should be immediately, implenented to upgrade the qulity of the [AHRI's proposal for short term project] vaccine produced, and another program leading to contruct a modern up-to-date poultry vaccines production unit as soon possible to replace Abbasia. Also, an urgent need exists to improve the in-country supply and availability of sufficient poultry pharmaceuticals at most economic prices. The team recommended that an-in-depth feasibility study should be conducted as soon as possible that will quantify and justify the need for a poultry vaccines and pharmaceuticals in Egypt. It is also important to remined that the feasibility study is one of the major task for the project and has been taken in consideration that it's cost will be covered from the existing available budget. The report indicates that it will be for less expensive to produce the poultry vaccines locally than to have to depend on importation.

5- There exists an urgent need for simple, but highly functional poultry health diagnostic laboratories. Technical assistance should be continued to the Veterinary and Extension services to optimise available vaccines and other existing resources.

Recommendations (Cont.)

7- A program for feedstuff optimization should be developed which would include an urgently needed in-country feed analysis laboratory, an improved imported feed inspection program, computerized feed formulation feed equipment repair and upgrading, improved tracking of domestic and imported feed and feed ingredients, and elimination of duties and tariffs on imported feed, feed ingredients and concentrates, and vaccines.

8- A coordinated program should be developed to stabilize the poultry economy of the country, particularly with regard to the marketplace. The program should include sufficient slaughter houses, refrigerating and freezing units for both the public and private poultry sectors.

9- A breed testing program should be implemented within the MOA farms to compare locally available "adapted" breeds with improved foreign strains. It is also suggested that each of MOA farm to limit itself to improvement effort on only one breed. The team recommended for the broiler sector that development of broiler testing facilities to compare different foreign stocks is encouraged. There is also a need to determine whether the poor performance achieved in duck production is nutritional or strain related. It is recommended that the GPC consider importation of different strains to be tested under the Egyptian conditions. It also suggested that feeding trails be set up to set various charges in their diets. For trukeys, it is recommended that changes in nutrition programs to eliminate egg feeding and to eliminate the full feeding of breeds should be tired. Improvement in housing, ventilation and heat protection should have considerable attentions.

10- The balance of MOA farms not including for expansion in the project should be improved at the earliest possible time. This will optimize their existing capabilities to produce appropriate types of disease free hatching eggs for native hatcheries and for baby chicks for the villagers. The report also indicates that the current hatchery expansion program should be accellerated. (APRI's report)

11- The new revised programs for training based on the commercial industry rather than being university based, should provide a better training comparable to that being given before. Also, the new programs being directed to provide a basis of helping to solve problems in the Egyptian Poultry Industry- special programs should be conducted for training veterinarians on vaccines preparation techniques and on SPF farm practices in order to prepare personnels who will be able to work efficiently at such fields.

Accomplishments to date:

As a part of ensuring food security for the Egyptian inhabitants, the Government of Egypt has undertaken a program of improving its poultry production sector. In response to the Government of Egypt's request for assistance in the field of poultry production sector, AID in June- July 1977 requested Experience Incorporated to asset Egypt in improving the poultry industry and to recommend technical assistance AID might provide. The team's report, expanding poultry production in Egypt, August 1976, provides a broad and comprehensive view for both egg and meat production in Egypt and recommendations for improving production efficiency. Another AID/Washington team visited Egypt between October _ November 1976 for further investigation. The project identification document document prepared by this team was approved by the Near East Bureau Project Review Committee on January 1977. A USAID grant of 4.542 million dollars has been approved to cover the total costs of the project number 263-0062. A contract was signed between the Minsitry of Agriculture and Mathtech Incor. in July 1978.

Mathtech used the team approach in scheduling activities in the 6 tasks. Nine (9) teams of specialists were used to comprehensively examined the tasks outlined in the project paper. The first team members arrived Egypt in October 1978 and all tasks had been addressed by February 1979. The poultry specialists which comprised the nine teams are of national and international fame and include experts in all primary areas of poultry operations.

A major difficulty existed not only in identifying central sources but also in findings any accurate data on the Egyptian poultry sector. This has been largely overcome by an increased effort in the part of the Mathtech team. As a result, a great deal of reliable information has now been assembled and the first-evercomprehensive Egyptian Poultry Sector production reports have been produced. It is better to clarify that for preparing the Econometric Model, the project may need contain assistance from Dr. Osman El Kholy, the professor of the economic Dept. of Ain Shams Faculty of Agriculture, and also to use the facilities of the central computer of Cario University. So the funds require to cover these costs have to be taken in consideration from the available budget.

Training in the United States initially posed some problems; problems which have now been solved. Difficulties also existed with the type of curriculum provided by the University of Florida, the training subcontractor - The original curriculum was not suitable for the level and type of participants invloved. Attempts to have the University of Florida, change the curriculum to one more appropriate to the participants needs were unsuccessful, therefore, the subcontract was cancelled.

Accomplishments to date (Cont.)

In the summer of 1979, the training program was directly assumed by Mathtech, utilizing the facilities of the University of Gergia, the Southeastern Poultry and Egg Association, and private companies in the North Georgia area. The curriculum has been modified to best adapt to the individual needs of the participants, and focuses on solutions to actual poultry sector problems identified in this project.

Administrative problems and factors involved in the site selection of the MOA breeder/hatchery farms at Fayoum, Sakha, and Inchas delayed the expansion of the three farms. The situation has recently been resolved, and the equipment for the three farms will betendered shortly. But, the expansion program cannot be completed within this project's lifespan, as originally scheduled. So the supervisions for erection of prefabricated houses and installation of equipment must be taken in consideration.

A major, and previously unspecified, constraints to poultry production was identified in the area of poultry health, particularly in the utilization of available vaccines and pharmaceuticals. Corrective programs have been recommended. Serious limitations of the present MOA production facilities were identified, and possible corrective measures and alternative solutions have been recommended. Upgraded specifications for vaccines and pharmaceuticals to be purchased by the MOA and GPC were developed, including some seriously needed items not previously used. Those United States vaccine and Pharmaceuticals companies who would be willing, under appropriate conditions, to joint venture new production facilities in Egypt have been identified.

Major problems in the poultry sector, and the impact of the village flock and rural producers on that poultry sector, were identified and recommendations submitted. However, additional technical assistance will be required for the Governorate programs to be successful.

Problems initiated from the inconsistencies of supply and demand, which have had a major negative impact on market prices and the profitability of private sector production, were identified and recommendations submitted.

Assistance was provided to GPC regarding low breeder productivity problems and equipment problems at N. Tahrir broiler production complex. GPC modified their organizational structure from a technical services and operational management orientation as a result of recommendations submitted in March and April of 1979.

Accomplishments to date (Cont.)

The design of the Econometric Model of the Poultry sector represented the first tangible outline of the entire national sector including those factors by which it is impacted or creates major impacts of its own.

In summary, the accomplishments to date represent a much broader scope than those outlined in the project paper. Overall, the project has been successful in helping the Egyptian Poultry industry move toward its goal of increased poultry meat and egg production. It appears that poultry production is now expanding at a rate sufficient to achieve the governmental targets for 1980. These goals can easily be surpassed if the measures recommended herein are implemented.

Key Factors Inputs and Outputs

Problems relating to inputs existed during the early stages of the project. Areas of difficultry included the provision of host country counterparts for project consultants, communications and transportation. Deficiencies in support logistics (such as office space, telephones, telex, and copy machine) were also deterrents to developing outputs efficiently. These problems have been largely overcome.

As noted, training programs have been revised and subjects and periods of training for each specified group. The level of training at University of Georgia has been improved.

Changes in the dynamic poultry industry of Egypt have necessitated changes in both inputs and outputs (see Exhibit 1). For example it was necessary to seperate the feed and nutrition problems from Task 050 (Poultry production) because of its important effect on the industry. Also, the identification of major disease control and vaccines production and quality problems necessitated the expansion of the "vaccine /Pharmaceutical Production Task" to include and to be subsequently identified as the "Poultry Health Task".

External Factors:

The tremendous expansion of the poultry industry and the proliferation of poultry projects, both governmental and privates, were not envisioned or addressed in the orginal project paper. For expample, there are now several governmental agencies in the chicken production business, including GPC, ORDEV and Agrarian Reform. Also, President Sadat's governmental decenralization program had accelerated and most of the twenty_five Governorates are now developing poultry projects. In order to prepare the necessary qualified technicians for these new projects, a national training center for poultry mustbe constructed as soon as possible.

External Factor::(CONT.)

Private commercial poultry production was insignificant in 1977 when the project paper was written compared to its role today in poultry industry. Private companies are expected to produce as much poultry meat and eggs in 1980 as the GPC had produced in 1976. Unfortunately, because of unstable market and distruibution conditions, approximately 50% of the available private sector poultry production capacity is not used. So, technical assistance should be directed towards market problems and encouraging facilities have to be avaiblale for the private sector to participate in establishing slaughter houses and refrigerating and freezing units.

Unplanned Effects:

As this industry continues to grow and evolve at a rapid rate, many of the assumptions which were valid when the project paper wes written, are no longer true. As a result, the project teams have had to conduct many additional activities in order to identify and then monitor, the poultry sector. The teams data activities have provided a large bank of information of significant value, not only to those directly involved in poultry production, but to allied industries such as feed and vaccines as well. If properly utilized, this data should also be of importance not only to the MOA, but to Economy, Planning, and other Egyptian Government agencies as well.

The proliferation of governorate, private, and other poultry projects has greatly increased the need for a national poultry plan to help coordinate the rapid expansion of the industry and to make the most efficient use of Egypts resources. These factors make implementation of a Poultry Health Program more important than ever, if achievement and maintenance of national goals is to result.

These recent changes mean that future poultry projects are likely to be quite different from the type of project this was originally intended to be from the project paper.

Future projects will likely involve a greater emphasis on well defined, specific, hard objective goals.

Beneficiaries:

Direct beneficiaries of this project include a number of agencies of the Ministry of Agriculture such as GPC, APRI, AHRI, Veterinary and extension services. These agencies have benefitted through direct consultancies and upgrading of their current programs, organizations and activities.

Indirect beneficiaries of the project include the Egyptian consumer, the private sector and village flock producers and allied industries. Private and village flock producers will benefit through increased availability of disease free chicks, improved feed formulations, and expanded poultry health programs.

Problems:

The logistical, administrative, transportation and communications problems existed during the early stages of the project. However, these problems did not hamper the technical work of the consultants. Most of the impacts were absorbed by the contractor.

A 30-day minimum stay by consultants became a requirement after the contract was in force, although the contract has specified lesser periods. This was a limiting factor on the availability of top quality consultants and after works against their most efficient use in terms of project needs.

Lessons Learned:

While it is still early to make definite comments on the results gained from the project on improving the poultry production in Egypt and mainly the effective results on the village flock sector, several lessons can be drawn with regard to project design and management.

Actual expenses in various budget categories have been different than anticipated. So, the remaining available budget needs to be revised at the earliest possible time.

The resident administrative team should arrive on site at least one to two months before the consulting team. Consultants should not arrive until all major operational problems are resolved.

When a project is to encompass an entire economic or production sector, the allied or supportive industries should be included in the planning. Similarly other ministries which impact on the poultry sector (including the Ministries of Economy, Planning, supply, local Gover. and Finance) should have been consulted during the planning stage of the project. A host country project council or an advisory committee in which all such ministries activly participate, should be formed at project startup.

Special Comments or remarks:

Problems relating to inter-ministry relationships which affect project performance and results should be addressed in a policy statement to the host country government prior to project implementation.

AID direct-hires and team members are afforded privileges and support not available to host country contract team members, even though there is better or no difference in actual project circumstances other than the name of the type contract involved. This inhibits project performance and utilization of the best specialists available for work on AID funded project.

As this project developed, the need for skilled Egyptian input beyond routine counterpart participation became apparent. Under the Egyptian system of operations, participation beyond routine involvement requires the payment of supplemental income to this type of "counterpart". A change or easing of restrictions or the inclusion of a budget category for such purposes would significantly improve project results.

Project Of Newcastle Disease Vaccine

Part I Short term project

Objective: To maintain present ND vaccines production in improved qulaity

Problems:

1- The use of commercial eggs in present production. Such eggs may contain viral and bacterial contaminants, and antibodies to ND.

2- Lack of equipment such as:-

   a. Incubators (for eggs)

   b. Lyaphilizing facilities

   c. Freezers for storage of vaccines

   d. Refrigerators for chilling eggs

   e. Accessory equipment

3- Production rooms lack the decontamination facilities, such as liminar air flow system

4- Repair and maintenance of equipment.

Solutions of Problems:

1- a. Weekly supply of 7000 SBF fertile eggs, until the establishment of a local SBF farm, and 100 SBF chicks.

   b. The present building for isolation of susceptible chickens which consists of six separate pens, needs a high wall to surround it, plus a dependant water supply.

   c. A suitable automatic egg incubators, 2000 eggs capacity 30000 total capacity.

   - Two egg incubators of 1500 eggs capacity.
   - Three egg incubators of 3000 eggs capacity.

2- b. A specialist is needed to set up two chillers to be connected with their new lyaphilizers of 20 litters each, and to repair those out of function. We will be obliged if the specialist will train our technical staff of the lyophilization unit.

2- c. Two walk-in freezers for storage of vaccines.

2- d. One walk-in refrigerator for chilling the large amount of innocuated eggs.

Solutions of Problems (Cont.)

2- e. Stand-by Generator

2- f. Accessary equipments:

I. 5 Electric egg-shell cutters

II. 10 Hand egg-shell cutters

III. 6 Electric suction pumps

IV. 500 Boxes of pure natural latex tubing, seamless non-blooming, 50F /box, no 604 R, Amber color, size $\frac{3}{16}$

(Kent Latex Products, Inc. Kent, Ohio, USA

V. One automatic printing machine for vials and ampoules, with needed sets of letters and ink tubes.

VI. Egg candlers provided will powerful source of light, with enough sets of lamps.

VII. Different colors of plastic ring for marking chickens.

(10,000 ring of each color).

3- The two production units of the lentogenic and mesogenic ND vaccines in the present building have to be equipped with centeral air-conditioning and liminar air flow system.

4- Training of Veterinarians working in the unit of ND vaccines production in the following fields.

a- 4 for the new trends and technology of production of ND vaccines.

b- 4 for the control of poultry vaccines.

Part of Newcastle Disease Vaccines

Part II Long-term Project

Objective: To increase the production of ND vaccines from 200 millions gradually to cover the needs of the country in SPF eggs.

To fullfill these requirements the following needs are required.

1- An established local SPF farm to provide ND unit with 750,000 fertile SPF eggs, and 5000 SPF chicks annually.

2- A new laboratory building, supplied with centeral air conditioning and pasiture filtered air flow.

This building has to be provided with the following equipments:-

1. 4 egg incubators, 20,000 eggs capacity to incubate fertile eggs.
2. 6 egg incubators, 5000 eggs each for the vaccine production units.
3. 20 egg candlers with strong light, with enough sets of lamps.
4. 20 egg-shell hand cutters, and 10 electrical ones.
5. 3 automatic filling machines, or an automatic line filling machine.
6. 10 automatic caping machine to fix the aluminum capes of the vials of different sizes.
7. 2 lyaphilizers for vials 10-20 liters capacity.
8. 2 walk-in refriferators 185 x 245 cms.
9. 6 walk-in freezers 185 x 245 cms.
10. 10 electric suck pumps, or a cetral section system with multi-connections to provide the whole building.
11. 1000 boxes of pure natural latex tubing, seamless, non-blooming 50 ft/box, No. 604 R, Amber color, size $\frac{3}{16}$.
    (Kent latex Products, Inc. Kent, Ohio, USA).
12. 100 automatic syringes 2 ml capacity, with 200 glass spare parts.
13. 100 automatic syringes 5 ml capacity, with 200 glass spare parts.
14. An automatic printing machine for marking vials and empoule, of different capacities, with complete sets of letters and ink of different colors.
15. 4 autoclaves, electrical, 50 x 100 cms.
16. 4 Hot air ovens, electerical, 48 x 24 x 36" inches.

OBJECTIVE (CONT.)

17. 50 crates for transportation of chickens.

18. 3 micro-titre sets.

19. Lab coats for stuff.

Transportation

1- 2 microbuses 20 passengers each for the working stuff.

2- 1 closed car (Van) to transport SPF eggs and chickens

Director of ND Unit

Dr. Adel H. El Sabbag

12.12.1979

Director of Vet. Res. Inst.

Comments on the Evaluation of the
Poultry Improvement Project
Submitted by the MATHTECH

December 25, 1979

The APRI agrees fully about all information and suggestions presented in the MATHTECH study. All the information in the study was collected and given to the American side.

The staff of the APRI accompanied the American experts and gave them all the information they asked for.

The testing programme was discussed with them and agreed upon.

The fact that the APRI poultry farms are not producing with their total capacities is due to shortage of budget for the poultry feed.

Sites for the hatcheries and brooding rearing laying houses were selected and approved by the American and Egyptian sides.

Specifications for the equipment were identified and it is clear that there is delay from the American side for the supply of the prefabricated houses and the equipment. In the budget of 1979 LE 100 000 were allocated from the Egyptian side for the civil work, but no plans for the civil work were obtained for execution of civil work according to the plans of the prefabricated houses.

On the other hand, the vehicles which should be purchased from the budget of the project were not supplied.

It is clear that there is delay in execution of the project from the American side and not from the Egyptian side.

I.F. Sayed Y.E. Madkour

POULTRY IMPROVEMENT PROJECT

PRELIMINARY EVALUATION REPORT

December 28, 1979

I. SUMMARY:

This is the first coordinated, multi-partner evaluation of this project involving the Agency for International Development (AID), the Ministry of Agriculture (MOA), and MATHTECH. Another evaluation is scheduled prior to the completion of this project as currently authorized. However, the Contractor completed two (2) extensive in-house evaluations leading up to the submission of the major six (6) and twelve (12) month project reports and recommendations. These were entitled First Interim Report and Second Interim Report, and were used as part of the base information for this evaluation.

The project is essentially on schedule and has effectively achieved its goals to date on a much broader scale than originally planned. Many of the problems specified in the original Project Paper have already been identified and solutions developed. Supplemental action will be required to implement some of the conclusions and to complete the remaining elements of the Egyptian Poultry Improvement Project as outlined in the Project Paper.

The project is within budget, and the remaining original Project Paper tasks should be completed within the allocated funds. Identified supplemental and expanded tasks will require additional funds.

Due to the dynamic nature of the project, it will be necessary to reallocate some funds between line items in order to match needs. This will also allow the Contractor to complete the project with necessary efficiency, and within realistic task budgets.

The Village Flock Team has completed an in-depth review of village poultry production in Upper, Middle, and Lower Egypt, and has developed appropriate recommendations. The Poultry Health Team has identified primary constraints and possible solutions to the poultry disease situation, which has had a major impact on the productivity of the Poultry Sector.

A review of the breeding programs of the Ministry of Agriculture has been made, and proposals for a breed evaluation program presented to the MOA. The General Poultry Company (GPC) has been examined thoroughly, and problem areas identified. A number of specific recommendations in the areas of broiler breeder management, feed and nutrition, production and poultry processing were submitted to GPC.

I. Summary (cont'd):

The initial phase of the Sector Analysis has been completed; and major recommendations, which the team believes will stabilize the economic factors associated with poultry production and distribution in Egypt, were developed. The effectiveness of the Sector Analysis, combined with effective use of the Econometric Model (see Exhibit 2), will depend upon improved participation and help from the MOA. This is vital not only to the validity of the information produced, but also to its continued use after project completion.

The training task is slightly behind schedule due to English language qualification deficiencies, which necessitated remedial training for Egyptian trainees prior to departure for the United States. This task can be completed within the alloted time only if there is an immediate accelerated effort to upgrade a number of the remaining participants' English language capabilities.

The hatchery breed farm expansion program cannot be completed within this project's lifespan, as originally scheduled. This is due to a number of problems, administrative and otherwise, which have delayed progress on this task. Primary delays resulted from a necessary reevaluation of the program alternatives, and problems with the sites previously selected by the MOA. Final arrangements for use of one of the sites (Fayoum) were not completed until November, 1979.

II. RECOMMENDATIONS:

1. The project should be continued. The project budget should be adjusted to allow trainsfer of remaining funds to appropriate categories within the existing budget. The remaining project activity, as currently authorized, should be devoted to completing the Training, Hatchery Expansion, and Econometric tasks; to developing and refining the necessary background and support data for the new and supplemental poultry related projects identified as a result of this project, and to providing whatever further consultancies may be possible within the balance of the budget.

2. Plans should be developed for a six (6) to twelve (12) month extension of the Training Task and an up to twelve (12) month extension of the Hatchery Expansion Task. Delays in both tasks were not the fault of the Contractor. Consideration should also be given to increasing the number of training participants to include more personnel from ORDEV, Agrarian Reform, Extension Veterinary Services, and from the Governorate organizations already active, or to be involved, in poultry production.

3. The Poultry Health Plan should be given highest priority, with special emphasis on the needs of the native hatcheries and the village flocks. The native hatcheries and village flocks provide approximately 50% of all poultry products in Egypt, have a major impact on the rural, mainly poor, population, and significantly effect both public and private commercial producers. Therefore, emphasis should be directed toward supplying the native hatcheries and village flocks with the technical services necessary to overcome the deficiencies of their current systems and toward providing the appropriate allocation, availability, and delivery of needed supplies; including disease-free chicks, balanced feed rations, and vaccines. Technical assistance should be expanded to ensure development, implementation, and coordination of existing resources in order to bring the disease problem under control at the earliest possible time. This would result in an almost immediate increase in production and villager income within existing resources.

4. The completion and formalization of the comprehensive National Poultry Plan is of highest priority. This plan should address all impacting sectors of the economy, including those not currently under the control of the Ministry of Agriculture. The plan should provide realistic, multi-year objectives for such activities as the practical allocation of resources, supplies, and materials to all sectors, including the GPC, Veterinary Services, villages, and the private sector.

The plan should also address the allocation of resources used by sectors other than poultry, such as feedstuffs, vaccines, and pharmaceuticals. It is imperative that the National Poultry Plan be implemented at the earliest possible time, in order to prevent ineffective allocation or waste of Egypt's limited resources.

5. A coordinated program should be developed to stabilize the poultry economy of the country, particularly with regard to the marketplace. A steadier, more disciplined release of poultry products to the primary consumer markets is required to ensure the private sector and village flock producers a reasonable return on their poultry production. In the past, uneven release of poultry products to the markets has resulted in drastic price fluctuations. Dramatic price reductions have had a severe negative impact on private and village producers. A coordinated program would include sufficient slaughterhouse and refrigerated storage capacity for GPC to withhold delivery of broilers and eggs to the market until the market is able to absorb the supply. This program would also provide private and village flock producers with similar opportunities for controlled release of poultry products, ensuring a fair return on investment.

6. There exists an urgent need for simple, but highly functional, poultry health diagnostic laboratories. The diagnostic laboratories should be provided at the earliest possible time. A program which would make the services of these laboratories available to village producers, native hatcheries, the private sector, and to Governorate programs should be developed and implemented. Technical assistance should be supplied to the Veterinary and Extension Services to optimize available vaccines and other existing resources.

7. A program for feedstuff optimization should be developed, with emphasis on support to the private sector, including villages, MOA farms, native hatcheries, and governorate programs. However, the same opportunity for use should be made available to public sector programs as well, including cooperatives, extension villages, and the GPC. The feedstuff optimization program would include an urgently needed in-country feed analysis laboratory, an improved imported feed inspection program, computerized feed formulation, feed equipment repair and upgrading, improved tracking of domestic and imported feed and feed ingredients; and elimination of duties and tariffs on imported feed, feed ingredients and concentrates, and vaccines. This program could also be extended into other sectors requiring feed, such as livestock, dairy, and fish farming. Technical assistance should be supplied for coordinated implementation of this feedstuff optimization program.

8. A breed testing program should be implemented within the MOA farms and expanded into field tests in the native hatcheries and villages. This will more accurately identify the most productive, viable breeds for the private sector and villages. Technical assistance may be required for effective implementation.

9. A special program for technical assistance to GPC should be developed and implemented as soon as possible. Although GPC's overall national influence is planned to diminish somewhat in the years ahead, its activities are still a major factor in self-produced poultry product and the national economy. Also, the lower the production efficiency of this group (which supplies approximately one-third of national poultry production), the less the amount of funding available for the government's rural support elements such as Extension, ORDEV, and Agrarian Reform. Also, GPC is designated to provide necessary technical support for the growth of the private sector and governorate programs. Therefore, the more efficiently GPC operates, the more beneficial the impact will be on the private and village sectors.

10. The balance of MOA farms not scheduled for expansion as a part of the Poultry Improvement Project should be improved at the earliest possible time. This will optimize their existing capabilities to produce appropriate types of disease-free hatching eggs for native hatcheries and/or baby chicks for the villages. The current capacity could be more than doubled by a "balancing" of their equipment and a coordination of their activities. This program will most likely require expanded technical assistance to provide the support, services and coordination necessary for successful implementation.

11. A model-farm national poultry training center should be established for in-country training (in Arabic) for various poultry sector on-line personnel. The center would provide training in feed mill and breeder farm operations, layer and broiler production, poultry health basics, and all pertinent aspects of poultry husbandry. This would supplement the expanded management development program noted previously. The center should include a central library for relevant research papers and materials, and poultry science publications, of which there is currently a significant void in Egypt.

12. A controlled, limited improvement program for the Abbasia vaccine production unit should be immediately implemented, and the program leading to a possible joint venture for development of new vaccine and/or pharmaceutical plant(s) should be pursued. This would allow subsequent replacement of Abbasia with entirely new facilities, while at the same time upgrading the product quality levels, as much as possible, in the interim.

13. A series of in-country management seminars should be developed and implemented in conjunction with U.S. management and poultry organizations, such as the Southeastern Poultry and Egg Association and the American Management Association.

14. GOE support for the Hatchery Expansion Program should be accelerated.

15. Activity on the definition and modelling of the Poultry Sector should be supplemented through expanded technical assistance to the MOA Agricultural Economic and Statistics Unit. This would include the development and implementation of the Egyptian econometric model as relevant to the Poultry Sector. The current system, with its limited capabilities to provide sufficient, viable, and comprehensive data to the GOE's decision makers regarding the allocation of limited resources, has severely affected support to the private and village sectors.

16. An in-country poultry trade association should be formed to provide opportunities for professional growth and facilitate the exchange of practical and technological information.

17. Consideration should be given to extending and/or supplementing the existing project to implement the recommendations made herein. Project personnel are now trained and experienced in the Egyptian Poultry Sector, and the infrastructure has been developed through which these additional tasks can be implemented in the shortest possible time, at the least possible cost, and with the greatest possible effectiveness.

III. EVALUATION METHODOLOGY:

The purpose of the project evaluation was to determine the status of the project, its accomplishments to date, areas needing special attention, and courses for future action. The evaluation was conducted by three (3) teams: four (4) persons representing the MOA, four (4) from USAID, and three (3) from MATHTECH. Each person was given the Project Paper, the First and Second Interim Reports, the Contract Work Statement, and all special project reports. Outlines using the Project Evaluation Summary, Part II, were also provided. An orientation meeting was held for MOA and MATHTECH personnel to familiarize them with the evaluation approach. Each individual evaluator and evaluation team worked independently before meeting together to discuss the results of the overall evaluation effort.

IV. PURPOSE AND GOALS OF PROJECT:

A. The purpose of the Poultry Improvement Project is to help Egypt meet its long-term goal of significantly expanding its production of poultry meat and eggs in a disciplined, coordinated, resource-effective manner.

Specifically, the project is aimed at developing programs and inputs which will enable Egypt to accomplish the above stated goal through the follow six (6) tasks, as specified in the Project Paper.

1. Complete a poultry sector analysis in order to assess the poultry industry's needs, and determine effecitve resource allocation to accomplish Egypt's ambitious goals. In addition, to provide general consultancies and training in the United States to improve the skills of Egyptian poultry management in utilizing such analyses.

2. Expand three (3) breeding/hatching farms at Fayoum, Sakha, and Inshas. This expansion is intended to increase the availability of disease-free, higher quality chicks to rural producers.

3. Make recommendations to the MOA for a national breed and hatchery program to benefit rural and private sector poultrymen.

4. Provide consultancy to GPC, and develop recommendations to improve the efficiency of the management of the company.

5. Analyze the Egyptian vaccine and pharmaceutical industry to identify possible constraints to poultry production, and to develop a national plan for increasing the availability of these important items.

6. Examine the village flock sector to determine its impact on the national poultry sector, and suggest ways of increasing identified, essential services to this sector.

B. Accomplishments to Date:

Although the Project Paper was published in May of 1977, the contract was not signed until August, 1978. Actually, the Project Paper was developed out of studies conducted in 1976 and 1977. MATHTECH used the team approach in scheduling activities in the six (6) tasks. Nine (9) teams of specialists (see Attachment I) were used to comprehensively examine the tasks outlined ithe Project Paper. The first team members arrived in Egypt in October, 1978, and all tasks had been addressed by February, 1979. The poultry specialists which comprised the nine teams are of national and international fame and include experts in all primary areas of poultry operations.

A major difficulty existed not only in identifying central sources, but also in finding any accurate data on the Egyptian Poultry Sector. This, together with the inability of the MOA to provide qualified counterpart personnel for data collection and analysis and to conduct the field studies noted in the Project Paper, caused delay in development of the Econometric Model (see Exhibit 2). This has been largely overcome by an increased effort on the part of the MATHTECH team. As a result, a great deal of reliable information has now been assembled, and the first-ever comprehensive Egyptian Poultry Sector production reports have been produced.

Training in the United States initially posed some problems; problems which have now been resolved. There were always delays in sending participants to the United States due to inadequate proficiency in the English language. Many have now completed supplemental English language training, and this has largely eliminated the problem, even though the number of eligible, qualified trainees available remains an issue.

Difficulties also existed with the type of curriculum provided by the University of Florida, the training subcontractor. The original curriculum, as developed from the RFP and Contract, was not totally suitable for the level and type of participants involved. Attempts to have the University of Florida change the curriculum to one more appropriate to the participants' needs were unsuccessful; therefore, the subcontract was cancelled.

In the summer of 1979, the training program was directly assumed by MATHTECH, utilizing the facilities of the University of Georgia, the Southeastern Poultry and Egg Association (the primary training source for the U.S. Poultry Industry), and private companies in the North Georgia area. Participants returning recently to Egypt from the United States have expressed satisfaction with the training now being provided. The curriculum has been modified to best adapt to the individual needs of the participants, and focuses on solutions to actual poultry sector problems identified in this project.

B. Accomplishments to Date (cont'd):

Administrative problems and factors involved in the site selection of the MOA breeder/hatchery farms at Fayoum, Sakha, and Inshas delayed the expansion of the three (3) farms. The situation has recently been resolved, and the equipment for the three farms will be tendered shortly. The equipping of these farms will be of a significantly less mechanized nature than originally outlined in the Project Paper, while other needed equipment not previously identified has been included.

A major, and previously unspecified, constraint to poultry production was identified in the area of poultry health, particularly in the utilization of available vaccines and pharmaceuticals. Corrective programs have been recommended, with some activity already initiated. Those United States vaccine and pharmaceutical companies who would be willing, under appropriate conditions, to joint venture new production facilities in Egypt have been identified. Serious limitations of the present MOA production facilities were identified, and possible corrective measures and alternative solutions have been recommended. Upgraded specifications for vaccines and pharmaceuticals to be purchased by the MOA and GPC were developed, including some seriously needed items not previously used.

Major problems in the poultry sector, and the impact of the village flock and rural producers on that poultry sector, were identified and recommendations submitted. Some of these are now being addressed through the recent redirection of MOA efforts through the Governorate programs. However, additional technical assistance will be required if such programs are to be successful.

Problems stemming from the inconsistencies of supply and demand, which have had a major negative impact on market prices and the profitability of private sector production, were identified and recommendations submitted. An inter-ministry committee for key agricultural projects, including poultry, feed, and vaccines, is being formed by the MOA as a result of the recommendations presented in the first major project report submitted in March, 1979. This committee is to include the Ministries of Economy, Planning, and Local Government, as well as key MOA officials.

GPC modified their organizational structure from a technical services and operational management orientation as a result of recommendations submitted in March and April of 1979. Assistance was provided to GPC regarding excessively low breeder productivity problems, and corrective programs were recommended. Assistance was also provided regarding major equipment problems at the huge N. Tahir broiler production complex, leading to its conversion from a breeder to a broiler production unit.

B. Accomplishments to Date (cont'd):

The design of the Econometric Model of the Poultry Sector represented the first tangible outline of the entire national sector, including those factors by which it is impacted or creates major impacts of its own.

In summary, the accomplishments to date represent a much broader scope than those outlined in the Project Paper. Overall, the project has been successful in helping the Egyptian Poultry Industry move toward its goals of increased poultry meat and egg production. It appears that poultry production is now expanding at a rate sufficient to achieve the governmental targets for 1980. These goals can easily be surpassed if the measures recommended herein are implemented.

V. KEY FACTORS INPUTS AND OUTPUTS:

Problems relating to inputs existed during the early stages of the project. Areas of difficulty included the provision of host country counterparts for project consultants, communications, and transportation. Deficiencies in support logistics (such as office space, telephones, telex, and copy machine) were also deterrents to developing outputs efficiently. These problems have been largely overcome, although difficulties still exist with customs fees and counterpart assignments, particularly concering the data a sectoral analysis tasks.

Changes in the dynamic poultry industry of Egypt have necessitated changes in both inputs and outputs (see Exhibit 1). For example, it was necessary to separate the feed and nutrition problems from Task 050 (Poultry Production) because of its important effect on the industry. Also, the identification of major disease control and vaccine production and quality problems necessitated the expansion of the "Vaccine/Pharmaceutical Production Task" to include, and to be subsequently identified as, the "Poultry Health Task".

VI. EXTERNAL FACTORS:

The tremendous expansion of the poultry industry and the proliferation of poultry projects, both governmental and private, were not envisioned or addressed in the original Project Paper. For example, there are now several governmental agencies in the chicken production business, including GPC, ORDEV, and Agrarian Reform. Also, President Sadat's governmental decentralization program had accelerated and most of the twenty-five Governorates are now developing poultry projects. Unfortunately, most Governorates do not yet have the necessary qualified technical assistance. This is also a problem in GPC, ORDEV, and Agrarian Reform.

VI. External Factors (cont'd):

Private commercial poultry production was insignificant in 1977 when the Project Paper was written, but has since expanded quite rapidly. Private companies are expected to produce as much poultry meat and and eggs in 1980 as the GPC had produced in 1976. Unfortunately, because of unstable market and distribution conditions, approximately 50% of the available private sector poultry production capacity is not used.

VII. UNPLANNED EFFECTS:

As this industry continues to grow and evolve at a rapid rate, many of the assumptions which were valid when the Project Paper was written are no longer true. As a result, the project teams have had to conduct many additional activities in order to identify, and then monitor, the poultry sector. (The insufficient staffing, capabilities, and systems of the MOA Agricultural and Statistical Department tend to compound this problem.) The teams' data activities have provided a large bank of information of significant value, not only to those directly involved in poultry production, but to allied industries such as feed and vaccines, as well. If properly utilized, this data should also be of importance not only to the MOA, but to Economy, Planning, and other Egyptian Goverment agencies as well.

The proliferation of governorate, private, and other poultry projects has greatly increased the need for a National Poultry Plan to help coordinate the rapid expansion of the industry and to make the most efficient use of Egypt's limited resources. These factors make implementation of a Poultry Health Program more important than ever, if achievement and maintenance of national goals is to result.

These recent changes mean that future poultry projects are likely to be quite different from the type of project this was originally intended to be from the Project Paper. Future projects will likely involve a greater emphasis on well defined, specific, hard objective goals.

VIII. BENEFICIARIES:

Direct beneficiaries of this project include a number of agencies of the Ministry of Agriculture such as GPC, APRI, AHRI, Veterinary and Extension Services, the offices of the First Undersecretary, and the Minister of Agriculture. These agencies have benefitted through direct consultancies and upgrading of their current programs, organizations and/or activities.

VIII. BENEFICIARIES (con't):

Indirect beneficiaries of the project include the Egyptian consumer, the private sector and village flock producers, and allied industries. The average Egyptian today consumes only 11 grams of animal protein daily, compared to the United Nations Food and Agricultural Organization's minimum standard of 33 grams and the United States consumption of over 55 grams of animal protein daily. More poultry product is available today than when the project started, and this amount should continue to increase if the identified problems are controlled and the resources are effectively utilized. Private and village flock producers will benefit through increased availability of disease-free chicks, improved feed formulations, and expanded poultry health programs.

IX. PROBLEMS:

The logistical and administrative problems in establishing and operating the field office were significant. However, these problems did not hamper the technical work of the output of the consultants. Most of the impacts were absorbed by the Contractor.

Communications were a major problem. For example, a telephone was not installed in the field office until February of 1979, although the contract specified it would be in place by October 1, 1978. The telex, crucial for coordination of work with the project office in the United States, was not connected until May, 1979, rather than the contract specified date of October 1, 1978.

A 30-day minimum stay by consultants became a requirement after the contract was in force, although the contract had specified lesser periods. This had a limiting effect on the availability of top quality consultants, and often worked against their most efficient use in terms of project needs.

Difficulties in processing invoices through the MOA and AID resulted in a great administrative load to the field office, as well as substantial extra financial burden on the Contractor. At one point, invoices totalling almost $400,000 were outstanding, representing approximately 20% of the total project budget.

Difficulties in the training program included English language deficiencies and trainee health and attitude problems. In addition, the need for more practical training than that available solely through U. S. university sources necessitated a major change in the training program and staffing.

IX. PROBLEMS (cont'd):

Another problem was the fact that other governmental organization involved in poultry production such as ORDEV and Agrarian Reform were not originally included in the development of the Project Paper. It has not always been easy to obtain their necessary cooperation and help, since they feel that the project does not adequately address their needs. This was particularly evident in their reluctance to provide counterparts for the consultants and data on their organizations and production.

The uncoordinated and disorganized development of the poultry industry in general added to the difficulties in developing reliable data and practical programs which addressed the targeted objectives of the project.

Major decisions which significantly impact the poultry industry are made in an uncoordinated manner, not only by the different departments of the Ministry of Agriculture, but also by other Ministries such as Supply, Economy, Planning, and Local Government. This has complicated project implementation, and has been overcome only by determination, patience, and additional project activities. It is anticipated that the new National Council will help the coordination process.

Transportation was a major problem, which was overcome only through the use of locally contracted sources at significantly higher rates. The interpretation of "source and origin" clauses delayed acquisition of project vehicles. These were eventually purchased through private sources in the United States by the Contractor, and then shipped on U.S. vessels which arrived in Egypt five months after the project began, following completion of major consultancy efforts. The two (2) authorized project vehicles were and are not sufficient for project activities, especially when a number of consultants are on site. Availability of vehicles and drivers from the host country (MOA) continue to be extremely limited.

This project was the first major Technical Assistance "Host Country" contract in Egypt. Previous rules, regulations, and procedures often required modification and new interpretation, frequently resulting in significant delays and inefficiencies. U.S. and Egyptian agreements concerning custom fees and duties are still creating problems, and materials costing approximately $2,500 are still in Egyptian customs lockers after eight months of discussions.

X. LESSONS LEARNED:

The first and most important lesson in effectively implementing a project in a developing country such as Egypt is to take nothing for granted. All data should be checked and double checked, and information should always be acquired from as many sources as possible. Then, the data should be purged and qualified through source visits by experienced personnel.

The resident administrative team should arrive on site at least one to two months berfore the consulting team. Consultants should not arrive until all major operational problems are resolved. The logistics of establishing offices, communications, transportation, and housing require far more time than they would in the United States. Once the major administrative and logistical systems are working, the consultants can come and immediately begin their work without hindrance.

When a project is to encompass an entire economic or production sector, the allied or supportive industries should be included in the planning. In the case of this project, areas such as marketing, feed supply, nutrition, and processing have a significant and important impact on the entire poultry sector. However, none of these were involved or included in the original Project Paper.

Similarly, other ministries which impact on the poultry sector (including the Ministries of Economy, Supply, Local Government and Finance) should have been consulted during the planning stages of the project. A host country project council, or an advisory committee in which all such ministries actively participate, should be formed at project startup and meet on a regular basis throughout the life of the project. Team management should at least be ad hoc, if not permanent, members of such a council.

XI. REMARKS:

Problems relating to inter-ministry relationships which affect project performance and results should be addressed in a policy statement to the host country government prior to project implementation. The lack of an appropriate agreement before the fact inhibits development of the most effective project efforts and dilutes the results almost in direct proportion to the level of inter-ministerial relationships. An appropriate statement of policy and commitment from the host country government, if contained the AID Letter of Agreement with the host country, would be invaluable in overcoming such problems.

XI. REMARKS (cont'd):

AID direct-hires and team members are afforded privile; · and support not available to host country contract team members, e· ı though there is little or no difference in actual project circumsta..ces othe: than the name of the type of contract involved. This creates undue hardship on the latter group of Americans serving abroad, and inhibits project performance and utilization of the best specialists available for work on AID funded projects.

Although the U.S. Government is providing enormous sums of money for capital development and technical assistance, it has been apparent to team personnel that the general population of Egypt is not aware of the extent to which such assistance is being provided. In contrast, when most other countries provide any assistance, regardless of how meager it may be, that country undertakes extensive effort to ensure that the population is fully aware of such assistance. It is believed that improvement of such type of effort on the part of the U.S. agencies involved would result in improved cooperation and performance by Egyptians on U.S. funded projects.

As this project developed, the need for skilled Egyptian input beyond routine counterpart participation became apparent. Under the Egyptian system of operation, participation beyond routine involvement requires the payment of supplemental income to this type of "counterpart". However, when such very limited funds are controlled by the host country and not the contractor responsible for project performance, essential needs are not fulfilled. And current policy precludes the payment for such participation directly from project funds, thereby creating a major constraint to achieving effective project results. A change or easing of restrictions, or the inclusion of a budget category for such purposes, would significantly improve project results.

XII. ATTACHMENTS:

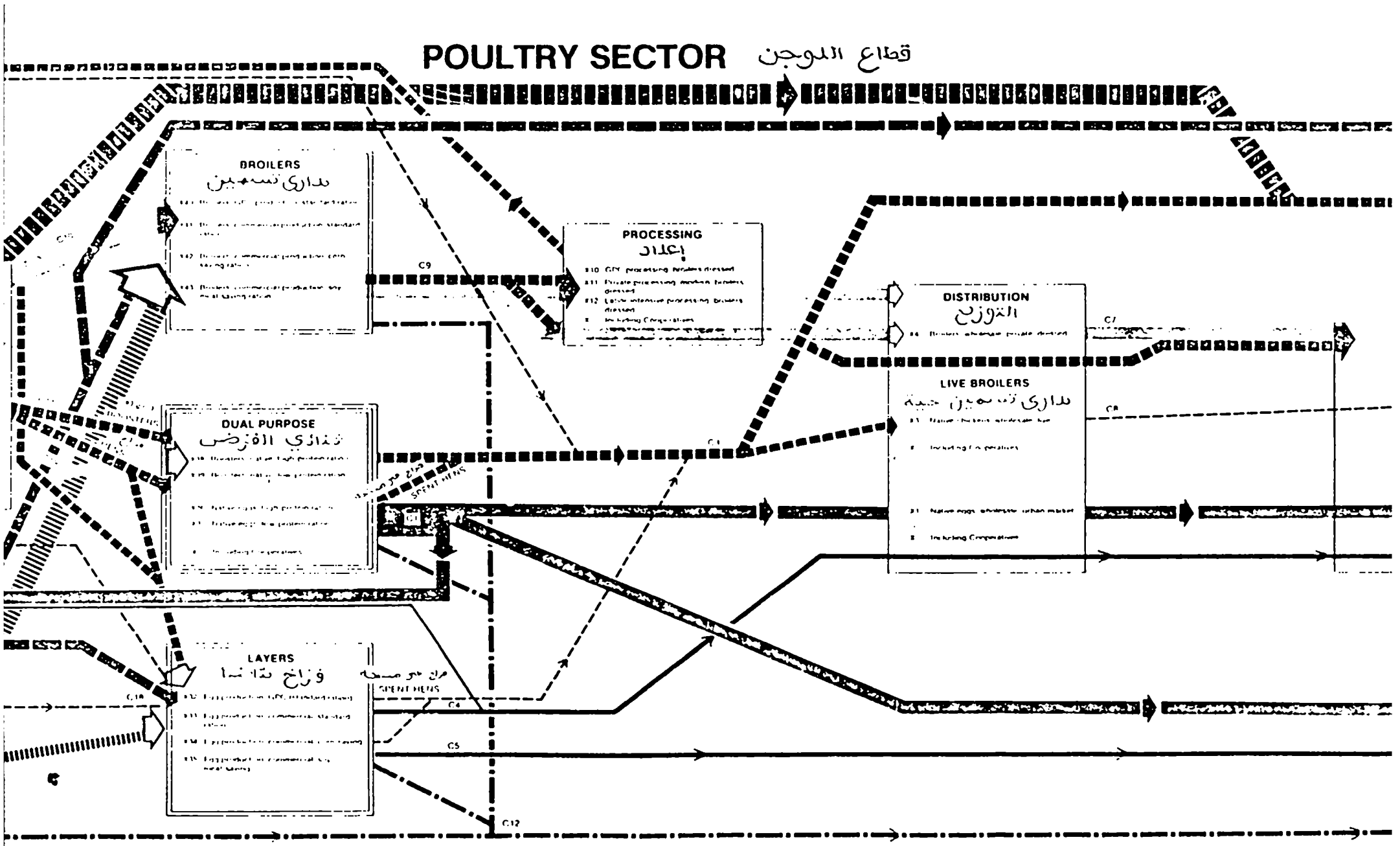
(a) EXHIBIT 1 - MATRIX of tasks assigned in Project Paper; MATHTECH work efforts.

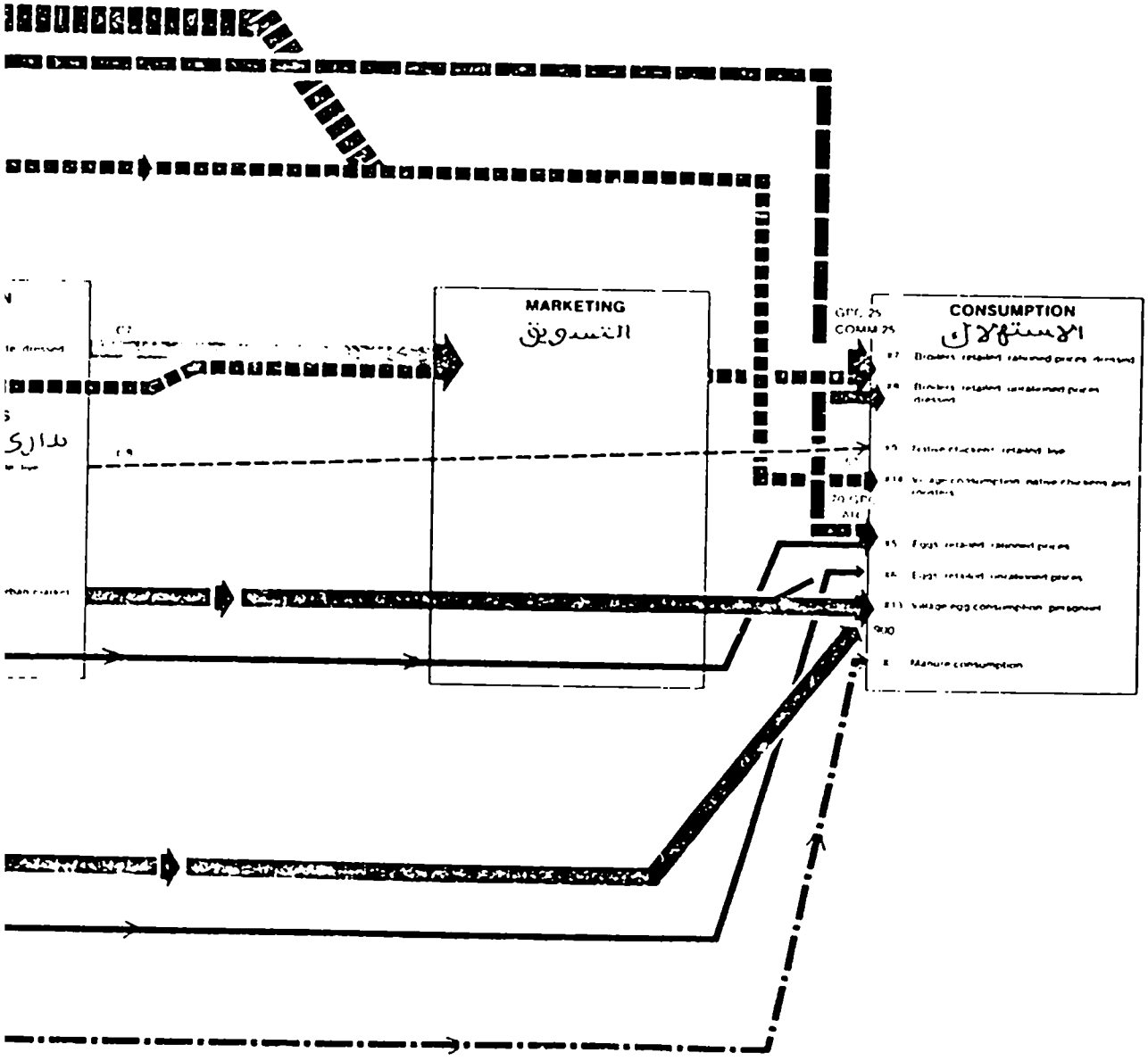
(b) EXHIBIT 2 - Econometric Model of the Egyptian Poultry Sector.

George R. O'Day
Project Director

PROJECT PAPER	MATHTECH PROPOSAL	ACTUAL EFFORTS/WORK BY MATHTECH PROJECT TEAMS
• VILLAGE FLOCKS	• VILLAGE FLOCKS -- CO-OPS	• VILLAGE FLOCKS • NATIVE HATCHERIES • PURCHASE OF EGGS & DAY-OLD CHICKS AND DISTRIBUTION/MARKET OF EGGS & POULTRY MEAT • CO-OPS • DONOR GROUPS • EXTENSION/VET SERVICES
• GENERAL POULTRY CO. (GPC)	• GPC (PUBLIC SECTOR) • PRIVATE SECTOR (INDEP. PRODUCERS) • AGRARIAN REFORM	• GPC • PRIVATE SECTOR -- INDEPENDENT PRODUCERS -- GOVERNORATE PROGRAMS • AGRARIAN REFORM • ORDEV • FOREIGN INVESTMENT
		• FEEDS AND FEEDSTUFFS • GRAIN IMPORTS/FEEDSTUFF IMPORTS • LOCAL SUPPLIES/SHORTAGES • MILLING: CAPACITY & CONDITION • FORMULATIONS/QUALITY CONTROL • IMPACT ON PRODUCTION OF EGGS & POULTRY MEAT
(TRAINING	• TRAINING PROGRAMS — MOA — GPC -- ORDEV	TRAINING PROGRAMS — MOA -- GPC — ORDEV — ARO — PRIVATE SECTOR
		• NATIONAL POULTRY PLAN

PROJECT PAPER	MATHTECH PROPOSAL	ACTUAL EFFORTS/WORK BY MATHTECH PROJECT TEAMS
· SECTOR ANALYSIS/ASSESSMENT	· DEVELOPMENT OF DATA BASE -- ECONOMETRIC/LINEAR PROGRAM MODEL	· DEVELOPMENT OF DATA BASE -- ECONOMETRIC MODEL
	· SECTOR ANALYSIS	· SECTOR ANALYSIS -- TOTAL SYSTEM INFRASTRUCTURE -- POULTRY SECTOR ECONOMICS -- IMPACTS ON NATIONAL RESOURCES
· HATCHERY EXPANSION (FAYOUM, SAKHA, INSHASS)	· DEVELOPMENT OF SPECS · COORDINATION OF BID SPEC CONFORMANCE · COORDINATION OF U.S. EFFORTS	· DEVELOPMENT OF SPECS · COORDINATION OF U.S. EFFORTS
· BREED & HATCHERY IMPROVEMENT	· BREED EVALUATION & ASSESSMENT · HATCHERY ASSESSMENT	· BREED ASSESSMENT · HATCHERY ASSESSMENT · ALTERNATE PLANS FOR IMPROVEMENTS. · BREED PERFORMANCE TEST PROGRAMS
· NATIONAL PLAN FOR POULTRY VACCINES & PHARMACEUTICALS	· EGYPTIAN MANUFACTURE & SUPPLY OF POULTRY VACCINES & PHARMACEUTICALS · IMPORTATION & EXPORTATION OF POULTRY VACCINES & PHARMACEUTICALS	· ASSESSMENT OF LOCAL MANUFACTURING FACILITIES & PRODUCTS · ASSESSMENT OF REQUIRED SUPPLY · ASSESSMENT OF IMPORTED SUPPLY QUANTITIES AND CATEGORIES · IMPACT ASSESSMENT OF VACCINE & PHARMACEUTICAL SITUATION ON PRESENT POULTRY HEALTH · UTILIZATION · DISTRIBUTION OF VACCINES & PHARMACEUT · U.S. COMPANY INTERESTS · POULTRY HEALTH PLAN · REQUIRED IMPACT PROGRAMS TO IMPROVE MORTALITY/PRODUCTION OF EGGS & POULTRY MEAT





KEY

- CHICKENS (50,000,000) دواجن
- EGGS (200,000,000) بيض
- BROILERS (50,000,000) داري تسمين
- FEED علف
- PHARMACEUTICALS (50,000,000) ادوية
- LABOR العمال
- MANURE سماد
- FOREIGN EXCHANGE نقد اجنبي

Mathtech