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SUMMARY: POLICY ALTERNATIVES AND RECOMMENDATIONS IN AGRICULTURAL MARKETING SYRIAN AGRICULTURAL SECTOR ASSESSMENT

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Departmental Information Report

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PREFACE

This report on Syrian agricultural marketing is part of a general agricultural sector assessment prepared as background to be used in developing the Syrian fifth five year plan for 1981-1985. The report summarizes the policy alternatives and recommendations extracted from the reports prepared by the Agricultural Marketing Assessment group. The recommendations contained in this summary are selective and indicative of those recommendations considered highest priority. All of the background and analytical information is contained in the six individual reports reproduced in Annex 3. These reports are listed below and should be consulted by those interested in the supportive analysis or in additional recommendations.

Volume 1 - Production/Consumption Trends, Commodity Demand Projections, and Price Policy Appraisal	Carl Shafer and Vito Blomo
Volume 2 - Crops Marketing and Food Processing	Donald Farris and Ray Billingsley
Volume 3 - Livestock, Meat, Poultry, Eggs and Dairy Products	Greg Sullivan and Donald Farris
Volume 4 - The Role and Adequacy of Credit	John Hopkin
Volume 5 - The Marketing of Physical Inputs	Clair Nixon
Volume 6 - The Development and Application of A Planning Model for the Syrian Economy	John Penson

This assessment effort represents many hours of collaborative work among the marketing assessment team members and with numerous officials of the Syrian Arab Republic. Although most of the information came from Syrian sources, any inaccuracies or misinterpretations of data are the responsibility of the authors.

The writing of each report was assigned to specific individuals but the assessments are the result of information, analysis and recommendations gleaned from numerous sources. The recommendations in the various assessments are intended to be feasible alternatives for improving the efficiency of agricultural marketing in Syria within the chosen economic and political institutional framework. In this context, it is not intended, nor would it even be feasible, for all recommendations to be implemented. The choice of timing and the degree to which recommendations are implemented must rest within the political and administrative structure of the Syrian Arab Republic

government. As is true for all policy alternatives, most of these recommendations involve trade offs and it is only rarely that a government can implement a change in policy improving one group without some other group being worse off than before. It is for this reason that participating in an assessment exercise is a humbling experience. Writing about feasible, alternative policies to improve agricultural marketing is an easy task compared with selecting which policy alternatives to implement.

The individuals making up the Agricultural Marketing Assessment Teams are listed below along with the specific responsibility assigned to each team member.

Coordinator - Ray Billingsley, Agricultural Economist.

Commodity Demand Assessment Team - Carl Shafer, Demand Economist, Team Leader; Vito Blomo, Price and Income Demand Analyst.

Commodity Marketing Assessment Team - Donald Farris, Crop Marketing Economist, Team Leader; Gregory Sullivan - Livestock Marketing Economist.

Farm Input Assessment Team - John Hopkin, Agricultural Credit, Team Leader; John Penson - Macro Financial Economist; Clair Nixon - Agricultural Input Economist.

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SYRIA: POLICY ALTERNATIVES AND RECOMMENDATIONS IN AGRICULTURAL MARKETING

INTRODUCTION

An assessment of a marketing system must consider the goals and objectives of the society in which it operates. It also must recognize that most societies operate with some conflicting goals and philosophies about the economic and non-economic direction of marketing systems. The specific role of the state and private interest may change from time to time in the course of development, but marketing functions must perform effectively if the societies goals are to be achieved. This report attempts to assess Syrian agricultural marketing at the current state of development of the economy and makes judgements and recommendations based on principles of the disciplines involved, on experiences with systems in other countries and on field work in Syria. The role of the public and private sector varies a great deal among specific industries and stages within the industry in the SAR. These roles have been changing in recent years and changes are still planned.

It is the objective of this study to provide the State Planning Commission of Syria and other interests with some information and recommendations that will lead to improved performance of the marketing systems.

The focus of this assessment is on the market organization, practices, policies and investments that influence the marketing system's ability to provide consumer satisfaction for marketing services, and subject to the societies' desire to improve physical and economic efficiency, increase economic development and to control inflation.

AGRICULTURAL MARKETING SYSTEM

Agricultural commodity marketing systems in the Syrian Arab Republic range all the way from a government monopoly for industrial crops like tobacco, cotton, and sugar to private sector marketing of crops like olives and grapes. Most of the others are somewhere in between, with some indications that the government is increasing its role in marketing and may eventually dominate all commodities and functions.

The current price policy is for the government to establish prices at each point in the exchange process from farmer all the way to the consumer. There are a few exceptions such as green vegetables that are priced in the open market and there are commodities for which frequent changes are made in the official prices like the major fruits and vegetables where a local committee may change the price as often as twice per week. Then there are

products like cereals and industrial crops where a High Commission sets the basic price once a year and it is not changed except for fixed premiums and discounts for time of delivery, quality, and other conditions.

The systems have commodities like wheat that are subsidized at the farm level with prices above the world market and also subsidized at the consumer level with flour and bread sold substantially below cost. On the other hand, there are commodities like cotton and tobacco where the monopoly marketing systems extracts substantial tax and/or profits for the government.

As one might expect from the foregoing it is difficult to generalize about the basic legal and economic framework shaping agricultural marketing and international trade in these products except to note that it appears to be national policy to control as many prices as possible and for the Public Sector to operate as much of the marketing system as possible. The private sector still operates practically all of the food retailing although most of the new investment in facilities appears to be government operations. Fifty-five government operated shopping centers are planned for the country. Some are already in operation. New government owned fruit and vegetable stores are being constructed, and government owned supermarkets include food departments. Government operations dominate processing, international trade, and for some commodities, the wholesale and distribution functions.

Data on the public sector's role in marketing is incomplete and conflicting, but additional details are presented in Volume II, Annex 3 on the extent of Public Sector operations in marketing. Practically all farming and retailing is in the private sector, but there are government operations in each of these also.

From seminar papers and discussions on the topic of Agricultural Issues, February 1977 in which Syrian officials participated, there were conflicting views expressed on the desired role of the private versus the public sector. From these discussions it appears that the value of the private sector is recognized, but there is a feeling that "middle men" cannot be allowed to operate without controls that protect producers and consumers from exploitation. Some statements implied replacing "middlemen" with government companies.

There appears to be no organized credit system or program to facilitate loans to merchants, traders, or distributors. There is an Agricultural Cooperative Bank to finance farmers and a source of financing for housing, apartments and factories, but "middle men" must arrange their financing in a more informal manner, either from owned funds, suppliers or from private individuals. There appears to be no standard practice of short-term inventory financing of merchants by commercial banks. Although one official insisted that loans are available to merchants from Syrian Banks, merchants contacted said that bank loans were not generally used to finance inventory.

As one might expect from the previous description of the wide variation in legal and economic conditions under which marketing firms operate, overall market performance varies from good to poor. Basic problems are

low labor productivity, lack of flexibility in management, generally little new capital investment in the private sector, limited supplies, variety, and sizes of processed foods.

Comparisons with neighboring countries were not attempted but the impression is that overall development and performance of the marketing system lags behind that of Jordan and Lebanon, and there are many opportunities for improvement. Modern methods of retailing and wholesaling have not progressed very far in Syria by 1979. Most retail shops are very small with low volume, and the distribution systems to them are the jobber-peddler type required to service these kinds of stores. Commodity marketing as opposed to finished product marketing often employs modern technology and modern systems, however, little attention has been paid to labor productivity and bulk handling has not been adopted in some of the obvious applications such as handling wheat and flour.

Functions of a Marketing System

The role of a marketing system is not as easily understood or described as is a production system. However, when it fails to operate due to wars, strikes or boycotts its value can be better understood. For example, cotton at Aleppo has little value unless it can be moved to textile mills, transformed into clothes and made available to some one to purchase and wear. Likewise, bananas in Central America are of no value to Syrians unless they are transported and ripened; and their value is even enhanced if they are available within a short walking distance of one's home. In both of these examples, more than half of the value to consumers was created by the marketing system. These marketing margins to the extent they represent cost and reasonable profits are legitimate charges for services rendered and cannot be avoided if the product is to be delivered at the proper time and place in the desired form.

To restate this marketing function in general terms, the role of marketing is to create time, form and space utility. In terms of agricultural commodities, the purpose of the marketing system is to utilize raw agricultural products in satisfying needs of consumers for quality, variety and convenience in a form, at a time and place desired and for which they are willing to pay the necessary costs. In the United States, because of the long distance products are moved, and because income levels permit people to demand packaging, convenience and in some cases the product already cooked; marketing costs for food average about 60 percent of the total retail costs. Average Syrian marketing costs were not available to the marketing team, but they are certainly lower than in the U.S. because fewer marketing and processing services are performed and wage rates are lower.

Consumer demands for food are more or less regular and a food marketing system must have the flexibility to procure food where and when it is produced because agriculture production is annual, seasonal, cyclical and subject to great variability. Syria with its erratic dry climate must be organized for storage and to take advantage of trade to meet food needs. It should also recognize the lack of a large domestic market for some products and look to substantial trade with neighboring countries and the

world markets for specialized and low volume products, if it wishes to achieve the maximum levels of living. Likewise, it must look to international sales for some products in which it has a competitive advantage as it has long done with cotton.

There are many ways to operate a marketing system and performance depends on the quality of management, facilities, transportation and communication. It also depends on the quality of the legal and economic environment which shape the rules of operation, the feasibility of effective contracts and the degree to which it fosters investment.

Almost every country has some distinctive features in its marketing system as there are many alternative ways to shape a marketing system.

Some of these are: (1) Open competition, (2) price controls and/or margin controls, (3) subsidies and/or taxes, (4) government operation, (5) franchised monopoly, (6) cooperatives, (7) expose the government and/or the private sector to foreign competition with low import tariffs (perhaps a maximum of 15 percent) and no volume controls, and finally (8) a mixture of the above.

The Pricing System

The role of prices in any economic system is to serve as communication links between producers and consumers. The prices of inputs communicates to farmers which inputs are relatively expensive and which are cheap. In addition, the prices for products communicates to producers which products consumers want most and which products the producers might cut back.

Current Marketing Policy

The goals of the current policy regarding the marketing of agricultural products may be specified as follows: (1) the protection of both producer and consumer against the domination of individual intermediaries which may occur in an uncontrolled marketing system (2) the provision of adequate economic incentives to encourage production and the crop composition specified by the plan, (3) supplying the institutions of the public sector responsible for trade and industrialization with the needed quantity of agricultural goods according to the plan, (4) supplying food stuff to consumers at prices which are stable and free from inflation, (5) the gradual substitution of cooperative marketing and production for individual control. This policy is a political goal as well as a means for improving production and marketing efficiency.

In order to achieve these goals, the SARG has implemented a number of marketing policies for agricultural products. (1) The role of the private trader in the marketing of crops has been lessened while at the same time reinforcing the public sector. (2) The production of crops to be used for essential foodstuff, exports, and for industrial production is encouraged according to the plan. Specialized agencies have been set up

for this purpose and now control several of the marketing stages, including industrial processing, of such crops as wheat, barley, lentils, cotton, tobacco, sugarbeets and peanuts. The areas planted to these crops amounts to 75 percent of the total irrigated acres in the country and around 90 percent of the rainfed area. The State has also started to market basic inputs such as fertilizer, machinery, fuel and most of the insecticides and improved seeds. (3) The public sector plays a significant role in the marketing of essential foodstuffs such as meat, dairy products, vegetables and fruits. These activities in the past were mostly in the hands of the private sector. (4) A cooperative sector, represented by the Peasant Union was established giving it more marketing responsibilities and involving more stages of the marketing process. This would include handling the product from the farmers field to the wholesaler and in some cases engaging in processing and/or delivery to the consumer or retail outlet. This depends on the product, the nature of the marketing channel, and the ability of the Peasant Union to undertake such responsibility. (5) The private sector, represented primarily by the small retailers was allowed to market the remaining agricultural products which includes mainly those products intended for direct consumption.

Evaluation of Performance

Performance of a marketing system is evaluated in a market structure, market conduct, market performance framework. Market structure refers to the market situation with respect to competition or other rules of operation such as degree of concentration, ease of entry, economies to scale, etc. and it shapes market conduct. Market conduct relate to output and price policies. Market performance is evaluated in terms of the extent to which it achieves societies goals given the resource base.

Dimensions of performance are equity, progressiveness, efficiency and the extent to which the industry contributes to full employment of the Economy's resources. Precise measurement of these dimensions of performance is not possible in any country. But this is not necessary provided one is able to qualitatively identify areas of poor, average or good performance and indicates areas for improvement.

Some of the measures which reflect performance is labor and capital productivity, profit rates, relative costs, prices and margins. In addition, degree of innovation and adoption of cost reducing methods and extent of responsiveness to consumer demands are also measures of performance.

An example of good performance in the Syrian Economy is the poultry and egg industries which have expanded rapidly and made products available at reasonable prices compared to those available in other countries. Marketing margins have been relatively low. An example of poor performance is the excess competition in food retailing with low labor productivity (Lack of progressiveness) and low returns to labor (equity). Part of this problem apparently stems from lack of incentives for private investment and lack of pull from other sectors in attracting some of the labor out of

retailing. Wholesale - retail margins varied from 3 to 20 percent for most food items in Damascus and Aleppo in 1977. Most were in the range of 12 to 18 percent which is lower than most developed countries probably due mainly to differences in wages in retailing and differences in services performed.

Legal and Economic Environment for Marketing in Syria

In the short time available to complete this study it was not possible to understand all of the forces that shape the marketing system in SAR. Listed below are the more important legal and economic conditions shaping commodity marketing structure and market conduct.

(1) There has been a long process of increased nationalization of finance, industry and business in Syria. Only farming and retailing have a relatively small amount of government operations. As a result private capital is attracted mostly to safer investments such as apartments, small shops or investment outside the country.

(2) Prices are regulated at all levels, but not at the farm level in some cases. Because sheep prices are not regulated, but wholesale and retail prices are, the General Organization for Food Industry's (GOFI), meat company has lost money because the raw product has been increasing since 1977 and the High Council will not allow them to raise meat prices fast enough.

(3) Business entry and exit conditions for most business is controlled by government. In some areas there seems to be no problem to get a permit to operate, but in others where government has substantial activity, the government organization that a private business would be competing against must approve the permit and the need justification. As a result the government is now the only source of new investment in marketing for most commodities. Poultry seems to be an exception.

(4) The Syrian economic system is a mixed socialist and capitalist economy which is guided by a series of five year plans where output by industries and sectors is centrally planned, including farm output. Farm plans and rotations are required to be consistent with the national plan.

Most economies from time to time adjust the degree of social and market control in attempting to accomplish its goals and objectives. It is the opinion of the commodity marketing team that overall performance of the SAR marketing system would improve if clear guides were established to encourage private investment in marketing and gear the system to be more responsive to economic incentives. This can be done at the same time equity objectives are being pursued by having a proper mix of production controls and price incentives.

Transportation and Communications

Efficient marketing requires efficient transportation and communications. Trucks in Syria are modern and relatively efficient considering the roads. Some primary roads are good. Improvement of roads to facilitate commerce benefits the entire society. Approximately one half of the trucks in Syria are privately owned and the other half publicly owned. Transportation service was considered good by most people interviewed in marketing companies, although there has been some shortages during peak harvest time. The rail system is poorly designed to serve the entire country. Studies and projects are underway to improve this situation.

Telephone service is poor. Modernization and expansion of facilities would greatly facilitate commodity marketing as well as the entire society. Telex and cable are good and must be used instead of the phone in many cases.

Marketing Facilities

Marketing facilities are discussed in more detail under each commodity section. The highlights are that SARG is adding substantially to facilities in flour milling, cereals storage, baking, fruit and vegetable canning, cotton seed oil processing and fresh fruit and vegetable grading and marketing. Additional storage facilities are needed at assembly points so that cereals can be handled in bulk after being purchased from farmers. Government apparently cannot begin to meet the needs of retail facilities which currently are small, and generally have low labor productivity. Larger facilities could release a lot of under-employed labor for more productive jobs.

Marketing Institutions

Credit institutions are not designed to serve the needs of the private sector in marketing. Most have to depend on suppliers, their own funds or an individual. Market information systems have been neglected in some commodities. The Cotton Marketing Organization stays in close touch with international markets, but some of the other government companies did not appear to emphasize this much. It is assumed that domestic markets are "captive" markets. There seemed to be inadequate feedback from suppliers and customers. Apparently there are no market tests done prior to producing a new product like European bread.

Grades and standards are used extensively in cotton, but are absent in meat. New standards for fresh fruits and vegetables for Arab countries are needed.

Degree of competition varies from state monopoly in some commodity marketing to excess competition in retailing. In practically all areas government operations either dominate or effectively compete with the private sector. In poultry and eggs the private sector has performed

extremely well and brought the country to self sufficiency in poultry meat and eggs. Currently, with government administered prices and government production and marketing companies, there is plenty of competition to protect the interest of producers and consumers. Exceptions are in industries that are government monopolies, there is often no effective method to keep the monopoly efficient and responsive to the needs of producers and consumers except through the political system. As a result, only the major problems get attention. In some industries where producer prices or consumer prices are subsidized by the government, or where government company's costs are partially paid by SARG there is excess competition and little or no new investment on the part of private operators.

Trade barriers are extremely variable. In fresh fruits and vegetables, imports from Jordan and Lebanon are relatively free. Imports from outside Arab countries generally have a tariff of 45 to 55 percent. Government organizations monopolize trade in some areas and then tariffs are not needed to limit trade or raise revenue. The main activity controlling trade is decisions of government to buy, or not to buy, or to issue, or not to issue, a permit to the private sector to trade a product. More uniform rules with no quantity restrictions and low import tariffs would improve the well being of the Syrian consumer and provide competitive pressure on government and private operations to keep prices in line with world markets and maintain efficiency.

COMMODITY MARKETING

A brief summary is provided here to highlight the recommendations for commodity marketing. The reader is encouraged to examine II and III, Annex 3 for more details and for a better understanding of the current marketing system, and the reason for these assessments and recommendations.

The role of the Syrian Arab Republic government in marketing involves setting prices at all levels and owning and operating a substantial part of the agricultural and food marketing system. Currently marketing is a government monopoly for industrial crops, but the private sector operates substantial parts of marketing perishable food crops, meat, poultry and eggs. Farming and retailing are mainly privately operated. Practically all of the recent new investment in marketing is government owned. Currently there is little private investment in marketing facilities except poultry processing. Current government policy is to increase its role in marketing. This policy has limited, and in some cases, eliminated incentives for the private sector to invest capital into fixed facilities that would improve marketing. There has been little progress in food wholesaling and retailing in a decade except for a limited amount of government activities.

This study has attempted to assess agricultural marketing by all appropriate criteria available, however, most assessment had to be based on the teams experience and judgement rather than empirical evaluation. The framework used in the field of Industrial Organization was a basis of analysis where possible.

Performance ranged from very good in cotton marketing (a government monopoly) and in poultry processing and marketing (largely privately owned and operated) to poor in dairy processing and in food wholesaling and retailing compared to other countries and considering the level of performance possible from known technology and marketing methods. Much of the recent progress in marketing has been in improved roads and trucks. Improved storage, processing and refrigeration has also been the result of government investment in new facilities.

Many of the problems in marketing stem from some price controls, lack of investment in modern facilities, lack of experience of managers of publicly owned operations; and from risks and uncertainties of a country in transition from less to more public control. There are specific problems of marketing management and operations, however, that can be substantially improved in both public and private operations. Basic to understanding marketing and improving it is the understanding of its role in an economy. Marketing creates time, form and space utility, and as such creates value to consumers. For products to have the highest value they must be delivered at a time and in the desired form and at a convenient place. This requires a system with effective rules of commerce, with flexibility to adjust to changing conditions and with clear lines of authority and responsibility. Furthermore, it is helpful to understand those marketing activities where government is required to achieve efficiency and those where private control is more efficient. In areas where only one or a very few firms can operate efficiently higher performance toward achieving society's goals may be achieved by government operation, by government being a competitor, or by private operation and government control of prices or even by producer or consumer cooperatives.

On the other hand, where a fairly large number of firms can compete in the business the industry is likely to perform better in the private sector with government providing and enforcing the rules of competition and allowing the market to set prices. In most small countries, regardless of whether publicly or privately operated, prices should be kept generally in line with international markets by maintaining low trade restrictions.

Recommendations

(1) Uncertainty and the policy of increased public control has stagnated the food wholesaling and retailing business which is still mostly private. Suggested policies to increase performance in this area are:

A. Publish a clear policy that food retailing is to remain primarily in the private sector and encourage investments with government loans and assistance for building new facilities. Aid transition of excess labor into more productive employment.

B. Government plan with the private sector and build modern facilities for storage, wholesaling, grading and sorting. These could be leased to private operators on a competitive bid basis.

C. Limit price control at retail to a minimum number of basic food items. There is adequate competition at the retail level to protect the interest of consumers.

(2) Fresh fruits and vegetables marketing has performed reasonably well and marketing margins have remained relatively low. The same recommendations as in (1) above apply. In addition, it appears that there is no need for price controls at any level on these products. There is sufficient competition to protect producers and consumers. Government efforts could best be directed at developing grades and standards, maintaining competition, fostering desirable trading practices and dissemination of market news. A project to cooperate with other Arab countries to develop uniform grades and standards for fruits and vegetables would greatly facilitate trade.

(3) Cereals marketing is dominated by government with both producer and consumer prices substantially subsidized. This is a political decision, but it reduces efficiency in marketing and reduced subsidies would reduce the economic distortions in marketing. In terms of cereals marketing operations, handling efficiency is poor because of lack of bulk handling. Local bulk storage such as metal and/or concrete bins to start the bulk handling process and reduce the peak demands on truck transportation is needed. A detailed study is needed to estimate the number, size and location of this local storage.

(4) Commercial food processing is mostly operated by government. Most plants appeared to be well operated where decisions were under control of the local manager, but lack of flexibility in employment, procurement and marketing policies resulted in inefficiencies and idle capacity. Management programs to increase training, delegate authority, improve accountability and evaluate performance are badly needed. As incomes increase and more women enter the work force much more food processing capaicty will be needed.

Overall, food processing lacks the facilities, capacity and technology to produce the necessary quantity and variety of products for the country and many products are imported. Economic development can be advanced by expanding processing facilities and new plants are under construction. In some cases it would appear that joint ventures with international companies would be desirable to acquire the necessary investment, technology and management for some products not currently produced in the country. In the meantime, trade barriers and restrictions are generally too severe. A comprehensive study of the market for processed food and the feasibility of serving the market with domestic production and processing is needed.

(5) Cotton marketing is an efficient and well performing government monopoly. The equity dimension of performance could be improved by paying producers a price nearer world market levels. Cotton is harvested by hand and there is opportunity to improve labor productivity by moving toward machine harvesting. Most of the changes must come at the farm level,

however, close coordination with The Cotton Marketing Organization (CMO) is needed to handle the machine harvested cotton. Productivity in CMO could be increased by the use of a mini-computer to handle the accounting work and to aid financial and operational control and evaluation.

Evidence of the favorable performance of CMO is that marketing costs are apparently equal to or below those of the U.S. (This may be partially due to a lower wage rate). In addition, the procurement and sales program are based on pricing on the basis of quality. Furthermore, the product delivered to buyers is of reliable quality, they know the kind of product they are purchasing and can depend on it being precisely as specified. As a result, it brings at least the average price of cotton of like quality and staple length in world markets. Both buyers and producers receive prompt and fair treatment and service. The procurement, ginning, quality determination and sales appear to be efficiently organized and operated.

(6) Livestock market facilities in Syria consist mostly of a place where sellers can bring livestock for sale. The largest market in the country at Aleppo does not have pens for holding individual flocks or loading and unloading facilities. The basic facilities for a modern well organized livestock market should be provided in each place where substantial trading occurs. A study to provide a basic design and organization for a model market would be a good investment. If this pattern proved useful, other markets could then be designed using this model.

(7) Syria is in a strategic position in sheep marketing in the Middle East. Demand for meat will grow rapidly in the future. There was surprising little market organization and market coordination in livestock and meat marketing, processing and distribution. A sheep Marketing Board or a Livestock-Meat Marketing Board could be established to coordinate, establish policies, and produce market information that would be useful in improving performance in livestock meat marketing. Future demands in the Middle East will provide great opportunities for Syria to serve as a fattening and trade center for sheep if the industry is designed to take advantage of these opportunities.

(8) Despite only two modern livestock slaughter plants in Syria, these plants have underutilized capacity; and the sanitation and quality they are designed to produce is not being fully utilized because of management and administrative problems. A board with authority to study and carry out policies to improve performance of these systems should pay large dividends.

(9) Butcher shops and meat stores are generally very inefficient with low labor productivity mainly because they lack adequate space and facilities. Because the lack of incentive for private investment, government could design and build modern facilities and lease these to private operators on a competitive bid basis. There is adequate skills and competition in the private sector. Government's role should be to set grades and standards and enforce them and allow the private sector the flexibility to serve customers.

(10) Poultry meat and egg production and marketing is among the best performing industries in the agricultural sector. Although government is a significant factor in the industry, the private sector accounts for the largest volume. Although modernization started late compared to most countries, by 1979 sufficient progress was made for the country to become essentially self sufficient in poultry, meat and eggs. There is sufficient competition in these industries plus the government being an important producer and marketer makes price controls unnecessary. Additional expansion of government facilities appear to be unnecessary.

(11) Dairy marketing in Syria is mainly in the hands of small private producers and operators despite the fact that the government operates the three modern plants all of which are under utilized due to administrative management, and marketing problems. Syria is a dairy products deficit country and this is likely to continue as it does not have the necessary production resources to economically produce all of its needs. This is such an important food group required to produce good nutrition, that a national study is needed to examine the total dairy marketing, trade and price policies to provide improved performance of the national dairy industry.

(12) Finally, international trade is often inefficient because of rigid regulation, monopoly on some trade items and the necessity to get specific trade permits. In short, both public and private companies should be allowed fairly easy access to international markets. This can be designed to maintain pressure on the entire marketing system to be efficient and respond to the changing needs of the society.

COMMODITY DEMAND

The purpose of the assessment of commodity demand was to (1) evaluate recent trends in Syrian agricultural production, prices, and trade in conjunction with SARG price policy objectives and the specific price policy tools which have been employed in the pursuit of such objectives and (2) provide projections of consumer demand for selected agricultural commodities to 1985 and 2000. The assessment and recommendations were based primarily on the team's past experience and judgement. Considerable further study would be necessary before more specific operational suggestions could be made with respect to specific policies to include in the 5th five year plan being developed for 1981-85.

This brief summary is based on a much larger report, Volume I, Annex 3. That report is in five parts: 1. Price Policy: Goals and Considerations, 2. Price, Production, and Trade Trends, 3. Price Policy Appraisal, 4. Commodity Demand Projections, and 5. Recommendations.

It is important to note that this is an assessment of selected aspects of SAR's agricultural marketing and pricing system rather than a comprehensive in-depth analysis of the system. The assessment seeks to illuminate problem areas as well as areas of potential strength for further attention and exploitation in the 5-year plan.

Price Policy Related Goals

The success of SARG's agricultural price policy can only be assessed with regard to a set of goals. Those SARG goals the team believed to be related directly to price policy are:

(1) To establish prices of agricultural products which will ensure stability for the productive farmer's income and directing agricultural production within the planned targets. (Price stability is implied.)

(2) To mobilize rural manpower to fully utilize agricultural resources and develop the country side in general. (Reducing migration from rural to urban area is implied.)

(3) To achieve self-sufficiency in the production of main foodstuffs and commodities and to endeavor to achieve increasing rates of self-sufficiency in other commodities.

(4) To improve the citizens' good standards and, in particular, the availability of animal proteins and increase production of fruit and vegetable crops at prices as free from inflation as possible.

(5) To provide the requirements of domestic industry for agricultural raw materials for the production of the required quantities of manufactured goods.

(6) To achieve a surplus for export in order to contribute to reducing the balance of trade deficit.

(7) To achieve real increases in agricultural GNP of 8-10% per year.

(8) To protect both producer and consumer against the domination of market middlemen reaping benefits unwarranted by their services.

(9) To regulate the agricultural market through considerable public directed production and marketing activities but not necessarily to monopolize all stages of commodity production and marketing.

The orientation of the Syrian agricultural pricing policy includes the following characteristics:

(1) Setting farm prices for products marketed by public or cooperative institutions.

(2) Insuring cost-plus farm prices and use of premiums in accordance with attempts to influence production.

(3) Maintaining the financial position of state marketing institutions insofar as possible.

(4) Announcing prices before planting season.

(5) Coordinating buying prices in all producing regions.

(6) Establishing prices with regard to grade characteristics.

(7) Considering the forces of supply and demand in fixing wholesale and retail prices for products marketed by the private sector. Most such products are for direct consumption such as fresh fruits and vegetables, meat, eggs, and dairy products.

(8) Basing selling prices of agricultural inputs on cost plus with only minimum profit or a subsidy to achieve low cost and stability.

(9) Allowing two types of price systems to operate in Syria concurrently. (a) A system of fixed prices set irrespective of supply and demand for certain crops and inputs marketed by the state or the cooperatives. Cost of production, production goals for each crop and world prices are considered in fixing annual crop prices and subsidies. (b) A semi-free pricing system where internal market forces of supply and demand, degree of competition and increasing consumer incomes are considered in setting prices. Direct consumption items such as fresh fruits and vegetables, poultry, meat and dairy products are prices within this market oriented system.

The foregoing goals, objectives and brief discussion of price programs used by SARG make it abundantly clear that the state is responsible for the economic performance of agriculture, disregarding the undue influence of weather. The goals for SARG price policy seem generally reasonable except that self-sufficiency in all or more agricultural items seem un-economic. From a strictly economic standpoint, it would be useful to determine the product mix from the commodities with the highest comparative advantages for Syrian agriculture producing areas, given world markets and prices as guides to resource allocation in Syria. The economic costs of the goals should be understood vis-a-vis the "best" market opportunities for Syrian agricultural commodities at home and in world trade.

Price, Production, and Trade

Agriculture and consumption habits in Syria have undergone changes over time. To meet rising demand from increasing population and higher incomes, large increases in crop and animal supplied (production and imports) have been necessary. After a serious decline in total agricultural production during the second half of the 1960's through the early 1970's, crop production has increased substantially, particularly feed grains, fruits, and vegetables. Wheat production has increased but the vagaries of weather result in large annual fluctuations. Cotton and sugar beet production have not increased. In animal production, dairy eggs, poultry, and beef have increased output while sheep meat output has declined.

Progress in achieving self-sufficiency has been lacking except for a few commodities such as potatoes, dairy, and eggs. Imports have continued to grow in weight and value, contributing to a balance of payments problem. Prices for foodstuffs have been increasing rapidly and now outpace the general price indices at the retail and wholesale levels. Consumers have made changes in their diet: cereal consumption has remained relatively stable in spite of decreasing real prices, while fruit, vegetable, dairy and egg consumption (per capita) have increased despite increasing real prices.

Among the industrial crops, cotton was the leading earner of foreign exchange until 1974 when it was exceeded by petroleum exports. Cotton is still a major source of foreign earnings for Syria but its production has been discouraged by recent SARG policy.

Price Policy Appraisal

Price policy, as well as its results, can only be assessed with regard to policy objectives and the performance of the sectors concerned. These objectives, which included stabilizing prices, increasing producer's income, reallocating production, achieving self-sufficiency in some crops, protecting producers and consumers from exploitation by middlemen, improving nutrition, increasing use of cooperative marketing and keeping product prices received by farmers in line with input prices paid, were discussed in some detail in the main report, Volume I, Annex 3.

A broad generalization would be that only since the mid-1970's has Syrian agriculture performed as well as during the early 1960's. That is, production has not been as consistently high as during that period. Per capita production has been lower recently than during 1961-1965. Thus, SAR has been forced to increase its dependence on imports and/or reduce exports of certain agricultural products.

Agricultural production is difficult, to manage within any economy due to the small scale of production, and livestock products, particularly highly perishable items, is even more complex due to the coordination of assembly, processing, storage, and distribution activities required to provide food supplies evenly throughout the country during the year. SARG needs to critically evaluate their continuing thrust into both the regulation of production and, in particular, actual marketing operations.

Evidence and experience from other countries tend to support the general proposition that while government price supports and hectarage programs can increase production and allocate major crops, government attempts at regulating agriculture from production through marketing have not been particularly successful and frequently wasteful.

The difficulty is effectively administering the production and marketing of several crops and/or livestock products is great because of substitutibility among crops by producers and among end-products by consumers.

Slight misjudgement in terms of price setting and production planning can result in surpluses or shortages of specific items not to mention the implied misallocation of resources. These shortages and surpluses are not always apparent due to price regulations being violated and/or the illegal movement of commodities among Turkey, Jordan, Lebanon, and Syria in response to differential prices among these states. In contrast, the control of a few major crops with some marketing activities to control the excesses of the sector would seem to be the more fruitful route. Subsidization of inputs--fertilizers, credit, improved seeds, and so on-is a good program for increasing and reallocating production when used with price floors for major crops.

Widespread attempts to process and market most of the agricultural produce seem unwarranted in view of the objectives of the 5-year plan. A major concern seems to be with exploitation by middlemen. This should be largely solvable by the distribution of more price and supply information, modest counterbalancing trade activities by government companies, as well as encouraging production with farm price supports and input subsidies. Attempting to dominate the whole of agriculture production and marketing could be very costly.

Recommendations

(1) SARG policy is clearly providing stable prices and markets for major crops for those producers who choose to deliver their crops. In the case of some major crops--wheat, barley, and lentils--participation has frequently been low. The general policy of higher farm prices and moderate consumer food prices may be resulting in increased subsidy costs and inflationary pressures as well as reduced foreign exchange earnings, all of which are contrary to stated SARG policy.

(2) Economic planning to the degree attempted by SARG clearly requires a large volume of data as well as careful analyses of these data. The team's impression was that considerable data may be available among the various ministries and general organizations but no central analytical staff to evaluate the data was apparent. We recommend that a modest size staff of economic analysts be assembled in one location with the full-time mission of evaluating current and proposed programs in terms of production, prices, consumption, trade, carryover stocks, program costs (including sudsidies) and benefits, program participation by producers and consumers, and income levels and distribution. While evaluation of programs would be a major responsibility, the staff group might also propose and evaluate programs given certain objectives. However, this staff should primarily be an objective analytical group rather than being advocates of any particular policy.

Specific tasks for the above staff should include: (1) estimating losses of sales due to smuggling associated with price differentials among Syria, Lebanon, Jordan, and Turkey, (2) determining the amount of bread wasted due to the extremely low price (some feed livestock), and (3) determining costs of current agricultural production and marketing programs in terms of both direct subsidies and operating subsidies on a crop by

crop basis.

(3) Another major data project which would be very useful for planning purposes is a consistent set of commodity balance tables. These tables can be based on the UN's FAO balance table method which attempts to (1) determine annual supply and (2) partition supply among various uses, waste, and carryover stocks. Three sets of balance tables were found by the team; one each in MAAR, MSIT, and CBS. Each set was significantly different from the other two. A consistent set of balance tables will also be valuable for assessing average nutritional levels. This activity might be located within the MSIT because of their responsibility for projecting annual consumption needs and the resident expertise.

(4) In addition to the above mentioned balance tables, specific information from household surveys would be useful for determining detailed consumption patterns and income or consumption elasticities. Specific income elasticities for SAR should provide (1) greater insight into changing consumption patterns and (2) better demand projections. Household consumption surveys were conducted in 1961/62 and 1971/72, providing useful data. However, the next survey should determine rates of consumption over families of different income levels so that expenditures and/or income elasticities can be developed. At present, demand projections for Syria incorporate FAO expenditure elasticities since no domestic elasticities were readily available for all of the desired commodities.

(5) As indicated earlier, considerable data on agriculture were available among the various state agencies but a valuable contribution could be made by compiling these data in the Annual Agricultural Statistical Abstract. Such a publication would contain all available price, production, utilization, trade, etc. data on agriculture rather than only the production and land use data in the recent 1976 agricultural abstract. Much of the agricultural related data in the CBS annual Statistical Abstract should be included in the agricultural data in one publication and illuminate any gaps therein.

(6) A major thesis of this assessment is that SARG may be too involved in both the production and marketing phases of marketing, stifling efficiency and investment. Thus, we recommend the following operational items.

First, utilize price supports (rather than fixed prices) selectively to allocate production and support farmers' incomes. Price supports are beneficial proportionate to the farm size. Since most farmers have very little to sell, price supports would not appear to be particularly beneficial as income support. In any event price supports will allow prices to rise more for those products in greatest demand and/or shortest supply. Of course, price floors must not be set so high that surpluses occur frequently. This "flexibility above the price support level" approach will aid on both production and consumption allocation.

Second, commodity production should be relatively free to move within Syria's boundaries so as to determine the most efficient pattern of production.

Third, concern about exploitive middlemen may be well founded. The decision that the state should dominate the agricultural marketing sector is probably not. Better ways of promoting competitive and efficient marketing could include modest state purchase and storage activities to keep prices reasonable and provision of adequate market information on prices and supplies for both producers and consumers. Newspapers would be useful information outlets.

(7) The sugar program needs a thorough examination in terms of the costs of producing sugar domestically versus importing. Frequently imported sugar is cheaper than that produced in SAR. FAO projections to 1985 indicate plentiful world supplies and reasonable prices.

(8) If SARG planners continue to pursue the marketing of vegetables and meat (in Damascus), the operational personnel need to be given greater authority to adjust prices in accordance with cost and demand factors.

In a sense, one could argue that government programs have created a degree of uncertainty which has prevented the capital investment necessary for increasing productivity. While price stability has been beneficial, the small units created through land reform cannot adopt much in the way of yield increasing technology.

Poultry production units, which require some size in order to be efficient, have apparently been restrained by threat of nationalization. Modern poultry operations have been much slower to develop than in Lebanon, for example. SARG needs to determine how important size of production unit is for increasing production efficiency and then encourage such scale of enterprise. These would presumably be modest size units but not necessarily the extremely small ones currently dominating Syrian agriculture.

(9) Cooperatives are currently used to alleviate the scale or size problem, i.e., cooperative marketing assembles volumes for more efficient handling from a larger number of small production units. How well is this working? Since the state has only been able to get 31 percent of the wheat crop (average 1967-1976), it is forced to import the wheat to meet projected consumption needs. Imports of wheat and flour were greater than the total amount of wheat purchased by the state from SAR producers during the nine-year period 1967-1975 with only about 30 percent of the total production sold to the state.

(10) It appears that the private sector, of which agriculture is a part, has been discriminated against relative to the public sector and in some cases, industry is favored more than agriculture. Agriculture clearly plays a leading role in economic development and should not be treated as if of secondary importance. The SARG should be careful to distinguish between policies which are intended to support low income farmers and those intended to promote production and economic efficiency in order to minimize the implementation of conflicting policies.

We recommend that the effects of fixed prices on the income of small farmers be carefully evaluated. It may be desirable to support incomes of small farmers with direct payments in addition to product prices.

Hopfully the recent farm survey will provide evidence on the importance of farm price subsidies for farm income levels and distribution. This is critical information in assessing the effect of price policy.

SOURCES, SUPPLIES AND DISTRIBUTION OF MAJOR FARM INPUTS

The assignment given to the Farm Inputs Assessment Team was: to describe the input marketing system, with particular emphasis on credit; assess constraints to the effective operation of the system; and propose changes needed to improve effectiveness. Since most of the farm inputs are made available or controlled through the Agricultural Cooperative Bank (ACB) particular attention was given to the operation of that organization, both at the micro and macro levels. All organizations, public and private, providing fertilizers, chemicals, machinery, seeds and breeding stock or other inputs were considered by the team. The team developed recommendations for development alternatives and for public program and policy changes for inclusion in the next 5 year plan. Considerably more detail is contained in the three basic reports developed by the team, Volume IV, and V and VI in Annex 3.

Agricultural Credit

In fulfilling this assignment, we first examined the unique role played by the oldest lending agency in Syria, the ACG, in distributing production inputs to Syrian farmers. Additionally we assessed the adequacy of existing systems for financing both annual operating expenses and capital formation, including the ACB and other sources of capital. Where deemed appropriate, we suggested additional projects or possible changes for consideration. These suggestions were designed to (a) reduce constraints and increase flexibility and timeliness in the flow of annual production inputs and (b) boost capital formation in agriculture. Although we gave special attention to the Agricultural Cooperative Bank, other public and private sources of capital were briefly considered within the severe limits of available information.

Data and other information on which the assessment is based were obtained from published sources with the ACB, the Ministry of Agriculture and Agrarian Reform (MAAR), the Central Bank, The Ministry of Finance, The Ministry of Economics and Foreign Trade, numerous government agencies and companies, and privately endowed agencies such as ICARDA. Valuable information and insights were also obtained from interviews with numerous leaders in the above ministries and agencies and with private and public operators of farming and farm service firms.

A summary of the findings and recommendations for agricultural credit follows:

(1) Syrian agriculture has failed to keep pace with the rate of growth experienced by the other major sectors in the Syrian economy since 1970. The volume of loans made by the Agricultural Cooperative Bank (ACB) more than doubled during the 1970-78 period. However, this rate of increase was way below the growth rates for the Commercial Bank and other specialized banks.

(2) The impacts of the slower rates of growth in ACB loans have been most noticeable in the private sector, which increased only 52 percent between 1970 and 1978, compared to an increase of 268 percent in the cooperative sector.

We recommend a study to assess the relative marginal productivity of capital added to the private, cooperative, and public sectors. The results of this study could help the High Committee for Agriculture better determine if the present allocation of ACB loans among these sectors is appropriate, given Syrian desire for increased agricultural production.

(3) Short-term cash loans to farmers by the ACB have declined sharply relative to other loans by the bank since 1970. Although medium and long-term loans increased significantly, the volume of such loans still falls short of Syria agriculture's need for mechanization.

Most short-term, operating loans have a high payoff to producers. Hence, we question the advisability of the present relative cut-back in short-term loans. While we commend the commitment to increase medium and long-term loans, we do not feel that such loans should replace short-term loans. Instead, we recommend that the ACB be permitted to discount its intermediate and long-term loans to private as well as to the cooperative sector with the Central Bank as an additional source of medium and long term funds. We also suggest that a long-term educational and promotional program by the ACB to increase bank deposits from the private sector can supply additional funds for medium and long-term lending.

(4) Cotton has had preferred access to ACB loans relative to other crops. Although there is a trend away from this favorable position for cotton, non-cotton producers are still at a disadvantage relative to cotton producers in their access to ACB loans. Whether or not this favorable access to ACB financing is warranted by cotton's role in foreign trade should be evaluated.

(5) The amount and timing of both in-kind and cash loans are specified in the Annual Decree of Input Requirements published by the High Committee for Agriculture. The details of these needs by crop or livestock enterprise are outlined in Tables 4.12 and 4.13 in Annex 3. The quantities are established as national averages for irrigated and non-irrigated zones. They do not vary by soil quality or by differences in management capacity of borrowers. Studies are underway in Syria to better determine differences in productivity responses for different soil types as a basis for varying the fertilizer allocation among soil types. We commend this approach toward increasing the flexibility of input allocation as a means of increasing agriculture. We recommend that study be given to developing relevant criteria for evaluating management capacity of borrowers and for estimating differences in productivity responses from varying fertilizer applications associated with different levels of management capacity. In the absence of such studies, we suggest that varying input (seeds, fertilizers, etc.) allocations according to the previous year's yields would be a shift in the direction of allocating resource inputs to get increased agricultural output.

(6) To obtain a crop loan from the ACB a borrower must first obtain a license specifying the amount of each crop to be grown. When the license is approved at the mantika level, the ACB will allocate the in-kind and cash amounts specified in the Annual Decree. On the surface, this system appears to be very unflexible. However, a comparison of actual vs planned hectarages planted suggests that farmers make substantial deviations from the assigned or planned hectarages of non-irrigated crops in response to changing weather conditions. They also appear to make substantial shifts in irrigated hectarages from those planned, in response to changing economic conditions. Attempts to reduce farmers' flexibility to make these adjustments would be counterproductive, given the high degree of weather variability and economic uncertainty under which farmers operate.

(7) Rates of interest charged on ACB loans are highly subsidized, being 4.0 percent for cooperatives and 5.5 percent for both public firms and private individuals. The rate to private individuals increases to 7.5 percent for loans exceeding 50,000 SP. Because of these subsidies, severe limits are placed on the maximum size of loan a branch manager can make to individual borrowers - 80,000 SP for short-term and 20,000 SP for medium and long-term loans. These limits apply equally to all branches. We recommend that the size limits be varied among branches according to the needs of the area and the demonstrated credit management skills of the manager and his staff. We suggest as a desired target that each branch manager have a lending authority which will permit the branch to handle 85 percent of loan applications coming to that branch.

Loan requests beyond the branch manager's lending authority are handled by an ACB headquarters committee up to 100,000 SP for short-term loans and 60,000 SP for medium and long-term loans for individuals. Loans beyond these limits must be approved by the Director of the Central Bank. The loan limits for cooperatives are 1 million SP for medium and long-term loans, with approval of the ACB headquarters committee. This limit can be exceed with the approval of the Director of the Central Bank and the intercession of the Peasants Union.

There appears to be both a mechanism and attitude at the Central Bank as well as at ACB headquarters and at many branches favorable for meeting the loan requirements of larger borrowers. However, a number of larger private operators are not turning to the ACB for financing apparently because they believe its lending programs are too restrictive to meet their needs. We suggest that a program be developed to inform the more productive private operators and cooperatives regarding the flexible lending limits permitted within present policy.

One argument against a policy of making more loans available to the larger, more effective producers is that the rates charged by the ACB are highly subsidized. To avoid subsidizing these growers who likely do not need it, we suggest that consideration be given to further increasing interest rates when the loan exceeds some point (say 100,000 or 150,000 SP) to a rate more nearly approximating the free market level.

Serious loan size restrictions currently exist in terms of the maximum loan that can be made for individual crops to a single grower. These maxima are 40,000 SP for cotton, 25,000 SP for cereals and 10,000 SP for other crops. These restrictions seriously constrain farmers in their efforts to mechanize and achieve operating efficiencies. We recommend that the size of loan constraint to a specific crop be eliminated.

(8) We were asked to consider and comment on the advisability of transferring the ACB from the Ministry of Economics and Foreign Trade to the MAAR. We recognize some advantages in this transfer. However, we feel that advantages are more than offset by disadvantages and risks to the entire economy. Moreover, we feel that most of the current financing problems are the result of policies and procedures that can be modified within the present arrangement.

(9) Although the ACB is the primary source of credit to Syrian farmers, there are a number of other sources:

- Both the Commercial and Industrial Banks make loans to agriculturally related firms, some of which are used to finance the sale of their products to farmers.

- The General Machinery Company (GMC) in its responsibility to distribute tractors and other machinery, finances about two-thirds of all the new farm tractors sold in Syria, plus the sale of other large machinery sales.

- Merchants continue to channel a significant volume of funds into agricultural production. This is particularly true for fruits and vegetables and for livestock and livestock products marketed through the souks in the larger cities. The middleman or "damman" still plays an important role in this marketing and financing process. Similarly, food processors finance the production of much of the raw products for their processing plants.

- The Tobacco Monopoly is an important source of agricultural financing for those farmers who grow tobacco.

- Numerous grants and loans from foreign nations and international institutions have channeled capital into Syrian agriculture. Such outside funds will likely continue to provide a significant capital flow into Syrian agriculture in the near future. Over the longer range, however, Syria will need to develop its own sources of both operating and investment capital.

- Self-financing (retained farm earnings, depreciation and off-farm income) is also an important source of new capital for Syrian farmers. Study should be given to better estimate the magnitude and circumstances of this source of funds. Moreover, study should be given to determine the desirable level of self-financing, in order to insure that "forced" saving and reinvestment in the farm enterprise is not competing with such social objectives as education, improved health care and community services.

Physical Inputs

The efficient flow of agricultural production inputs in a large measure determines the overall productivity of the agricultural sector. Several bottlenecks in the current method of input storage, distribution and production have created problems to Syrian farmers.

Capital for use in building permanent storage facilities and purchasing farm machinery has not been adequate to keep up with the increasing demand for their use. First, while storage capacity has increased over time, it has not nearly kept pace with the increase in demand for storage facilities. The lack of storage capacity is the result of insufficient capital outlays for the construction of additional storage facilities for feed, fertilizer and seed. Although plans have been made to increase storage capacity over time, current plans are deemed insufficient to meet the growing demand for storage of agricultural inputs. The lack of storage capacity places Syrian livestock producers in an especially precarious position in terms of not having adequate storage facilities to handle the emergency feed reserve. Not only is the storage capacity inadequate to handle the proposed feed reserve, but when combined with the annual feed carryover stocks as well as annual feed consumption the problem becomes more intensified. Without additional storage there exists the possibility of mis-allocation of feed to various regions of the country. The result is that there are excesses in some areas and deficiencies in others. The feed then requires redistribution to the proper location when storage becomes available which is both time consuming and costly in terms of transportation expenses. Second, the terms of loans to finance the purchases of agricultural machinery are so structured as to pose significant financial burdens on small farmers who are attempting to mechanize. Although the interest rates are reasonable, the length of the loans appears to be too short for many borrowers. The high payments required to pay off the loans over a five year period prohibit many small farmers from purchasing machinery.

There also appears to be a lack of qualified field extension personnel to assist farm operators in improving their farm production practices. Without trained field support the dissemination of improved production information to producers is difficult. Attempts at increased mechanization can only be realized if the farm operator can be shown the benefits of their use over animal or manual labor. The distribution of dairy cows to small farmers throughout the country and the resulting problems reinforce the need for farmer oriented extension work. For example, many of the farmers who purchased dairy cows did not understand their need for proper nutrition in order to achieve high milk production levels, that is they did not provide enough green fodder which significantly reduced milk production.

The delivery of inputs from the ports to the various distribution stations throughout the country is viewed as a major bottleneck in the farmer's production process. A delay in delivery of inputs from the ports to the local warehouses can cause delays to the farmer in planting his crop. These delays can mean the difference between a good crop and a poor crop. A related problem involves the distances the farmer is required to travel in order to pick up his inputs. The local distribution stores are often not

located close to the farm operators so that collection of inputs by the producer becomes very time consuming.

Recommendations

The following recommendations for implementation in the fifth five year plan are proposed to alleviate some of the above bottlenecks and increase the efficiency and flow of agricultural inputs to Syrian agricultural producers. The recommendations are presented in their order of priority as potential projects in the fifth five year plan.

(1) Storage capacity for feed grains is not adequate at present and will continue to be a problem in the future unless some affirmative action is taken. Additional storage facilities for all types of feed grains, fertilizers and seeds need to be built. The most critical need is in the area of feed grains, however. Projected livestock numbers during the fifth five year plan establish the need for considerable expansion in feed grain storage capacity. If the feed reserve becomes a reality during the fifth five year plan then current storage capacity will not be adequate to handle both the reserve and annual carryover stocks.

The feed storage facilities could be of two types, tower silos or small, flat concrete buildings. In the areas of concentrated livestock production centrally located large tower silos would probably provide the most efficient means for storing both the feed reserve and annual feed consumption. On the other hand, small, flat concrete storage buildings would likely handle the feed storage requirements for both private producers and areas of unconcentrated livestock production. A study should be conducted to determine the cost and benefits of both types of storage facilities. Time is of essence, however, as the storage capacity for feed grains as well as other inputs is woefully short of what is needed.

(2) An intensification of domestic feed production is needed to alleviate some of the burden on foreign exchange resulting from increasing imports of livestock feeds. The domestic feed production program should emphasize both green fodder and feed grain production. Syria has an ideal climate for high quality green fodder production. Assistance from the government in defraying the initial planting costs of the producer as well as a guarantee in the form of a subsidy on production would likely provide the needed incentive for farmers to increase their green fodder production. Special financing considerations on forage equipment purchases through the ACB would also enable farmers to more easily increase their green fodder production. In addition, if farmers could have the benefits of growing green fodder crops over other cash crops demonstrated to them at local extension type meetings, it is likely that many farm operators would respond by increasing production.

Increased production of feed grains with special emphasis on maize and sorghum would also help in releiving the increase in imports of these feed components by the poultry and diary sectors. Experimentation of drought resistant feed grains should also be explored for possible use in the marginal rainfall areas of Syria.

(3) A study needs to be conducted in regards to the economic feasibility of building bulk handling facilities at the ports for both imports and exports of agricultural inputs. The costs and benefits of implementing such facilities should be thoroughly investigated keeping in mind the likelihood of increased port use during the fifth five year plan. Bulk handling facilities would not only decrease labor and materials costs, but also enable faster delivery of inputs from the ships to the farmer. Of course, to fully utilize bulk handling at the ports, delivery of bulk materials to local warehouses would have to be implemented. It is likely that many areas do not have sufficient demand for bulk deliveries to warrant local bulk facilities being built. However, in areas where large quantities of bulk material can be utilized, the savings by using this kind of system appears to warrant serious investigation. The final step in the bulk handling process would be to have large livestock or crop producers install bulk handling facilities on their farms. It is proposed, therefore, that several pilot projects be instituted using bulk delivery of feed to both local stores and large livestock producers. If these projects prove to be economically successful then the program should be expanded to include more farm operators.

A transportation study to determine the most efficient means of fertilizer distribution would assist in identifying the adequacy of the current distribution system. This information is particularly important with the addition of the new fertilizer plants and their corresponding output. An assessment of the adequancy of the distribution system to handle both current and expected domestic production would help in identifying the best method and timing of fertilizer deliveries for both domestic consumption and exportation. In conjunction with this study an analysis should be made regarding the feasibility of bulk deliveries of fertilizer to large scale crop producers. A pilot project is recommended which would involve the delivery of fertilizer to selected crop producers in bulk rather than bags. Successful implementation of such a program could provide significant savings in fertilizer distribution for both the fertilizer plants and the ACB. These savings could then be passed onto the farmer in the form of lower fertilizer prices.

(4) Power generating facilities in industrial sections of the country need to be examined in light of the anticipated increase in its demand during the fifth five year plan. At present, the power facilities near Homs is inadequate to provide the power needs of its industrial customers. Without a sufficient power base the industrial sector cannot fully utilize its resource base. Therefore, a study evaluating the need for additional power generating capacity in the industrial areas during the fifth five year plan and beyond should be conducted.

(5) A study to assess how the cooperative machinery program is functioning would be worthwhile as it appears there are some inequities in cooperative machinery use. Actual machinery use by each cooperative member in a few selected cooperatives would provide a good indication of how the cooperative machinery program is working. If there proves to be misallocations of machinery use time among the members a strict allocation program might be needed so that all cooperative members have an equal opportunity to use the machinery.

(6) Serious consideration should be given to going ahead with the proposed building of a chemical formulation plant in Syria. There are several benefits to having such a plant within the country. First, with the chemicals being formulated within the country adequate testing and safeguards could be established to insure against potential problems due to outside nonuniform chemical testing procedures. Second, there would be a constant supply of chemicals to the Syrian farmers. Third, special insect or disease problems could be addressed within the country without relying on outside sources. Fourth, an additional industry would provide employment opportunities as well as increased expertise in this area of increasing importance in agriculture. Fifth, the project would have the potential of exporting chemicals to neighboring countries thus helping the Syrian foreign exchange situation.

(7) Increased use of aerial insecticide application requires that either the MAAR purchase additional planes or allows private individuals to engage in aerial application. The use of private aerial service would enable the MAAR to place its capital resources in other areas such as extension training programs rather than in buying additional planes.

(8) Careful analysis should be made of the costs and benefits of domestically producing area fertilizer given current economic conditions. It appears that Syria would be economically better off to export its petroleum products and import its fertilizer needs. The use of natural gas as a substitute for naphtha should be considered.

(9) The seed improvement program in Syria has recently undergone rapid and monumental changes. As with any program that results in rapid changes, some snafus are bound to occur. Greater effort is needed in following up on trouble spots in order to speed up the feedback which can help prevent their reoccurrence. An indepth study of the seed production and delivery systems would provide important insight into the changes in procedures required to improve the efficiency of each seed delivery system. It would also assist in identifying which parts of the production/marketing systems are most likely to yield the greatest benefit from change and which types of training programs are most needed to implement these changes.

(10) Some of the skills that are lacking in the seed improvement program are already apparent to the Seed Organization. Provisions need to be made in the next 5 year plan for training programs to upgrade the skills of the Seed Organization personnel as well as provide additional skilled personnel as required by the already planned expansion. These training programs should be coordinated with the appropriate foreign and international organizations which are ready to provide assistance.

(11) An extensive training program for farmers on proper dairy cow care could both increase milk production and decrease calf mortality rate. This training program could be presented on a local basis by either livestock specialists or successful dairy farmers.

It is recognized that not all of the above recommendations can be implemented in the fifth five year plan. Therefore, priority should be given to implementing those projects identified which will alleviate major

production bottlenecks to Syrian farmers.

Syrian Economy Planning Model

Because of the interdependencies between the production sectors in the Syrian economy, an assessment of its agricultural sector should necessarily capture the effects that the productive capacity of this sector and its planned utilization have upon the rest of the economy. Likewise, this assessment should also capture the effects that the productive capacities of those sectors which supply agricultural production inputs or process agricultural output and their plans for utilizing existing capacity have upon the ability of the agricultural sector to meet projected final demand. In short, what is needed is a planning model that accounts for the interdependencies between its production sectors and the effects that their capacity and planned capacity utilization will have upon the economy's gross output under alternative annual production plans and its ability to meet current projected levels of final demand for specific goods and services.

The planning model developed for the Syrian economy gives particular emphasis to the agricultural sector and the linkages between this sector and the rest of the country's economy. The approach adopted to account for these interrelationships was to first develop a system of simultaneous production functions for the production sectors in the Syrian economy. The direct requirements for primary inputs (i.e., labor, fixed capital and government services) and the goods and services provided by other production sectors per unit of gross output for each sector, approximate the parameters for each sector's production functions, the productive capacities of each sector, and the availability of primary inputs makes it possible to report the economy's gross output and each sector's contribution to gross domestic product for the specific production plan being studied. The procedures followed in constructing this planning model are explained in Volume VI, Annex 3, along with specific recommendations for later modifications when additional data become available.

Three scenarious to 1985 and 2000 were examined with this model. The three scenarios were developed consistant with the three alternatives assumed in the commodity demand projections made in the Commodity Demand Assessment, Volume I, Annex 3.

In the three scenarious run for 1985, Alternative I, builds upon the 62.5 percent increase in per capita expenditures and 44.9 percent increase in population and places the greatest demands upon the Syrian economy. Assuming no exports of Syrian products, the production sectors must produce 75.5 billion S.P. of goods and services if it is to satisfy intermediate and final demand. At the opposite end of the spectrum, only 49.2 billion S.P. of goods and services would be needed under Alternative III. If the Syrian government desires to export any of these commodities, the final demands assumed under each of the scenarious examined in this study must be expanded accordingly. And if the Syrian economy does not have the capacity to meet the intermediate and final demands projected under Alternatives I-III, the government will have to import goods to satisfy these demands.

In the three scenarios run for the year 2000, it is once again Alternative I that placed the greatest strain on the capacity of the Syrian economy to meet the domestic demand for its goods and services. If the Syrian government has hopes of exporting specific commodities, the capacity of those sectors that produce these commodities will be strained even further. It is important to note some of the assumptions underlying these projections expressed in Volume VI, Annex 3. For example, we have assumed that the production processes used to produce goods and services in the 1970s will remain unchanged by the year 1985 and 2000. To the extent that the relative use of specific inputs changes, their direct requirements and hence intermediate demands for goods and services produced by other sectors will differ from those projected in this report. Secondly, we assumed that the production capacities of each sector would not limit its ability to meet the intermediate and final demand for its products. The purpose of these projections, however, was to show what the output of each production sector would have to be by the year 1985 and 2000 rather than what the potential output of the economy and its sectors will be. This issue can easily be addressed with the planning model developed in this study once these capacities are known. That is, the production capacities of the individual sectors can serve as upper bounds in a constrained solution of the planning model to show what the potential out-put and domestic product of the economy can be in these years.

Recommendations

(1) Although it is not possible to make specific recommendations on the basis of the runs made so far with the Syrian Economy Planning Model, it is appropriate to recommend that the model be used in evaluating alternative policy recommendations in the fifth five year plan.

It is important, however, that the potential uses and misuses of the planning model developed in this study be clearly understood. It is also vital that its users understand how to further disaggregate the model and update the technical coefficients and capacity constraints as new information becomes available or as different assumptions regarding technological change and capital formation are made.

(2) It is also appropriate to recommend further development of the model. The approach taken in developing this planning model was to use the best information available. Our major goal in this study was to get this model operational so that we could illustrate the types of analyses it can perform. As additional and more precise data are made available, we can easily modify the technical coefficients and capacity constraints in the model.

(3) Priority should be given to examining the direct requirements used for the crop and livestock production sectors in the model. In addition, irrigated and rain fed options should be allowed for other crops besides wheat where applicable. Further emphasis should also focus on disaggregating the food processing and beverage (FODBEV) sector to more clearly track the effects of production plans for specific agricultural commodities.

Once the desired disaggregation of the non-agricultural sectors has been achieved, the next step is to survey the managers of firms or government agencies associated with these sectors to determine their current productive capacities. Questions about current output and the fraction of maximum potential output this represents would allow us to determine their productive capacity. Once these values are known, we will be in a better position to assess the feasibility of alternative production plans for the agricultural and non-agricultural sectors in the short run and the added capacity needed to meet projected final demand for goods and services in 1985 and beyond.