

INTERRELATIONSHIPS BETWEEN
AGRICULTURAL AND INDUSTRIAL DEVELOPMENT
IN SYRIA

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Submitted in Partial Fulfillment for
the Requirements of the Degree Master of Arts
in the Department of Business Administration of the
American University of Beirut, Beirut, Lebanon
June 1958

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ABSTRACT

There had been appreciable growth in Syrian agriculture and industry since World War Two. The development that has taken place was primarily due to private initiative and thus was not a part of an overall plan for the economic development of the country.

The idea of balanced growth has put great emphasis on the interdependence of agriculture and industry in the process of economic development. This is best illustrated by showing the agricultural contribution to industrial development and the industrial contribution to the development of agriculture.

How smoothly the above interdependence is likely to function in Syria depends on the solution of the present limiting factors to agricultural and industrial growth in the country. The solution appears to depend primarily on government initiative. Accordingly, a separate plan should be made for the development of agriculture and another for the development of industry.

Plans in this connection have not been made so far. Also an overall plan for the development of the country is not as yet developed. However, there are good government agencies that have been recently established in the country to draw plans and supervise their execution.

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PART I
GENERAL SURVEY

A. Agriculture in Syria

1. Place of Agriculture in the Syrian Economy

Syria is an agricultural country gifted with fertile land and relatively abundant water resources. It enjoys a varied climate owing to a varied altitude, and this permits the planting of many different kinds of crops. The total area of its cultivable land is seven million hectares out of which only 4,590,000 are cultivable. (1)

About two-thirds of the inhabitants work on the land. Part of the rest work in the processing of agricultural products, while others are occupied with trading in agricultural products either in the raw or processed forms.

The 1953 national income figures for Syria show that 46 percent of the total arises in agriculture and 17 percent from animal husbandry. Trade and industry account for only 13 percent. This latter income is to a large extent dependent on agriculture since the main industries of the country include cotton ginning, spinning and weaving, oil extraction, tanning and dyeing of hides, sugar manufacturing, and con-

(1) The Ministry of National Economy, Statistical Abstract of Syria (Damascus; The Government Press, 1956), p.496. We realize that the term 'cultivable' is tenuous at best; however, there is little doubt that much additional land could be brought under cultivation with the help of Syria's internal resources together with resources 'borrowable' from abroad.

serves, all dependent on the agricultural sector for their raw materials.

The figures then show that agriculture in Syria is the main source of living for the people. But this is not all. Agriculture is also a principal source of foreign exchange. The average share of agricultural products to total exports from 1954 to 1956 was 82 percent. Foreign exchange is used to purchase machines for both agricultural and industrial purposes; it is used also to purchase raw materials for industry. Foreign exchange provides the means to buy consumption goods not produced locally, and finally, the government takes a share to implement the projects that are needed for the economic development of the country.

The foregoing brief discussion shows that agriculture is the base of the Syrian economy. Therefore, any effort for raising the standard of living of the people apparently depends primarily on agricultural development. Through the income effects of an increase in land productivity, there should follow an increase in income arising in industry and in services. This process describes the fundamental relationship between Syrian agriculture and industry. More detailed analysis will appear later.

2. Agricultural Progress Since World War Two

Before World War Two, although agriculture was an important source of living for the people, it was nevertheless

a neglected sector of the economy; neglected by the landowner, by the peasant, and by the authorities. Landowners were interested in their holdings only as a source of income in the short run. There was little thought about maintaining income in the long run through capital investment in their properties. Uncertain tenure made capital outlays by the peasant out of the question, even in those cases where any excess of income over consumption made such investment possible. As for the authorities, public programs for agricultural development were very limited. Official interest in the agricultural sector hardly went farther than consideration of the land as a source of tax revenue. All were taking; none was giving.)

(The war was a stimulus to agricultural development. Loss of overseas sources of supply coupled with the demand of the allied forces encouraged an increase in local production. The magnitude of this increase is indicated by the figures of area under cultivation. From 1,904,079 hectares in 1939, the area increased to 2,290,000 hectares in 1946.⁽¹⁾ However, it was not until the post-war years that agriculture made its greatest strides.

(1) Bureau des Documentations Syrienne et Arabes, Etude sur L'Agriculture Syrienne (Damas: 1955), p. 57. The immediate pre-war years had seen some interest on the part of the mandatory power in Syrian agriculture. This interest was shown in the introduction of a limited amount of machinery, fertilizers, and new methods of cultivation.

There are three different approaches that might be used to measure this growth. First, we could compare the increase in the cultivated land; second, we could show the progress made in the volume of production of the principal crops; and third, we could give an even more comprehensive picture through tracing the change in the national income arising in the agricultural sector.

(There has been an increase of about fifty percent in the cultivated land since 1946.) (As was mentioned above, the area of cultivated land during that year was somewhat greater than two million hectares. By 1956, the cultivated land had increased to 4,600,000 hectares.)

When we make comparisons of the volume of production of principal crops, we find a similar pattern of large increase. Wheat production, for example, more than doubled. In 1945, production was 751,000 tons; eleven years later, it was 1,537,000 tons. ⁽¹⁾ Cotton production in 1945 represented only 6 percent of the 1956 production. In the previous year, total production was 124,000 tons, while it reached 2,525,000 tons in the latter. ⁽²⁾ Barley increased by almost fifty percent during the same period, or 248,000 tons in 1945 against 462,000 tons in 1956. ⁽³⁾ An appreciable in-

(1) The Ministry of National Economy, op.cit., p. 436.

(2) Ibid., p. 446.

(3) Ibid., p. 436.

crease was also noticeable in the production of sesame and sugar beet. Sesame production increased about three-and-a-half times from 1945 to 1956 (from 37,000 tons to 104,000)⁽¹⁾. Production of sugar beet grew from almost nil in 1945 to 30,000 tons in 1956.⁽²⁾ Apple production increased by 43 percent since 1945 and there was also an average increase of 14, 77, 62, 16, and 153 percent consecutively in the production of grapes, pears, plums, peaches and figs.⁽³⁾

On the debit side of agricultural development was the decrease of around 40 percent in the production of the relatively minor crops of maize, rice, millet, oats, and chickpeas. However, this decrease would require only a small subtraction from the overall increase in the volume of agricultural production. There was also an average decrease of 35 percent in the production of olives, apricots, nuts and pomegranates. However, this decrease would appear to be only temporary since there were significant increases in the number of trees planted. Olive trees increased from 8,802,000 in 1945 to 13,107,000 in 1956, apricot trees from 47,253,000 to 65,378,000, nut trees from 397,000 to 407,000⁽⁴⁾ and pomegranates from 696,000 to 957,000.

Growth in the national income from agriculture gives us an overall impression about the development that has

(1) Ibid., p. 446.

(2) Ibid., p. 449.

(3) Ibid., pp. 452, 455, 456, 457, 460.

(4) Ibid., pp. 451, 453, 458, 459.

taken place in the agricultural sector of the economy. The first estimate for Syria's national income was made in 1950. The share of agricultural production then was 553,000,000 Syrian pounds, or 44.3 percent of total national income. This figure grew to 1,035,480,000 Syrian pounds in 1957, or an increase of 482,480,000 Syrian pounds in seven years. (1) (Unfortunately the total national income figure for 1957 is not available, so we cannot know the share of agriculture.) The value of agricultural production then has almost been doubled, a very good rate of development in a country like Syria. The increase was not due to the industrialization of the country on a scale that would revolutionize agriculture. The modern machines and implements that were used on the land were all imported. Even spare parts were not produced at home. Also it was not due to land reforms which ordinarily bring about, at least in the long run, an increase in the productivity of the peasant. The irrigation projects that helped the increase in production were more of a private nature than of the large-scale public type. In

(1) The Ministry of National Economy, National Income from the Agricultural Sector. 1952 - 1957 (Damascus: 1957), p. 51. Allowances should be made for changes in prices. There was a decline in average annual wholesale prices of major agricultural products, wheat, barley, and cotton until 1954. The 1955 and 1956 prices had only slight variations - this shows that the increase reflects a real increase in production rather than an increase in prices. The Central Bank of Syria, Annual Report, (Damascus: 1956), pp. 59-60.

short, private initiative was responsible for the development as a whole.

At present this initiative has reached a stage where it can go no further without government help in the form of large capital assistance. This assistance should be used to provide for big irrigation projects, good transportation facilities, land redistribution, extensive government guidance and experimental work, credit of a kind that helps small farmers, and finally for industrialization that supports agricultural development by supplying tools, fertilizers, chemicals to combat plant diseases, and by providing a market for agricultural products as raw materials for processing.

B. Industry in Syria

1. Place of Industry in the Syrian Economy

Industry occupies a place of lesser importance than agriculture in the Syrian economy. As we noted, income arising in the agricultural sector in 1950 was 44.3 percent of the total; industry, on the other hand contributed only 10 percent, or 125,000,000 Syrian pounds. However, the place of industry is not insignificant, and it promises to be even greater in the future. The principal Syrian industries at present include the following:

a. Textiles

This industry comprises cotton ginning, cotton,

silk and woolen thread production, cotton underwear, tricot, cloth, socks and stockings.

b. Food Processing

Major establishments in this group include sugar refining, vegetable oil, biscuits and macaroni, flour milling, conserves, and tobacco.

c. Other Industries

Electricity, glass, and cement are considered to be the most important in this category.

Besides those industrial activities listed above, there are a number of industrial establishments which give a further idea about the kind of manufacturing that is done in Syria. There are various industries of different sizes which include leather tanning, soap, light iron articles, dyes, alcohols, rice husking, matches, milk products, string and rope, ready-made clothing, furniture, metal beds, automobile bodies, metal casting, tire retreading, leather goods, printing, beer, glucose, refrigeration equipment, plastics, neon, toys, veneer, velvet fabrics, liquid gas, nails, pins, screws, locks and padlocks, aluminum utensils, and irrigation pumps.

With this picture of the kinds of industrial establishments that exist in the country in mind, it would also be useful to know the number of establishments in each

group. Statistics of manufacturing industries that are registered in the Ministry of the National Economy show the following:

<u>Kind of Industry</u>	<u>Number of Establishment</u>
Textile industries	1,916
Food "	1,797
Metal "	586
Pharmaceutical & Chemicals	117
Tanning industries	109
Plastics "	29
Building "	369
Wood "	113
Printing, paper & cartoon industries	163
Electricity	42
Miscellaneous	<u>8</u>
Total	<u><u>5,249</u></u>

The relatively large number of establishments is misleading, since not more than fifty ⁽¹⁾ can be considered as factories in the "modern" sense of the word, i.e., firms characterized by high capital intensity and continuous process; in short, mass production. The remainder are small workshops which still have the handicraft characteristic.

(1) Abdel-Ghani Hamour, Syrian Economy 1956, a report prepared by Damascus Chamber of Commerce (Damascus: May, 1957).

2. Industrial Progress since World War Two

a. Textiles

(i) Cotton Ginning: Cotton ginning factories have increased during the past few years as a result of the increase in cotton cultivation. The number of cotton ginning mills was twenty in 1945. They increased to 67 in 1951, 111 in 1955, and 126 in 1956. The total number of gins was 1,071 in 1951, increasing to 2,437 by 1955. The amount of capital investment declared before 1953 was 3,399,000 Syrian pounds compared with the present capital investment of 15,000,000 Syrian pounds. The annual capacity in 1951 was 25,556 tons of ginned cotton. It is now 100,000 tons. ⁽¹⁾

(ii) Cotton, silk and woolen thread: There were two spinning factories before World War II. The total number of spindles did not exceed 10,000. During the postwar period, five new factories were established, and the capacity of the two older factories was increased. The total number of spindles in all factories

(1) Bureau des Documentations Syrienne et Arabes, L'Industrie Syrienne, (Damas: 1955) p. 110.

reached 93,209 in 1956.⁽¹⁾ Production increased from 1,715 tons of cotton thread in 1944 to 6,231 tons (5,460 cotton, 1,152 silk) in 1953,⁽²⁾ and to 11,789 tons (8,145 cotton, 3,644 silk) in 1956.⁽³⁾

(iii) Cloth: This industry has always been the major industry of Syria. Damascus in particular is famous for "damas", or "damask" material. Until 1923 hand looms were used. After that date, mechanical looms started to appear. By 1939 the number of textile factories with mechanical looms was 80 and the number of looms was 500. The number of establishments reached 800 during the postwar period (1953), and the number of mechanical looms increased to 5,500, while that of hand looms was 6,000.⁽⁴⁾ In 1956, the number of mechanical looms reached 7,000 and that of hand looms 1,000. The total production of cotton and silk textiles increased from 16,000 tons in 1952 to 20,000 tons in 1956.⁽⁵⁾

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- (1) Burhan Dajani, The Arab Economy (Beirut: 1957), p. 139
(2) The Directorate General of Information, Syria -- Economy and Finance (Damascus: 1955), p. 86.
(3) The Central Bank of Syria, Annual Report (Damascus:1956), p. 65.
(4) The Directorate General of Information, op.cit., p. 87
(5) Burhan Dajani, The Arab Economy (Beirut: 1957), p. 139.

- (iv) Cotton underwear: This is newly developed industry. The number of factories was 15 in 1945, but increased to 40 in 1953.⁽¹⁾ It is now 56. Production of these factories has increased from 720 tons in 1953 to 1,000 tons in 1956.⁽²⁾
- (v) Tricot: This industry improved in quality of production while growing in number during the post-war period. The number of tricot factories in 1945 was 45. It increased to 150 in 1953,⁽³⁾ and is now (1956) 214. Production increased from 525 tons in 1953 to 600 tons in 1956.⁽⁴⁾
- (vi) Socks and stockings: In 1944 there were 17 factories for manufacturing socks and stockings. The number of machines used did not exceed 236. Modern machines were imported after World War II. In 1953 the number of factories increased to 70 and the number of machines became 886.⁽⁵⁾ Production increased

(1) The Directorate General of Information, op.cit., p. 88.
(2) Hamour, op.cit.,
(3) The Directorate General of Information, op.cit., p. 88.
(4) Hamour, op.cit.
(5) The Directorate General of Information, op.cit., p. 88.

from 920,000 dozen in 1953 to 1,350,000
(1)
dozen in 1956.

b. Food Industries

(i) Sugar making and refining: Sugar production started in Homs in 1950. Four hundred tons of sugar were produced during that year from local sugar beets and 7,800 tons of imported raw sugar was refined, thus giving a total of 8,200 tons. In 1953 total production increased to 30,000 tons (2) (7,000 from local sugar beets, 25,000 from raw imported sugar). Production in 1956 was 50,391 tons. (3)

(ii) Vegetable oils: Cotton cultivation encouraged the establishment and expansion of vegetable oil factories. By the end of 1953, there were 14 factories with modern machines and equipment. There were also four factories for the manufacture of linseed oil, 41 factories for the extraction of sesame oil, and two for the manufacture of margarine. All of these factories are

(1) Hamour, Op.cit.

(2) The Directorate General of Information, Op.cit., p.90.

(3) The Central Bank of Syria, Annual Report, op.cit., p. 65.

additional to a number of olive oil presses
that have been in existence for a long time.⁽¹⁾

Production of vegetable oil in general,
excluding olive oil, increased from 5,500
tons in 1953 to 10,300 tons in 1956.⁽²⁾

Production of cotton seed oil increased
from 6,900 tons in 1954 to 9,900 tons in
1956.⁽³⁾ Olive oil production varies with
the olive crop and ranges between 7,000
and 12,000 tons annually.

- (iii) Biscuit and macaroni: Biscuit making began
in 1951. By the end of 1953, four factories
were established. Annual production of these
factories is around 520 tons. Seven small
factories were established during the last
few years to make special kinds of biscuits
that are used with ice cream. Two factories
for macaroni existed before World War II.
Two others were established thereafter.
Total production is 400 tons annually.⁽⁴⁾

(1) The Directorate General of Information, Op.cit., p.90.

(2) Ibid., p. 81

(3) The Central Bank of Syria, Annual Report, Op.cit., p. 65.

(4) Ibid., p. 91.

(iv) Conserves, sweets and candies: Production of conserves increased from 934 tons in 1949 to 2,970 in 1955. The sweets industry developed considerably after the war and annual production is now 4,500 tons.⁽¹⁾

(v) Tobacco: The tobacco industry is a progressing government monopoly. The following table shows the development in the quantity (in kilos) manufactured since 1945.⁽²⁾

<u>Year</u>	<u>Tobacco</u>	<u>Tombac</u>	<u>Cigarettes</u>	<u>Total</u>
1945	642,881	224,365	864,692	1,731,938
1947	586,918	146,479	833,235	1,566,632
1949	701,699	131,355	1,192,443	2,025,497
1950	585,100	129,766	1,360,550	2,075,416
1952	754,467	119,994	1,573,244	2,447,705
1954	996,468	132,367	1,772,339	2,901,374
1956	1,098,638	134,340	1,902,774	3,126,752

c. Other Industries

(i) Electricity: Before World War II, there were four electricity companies. From 1956 to 1954, seventeen additional companies

(1) Ministry of National Economy, The Syrian Industry, a report prepared by the Directorate of Industry (Damascus: 1957).

(2) Ministry of National Economy, Statistical Abstract of Syria, Op.cit., p. 479.

were founded. Development of production since 1947 is as follows:

Year	Quantity Produced (in Thousand Kilowatt-hours) ⁽¹⁾
1947	47,036
1948	56,160
1949	68,625
1950	81,279
1951	86,801
1952	98,791
1953	114,238
1954	128,923
1955	146,687
1956	164,379

(ii) Glass industry: The first modern factory was established in Damascus in 1945. Production of this factory during 1950, 1951, 1952, and 1953 was 4,400, 2,780, 5,800, and 3,200 tons respectively. In 1952 another factory was established. Its production in 1953 was 145 tons. ⁽²⁾ Total production

(1) The Directorate General of Information, op.cit., p. 95, for the 1947-1953 figures; and The Central Bank of Syria, op.cit., p. 65, for the 1954-1956 figures.

(2) The Directorate General of Information, op.cit., p. 93.

of glass was 5,499 tons in 1954, 7,562 in 1955 and 10,654 tons in 1956. ⁽¹⁾ There are also 12 workshops that produce hand-made glass.

(iii) Cement: Annual production of the Dummar factory in 1950 was 67,650 tons compared with 30,000 tons produced when the factory commenced its work in 1933. With the establishment of the Aleppo factory, total production was raised to 150,000 tons in 1952, 223,639 in 1953, ⁽²⁾ 249,075 in 1954, 264,288 in 1955, and finally to 325,548 ⁽³⁾ tons in 1956.

(The progress that was made in Syria's agriculture was an essential cause for the development of its chief industries. The increase in cotton ginning would have not taken place if it were not for the increase in cotton cultivation. The increase in cotton cultivation also encouraged the spinning and weaving industry, socks and stockings, tricot, and cotton underwear. - It was also an incentive to

(1) The Central Bank of Syria, Annual Report, op.cit., p. 65.

(2) The Directorate General of Information, op.cit., p. 95.

(3) The Ministry of National Economy, Statistical Abstract of Syria, op.cit., p. 480.

the establishment of the modern vegetable oil factories.) Due to agricultural progress, we can also look forward to further development in the cement industry, glass, and electricity. (As agriculture is in the process of development, a great deal of cement is going to be needed to undertake the huge irrigation projects planned.) The farmer will also need cement as a building material. Glass shall be demanded by the farmer also as a building material and especially for the green houses necessary to modern farming. Also much of modern farming moves by electricity; irrigation pumps are a case in point.

(Progress in the sugar industry, conserves, flour milling, milk products, alcohols, beer, and tanning depend a great deal on progress in agriculture.) The sugar factory in Homs, when it first started to operate, was forced to depend almost entirely on imports of raw sugar. Now it relies heavily on sugar beets produced at home. Flour mill-⁽¹⁾ing is based on the production of wheat. Conserves and alcohols depend on progress in fruits and vegetables. Milk products and the tanning industries depend on the increase in the number and kinds of animals. A larger quantity of hides are imported at present to be used as raw materials in

(1) It also depends on the production of millet and maize because there are a good number of the rural people who use the flour of these products to make bread.

the Syrian industries. The value of imported skins, hides and leather in 1956 was LS 3,858,000.⁽¹⁾ This figure could be decreased if the animals and pasturage of the country are properly cared for.

(Thus agricultural progress has served as an essential cause for the development of existing industries in Syria; it also promises to stimulate their further development.⁽²⁾ But we should not neglect the other causes that were behind the industrial movement in general, and here we must look at the demand side. War conditions promoted industry even more than agriculture. The large profits that were earned by the businessmen during the war period were invested in different industrial establishments when the war was over.) In eight years' time, 37 industries were founded with a total capital of 70,693,600 Syrian pounds.⁽³⁾ Of this number, 17 were established for the provision of electricity to villages and towns. The others included the following:⁽⁴⁾

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- (1) The Ministry of National Economy, Statistical Abstract of Syria, op.cit., p. 104.
 - (2) Further details on how much agricultural progress in Syria affects industrial development is given later.
 - (3) The Directorate General of Information, op.cit., p. 80.
 - (4) Ibid., pp. 80-81.

<u>Company</u>	<u>Work</u>	<u>Location</u>	<u>Authorized Capital (L.S.)</u>	<u>Year Estab- lished</u>
Syrian Industriail Co.	Oil production	Aleppo	5,000,000	1945
Syrian Glass Co.	Manufacturing of glass and porcelain	Damascus	8,000,000	1946
United Trade and Industry Co.	Manufacturing of textiles	Damascus	10,000,000	1946
Shabbaa Cement Industrial Co.	Manufacture of cement & building material	Aleppo	9,000,000	1946
Sugar & Agricul- tural Products Co.	Sugar refin- ing, alcohol and oil	Homs	12,000,000	1946
Technical Dyeing Co.	Dyeing of threads and cloth	Aleppo	5,000,000	1946
Syrian Lebanese Cinema Co.	Making of films	Damascus	1,629,800	1946
Oil & Soap Co.	Extraction of oil and mak- ing of soap	Damascus	2,500,000	1946
Syrian Liquid Gas & Mechanical Industries Co.	Liquid gas & mechanics	Damascus	397,000	1946
Shabbaa Textile Co.	Textiles	Aleppo	6,000,000	1949
Arab Sweets and Chocolates Co.	Chocolates and sweets	Damascus	430,000	1949
Mechanical Indus- tries Co.	Mechanical industries	Damascus	791,800	1950

<u>Company</u>	<u>Work</u>	<u>Location</u>	<u>Authorized Capital (L.S.)</u>	<u>Year Estab- lished</u>
Cotton and Oil Co.	Extraction of oil	Aleppo	3,000,000	1951
Syrian Cotton Ginning Co.	Cotton ginning	Damascus	500,000	1951
Syrian Rubber Shoes Co.	Making of rub- ber shoes	Damascus	180,000	1951
Modern Conserves Co.	Conserved fruits and vegetables	Damascus	324,000	1952
Aleppo Agricul- tural Industries Co.	Agricultural industries	Aleppo	600,000	1952
Syrian Light Metal Industries Co.	Manufacture of metal tools and machinery	Damascus	500,000	1952
Industrial Tex- tile Co.	Spinning and weaving	Aleppo	1,200,000	1953
Oriental Under- wear Co.	Underwear	Damascus	320,000	1953

In the space of one year, that is from July 1952 to July 1953, the following licenses were issued to permit the establishment of new plants and the expansion of the old ones:

<u>Industry</u> (1)	<u>Founding Plants</u>	<u>Enlarging Plants</u>	<u>Total Licenses</u>
Spinning and Weaving	43	114	157
Tricot	38	107	145
Socks and Stockings	5	21	26
Underwear Clothing	1	16	17
Rubber Shoes	3	2	5
Tire Treading	-	3	3
Leather Tanning	1	-	1
Beer	2	1	3
Conserved Goods	-	3	3
Plastics	3	1	4
Tiles and Mosaics	17	17	34
Metal Fitting	25	10	35
Printing	12	35	47
Paper and Cardboard	6	1	7
Cement	-	1	1
Liquid Gas	1	-	1
Automobile Bodies	1	-	<u>1</u>
Total Licenses			<u><u>490</u></u>

(1) Ibid., p. 97.

The above information shows that there has been a great rush towards industrial investment. This, as was the case in agriculture, was due to private initiative. (The authorities gave their support through customs protection, concessions of various kinds, and guarantee of industrial loans to launch new projects or to expand old ones. ⁽¹⁾ These forms of government help encourage the industrial movement; however, it was not enough to insure its continued progress. During the last few years, the establishment of new industrial projects declined precipitously. Even more alarming was the fact that capital investment in industry started to decline also. ⁽²⁾

Thus industry arrived at a stage of stagnation similar to that in agriculture: private initiative could go no further without government assistance. (The government has stepped in with proposed help which is going to take the form of supplying cheap fuel and power, more technical training and guidance, research for industrial possibilities, long-term credit through a specialized bank, and finally the

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- (1) Duties were increased on imported goods the like of which began to be produced at home. Raw materials and machinery needed for industrial purposes were exempted from customs duties. New establishments were exempted from real property tax and enjoyment charges for six years; from income tax for three years; and the equipment and machines of these firms were exempted from taxes for six years.
- (2) Hamour, *op.cit.* Capital investment in industry was 14,937,942 in 1953; became 22,256,156 in 1954; decreased to 11,404,276 in 1955 and to 5,869,952 in 1956.

indirect form of supporting agricultural development to insure a regular supply of raw materials, labor, foreign exchange for industrial needs, and a market for manufactured goods.

The conclusion that could be drawn from the above is that both agricultural and industrial development in Syria since World War Two were based on private initiative attracted by the possibilities of huge profits. When these profits declined, so did agricultural and industrial growth. The government intervened only when there was a persistent need for intervention. For example, the cotton crisis after the Korean war forced the authorities to institute measures to regulate cotton planting. At the same time, other measures were taken to encourage wheat production because the cotton boom in the country had made many farmers shift from wheat production to cotton cultivation. As far as industry is concerned, a decree law (No. 47 of 7/8/'52) was issued which subjected the launching of new establishments and the expansion of old ones to the requirement of a prior license.

Yet these measures were ad hoc, i.e., they were not based on a unified plan for balanced agricultural and industrial development set within an overall plan for development of the Syrian economy. The importance of a unified plan for agricultural and industrial development should

be emphasized. Agriculture and industry are the basis of general economic development.

The importance of agriculture does not lie only in how much it contributes directly to general economic development, but also in how much it contributes to the development of the industrial sector. The importance of industry is also based on its contribution to general development as well as on its contribution to help the development of agriculture. In short, there is a close interdependence between the two sectors.

PART II
MUTUAL CONTRIBUTION OF
AGRICULTURE AND INDUSTRY

The interdependence of agriculture and industry in Syria is best illustrated by the contribution of each sector to the other at present and by showing how this interdependence might evolve in the future. The discussion that follows puts heavy stress on future contributions, because our interest lies in the dynamic nature of the interdependence more specifically, on the problem of balanced growth.

A. Agricultural Contribution to Industry

1. Food

One of the chief industries in Syria is the food industry. Vegetables and fruits are used to make jam and preserves; sugar beets are used for the manufacture of refined sugar, tobacco to manufacture cigarettes, and olives to extract olive oil.

The price of raw materials in any industry is an important element to consider in the cost of production. Therefore the price of food affects to a great extent the cost structure of the food industry in Syria.

Crop prices not only affect the cost structure by reflecting the cost of raw materials, but they also affect labor costs since food prices are a principal determinant of the wage rate. This is so because the

average wage of the Syrian worker ranges between 250 - 350 Syrian piasters per day.⁽¹⁾ According to the present cost of living, this amount of money hardly buys the worker more than the food necessary to him and his family. Thus we can say that the price of food affects two important elements of production costs in the food processing industry - cost of raw material and cost of labor.

The effect of the price of food on the other industries in the country is felt through its influence on the wage rate, as it was mentioned above, and by affecting the price of the raw materials that are used in these industries. In the textile industry, for instance, the cost of raw material used is determined to a great extent by the farm laborer's wage. The cost of labor is an important factor in the production of cotton in Syria, since its cultivation requires much manual work as compared, for example, with wheat. Furthermore, there is an interrelation between cotton and food prices, since relative prices determine the proportion in which available land is planted in these crops. This point will be expanded upon below.

As industry develops in Syria, capital as a factor of production will become more important than

(1) The Central Bank of Syria, Annual Report (Damascus: 1956), p. 67.

labor. Thus it follows that the influence of food prices through their effect on wage rates will become less important. Also industrial development may be expected to increase the income level of the average industrial worker. Engels' law tells us that the proportion of the family budget devoted to food should decline as a consequence. In other words, not all income will be spent for food, but rather a part will go to purchase, among other things, manufactured articles.

Besides affecting the cost structure of major industries, food also determines their location in many cases. At present conserved fruits and jam factories are mostly scattered in the Ghuta of Damascus where fruit trees are found in abundance. Olive oil presses are concentrated in the Lattakia district where most of the olive groves are found. The degree of perishability of the food determines the degree of proximity of the factory to the source of raw material, i.e., the more perishable, the closer to the source. Better marketing and transport facilities (including storage) can be expected to modify this pattern. Indeed, investment in these facilities will result in less resource-orientation, i.e. other locational factors will become predominant.

The present volume of food production is determined by the extent of area under cultivation and by

production technique. Further, there are other crops that compete with food crops for available land, cotton being the best example. The relative share of land devoted to cotton and wheat have in recent years not been determined by relative prices, but by government decree, which has limited cotton planting. When the cultivated land increases as a result of agricultural development, the present stiff competition among the agricultural crops for area would most likely diminish. However, the same result could be achieved if better production methods are introduced without increasing the area under cultivation. In either case, Syria would have more cotton and more wheat.

The importance of the food supply depends on quality as much as on quantity. Bad quality increases the cost of production of the processing industries and makes it difficult for them to compete with foreign-produced goods. The city worker is conscious enough of quality that he would rather pay a higher price for good quality rather than be satisfied with cheaper one of less quality.

With the introduction of better seeds and better methods of cultivation, harvesting, picking fruits and vegetables, and caring more for plant diseases and animals, the quality of the food produced in Syria would be improved to the advantage of both agriculture and industry.

2. Raw Materials Other than Food

Cotton stands in this category as first in importance. In fact, it is the principal crop by value in Syria at present. Cotton cultivation was encouraged after World War Two by the increased local demand of the growing number of spinning and weaving factories in Aleppo and Damascus. But the tremendous increase in cotton planting took place just before and during the Korean War. (In one year, 1949 - 1950 cultivated area in cotton jumped from 25,296 hectares to 77,000 hectares. At the same time the crop went up from 13,000 to 35,495 tons.)⁽¹⁾ Since that time, cotton came to be considered mainly for export purposes.

The fact that the Syrian cotton farmer depends primarily on world markets does not deny the importance of cotton to the textile industry in Syria. The increase in the number of ginning factories, and the establishment of new textile industries such as cotton underwear was mainly due to the increase in cotton cultivation. It is also a great advantage to the textile industry to have this kind of raw material produced in sufficient quantities at home. The cost of cotton production in Syria compares favorably with the cost of producing cotton in the United

(1) The Directorate General of Information, Syria -- Economy and Finance, (Damascus: 1955), p.32.

States; in fact, the cost in the latter country is more than it is in Syria.⁽¹⁾ So low costs in cotton production lead to low costs of production in the textile industry.⁽²⁾ The figure for the total consumption of the textile industry from cotton is not known. However, it is known that between 1952 and 1956 the spinning industry used about 45,000 tons of ginned cotton valued at 100 million Syrian pounds.⁽³⁾ This figure gives an idea about total consumption since most of the other textile establishments use cotton thread as raw material.

Cotton seeds, a by-product of cotton growing, served as a good incentive for the establishment of modern vegetable oil factories. The local supply of cotton seeds is more than sufficient for the local demand of the vegetable oil establishments. There are no statistics for the amount of cotton seeds that are consumed by these establishments at present. However, the average

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- (1) Bulos Ibrahim, "Cotton in Syria - Past and Present", Aleppo Chamber of Commerce Economic Year Book, p. 355.
 - (2) Average cost of cultivating one hectare of irrigated land is L.S. 910. Average yield per hectare is 1500 k.g. Therefore the average cost of producing one kilo is 60 piasters. This decrease to 53 piasters per kilo of cotton produced on non-irrigated land.
 - (3) Bulos Ibrahim, Development of Cotton cultivation in Syria and its effect on the Syrian Economy, a report prepared by the Ministry of Agriculture (Damascus: 1958), p. 4.

annual volume available for crushing, after deductions for export and sowing requirements, was about 68,000 tons during 1950 - 1953.⁽¹⁾ Cotton seeds could also be a base for the establishment of different kinds of industries which depend on the derivatives of cotton seed oil, e.g. oil cake and residues. Oil cake could be prepared for animal feeds and the residue could be used for the preparation of paints and the manufacture of candles. There are also various other industries that depend on vegetable oil. Vitamins, glycerin, and synthetics are examples.

The importance of vegetable oils is increasing in Syria as local consumption increases. (Exports take the bulk of production at present.) The vegetable oil industries enjoy a great locational advantage by being near the cotton fields, since the seeds can be pressed while they are still fresh thus giving a very good quality of oil. Access to the cotton fields also reduces transportation costs and thereby the cost of the raw material.

Cotton has great importance now in so far as the textile and vegetable oil industries are concerned. This importance will increase in the future for both

(1) The International Bank for Reconstruction and Development, The Economic Development of Syria (Baltimore: The Johns Hopkins Press, 1955), p. 361.

industries. In the last century the world textile industry used only 4 percent of cotton threads. At present 70 percent of cloth manufacturing use cotton as a raw material. A like development may be expected in Syria. The establishment of the chemical industries that were mentioned above would also increase the demand for different varieties of cotton seeds. Producer goods industries, such as airplanes for instance, also demand cotton. Other kinds of industries that demand cotton are the tire industry and amunitions.

The prospective demand for cotton leads us to ask whether Syria has the potentialities to increase its cotton cultivation or not. In fact it has. The climate is suitable, and an increase in area for cotton cultivation is possible. The area planted in cotton at present is not more than 250,000 hectares. This could be increased to 600,000 hectares out of which 500,000 hectares would be irrigated and the remainder non-irrigated. With this development total production could be expected to increase to 250,000 tons of ginned cotton, or 140,000 tons over the 1957 production figure. ⁽¹⁾

Although not mentioned among the chief industries, the tanning industry in Syria is quite important. The

(1) Op.cit., p. 8. This, of course, would be possible only after implementing the big irrigation and reclamation projects, and assuming that there is an adequate labor supply.

animal resources of the country supply this industry with hides and skins. However, local supply is not sufficient, especially in quality; and the tanners have had to resort to imports which use much-needed foreign exchange. Expensive imports increase the cost of production which would have not been so had the livestock been properly cared for. The number of animals in Syria would be more than doubled if the natural handicaps such as shortage of grass and water supply during summer, could be overcome. ⁽¹⁾ These handicaps can be solved by studying the different possibilities of raising different kinds of grass, manufacturing animal feed, building shelters to protect the animals from hot and cold weather, and supplying water by the use of reservoirs or artesian wells.

The shoe industry, which depends on leather as a raw material, is as important to the Syrian consumer as the textile industry. The local demand for leather products would insure the establishment of modern factories as substitutes for the small work-shops that are presently scattered all over the country.

The supply of animal skins and hides is necessary to decrease the imports that are needed by the present tanning industry and to encourage the establishment of

(1) United Arab Republic, Information Department, Animal Resources in Syria, (Beirut 1956), p.5.

modern factories at home for shoe making and leather articles.

To several minor industries, Syrian agriculture supplies wool, hemp, and wood. However, the poor quality of wool supplied from domestic sources does not fit the requirements of the wool industry. As a consequence, the value of imported wool and other hair in 1956 was 16,227,000 Syrian pounds.⁽¹⁾ Again our attention is drawn to the improvement in animal breeding and to the increased care of animal resources.

Hemp soaking, peeling, and manufacturing into string and rope employs thousands of manual laborers in the Ghuta villages around Damascus, the locality where it is mostly produced.⁽²⁾ However, the figure of 6,269,000 Syrian pounds as the value of imports of bags and sacks for packing shows that the cultivation of hemp ought to be increased for the manufacture of these bags and sacks at home.⁽³⁾

The forest industries ar present are still in a primitive stage. They include charcoal production, extraction of industrial oil from the laurel tree, the

(1) Ministry of National Economy, Statistical Abstract of Syria, op.cit., p. 113.

(2) The Directorate General of Information, Syria -- Economy and Finance, op.cit., p. 29.

(3) Ministry of National Economy, Statistical Abstract of Syria, op.cit., p. 116.

preparation of mastic from the resins of pine and wild pistachio, the extraction of tanning from leaves of the sumac (*Rhees coriaria*) for use in leather manufacturing, the manufacturing of simple agricultural implements from oak wood, the manufacture of baskets from young branches of whortleberry and ash, the use of wood as a material of construction and as a material for the building of launches and fishing boats. ⁽¹⁾

Forest improvement and modern afforestation would encourage the development of the paper industry which depends mainly on poplar wood. Furthermore, there are possibilities for the exploitation of cork, for gum production from pine trees, for timber on a large scale for construction purposes, for wood distillation yielding such products as acetic acid and methyl alcohol, and finally for the establishment of modern installations for the production of charcoal.

3. Foreign Exchange

In Syria's foreign trade, agricultural products play a significant role, since they make up a great proportion of the country's exports. (It was mentioned before that the average share of agricultural products to total exports from 1954-1956 was 82 percent.)

(1) Ministry of Agriculture, Agricultural Development in Syria (Damascus: The Official Printing Press, 1955) p. 73.

Cotton, wheat, and barley make up for the greater share of agricultural exports as the following table illustrates:

(in million Syrian pounds)⁽¹⁾

<u>Year</u>	<u>Total Exports</u>	<u>Agricultural Products</u>	<u>Cotton</u>	<u>Wheat</u>	<u>Barley</u>	<u>Total</u> ⁽²⁾
1954	465.40	397.76	131.4	70.3	85.5	287.2
1955	473.00	384.43	249.8	10.6	7.5	267.9
1956	515.90	407.71	148.6	56.6	65.3	270.5

The above table shows that cotton is the leading export in Syria. The percentage of exported cotton to total exports has increased by 50 percent between 1951 and 1956.⁽³⁾

Other exports from the agricultural sector not shown by the table are living animals and animal products, lentils, and millet. There are in addition other minor crops which contribute only a small percentage.

The chief imports of Syria for industrial purposes fall in the following categories: mineral fuels and oils, bituminous substances and products of their distillation, silk, floss-silk and artificial silk, wool and other animal hair, cotton, machinery and equipment, and electrical apparatus.

(1) "The Trade Sector", Damascus Chamber of Commerce Quarterly Bulletin (Damascus: 1957), p. 39. Value at free rate of exchange.

(2) Total contribution of cotton, wheat, and barley.

(3) The 1951 figure for cotton exports was only 65 million Syrian pounds out of 245 million total exports. The 1955 figure became 249.8 million out of 384.43 million Syrian pounds.

The value of each category in 1956 was as follows: (1)

	<u>(Value in 000's L.S.)</u>
Mineral fuels and oils, bituminous substances and products of their distil- lation	146,657
Silk, floss-silk and art- ificial silk	67,170
Wool and other animal hair	40,567
Cotton	30,835
Machinery and apparatus, and electrical materials	<u>142,417</u>
Total	<u><u>427,646</u></u>

The above table gives us an idea about how much of industry's needs from abroad that agricultural exports are called upon to finance. (2)

It would have been more interesting to know how much of agricultural exports have financed the rapid industrial development right after the war. But here we should remember that foreign exchange accumulation from the war time had a greater role to play than in financing industrial establishments than agricultural exports had. However, the same interest would be maintained if we know how

(1) Ministry of National Economy, Statistical Abstract of Syria, op.cit., pp. 126, 133, 134, 135, 146. Value was given in official rate but was changed to free rate -- 1.5 ratio.

(2) We should take into account that not all fuels and oils and machinery were used for industrial purposes. A number of agricultural tractors, sowing and thrashing machines were included in the figures shown above.

much the same sources have contributed to finance industrial requirements during a period when industrial investment was the least. (Capital investment for industrial purposes in 1956 was the least compared with that invested in recent years.)

Here also it is difficult to know exactly the amount of foreign exchange that was used for industry because of the lack of accurate statistics. But we can say that the figures for silk, wool, and cotton, that appear on the above table, were all applicable to industrial purposes. This gives a total of 138,572 million Syrian pounds. Allowances should be made for industry's share of mineral fuels and oils, machines and apparatus, and electrical materials, and to other imports not mentioned in the table such as skins and hides, rubber, and articles and spare parts. With this in mind, the least that can be said is that the above figure of imports for industrial purposes would be more than double. ⁽¹⁾ When one compares this with the highest figure of foreign exchange earned from the export of agricultural products gives the conclusion that it is not enough to depend on agricultural exports to finance the industrial development of the country. As industry grows there is going to be a great need for the purchase of machines from abroad

(1) A rough estimate based on available statistics.

beside the present requirements of the existing industries for raw materials, spare parts, and replacement. Also, there are various other needs for foreign exchange, such as agricultural machines and implements, implementation of the various development projects, payment for foreign services and loans, and for finished goods which are directly consumed. All of these compete with industry for foreign exchange.

There are two possible solutions for the foreign exchange problem. First, the imports of finished goods should be limited. Some of the raw materials that industry is importing from outside -- wool, cotton, glues, skins and hides -- could be produced at home and therefore should be limited also. The second solution is to increase the exports of processed goods. This appears possible since there are evidences that the world demand for processed agricultural goods is on the increase.⁽¹⁾

Both solutions require further development in agriculture. Agricultural development would not only increase the amount of foreign exchange that comes into the country but also helps industry to develop and supply a great part of the foreign exchange that it needs through exports of its products. (Note that export of processed

(1) W.J. Martin and H.F. McColly, Introduction to Agricultural Engineering (London: McGraw-Hill Book Co., Inc., 1955), passim.

goods will also yield more foreign exchange than if their raw material equivalent were exported.)

4. Labor

The textile industry depends to a great extent on the rural people who emigrate to cities. The silk spinning factories in Homs, for instance, attract labor from the country and arrange for their lodging facilities.

The rural people who emigrate to cities are hired cheaply because they are weak in bargaining power. A rural worker, unlike the urban one, does not know much about labor codes and labor rights. Moreover, the prospect of a regular money income, no matter how small, is attractive to him. There was no chance for this before.

As the emigrant gets used to city life, he will start to understand his rights as a laborer and will ask for higher wages. There are many incidents when the worker, dissatisfied and unable to convince his employer to accept his demands, has quit his work. Under these circumstances, the employers begin to compete with each other in providing incentives to attract the newcomers and to hold the old ones.

In the long run, it is not expected that low wages will be accepted by the rural people, even when they first come to cities. Many will know beforehand from their

relatives and neighbors what the fair wages are and where they pay least and most. They will get to know their rights before they emigrate. And in fact, their destination would be mainly determined by the information they receive. In certain rural districts, this is actually taking place at present. (There are more emigrants from these districts to Beirut where conditions are better than to the Syrian cities.) However, there is still a good number who suffer from ignorance and who thus serve the financial interest of the industrialist willing to take advantage of it.

In the food industry, which had most of its establishments in the vicinity of the crop-land, a great number of its employees work part time in the fields. This is especially true with rural food industries such as the making of apricot sheets, molasses, wine, rice husking, flour milling and the pressing of olive oil. The food processing establishments, which are located in Damascus, Aleppo, and Homs, draw on rural labor in the same manner as the textile industry. In its nature, the conserved fruit and jam industries require seasonal employment in the same way the cotton ginning industry does. Here the need of the employer to have his work done at a definite time clashes with the interest of the worker to be employed all the year. The compromise between the two interests ordinarily is expected to be

shown in high wages during the season. But this is not so in Syria. There are a good number of workers from the rural areas who are ready to be employed at any time and for any definite period. In other words, the supply curve for labor in industry is very elastic.

In general, we can say that Syria's state of agriculture is contributing cheap labor to industry. The movement of labor to cities is mainly caused by the limited opportunities for a decent living on the land. As agriculture develops, the situation, of course, would be modified. Agricultural development would compete with industrial development for labor. Development of Syria's land would need a great number of workers for its exploitation. Also once the farmer finds good results on his land, he would be reluctant to move to cities. There is an argument here - as the productivity of the land increases the required people on the land would be less. This is true as far as food production is concerned. But the industrialist might demand a variety of staple crops the production of which would absorb the released labor from the production of food. How available labor would be divided would then depend on the relative demand for labor in agriculture and industry, demand which would be neglected in relation wage rates.

5. Market for Manufactured Articles

The number of the rural population makes a good potential market for manufactured goods. But it is not the number that counts so much as the purchasing power of the individuals, together with their tastes and habits.

In general, the present purchasing power of the average Syrian farmer does not constitute a good potential market for manufactured goods. Most of the farmers supply their own food. Those who cannot supply all their food requirements work part time in other occupations, and the money earned is used to pay for the food requirements that they were unable to supply for themselves. Others who do not supply any part of their food requirements, the cotton growers for example, use the money they get to buy their food.

Relatively speaking then, the margin that is used for manufactured products from the income of the farmer is low. With this narrow margin, he buys cloth, cotton underwear, tricot, socks and stockings, sugar, sweets, cigarette, soap, matches, pins, nails, locks and padlocks, string and rope, and simple tools and implements for the use on the land.

In fact the rural people, being in this state for a time, has helped the development of the textile industry. Passing through different stages of trial and

error, there are great quantities of cloth, cotton underwear, socks and stockings and tricot that were inferior in quality. Being conscious of color more than quality and suffering from a limited income, the farmers make up a good market for these inferior and cheap goods.

Sugar and sweets are purchased occasionally by the farmer. Sweets are more demanded by the rural people than sugar. Sweets are considered a part of the food requirements, whereas sugar is more or less a luxury. Vegetable oils (excluding olive oil) do not appeal to the village community, as is the case with conserved fruits and vegetables. Biscuits and macaroni are still beyond their means.

Electricity is unknown in most villages and rural communities. There are still certain parts in the country where even the use of gasoline is not common. Glass is demanded to a limited extent and so is cement.

The present geographical distribution of the rural people acts against the extension of the market for manufactured articles. There are many isolated places where people have no access to markets to see what is for sale. In addition many villages do not have shops. In certain districts the farmer needs a day or two to reach a place from where he can buy a piece of cloth or a pair of shoes. It is the well-to-do farmer

who can afford this trip. For besides the money he needs for the goods he desires to buy, he has to have an additional sum for his meals while he is away. (Sometimes he takes his food with him if he cannot afford otherwise.)

Distinguishing characteristics of the villagers is their lack of initiative and their traditional mentality. (There are many factors that contribute to this state such as the system of land ownership, isolation of communities because of the lack of transportation facilities, and the low income level.) These characteristics stifle any spirit of adventure. They hesitate to use things they have not used before. However, it is the acceptance of the new that helps industrial development and increases its tempo. In other words, consumer acceptance of new products is essential to the maintenance of the pace of industrial activity.

Again we come back to the promises of agricultural development. It not only offers the prospect of a higher income level to the farmer, but land reforms, an essential part of a program for land development in Syria, link the isolated areas by

proper rural distribution of population. Land reforms have the additional virtue of revolutionizing the mentality of the farmer.

As agriculture develops also, new demands will be created on the land to which industry may respond. There will be an increased demand for fertilizers, animal feed, and modern agricultural tools and implements, all of which could be supplied from local industrial sources. At the same time, the increase in the volume of agricultural products induces the establishment of various light industries that use these products for raw materials. These industries, through the effects of income invested in each, would make up a market for the industrial sector in general. In this way agricultural development would help indirectly to create a market for manufactured goods.

In summary, we can say that the maximum advantages that industry would reap from the contribution of agriculture depends in Syria on agricultural development. But at the same time the agricultural development of the country is greatly dependent on industrial development.

B. Industrial Contribution to Agriculture

1. Machines, tools and implements

Machines and modern tools and implements are all imported. Syrian industry provides only simple tools and implements through the workshops of numerous blacksmiths. Further many tools and implements are made by the farmers themselves.

The following table gives an idea of the number of agricultural machines that have been in use on Syria's land between 1952 and 1956.⁽¹⁾

<u>Year</u>	<u>Tractors</u>	<u>Combines</u>
1952	977	453
1953	1,115	627
1954	1,454	661
1955	1,786	693
1956	2,074	922

Most of these machines have been in use in the Jezirah area where it would be difficult to cultivate the land otherwise, owing to the shortage of labor.

Experience, so far, shows that there have been great difficulties in providing spare parts and technicians when needs have called for replacement and repairs. Even

(1) The Directorate General of Information, Syria (Damascus: 1957), p. 75.

spare parts are not produced at home, and the limited number of repair shops are far from the fields where the machines are in use. Another difficulty is the high cost of fuel which adds to the costs that have been mentioned before.

We certainly do not expect agriculturual machines to be manufactured in Syria, at least in the foreseeable future. However, it is quite possible to provide for spare parts and the technical know-how at home. This would be possible if there is enough demand to give the incentive. It is not possible to have the machines produced locally in order to mechanize Syria's agriculture. Mechanization could depend on imported machines from the industrialized country which gives the best offer. Holland, for example, has mechanized agriculture but does not produce agricultural machinery at home.

However, there are certain prerequisites for mechanizing the cultivation of land which Syrian agriculture should provide for, whether machines are to be imported or provided at home. The use of machines calls for the consolidation of the fragmentary holdings, for enough credit to the farmer to buy modern tools or to rent the tractors and combines, technical training and guidance, for the extensive use of fertilizers, and, finally, for a market sufficient to sustain large-scale production. Land reform

provides for the optimum size of holding. Through co-operatives, that should come as a result of land reforms, the farmer would be able to use modern tools and agricultural machines on a rental basis. The government could provide for an extensive program of guidance, especially through the different rural schools. Fertilizers could be provided at home on a large scale rather than imported. (Further discussion of this point is given later.) The development in the industrial sector is very likely to insure a good market for large-scale production on the land.

The implication of the machine for the land in Syria is that it will revolutionize agricultural institutions. In addition, it should revolutionize the farmer's mentality. His adherence to old notions would break; dullness of mind and awkwardness of body would give way to curiosity and initiative. The machines and modern tools require different skills and techniques which only a disciplined and trained mind can cope with. Precision and exactitude are needed as well as good farm management.

The use of machines would revolutionize production also. Productivity per man and per hectare would increase. Quicker harvests would be realized. (At present wheat from the Jezirah comes to the market, while this crop is not yet harvested in the other parts of the country.)

This is of great importance to Syria because of its varied climatic conditions. Quicker action is needed in certain districts to take advantage of the rainfall season and to avoid destructions caused by the heat. A great deal of waste is taking place at present because the farmer cannot do otherwise with his primitive tools and simple implements. Lands are not cultivated as they should be, nor are the seeds sown as economically as possible. The Syrian farmer is a victim of the weather; mechanization would help him to become its master.

Machines have the power of cultivating different kinds of land that could not be put under cultivation through the use of simple tools and implements. (Hard soils in the Jezirah were put under cultivation with the use of machines, soils which could not have been cultivated otherwise.) Partial land exploitation would give way to maximum use. In other words, scratching the surface of the land with simple tools does not give the amount of production that would have been realized had machines been used to exploit the deep soil.

The labor shortage in Syria favors the use of machines and modern implements. Less labor is required on the land when mechanization takes place. Not only is this so, but the work of the farmer will be lighter. This gives more opportunity for women to take the job of men.

The latter would then be available for industrial employment.

Industry, therefore, by supplying machines, modern tools and implements makes out of agriculture an enterprise operating on the modern principle of large-scale production. In the meantime, it helps to make out of it a going concern by maintaining the productivity of the land, creating a market for agricultural products, by increasing the incentive of the farmer to produce, and eventually by making out of the farmer a businessman oriented to the modern means and methods of carrying on a business.

2. Fertilizers and Other Chemical Products

Fertilizers should be used on the land to increase and maintain its fertility. Greater quantities are needed with the use of machines. In fact, fertilizers are an essential item on a program for farm mechanization.

Chemical fertilizers are not produced in Syria. They have been imported recently on a modest scale to be used especially in the cotton regions. The following table shows the amount that has been imported annually: ⁽¹⁾

(1) The Central Bank of Syria, Annual Report, Op.cit., p. 63.

<u>Year</u>	<u>Amount (in tons)</u>
1953	11,337
1954	15,559
1955	25,011
1956	24,041

There are many possibilities for manufacturing fertilizers at home instead of importing them. With the presence of the various mixes locally, only the essential ingredients need to be imported. ⁽¹⁾ There are various kinds of straws and leaves of vegetables which could be used for the manufacture of fertilizers. Such manufacture would not only increase the productivity of the land but would also provide a market for farm products which now go to waste. Local manufacture could take place right on the fields where it is meant to be applied. ⁽²⁾ (It might be of interest to mention at this point that a plant for nitrate fertilizers, with a capacity of 44,000 tons per year, is included among the items of the Soviet-Syrian Economic and Technical Agreement of 12/11/1957.)

The application of chemical fertilizers to the land should be preceded by experimentation. Different

(1) The International Bank for Reconstruction and Development, The Economic Development of Syria (Baltimore: The Johns Hopkins Press, 1955), p. 72.

(2) Ministry of Agriculture, "Local Chemical Fertilizers", Agricultural Guidance Magazine (Damascus: Dec.-Jan., 1957-1958), p. 32.

kinds of fertilizers are needed for different kinds of soil and for planting of different crops, plants, and trees. Also, not all kinds of fertilizers should be applied in all seasons and for the same periods of time. (Here we notice also that the use of chemical fertilizers helps to make the mentality of the farmer flexible enough to cope with the requirements of the modern production techniques.)

The Syrian farmer realizes the importance of natural fertilizers, but he has to fulfill his requirements for fuel first.⁽¹⁾ The preparation of natural fertilizers for fuel purposes is an important industry on the Syrian farm. Housewives, with the help of their neighbors or employed women, work for several days to bring the fertilizer in a shape that helps its storage until the time of need. The development of the fuel industry, such as charcoal and fuel oil, could release almost all natural fertilizers for use on the land.

Besides maintaining the fertility of the soil, the Syrian farmer needs to assure the growth of the different crops and plants he raises. Many kinds of insects, plant diseases, and nuisable animals attack agricultural crops in the country. There are some pests which have been present in the fields living on their hosts

(1) Ibid.

for a long time, and others have recently appeared. (1)
These pests and diseases have had an adverse effect
on the general level of production, an effect which
could have been avoided through the use of insecticides
and pesticides. If the use of these chemical products is
to be promoted, local manufacturing should take place.
All that has been in use so far has been imported. (2)
Similarly, as is the case with the proposed local manufac-
turing of fertilizers, the mixes for the preparation of
insecticides are available at home and only few essential
ingredients are needed from abroad. (These make up for
only a small percentage of the volume imported.) (3)

3. A Market for Agricultural Products

The needs of the present industries from the
agricultural sector in Syria were implied in previous
discussions. Considering these needs from a different
angle, we can say that the industrial population needs
food from agriculture and the industrial establishments
require agricultural raw materials.

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- (1) Ministry of Agriculture, Agricultural Development
in Syria (Damascus: The Official Printing Press,
1956), pp. 91 - 92.
- (2) The use has been entirely confined to cotton.
- (3) The International Bank for Reconstruction and
Development, The Economic Development of Syria
(Baltimore: The Johns Hopkins Press, 1955), p. 72.

The industrial population in the country is only 100,000.⁽¹⁾ Due to their low income levels, the majority that belong to this group cannot afford to buy much manufactured goods. So we can say that, as far as the industrial employees are concerned, at present they make up a good market for agricultural products through their inelastic demand. This demand is a combination of direct demand for agricultural products, like the demand for vegetables, fruits, and legumes, and derived demand, such as the demand for wheat, because the worker demands bread.

It is expected that as the income of the average industrial employee increases, the first step he will take is to improve his diet. More variety will be included in his food budget - items like eggs, meat, fruits, milk and various kinds of vegetables that he was deprived of because of his previous low income level. The worker is more likely to spend a fifty piaster daily wage increase to buy apples rather than have it accumulate for a couple of weeks in order to buy a piece of cloth. He is also more likely to save it for a couple of days and buy a bottle of jam.

So, at least in the short run, the demand for food will be increased because of the demand of the

(1) The Central Bank of Syria, Annual Report, Op.cit., p. 66.

newly-employed people in industry added to the increased demand of those who were employed in industry before.

Industrial development therefore increases the total demand for food at the same time that it increases the variety demanded. It also increases the demand for food on the part of those who work in services. (Services grow along with industry.) In addition, the industrial movement, as it attracts rural people to cities, causes a change in the kind of food these people want. To the emigrants, a change in their food requirements is a part of their adjustment to the city life. Also at the initial stage of industrialization, an increased rate of growth in population takes place. This would serve as a demand additional to those mentioned before, and would be a further cause for extension of the market for agricultural products.

The pressure for food that the industrial development creates meets, in due time, with less people on the land occupied with food production. The reason is not so much emigration of rural people to cities as it is the reorientation in crop planting. It might be, on the other hand, due to increased efficiency in food production. (1)

(1) It would be interesting to note at this point that the simplest index to productivity in a country is to ask what proportion of the population in there are needed in agriculture to produce enough food for the whole country. In rich countries only 12 - 15 percent of the people are required to produce food for a standard of feeding that is twice as much better from that produced for the same number by 60 percent of the people in the underdeveloped areas. A.W.Lewis, Report on Industrialization and the Gold Coast (Accra: The Government Printing Department, 1953), p. 2.

Food is needed by Syrian industry not only for direct consumption by workers but also for use as a raw material. With the introduction of more food-processing industries, the demand for food for this purpose would increase. Syria has great potentialities for these kinds of industries, especially those which use dairy products and meat. ⁽¹⁾ The following industries might serve as an example: dried milk, condensed butter milk, cheese of different kinds, canned meat, sausages, and lard. The development of food industries in general, noted for their help to develop other types of industries in the country, offer a good market to agriculture.

Growth in the food industry, in addition to an increased number of establishments, might lead to a vertical and or horizontal expansion in the scale of production of those factories which are already in existence. In other words, more raw materials would be needed for the different processes in the same industry, and more raw materials would be demanded to have more production of the same process. In both cases demand for agricultural products would be increased.

The textile industry in Syria, serves as a good market for the cotton that is produced in the country.

(1) United Arab Republic, Information Department, Animal Resources in Syria (Beirut: 1958).

It also serves as a potential market because of the increase in its importance. The vegetable oil industry, and the other industries that would be dependent on it, promises the use of great quantities of cotton seed.⁽¹⁾

Cotton, at present, is the chief crop, other than food, that is demanded as a raw material by the Syrian industry. The plantation of other fibers on an increased scale is possible; fibers such as hemp, flax, and jute, assuming that there will be enough demand in the future which justifies their planting, Cotton seeds make up for 70 percent of cotton seed oil that is used in the vegetable oil industry.⁽²⁾ This industry encourages further the planting of different oil seeds such as peanuts, sesame, linseed, and sunflowers. It also gives more importance to different crops and fruits, the seed of which could be used for extraction purposes. Here we can note parsley, carrots, alfalfa, tomatoes, pumpkins, water melons, grapes, and apricots.

Reorientation in farm crops, as a result of industrial development, would encourage the farmer over the long run to experiment with the cultivation of different

(1) Discussion relating to this point was given before.

(2) The International Bank for Reconstruction and Development, The Economic Development of Syria (Baltimore: The Johns Hopkins Press, 1955), p. 360.

kinds of crops that were not common before. This means that the innovating spirit becomes more widespread on the land. Thus, in effect, the farmer would be calling on industry to start on a project to use the new crops he would have introduced. At this point, it is difficult to draw a line to show how much agricultural development is a result of industrial development or vice versa.

But, certainly, the majority of the farmers would not produce what they are not sure they can sell at profitable prices. Industrial development in Syria would serve to sustain farm prices. (This would be so assuming all factors that hinder industrial development are overcome.)⁽¹⁾ The increased support of the local market for farm prices would make up for many deficiencies that might result from depressed world market prices. That is, the increased importance of processing agricultural products before they are exported helps in two ways: increases industrial activity at home and assures better prices on the world market - and therefore greater foreign exchange earnings.

4. Increases the Income of the Farmer

Increased productivity on the land because of the use of machines, modern tools and implements, fertilizers, and chemical products to combat pests, plant

(1) These factors will be considered in the conclusion.

diseases and nuisable animals, increases the income level of the farmer. Machines and modern tools decrease the cost per unit and thus leave a good margin for profit. Other things being equal, the use of fertilizers and insecticides assures a regular crop and thus a steady income. But, speaking in general, the farmer will not have the incentive to produce if he is not likely to sell his output. And, we have seen above how industrial development creates a market for agricultural production.

Therefore industrial development leads to an increased regular production at low costs in agriculture, and, at the same time, insures a market for this production. As a consequence, the income of the farmer would increase and would not be subject to wide fluctuations. He would be in a position that would allow a margin of saving. Industrial development, again, would have had aided in the establishment of a cooperative system which would channel the savings of the farmer into productive use, no matter in what small amounts they are.

A cooperative system would help the farmer to accumulate his savings for investment, market his goods at least cost, and to buy his requirements at favorable prices. (Specialized cooperatives would develop with the development of agriculture. Examples are cooperatives for the sale of dairy products, sale of meat and eggs, for

storage and grading facilities, for the purchase of seeds, and farm tools and implements, and finally for supplying credit.)

Industrial development would then create the favorable atmosphere for the farmer to invest his limited savings. Present conditions do not permit him to do so. He is insecure. His state of insecurity comes from the system of land tenure, climatic conditions, inability to combat pests and plant diseases, and from the infiltration of political ideas that are creating a spirit of restlessness among the Syrian farmer. ⁽¹⁾ Under present conditions, he would rather hoard any amount of money that comes into his hands as insurance against uncertain future. Many of them cut down on their food consumption in order to save. (A farmer's wife often deprives her children of eggs or milk in order to sell these products and be able to buy a gold pound or gold earrings, assets which have the double virtue of being aesthetic and liquid.)

By bringing about a change in agricultural institutions and by changing the mentality of the farmers, industrial development makes the farmer save

(1) He does not know exactly what his situation is going to be in the future. Will the principles of the Arab Resurrection Party be realized as far as his relationship with the landlord is concerned; or will communist doctrines be in practice in the near future?

in order to invest. Once the results of his initial investment are realized, also through the support of industrialization, a process of reinvestment would take place on the land, thus leading to still higher income levels.

As the income level of the farmer increases, the proportion he would spend on manufactured goods would also increase. This would make more money available to the industrialists for investment. Increased industrial investment will in turn increase the income level of the farmer and here we can see clearly the perpetual interrelationship between industry and agriculture.

5. Commercialize Agriculture

Industrial demand for agricultural raw materials breaks the institution of self-sufficiency on the farm and induces the farmer to produce for the market. To give an example, many farmers contract at present with the owners of the sugar factory in Homs to supply the factory with sugar beets. If it were not for the demand of the sugar industry for this kind of crop, the farmer, most probably would have used his piece of land for the production of a food crop for his own use. Occasionally, some farmers plant their land in sunflowers to supply the vegetable oil industry. Also, during the cotton

boom, before and during the Korean war, many small farmers shifted from planting cereals to cotton planting. Many of these farmers at present use their land during the summer season to plant tobacco rather than plant, for instance, tomatoes and eggplant.

With the introduction of more food-processing industries and other industries that use agricultural products as raw materials, there will be a tendency on the part of the farmer at first to limit the variety of the crops he produces and then gradually to specialize even more as growing industrial demand makes specialization ever more possible.

Specialization means that the farmer must search for markets. Assuming that he is not going to be a monopolist, he would then face many competitors. The competition might be on the basis of price or quality. Under both circumstances he would have to make many calculations which he did not make before. It follows that his need for knowledge of business methods and the market process will be quite essential.

Leading the farmer to specialize and providing modern tools and implements for his use, industrialization would put him in a critical position. First, he would have to study the market to make his decisions; second, he would have to manage accordingly the proper use of the land

to get the maximum benefit. He would be faced with different alternatives. To plant this crop or that one, or to use this factor of production on the land or the other, would be constant choices facing him.

Rational decision making and proper management characterize agriculture as an enterprise. Results would be more tangible. Outsiders, other than landowners and farmers, who have capital for investment would be able to have material on hand by which they can make their judgment of whether an agricultural project would be profitable or not in the same manner as they judge an industrial project.

Agricultural projects, mostly for the production of wheat and cotton, have been undertaken in the Jezirah area by private and corporate effort.⁽¹⁾ The use of machines and chemical fertilizers made this feasible.⁽²⁾ However, great difficulties are being faced. Most of the private projects have been given up, and the corporations have decreased their effort due to the debt that has been accumulating ever since they started their work.

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- (1) Mumar Bashi & Brothers and Asfar & Najjar are two well known corporations that have undertaken agricultural projects in the Jezirah area. They have leased land from the heads of the beduin tribes on the basis of paying a maximum of 15 percent of what they produce.
 - (2) In addition to what was noted before about these difficulties, transportation facilities are a great hindrance, and the beduins in the vicinity of the projects make a good deal of trouble.

This experience shows that efforts to make out of agriculture a business in Syria have met with many frictions. These frictions are due to the inability of industry to give the support that is required of this sector of the economy, and to the absence of a suitable degree of agricultural development.

CONCLUSION

We have seen so far the close interdependence of agriculture and industry at present in Syria and how it is likely to evolve in the future. But future interdependence would not work out smoothly as long as there are limiting factors to the development of agriculture and industry in the country. To have a clear idea about the situation, the crucial factors are noted briefly as follows:

A. Limiting Factors for Agricultural Development

1. Irrigation Facilities

Water sources are available for the realization of the big irrigation projects that are listed on the government irrigation program. These projects must be carried out.

2. Transportation Facilities

There is a necessity for roads to link the new agricultural districts together and with the main roads. A railway to join the northern district with Latakia Port is also necessary.

3. Availability of Hand Labor

Rural population densities could be improved. There are areas not used because of lack of people, while others are overcrowded. Even proper redistribution would not solve the problem, since people needed to work on the

land are more than the country can supply.

4. Availability of Agricultural Credit

Small farmers still suffer from money lenders. The Syrian Agricultural Bank should provide more short-term credit to small farmers. The best long-run solution, however, is the installation of a cooperative system.

5. Land Redistribution (P.23)

Small holdings - less than 10 hectares represent 13 percent of total, medium - between 10 and 100 ha. 36.5 percent, large - more than 100 ha. 30 percent, and public domain 20 percent. The need is to limit land holding and to distribute the public domain to the landless.

6. Lack of Modern Tools and Technique p.24

Modern agricultural tools and implements are needed to replace the primitive and simple tools currently in use. Research, guidance, and education are necessary on a wider scale.

B. Limiting Factors for Industrial Development

1. Mineral Resources

The different kinds of minerals the country has is not fully known as yet. Chrome, manganese, copper, and lead are known to be available but in limited quantities. Natural gas is estimated to exist in commercial

quantities in the Jezirah area. There are also good prospects for oil. An extensive program for mineral surveys is an item of the Soviet - Syrian Economic and Technical Agreement of 12/11/1957.

2. High Price of Fuel and Power

The price of oil is based on ex-Tripoli price plus transportation costs, and this formula means high fuel costs. Negotiations with oil companies to revise prices are needed. An oil refinery is under construction at Homs which in operation will help to solve the problem of high fuel prices. Most industrial establishments have their own electric dynamos. Prices of electricity from public utilities are high because of small-scale of production. Electricity supply as required would be available when the different hydro-electrical projects, carried out in conjunction with irrigation, are realized.

3. Low Degree of Technical Know-how and Lack of Trained Labor

Industry is always in danger of interruptions due to lack of local technicians. Furthermore spare parts are not available locally and repair shops are few. Labor productivity is low due to lack of training and to the state of management and working conditions. There is need for more extensive programs of vocational training.

4. Shortage of Capital and Adequate Credit

Facilities

Long-term credit for industrial purposes is not available, save for too few government-guaranteed loans. An industrial bank is planned by the government for the near future. The money market is still limited, and corporate financing is not as common as it should be for rapid industrial growth. There is also a shortage of savings institutions, and saving accounts at the banks are relatively small.

5. Limited Market

The inability of the Syrian market to absorb mass production should be mitigated by the unity with Egypt. Agricultural and industrial development work together at home to extend the local market; government initiative is needed to find outside markets.

Each sector, industry and agriculture, should be considered alone and a plan ought to be developed for its growth. But the separate plans should draw on a study that relates agricultural and industrial development together. The development of either cannot be separated from the other in a balanced economy. They both, as they develop, lend each other support and stand together as the backbone of economic development as a whole.

There are good institutions in Syria that are ready to work out plans for the development of the country and to supervise their execution. There is the High Economic Council which has already started on the preliminary work needed for the economic development of the country, work such as a study of the resources of Syria and the study of projects which are in urgent need, projects such as irrigation, reclamation, and drainage. The Economic Development Board of Syria is also working under the direction of the High Economic Council and is at present responsible for the implementation of a six-year development plan which includes projects entirely along the lines of public utilities.

However, an overall plan for the economic development of the country is not developed as yet. The reason might be that this would be realized after all preliminary studies have been made. It might have been delayed also due to the unity with Egypt which demands a unified plan for the economic development of the two countries together. As a result, things need to be revised and the potentialities of Syria and Egypt, taken together, should be considered.

Nevertheless, short-term plans could be developed for either industry and agriculture in the light of their interrelationship in the short run and possible interrelation over the long run, basing the latter judgment on the experience of the developed countries. This would avoid

many mistakes that have been experienced in the past, a result of lack of planning, and make the country benefit from the experience of the other countries which have developed before - a great help to realize development at an optimum rate.

BIBLIOGRAPHY

BOOKS

- Bonnie, Alfred, The Economic Development of the Middle East. London: Routledge and Regan Paul Ltd., 1953.
- Buchanan, Norman S. and Ellis, S. Howard, Approaches to Economic Development. Philadelphia: William F. Fell Company, 1955.
- Bureau des Documentations Syrienne et Arabes, Etude sur L'Agriculture Syrienne. Damas: 1955.
- _____. Etude Sur L'Economie Syrienne 1956. Damas: 1957.
- _____. L'Industrie Syrienne. Damas: 1955.
- Chang, Pei-Kang, Agriculture and Industrialization. Cambridge: Harvard University Press, 1949.
- Dajani, Burhan, The Arab Economy. Beirut: 1957.
- The Directorate General of Information, Syria -- Economy and Finance. Damascus: 1955
- _____. Syria. Damascus: 1957.
- Food and Agricultural Organization of the United Nations, The State of Food and Agriculture. Rome: 1955.
- Gibbs, Sir Alexander and Partners, Economic Development of Syria. Damascus: The Syrian Government Press, 1950.
- Hashim, Zaki, Industrialization and the Decline of Agriculture in Underdeveloped Areas. Le Caire: Imprimerie Mondiale, 1952.
- International Bank for Reconstruction and Development, The Economic Development of Syria. Baltimore: The Johns Hopkins Press, 1955.
- Kyle, Money, Agricultural Development in Syria. Beirut: Faculty of Agricultural Science at the American University of Beirut, 1956.

- Lewis, W.A., Report on Industrialization and the Gold Coast.
Accra: The Government Printing Department, 1953.
- Martin, W.J. and McColly, H.F., Introduction to Agricultural Engineering. London: McGraw-Hill Book Co., Inc., 1955.
- The Ministry of Agriculture, Agricultural Development in Syria.
Damascus: The Official Printing Press, 1955.
- The Ministry of National Economy, National Income from Agriculture 1952-1957. Damascus: 1957.
- _____. Statistical Abstract of Syria. Damascus: The Government Press, 1956.
- el-Naggar, Said, Industrialization and Income with Special Reference to Egypt. Cairo: Fuad University Press, 1952.
- Samman, Ahmad and Ashi, George, Labor Legislation. Damascus: Syrian University Press, 1954.
- Samman, Ahmad, Lectures About Syria's Economy. Cairo: The High Institute of Arab Studies, 1955.
- United Nations Department of Economic Affairs, Summary of Recent Economic Development in the Middle East, 1952-1953. New York: 1954.
- _____. Economic Development of the Middle East, 1954-1955. N.Y.: 1956.

REPORTS

- Hamour, Abdel-Ghani, The Syrian Economy During 1956. A Report Prepared by Damascus Chamber of Commerce. Damascus, May 1957.
- Ibrahim, Bulos Ibrahim, Development of Cotton Cultivation in Syria and its Effect on the Syrian Economy. A Report Prepared by the Ministry of Agriculture. Damascus, 1958.
- The Central Bank of Syria, Annual Report. Damascus: 1955.
- The Ministry of Finance, Annual Report. Damascus: 1956.
- The Ministry of National Economy, The Syrian Industry. A Report Prepared by the Directorate of Industry. Damascus, 1957.

United Arab Republic, Information Department, Animal Resources in Syria. Beirut: 1958.

_____. Future of Agriculture in Syria. Beirut: 1958.

ARTICLES

"Agricultural Development in Syria", el-Hadaf, No. 3182. Beirut: May 12, 1957.

Buchanan, Norman S., "Deliberate Industrialization for Higher Income", Economic Journal. December 1946.

Dajani, Burhan, "The Soviet Syrian Agreement", Middle East Forum. Beirut: December 1957.

"Economic Agreement Between Syria and U.S.S.R.", International Monetary Fund. Vol X, No. 23. December 1957.

"General Economic Development in Syria", Aleppo Chamber of Commerce Economic Yearbook. 1957.

Ibrahim, Bulos Ibrahim, "Cotton in Syria", Aleppo Chamber of Commerce Economic Yearbook. 1956.

_____. "Cotton Plantation in Syria", Aleppo Chamber of Commerce Economic Yearbook. 1955.

Industrial Bank of Egypt, Research Department, "The Role of Industry in Syria's Economy", The Lebanese and Arab Economy. No. 65. Beirut: May 1958.

"Industrial Development in Syria", el-Hadaf. No. 3174. March 18, 1957.

The Ministry of Agriculture, "Local Chemical Fertilizers", Agricultural Guidance Magazine. Damascus: December-January 1957-1958.

Mumar Pasha, Pierre, "Cotton Exports and Syria's Future", Aleppo Chamber of Commerce Economic Yearbook. 1955.

Sewoufi, Rafic, "Means for Agricultural Development in Syria", Damascus Chamber of Commerce Economic Yearbook. No. 3. Damascus: 1952.

el-Shareef, Munser, "Economic Development in Syria, a Private Initiative", el-Hadaf. No. 3178. March 15, 1957.