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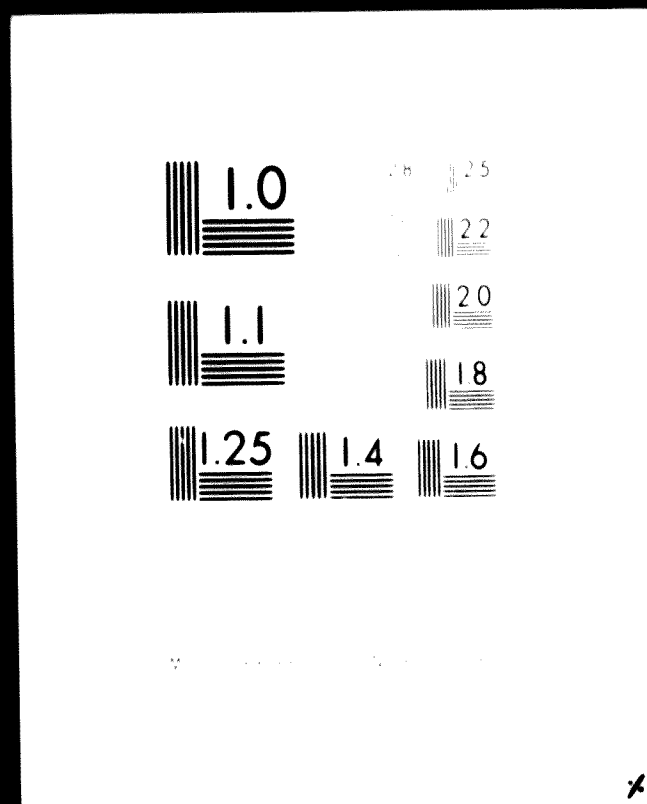
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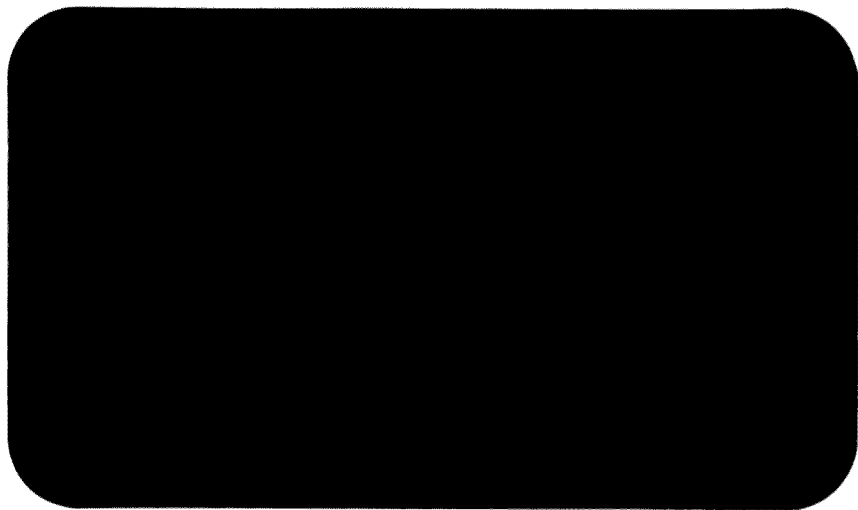
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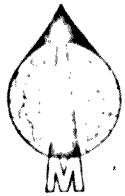
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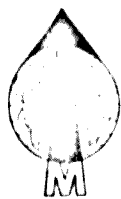




INDUSTRIAL SURVEY OF JORDAN
For
THE UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

VOLUME I

MINER & ASSOCIATES



INDUSTRIAL SURVEY OF JORDAN

VOLUME I

UNIDO CONTRACT NO. 71/77,

PROJECT NO. SF 71/3450

For

THE UNITED NATIONS

INDUSTRIAL DEVELOPMENT ORGANIZATION

By

THOMAS H. MINER & ASSOCIATES, INC.

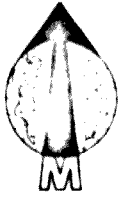
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INDUSTRIAL SURVEY OF JORDAN

This report has been prepared in three volumes:

VOLUME I

contains the Introduction; Section I, Architecture of the Economy; and Section II, Analysis of Industrial Development Potential.

VOLUME II

contains Section III, the tabulations of raw statistical data (printouts).

VOLUME III

contains Section IV, Analysis of Computerized Data.

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VOLUME I:
INDUSTRIAL SURVEY OF JORDAN

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FORMAT OF THE REPORT AND ANALYSIS OF DATA

The introductory pages of this report are intended to provide a record of how the Survey, particularly the census-taking operation, was conducted. It outlines in detail the method employed and the man-weeks expended, and should be useful in planning future surveys.

SECTION I describes and analyzes the economy of the East Bank as a whole and of the industrial sector in particular.

SECTION II analyzes the economy of the East Bank and evaluates the potential for developing its industrial sector in the light of available macroeconomic data and information gathered during plant visits and interviews with industrialists, government officials, bankers, and others; i.e. the technical survey.

SECTION III consists of tabulations of raw statistical data derived from the census, i.e. computer printouts.

SECTION IV analyzes the economy in the light of the computerized census data presented in the preceding section.

OBJECTIVES

- 1 To analyze the present structure and condition of Jordan industry and economy for the purpose of identifying and establishing priorities for expansion and new investment opportunities for industry.
- 2 To measure the value added to the economy by the mining and industrial sectors by a preparation and analysis of their components in both their census and national accounts contexts.
- 3 To present an analysis of the structure of industry and value added in such a manner as to provide the major input to future plans for maximizing the industrial development potential of Jordan.
- 4 To train Jordanian counterpart personnel in the modern techniques and methodology of industrial census-taking and analysis.

METHODOLOGY

Survey Area

The Hashemite Kingdom of Jordan is composed of all of the territory included within the Armistice Line of 1948-49 to the west, the Syrian border to the north, the Iraq and Saudi Arabian borders to the east, and Saudi border continuation to the south -- and consists of eight political divisions in all:

Nābulus	Irbid
Al Quds	Al Āsimah
Al Balqa	Al Karak
Al Khalil	Ma'an

The West Bank is composed of all of the territory of the Kingdom lying to the west of the 1967 Cease Fire Line, i.e. the territory presently under Israeli military control.

The East Bank is composed of all of the territory of the Kingdom lying to the east of the Cease Fire Line, and includes the political divisions of Al Āsimah, Al Balqa, Al Karak, Irbid, and Ma'an.

The Census of Jordan Industry and the technical evaluation made in connection with the Jordan Industrial Survey cover industry located in the East Bank area only.

Analysis of existing macroeconomic data involves some data pertaining to the Kingdom of Jordan as well as data pertaining to the East Bank only. In some instances, East Bank data could not be separated from data for the entire Kingdom; in other instances, data for the Kingdom is pertinent to the Survey.

Data Collection Methods

Survey data was collected by three discrete methods:

- 1 Census taking of industrial establishments having five or more employees.
- 2 Technical evaluation of individual establishments representing, in aggregate, an 80% sample of industrial output (computed at sales value).
- 3 Review of macroeconomic data available from government and other sources, including laws pertaining to business and industry, labor and political climate, and natural and human resources.

Manning the Survey

As shown in EXHIBIT A following, the Survey was conducted by contractor's field staff members assisted by Jordanian counterpart trainees appointed by the Minister of National Economy, and supervised directly by the Director of the Jordan Center for Industrial Development and the Chief of the Economic Section of the Department of Statistics.

Training Counterpart Personnel

Counterpart personnel were systematically trained in the techniques of industrial census-taking and analysis by instruction sessions conducted in formal classroom periods, seminars, and workshops, and by continuous on-the-job training. Trainees participated in each step of planning and, under the direction of the supervisors mentioned above, were wholly responsible for executing the census-taking function.

INDUSTRIAL SURVEY OF JORDAN
MANNING SCHEDULE

EXHIBIT A

Professional Staff Members	1972												Man-Weeks	
	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Field	Home Office
Project Director - Field													12	
- Home Office														26
Chief Economist - Field													8	
- Home Office														20
Systems Analyst - Field													12	
- Home Office														10
Engineer - Field													10	
- Home Office														7
Translator-Accountant - Field													21	
- Home Office														11
Economic Analyst - Field													74	
- Home Office														63
Average Number of Staff Members - Field	1.2	1.3	1.4	2.3	3.3	3.6	4.4	5.3	3.2	2.0	2.1	1.6	1.9	
- Home Office	2.1	1.1	1.2	2.2	1.0	0.0	0.0	0.0	1.1	1.4	2.4	3.4	4.2	1.2
Average Number of Counterpart Trainees Assigned to Project During Each Week	0	1	1	1	1	1	1	1	1	1	1	1	1	1
														280

- In addition to the foregoing, an average of six data processors worked intermittently on the project for an estimated total of 72 weeks. The Director of JCID and the Deputy Director of the Statistics Department worked part-time during the entire period of field work.
- Man-weeks in Amman computed to the nearest whole week and down to 74.
- Man-weeks in the field, including travel and survey stops in Vienna and Beirut add down to 77.

A total of 93 hours of formal instruction sessions were held, as follows:

<u>January-February</u>	6 classroom periods	15 hours
Subjects	Introduction to Industrial Census Technology Objectives of the Survey Work Plan Preliminary Design of Questionnaire Sampling Plan	
<u>February-March</u>	12 seminars, 1 workshop	42 hours
Subjects	Design of Technical Questionnaires Introduction to Computer Hardware and Software Organization Computer Methods Data Capture for Computer Processing Drawing Random Sample of 30 Companies Introduction to Census Technology for Newly Appointed Trainees Interviewing Techniques	
<u>April-May</u>	1-day workshop	6 hours
Subjects	Detailed review of all the survey steps involved, from the point at which the completed questionnaire is turned in by the interviewers through the point at which data is put on a master computer tape. The following steps were simulated: Editing Translation Coding 4-digit ISIC 6-digit ISIC Key punch preparation Key punch verification Computer test runs for completeness and correctness Resolving computer error messages Transfer of data to master tape and data printout.	
<u>August</u>	5 instruction periods	30 hours
Subject	Techniques of Analyzing Census Data.	

In total, 63 hours of formal training sessions were held during the field operations phase of the census, and 30 hours during the period of report drafting.

The analytical phase of the survey was carried out in the United States because the necessary computer facilities were not available in Jordan. It was found impractical to bring counterpart trainees to the U.S. to participate in the work. In order to eliminate what otherwise would have been a short-fall in the training program, the Chief Economist returned to Jordan in mid-August, at which time he conducted five six-hour workshop training sessions which covered all phases of the analytical techniques used in the survey.

Steps in the Census

The steps outlined below were followed in the execution of the census:

- 1 Research was performed on the most recent industrial census methodology as used in the U.S. and in selected underdeveloped areas of the world.
- 2 Objectives of the census were identified.
- 3 Operating schedules and work plans were drafted.
- 4 Computer soft- and hardware available in Jordan were examined and evaluated.
- 5 Pre-census and followup publicity programs were drafted and implemented.
- 6 A census questionnaire for use in a sample census was drafted in both Arabic and English. An interviewer manual, EXHIBIT C, page 16, was drafted which defined and explained terminology used in the sample questionnaire.

- 7 A random sample of 30 companies was drawn; interviewers were organized into three-man teams which executed the census-taking procedure for the sample census.
- 8 The data processing system which had been designed in preliminary form and the sample questionnaire were redesigned on the basis of analysis of the results of the sample survey. The redesigned questionnaire, referred to hereafter as the Standard Questionnaire,* consists of a basic set of question sheets which were used for all 589 establishments in the survey and a financial appendix which was used only for large companies -- companies having 30 employees or more, or JD 50,000 net sales or more. Appendix data was gathered for 56 large companies.
- 9 Interviewers were organized into two-man teams and interviews of industrial establishments were conducted, using the standard census questionnaires.
- 10 Computer programs to edit and prepare questionnaire data for tabulation and programs for tabulating data were prepared and test runs made, using data from the sample census.
- 11 Completed Arabic language census forms were audited for completeness, reasonableness, and accuracy of data, translated into English, re-audited, edited, coded, and the data transferred to coding sheets.
- 12 Verified and coded data was transferred from coding sheets to punch cards and then to computer tapes.
- 13 Programs for processing and analyzing taped data were drafted and tested, using data from the sample survey.
- 14 Final reports of data processed in accordance with the tabulation plan were produced.

* Standard Questionnaire: See EXHIBIT D, page 33.

Technical Assessment of Industry

Section VII of the questionnaire was designed to elicit information concerning individual company problems, the views of management on government policy vis-à-vis industry, and other matters, on a voluntary basis.

The objective of this inquiry was to gain at first hand a general impression of the condition of Jordan industry, its plants, equipment, and general operating efficiency; to uncover opportunities for developing new industry and new outlets for the products of existing industry; and to uncover problem areas and opportunities for enhancement of the industrial sector of the economy.

Initially an attempt was made to gather this data for the major companies in the industrial sector in the course of the regular census-taking procedures. Very few companies responded, however, and it was found necessary at about the mid-point of the survey to intensify the level of inquiry. A staff engineer was sent to Jordan by the contractor for this purpose.

A program of plant visits and interviews was conducted on a sampling basis by the staff engineer in 45 man-days. In order to make optimum use of the time available, the following method was used for selecting a sample of Jordan industry for evaluation:

- 1 The industrial firms for which, at the time of the survey, census data had been obtained, were arrayed in order of size as measured by net sales and aggregated until 70% of the estimated national industrial sales volume (excluding electric power sales) was reached. This procedure produced a list of 20 of the major companies of Jordan.
- 2 Two infrastructural operations, Jordan Electric Power Co. and dock installations of the Port of Aqaba, were arbitrarily included in the sample because of their importance.
- 3 Twelve other firms of medium or small size were added to the sample in order to cover a wider variety of industry and a broader mix of firm size.

Visits were made to a total of 45 plants operated by 34 firms whose sales aggregate 71% of the total industrial sales of Jordan. The composition of this cross-section sample is shown in EXHIBIT B, page

INDUSTRY SAMPLE
FOR
TECHNICAL ANALYSIS

<u>INDUSTRY</u>	<u>Companies Interviewed</u>	<u>Plants Visited</u>	<u>Employees</u>	<u>Assets (JD 000)</u>	<u>Sales (JD 000)</u>
<u>Raw Materials</u>					
Stone, gravel, phosphate and cement	<u>4</u>	<u>5</u>	<u>1,695</u>	<u>14,257</u>	<u>5,053</u>
SUBTOTAL	4	5	1,695	14,257	5,053
<u>Intermediates</u>					
Textiles	1	1	52	74	69
Leather	1	1	204	695	517
Paper & Paper Products	2	2	262	1,559	375
Construction Materials	4	4	155	1,800	1,285
Animal Feed	2	2	91	1,107	1,913
Flour	2	2	76	921	855
Petroleum Products	1	1	1,080	10,111	6,557
Electric Power	<u>1</u>	<u>1</u>	<u>787</u>	<u>5,847</u>	<u>2,036</u>
SUBTOTAL	14	14	2,631	22,114	13,607
<u>Consumer Goods</u>					
Shoes and Clothing	4	6	361	651	558
Food, Beverages & Tobacco	9	13	918	4,184	3,988
Soaps, Detergents, Cosmetics, Pharmaceuticals	2	4	294	909	1,256
Storage Batteries	1	1	343	699	586
Cookware	1	1	8	5	10
Printing	<u>1</u>	<u>1</u>	<u>121</u>	<u>28</u>	<u>52</u>
SUBTOTAL	18	26	2,055	6,476	6,450
<u>TOTAL</u>	<u>34</u>	<u>45</u>	<u>6,381</u>	<u>42,847</u>	<u>25,110</u>

Assembly of Macroeconomic Data

Publications and documents cited in the following Bibliography were reviewed and a number of interviews were held with government and business leaders in the process of obtaining and analyzing general economic information.

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RELIABILITY

General Reliability

Due to absence of any accounting records in some establishments and only incomplete or inaccurate records in others, it was found necessary to construct census data for some establishments from such raw data as invoice files. In some instances, it was necessary to force a balance in such data as raw material consumption. The most common data deficiency which necessitated this procedure was lack of inventory records. Fortunately these deficiencies were confined primarily to small establishments. Statistical reliability is measured in comparative terms and since there is no prior comparable census of Jordan industry, there is no base for measuring reliability. It is estimated that, on balance, data present on the three-digit (ISIC code) level is well within $\pm 10\%$ reliability limits; four-digit data is within $\pm 15\%$ limits.

Level of Coverage

Every effort was made to ensure that the census frame was as complete as it could be made. A list of 730 industrial and mining establishments was provided by the Department of Statistics and was used as a base for establishing the population frame for the survey. Fifty-four automotive repair shops were deleted from the survey list, since they are service establishments and not eligible for inclusion.

In the course of the census, the initial list was further reduced by elimination of 130 establishment names for the following reasons:

19 establishments could not be located and were presumed to be out of business.

39 establishment buildings were located, but the firms were found to be no longer in business.

22 establishments had changed form so that they no longer operated as they had when the list was originally drawn. The following causes were cited:

- o Name changed - company included in survey under new name.
- o Merger, consolidation or sale - company data included in survey under new identity.
- o Enterprise changed the nature of its activity so that it was no longer eligible for inclusion in the survey. For instance, a former manufacturer of truck bodies now functions only as a repair garage, which is a service.

50 establishments had fewer than five employees at the time of the survey and were therefore ineligible for inclusion.

The final census frame includes 40 establishments which were not on the original list due to error; change in identity, form, or product; size; or because they are new enterprises.

The final census frame consists of 589 industrial and mining establishments.

The completeness of the census may have been adversely affected by characteristics and circumstances peculiar to the quarrying industry. Sixty-five quarries were operating at the time of the survey and their data is included. Twenty-three quarries were not operating or were not found. There may be small unlicensed quarries operating in remote parts of Jordan undetectable by the census. Intermittent operation is apparently characteristic of Jordan quarries.

A regulation prohibiting blasting within certain limits in the Amman area was put into effect during the census, which shut down a number of operations. For the foregoing reason the quarry population is not precisely determinable.

The census identified quarry production in excess of JD500,000. It is estimated that, on balance, the induced error of omission by quarry production volume is accurate within a 20% plus or minus limit.

For all industrial sectors, it is estimated that errors of omission in coverage would be confined to very small enterprises and that in aggregate they would not exceed 5% of the total number of establishments or 1% of the total value added by the industrial sector.

Processing Accuracy

Every effort was made to assure a high level of accuracy in processing census data inputs. The following procedures were carried out:

- o Questionnaires were drafted on a co-project basis, with the interviewer (counterpart trainee) participating, to the end that they would have as complete understanding as possible of the meaning of the terminology and the purpose of each question.
- o Questionnaires were originally drafted in English, translated to Arabic and retranslated to English to minimize errors arising from language problems.
- o An interviewer's manual was prepared which gives definitions and explanations of terminology used (EXHIBIT B). As each questionnaire was completed in the field it was returned to the census office, where it was checked for completeness, accuracy, and reasonableness of data. Approximately 60% of the large companies' and 30% of the small companies' questionnaires required revisions or additional data.
- o Checks were made on a 20% sampling basis to determine whether or not interviewers had actually obtained their data on the premises of the establishment covered by the questionnaire.
- o Each bit of data on questionnaires was transferred to summary sheets where it was manually checked against questionnaires by a staff member.
- o Data from summary sheets were key punched on tabulating cards, which were subjected to automatic key punch verification.
- o Cards were run through a programmed editing process on the computer which rejected incomplete cards and cards which contained errors; deficiencies were rectified; and cards repunched as required. Editing runs were repeated until a zero error point was reached before computer tapes were made.

It is estimated that there is less than 2% error attributable to the data handling procedure. Such error would occur only if two people, acting independently, misread, in the same way, the same bit of data from the same questionnaire, and if the error could not be detected by balancing procedures.

Security of Data Individual establishment data was treated as confidential in keeping with the assurances given to the industrial community by the Ministry of National Economy. Questionnaires were executed only on the premises of the various establishments and were returned each night to the survey office for safe keeping. No firm names are used in published reports. Data from such single establishment industries as Petroleum Refinery, Cement, Tannery and Chemical/Mineral Mining is self-identifying; it cannot be used in the published report without disclosure. However, most of these establishments are large corporations whose data is available in published annual reports so that such inadvertant disclosure should have little effect on the security and confidentiality of their operations.

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APPENDIX I. STANDARD UNITS OF MEASURE

INDUSTRIAL CENSUS OF JORDAN INTERVIEWERS' MANUAL

INTRODUCTION

The census in which you are participating is being conducted at the request of the Jordan Government under the direction of LEONAS H. MINER & ASSOCIATES, INC., Chicago - Illinois, USA, under contract with United Nations Industrial Development Organization - Vienna, Austria.

In conduct of the census, the Contractor (MINER) is immediately responsible to the Ministry of National Economy as represented by the Jordan Center for Industrial Development and the Statistics Department.

The importance and potential value of the census to the economy of Jordan cannot be overstated. It will not only be a catalog of the manufacturing, mining and quarrying enterprises in the Kingdom but it will analyze the strengths and weaknesses of the economy, company-by-company and industry-by-industry. The end-product of the analysis will be a report which will be useful in improving and expanding the industrial sector of the economy. Primarily it will indicate ways in which the Government of Jordan can assist individual companies and individual industries to grow and prosper.

The information you obtain from each company will be held in strict confidence. You will each be given identification papers authorizing you to obtain this information; however, the degree of cooperation and the quality of information you obtain from each company management will depend, in large measure, on the fact and diplomacy you exercise in the course of your interviews. You can make your job difficult or easy by your attitude toward company management. Two points are important to bring to the attention of the management of each company you interview:

1. The long range objective of the Census is to find ways in which the Government can help industry.
2. The information will be held in strict confidence - will not be disclosed to other branches of Government, competitors or to the general public.

GENERAL INFORMATION

1. Training. Each interviewer will receive a minimum of two weeks intensive training which will cover the objectives of the census, the method of collecting and tabulating data, terminology used in the questionnaire, checking procedures, data processing and analysis procedures.

2. Scope. There are approximately 676 establishments to be interviewed - 330 with 5 to 9 employees, 346 with 10 or more employees. Data will be analyzed according to this size breakdown. Enterprises with less than 5 employees will not be included in the census.
3. Interviewing Teams. The interviewers will be organized into two and three-man teams consisting of an "Economist," an "Accountant" and an "Engineer." These titles refer to the responsibility each man will bear in the data collecting process. To the extent possible the work assignments will be made to fit each individual interviewer's training and experience. However, it is improbable that a perfect fit will be achieved. For instance there will be instances in which interviewers with engineering experience will be assigned to collecting economic or accounting data. Team members will be rotated so that at the same time two or three men will not be together thru the entire interview period.
4. Publicity. A pre-census publicity program was undertaken in January to acquaint the industrial sector with the planned census. To date, five press releases have been issued, four radio and two TV announcements have been made. In February a letter from the Prime Minister outlining the purposes of the census and guaranteeing the secrecy of data was sent to each industrial establishment. An appointment to call on each establishment will be made by phone in advance of each interview. If an establishment has no phone a personal call will be made to set-up a mutually convenient time for the interview. "Cold" interview calls will be avoided.
5. Transportation. Within Amman transportation will be by taxicab at established rates to and from the industrial establishment. The Census Headquarters, in the Department of Statistics Office, will be the point of departure and return for all interviews.

Transportation to outlying cities will be arranged on a city-by-city, team-by-team basis.

Living expenses while away from Amman will be compensated at a rate of JD _____ per day for meals and lodging.

All team travel will be pre-planned and approved by the Project Director.

6. Interview Schedule. A weekly interview and work assignment schedule will be prepared and published each Wednesday for the ensuing Saturday-thru-thursday week - the interview day will start at 8 am. with a brief meeting at the Census Headquarters and continue at an establishment office. The interview will follow the office hours of the establishment at which he is working until the interview is completed.

7. Custody and disposition of questionnaires. Completed questionnaires will be filed with a copy in the headquarters office. A depository will be provided to hold uncompleted questionnaires overnight on evenings or holidays, at all times the questionnaires should be kept in your personal custody if not in the office or depository.
8. Questionnaires. Questionnaires will be filled-in only by the legally authorized interviewer, in pencil - in his handwriting, only data obtained from the establishment concerned, on the premises of the establishment, will be entered. QUESTIONNAIRES whether they are process or completed are the property of the Jordan Government.
9. Checking of data. Completed questionnaires will be subject to several measures and auditing procedures:
 - a. The primary responsibility for accuracy rests with the interviewer. He must work conscientiously to avoid errors and check his data frequently enough to assure its reliability. He must be alert to the possibility of being given erroneous information either thru carelessness or by design.
 - b. Questionnaires will be examined for reasonableness of data. For example if an establishment produces 10,000 tons of finished product but consumes in aggregate only 8,000 tons of raw materials there is an apparent discrepancy in the data which must be checked.
 - c. Tests of certain key data will be run on the computer. These tests will compare our new data with known or standard deviations. For example if an establishment in a certain industry shows markedly higher (or lower) labor productivity rate than other establishments in the same industry i.e. its productivity rate falls outside the deviation curve which is standard for all establishments, an explanation will be sought.

TERMINOLOGY

"Establishment" A productive industrial unit engaged predominantly in one identifiable class of economic activity, at a single physical location, for which separate or separable physical and financial records are kept.

"Industrial Unit" A manufacturing plant, mine or quarry - "Manufacturing" shall include manufacture of parts to make an intermediate and/or primary product. "Mine or quarry" shall include any natural resource extractive unit.

SECTION II. EMPLOYMENT AND EARNINGS

- 1) Direct Labor. Workers engaged in fabricating, processing, assembling, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial services and auxiliary production for the plants own use (e.g., power plant).
- 2) Indirect Labor. Personnel engaged in supervision up to but not including administrative employees, sales, sales delivery, advertising, credit, collection, inspection, installation and service of own product, watchman services, clerical and record-keeping.
- 3) Administrative Employees. Employees engaged in the top level functions of planning, policy making, financial decision making, purchasing, legal activities, and general resource allocation.

Any employee engaged in direct, indirect labor, and administrative activities should be classified in that category in which he spends the majority of his time. Note that working proprietors are not included in any of these three categories but are reported on a separate line.

- 4) Labor Hours. The total number of hours actually spent by employees at work, including waiting time and work breaks. Overtime is included and recorded in terms of actual hours spent at work not in terms of time paid for. Vacation, holiday, casual or sick leave should be excluded. If man-hours are not available, convert man-days to man-hours by multiplying by eight.
- 5) Wages and salaries Paid. This includes all payments, whether in cash or in kind, made by the employer during the year in connection with work done, to all persons included in the count of employees.

- 6) Supplements to wages and salaries. This item covers payments made by the employer on behalf of his employees which are normally considered in national accounting practice to form part of employees' income but are not part of wages and salaries. Examples are employers contribution to social security schemes and pension funds.

SECTION III. GROSS RECEIPTS

- 1) Ex- Factory. Total sales of the establishment's product exclusive of delivery costs and indirect taxes.
- 2) Industrial services. This item includes the receipts, other than those arising from the shipment of goods, for work done for others or for services of an industrial nature rendered to others: for example, contract or commission work done for other establishments on their materials or repair and maintenance work on machinery and equipment. The value reported should be the total cost charged to customers for the work or service performed.
- 3) Goods shipped as received. The sales value, ex-establishment, of all goods shipped during the year in the same condition as received.
- 4) Electricity sold. The total value of electricity sold by the establishment during the year. In principle, the electricity supplied to other establishments of an enterprise by an ancillary power plant treated as a separate establishment should be valued at the commercial rate normal to the area; in practice, it may be necessary to accept the book value of the electricity supplied in such cases.
- 5) Fixed assets produced for own account. The value of new fixed assets and additions and improvements to existing fixed assets made by the establishment's own labour for its own use.

SECTION IV. INPUT AND RELATED ITEMS

- 1) Materials and supplies. This includes, reported at cost F.O.B. / ^{factory} all materials, components and so on that are

physically incorporated in the products of the establishment. Also included are all auxiliary materials (lubricants, water, packaging materials, small tools, parts, etc.) and office supplies. The value of materials obtained for use in construction work undertaken for the establishment's own use should be included here.

- 2) Fuels. This includes all purchased fuels consumed by the establishments (including gasoline and other fuels for vehicles) except those that directly enter the product (these should be reported as materials).
- 3) Electricity consumed. The quantity of electricity consumed (in kilowatt-hours) is defined for large establishments as the sum of the quantities of electricity purchased and generated less the quantity of electricity sold to others.
- 4) Goods shipped as received. Included is the cost of all those goods which were resold without any transformation.
- 5) Repair and maintenance work. This covers the total cost to the establishment of repair and maintenance services on buildings and other fixed assets of the establishment during the year. The cost of repair and maintenance services carried out by the ancillary repair and maintenance unit which has been treated as an independent establishment should be included.
- 6) Total energy consumed. This is equal to "energy equivalent of fuels consumed" plus "electricity consumed".

- 7) Energy equivalent of fuels consumed. This item refers to the total energy equivalent (in kilowatt-hours) of the fuels consumed by the establishment during the year. The data for individual fuels should be collected in terms of standard physical units and then converted into kilowatt-hours equivalent by the interviewer compiling the data. The kilowatt-hours equivalent is an established standard of measurement, and, because of the growing importance of electric energy as a source of power for industrial uses, is becoming a universal unit.

SECTION V. ADDITIONAL INFORMATION

- 1) Receipts for non-industrial services. This item include all receipts of the establishment from the provision to others of services of non-industrial nature.
- 2) Payments for non-industrial services. This item should be defined to include the cost of all non-industrial services rendered by other establishments which are paid for by the respondent establishment and are reflected in the ex-establishment value of its production in the year. It includes payments for advertising, accounting, insurance, communication, legal and similar services rendered to the establishment, and payments of gross rent other than payments of rent for the use of land. In some cases, it may be possible to gather data on selected expenses only.

SECTION VI. VALUE OF STOCKS (AT COST)

- 1) Materials, fuels and supplies. This item should include the value of all materials, components and so on that enter into the product; fuels; and repair, maintenance, office and other consumable supplies.. Materials under the control of the establishment, but held by others for processing, are included, while materials owned by others, but held by the establishment for processing, are excluded. The value of stocks of materials and supplies for use in construction work undertaken for the establishment's own use should be included.

- 2) Work-in-progress - This item refers to the value of all materials which have been partially processed by the establishment, but which are not usually sold, shipped or turned over to other establishments without further processing. Generally, it should include all work-in-progress for the account of others irrespective of the arrangements for financing this work. Work-in-progress on own-account construction of fixed assets should be excluded and treated as part of fixed capital formation.
- 3) Finished goods produced - This should include all goods made by these establishment which are ready for shipment as of the reference dates. Included are finished goods held by another establishment that were processed by that establishment from raw materials controlled by the respondent establishment. Excluded are finished goods held by the respondent establishment which were made from materials owned by others.

Section VII.

GROSS FIXED CAPITAL FORMATION

- 1) Acquisitions of new fixed assets - The cost of fixed acquired during the year that have not been previously used in the country. Thus, newly-imported fixed assets are considered as new whether or not used before they were imported.
- 2) Acquisitions of new fixed assets are divided into the following categories: (a) buildings, other construction and land improvements (residential buildings and other buildings, such as factories, warehouses, office buildings, stores and restaurants; new construction, such as permanent ways of railways or roads, streets, car-parking facilities and the like, as well as major alterations and improvements. The value of land before improvement is excluded while land improvements made in the inquiry period are included); (b) transport equipment (motor vehicles, aircraft, ships, railway and tranway rolling stock, tractors for road haulage, carts and wagons and major alterations and improvements of existing transport equipment); (c) machinery and other equipment

(power-generating machinery; office machinery, equipment and furniture; metal working machinery; mining, construction and other industrial machinery; cranes, forklift equipment and the like; durable containers; equipment and instruments used by professional men; and any other machinery and equipment and major renovations and alterations to these types of machinery and equipment).

- 3) Gross additions to fixed assets. This item is defined as the sum of the cost of new and used (those that have been previously used within the country) fixed assets acquired during the year less the value of sales of fixed assets in the year. The categories included are those defined in the preceding paragraph plus land.

SECTION VIII. CAPACITY OF INSTALLED POWER EQUIPMENT

- 1) Total capacity of installed power equipment. There are two ways to calculate the capacity of power equipment, whether it is being used or not, as of a given date; these are (a) the sum of the "capacity of all prime movers not driving electric generators" and the "capacity of all prime movers" and the "capacity of electric motors driven by purchased electricity". These two methods give similar, but not identical results.

In practice, obtaining the total capacity of installed power equipment by the second method (that is, adding the "capacity of all prime movers" and the "capacity of electric motors driven by purchased electricity") has some disadvantages. The difficulty is not only that electric motors may be run by purchased electricity at some times and by self-generated current at others, but that, in some cases, it may be difficult to distinguish the source of the electricity used. The first method of calculation is therefore used.

* and (b) the sum of the "capacity of all prime movers."

- 21) Prime movers - All prime movers, mobile or stationary, that are installed as of the reference date, except those used to drive vehicles: internal combustion engines, steam engines, water-wheels, turbines and so on. The classification of prime movers into those driving electric generators and those driving machinery other than electric generators should be based on the situation as of the reference date. Capacity should be measured in terms of rated horsepower, that is, the horsepower indicated by the manufacturer.
- 32) Electric motors-This item includes the capacity of all motors installed as of the reference date and used in connection with the production activities of the establishment, including motors used for driving machine tools and other equipment used in manufacturing, assembling or conveying, even though the motor is built into the machine, and motors driving exhaust fans or air-conditioning equipment in the works proper. Motors driving desk fans, non-industrial refrigerating equipment, office air conditioners and the like are excluded. Capacity should be measured in terms of rated horsepower, that is, the horsepower indicated by the manufacturer. In practice, it may be advisable to limit reporting of electric motors to those above a specified capacity, for example, to those of more than one horsepower.
- 45) Generators - The capacity of all electric generators installed, in use and in reserve, as of the reference date. Capacity should be measured in terms of kilowatts or kilovolt amperes as rated by the manufacturer.

Explanatory Notes for Obtaining Data on Production
Machinery and Equipment

FIELD
NUMBER

- 1 - Each piece of equipment is to be classified by the interviewer according to the following type codes:
 - S - Specialized machines and equipment are those which are developed specifically for the use in a particular industry and are typical for the manufacturing of the group of products of the firm.
 - C - Common type of machine and equipment, no matter if custom made, the type which can be widely used in many industries with limited modifications, such as
 - transporting solids (cranes, conveyors, hoists, etc.)
 - power-drivers (recessed separately)
 - industrial pumps, compressors, blowers, etc. of general types
 - weighing, cleaning, packaging equipment of general types
 - machines and equipment in auxiliary facilities (e.g. power-driven hand tools, metal-joining, welding, cleaning machines for repair and maintenance shops)
 - T - Transportation vehicles - specifically trucks and automobiles.
- 2 - A brief description of the machine should be entered in the second field of the questionnaire. This is not a technical specification description, but a simple name such as "two ton truck," "Automobile," "belt conveyor," "Crane," etc.
- 3 - The third field contains the four digit ISIC code for the main product for which this machine is utilized. It may or may not be the main product of the firm.
- 4 - This field contains a short verbal description of the main product for which this machine is utilized.
- 5 - Field five contains the "Make" or "Commercial Brand Name" of the piece of machinery or equipment.
- 6 - Name of country in which machine was manufactured.
- 7 - Year in which the machine was manufactured is entered in field seven.

8 - A technological rating code for the machine is entered in field number eight. The codes to be used are as follows:-

A - most advanced technology, i.e. it represents the most advanced technology that is applicable today to the particular process considered.

B - considerably high standard, i.e. highly advanced though it is still superior to what would be possible with today's most advanced technology.

C - lower standard, i.e. the technology of the particular machine is rather conventional or transitional but is sufficient for catering for today's market in the country or region.

D - appreciably short of today's standard, i.e. the production capacity can still be attained effectively but is liable for noticeable degree of difficulty in competing with other firms in the country or region.

E - almost outdated, i.e. these machines ought to be replaced by newer ones.

9 - Replacement value provides an estimate as to how much it would cost if the existing machinery was replaced by new-functional equipments. If the physical asset is so old that its functional equivalent can no longer be found in today's market, write "obsolete" under replacement value.

10 - Salvage value is the estimated value of the piece of equipment in today's market.

11 - Power source for the piece of equipment should be coded as follows:-

M - Manual

E - Electric driven

S - Steam driven

I - Internal combustion engine.

12 - Total number of days during the year that this machine was or should have been available for operation.

13 - Number of shifts the machine is normally scheduled to operate.

14 - Number of hours per shift the machine is normally scheduled to operate.

15 - The total scheduled operational hours for the year. (i.e. those hours the production plan called for the machine to be operating).

- 16 - The total number of hours during the year that the machine was available for operation, but for reasons other than maintenance, holidays, etc., the machine was not operating. (i.e. the machine was idle)
- 17 - Hours that the machine was operational performing the task for which it was designed.
- 18 - Number of units or pieces produced per hour of operation in the standard unit of measure for the device.
- 19 - Maximum design output in number of units or pieces per hour in the standard unit of measure for the device.
- 20 - Reasons productive efficiency of the machine was less than the desired optimum (within reasonable tolerances). The code to be entered is as follow:
 - A - Production Plan was less than capacity
 - B - Lack of raw materials
 - C - Lack of trained manpower
 - D - Breakdown due to poor maintenance
 - E - Lack of spare parts
 - F - Labor absenteeism
 - G - Production line bottle necks
 - H - No Electric power
 - I - No petroleum
 - J - Lack of product demand
 - K - Financial difficulties in the firm
 - L - Seasonal fluctuations
 - M - Frequent or excessive set-up time
 - N - Other (explain on back of questionnaire).

APPENDIX I.

STANDARD UNITS OF MEASURE

ISIC No.	Industry Classification	Unit of Measure
290	Stone industries	Metric tons
311	Food manufacturing	Metric tons
313	Beverage industries	Hectolitres
314	Tobacco manufacturers	Metric tons
321	Manufacture of textiles	Sq. meters
322	Manufacture of wearing apparel, except footwear	No. of items
323	Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel	No. of items
324	Manufacture of footwear	No. of pairs
331	Manufacture of wood and wood and cork products except furniture	Cubic meters
332	Manufacture of furniture and fixtures, except primarily of metal	No. of items
341	Manufacture of paper and paper products	Metric tons
342	Printing and publishing	Metric tons
351	Manufacture of industrial chemicals	Metric tons
352	Manufacture of other chemical products	Metric tons
353	Petroleum refineries	Metric tons
354	Manufacture of miscel- laneous products of petroleum and coal	Metric tons

ISIC No.	Industry Classification	Unit of Measure
355	Manufacture of rubber products	Metric tons
356	Manufacture of plastic products not elsewhere classified	Metric tons
361	Manufacture of pottery, china, and earthenware	Metric tons
362	Manufacture of glass and glass products	Metric tons
369	Manufacture of other non-metallic mineral products	Metric tons
371	Iron and steel basic industries	Metric tons
372	Non-ferrous metal basic industries	Metric tons
381	Manufacture of fabricated metal products, except machinery and equipment	Metric tons
382	Manufacture of machinery, except electrical	Metric tons
383	Manufacture of electrical machinery apparatus, appliances and supplies	No. of items
384	Manufacture of transport equipment	No. of items
385	Manufacture of optical goods	No. of items
390	Other manufacturing industries	No. of items
410	Electricity generation	Kwtt

ESTABLISHMENT NUMBER _____

ISIC CODE _____

SECTION I : PRIMARY IDENTITY SUMMARY

NAME OF ESTABLISHMENT _____

ADDRESS _____

DISTRICT _____ P.O. Box _____ TELEPHONE _____

PRINCIPLE PRODUCT _____

SECONDARY PRODUCT(S) _____

STARTING DATE OF PRODUCTION _____

- | | | | | | |
|---|--------------------------|---------------------------|---|--------------------------|---------------------|
| 1 | <input type="checkbox"/> | INDEPENDENT ESTABLISHMENT | 1 | <input type="checkbox"/> | SOLE PROPRIETORSHIP |
| 2 | <input type="checkbox"/> | BRANCH | 2 | <input type="checkbox"/> | PARTNERSHIP |
| | | | 3 | <input type="checkbox"/> | OTHER |

SECTION II: EMPLOYMENT AND EARNINGS (FOR 1971)

A - TYPE OF WORKER		AVERAGE NO. OF WORKERS	TOTAL MAN-DAYS	TOTAL ANNUAL WAGES
1)	PRODUCTION WORKERS			
2)	WORKERS NOT ENGAGED IN PRODUCTION			
3)	EMPLOYEES FOR SALES AND DISTRIBUTION			
4)	ADMINISTRATIVE & CLERICAL WORKERS			
5)	TOTAL WORKERS			

B - WORKERS BY METHOD OF EMPLOYMENT		AVG. NO. OF WORKERS		
		TOTAL	MALE	FEMALE
1)	WAGE EARNERS			
2)	WORKING PROPRIETOR & UNPAID FAMILY WORKERS			
3)	TOTAL			

SECTION III : PRODUCTION AND SALES FOR 1971

ISIC CODE (6-DIGIT)	PRODUCT DESCRIPTION (FOR ISIC CLASSIFICATION)	UNIT OF MEASURE GIVEN	STANDARD	PRODUCTIVE OUTPUT		INVENTORY AT BEGINNING 71 VALUE (JD's)	EX-FACTORY REVENUES FROM SALES		INVENTORY AT END 1971 (VALUE JD's)
				QTY.	VALUE (JD's)		QTY.	VALUE (JD's)	
00000	OTHER PRODUCTS (AGGREGATE)								
0000-00	GOODS SOLD AS PURCHASED								

J.D.

SECTION IV : MATERIALS, ENERGY AND SUPPLIES FOR 1971

ISIC CODE (6-DIGIT)	DESCRIPTION OF MATERIAL (FOR ISIC CLASSIFICATION)	UNIT OF MEASURE GIVEN	STANDARD	MATERIALS PURCHASED		INVENTORY AT BEGINNING 71 (VALUE JD's)	MATERIALS CONSUMED		INVENTORY AT END 1971 (VALUE JD's)
				QTY.	COST DELIVERED AT FACTORY		QTY.	COST DEL. AT FACTORY	
4101-01	ELECTRICAL ENERGY								
3530-00	FUELS PURCHASED								
9999-99	WATER PURCHASED								
8888-88	SUPPLIES								
0000-00	OTHER MATERIALS (AGGREGATE)								

SECTION V : RECEIPTS AND DISBURSEMENTS - 1971

A. RECEIPTS

	JD'S
TOTAL RECEIPTS FOR 1971	
RENTS RECEIVED	
INTEREST RECEIVED	
INDUSTRIAL SERVICES RECEIVED	
OTHER RECEIPTS (NET OF SALE OF ASSETS)	

B. DISBURSEMENTS

	JD'S
TOTAL DISBURSEMENTS FOR 1971	
RENTS PAID	
INTERESTS PAID	
PAYMENTS FOR INDUSTRIAL SERVICES	
OTHER DISBURSEMENTS (NOT LISTED ELSEWHERE)	

SECTION VI : FIXED ASSETS

ASSETS	COST (JD's)	DEPRECIATED VALUE-1971	1971 DEPRECIATION ALLOWANCE
BUILDINGS			
MACHINERY AND EQUIPMENT			
TRANSPORT EQUIPMENT			
OTHER FIXED ASSETS			
TOTAL FIXED ASSETS			

FIXED ASSETS PURCHASED 1971	
FIXED ASSETS PRODUCED ON OWN ACCOUNT	
TOTAL SALE OF FIXED ASSETS 1971	

PRODUCTIVITY ANALYSIS DATA FOR
PRODUCTION MACHINERY AND EQUIPMENT

INTERVIEWER _____

PAGE : _____
OF : _____

FIRM NAME : _____
ADDRESS : _____
CODE NUMBER : _____

LINE NO	(1) TYPE CODE	(2) MACHINE DESCRIPTION	(3) ISIC CODE OF PRODUCT PRODUCED	(4) DESCRIPTION OF PRODUCT PRODUCED	(5) YEAR OF PURCHASE	(6) COUNTRY OF ORIGIN	(7) PURCHASE PRICE (USD)	(8) TECHNOLOGICAL RATING	(9) REPLACEMENT VALUE JD	(10) POWER SUPPLY	(11) ACTUAL PRODUCTIONS PIECES/DAY
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

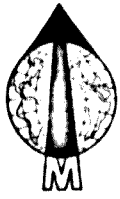
PRODUCTIVITY AND EFFICIENCY REPORT
 PROJECT ON WATER POLLUTION CONTROL

PROJECT NO. _____
 DATE _____

EMPLOYED : _____

(1) LINE NO.	(2) DESCRIPTION	(3) EST. NO. OF HOURS	(4) EST. NO. OF MAN-HOURS	(5) NO. OF MACHINES	(6) EST. NO. OF MACHINES	(7) EST. NO. OF MACHINES	(8) EST. NO. OF MACHINES	(9) EST. NO. OF MACHINES	(10) EST. NO. OF MACHINES	(11) EST. NO. OF MACHINES	(12) EST. NO. OF MACHINES	(13) EST. NO. OF MACHINES	(14) EST. NO. OF MACHINES	(15) EST. NO. OF MACHINES	(16) EST. NO. OF MACHINES	(17) EST. NO. OF MACHINES	(18) EST. NO. OF MACHINES	
																		(19) ACTUAL OUTPUT
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		

SECTION 1



The following information was gathered
from large companies only.

MINER & ASSOCIATES

APPENDIX I

ESTABLISHMENT NUMBER _____

BALANCE SHEET

Assets

Current

End Fiscal
" 69 "

End Fiscal
" 70 "

End Fiscal
" 71 "

Cash on hand and in banks _____

Short term investments _____

Accounts receivable _____

Inventories:

Raw Materials _____

SUPPLIES _____

Finished Goods _____

Other Current Assets _____

Total Current Assets _____

Fixed Assets

Land _____

Buildings _____

Plant machinery _____

Tools and equipment _____

Construction in progress _____

Transport equipment _____

Furniture and fixture _____

Other fixed assets _____

Total fixed assets _____

TOTAL ASSETS

=====

=====

=====

Equities

	<u>End Fiscal</u> <u>" 62 "</u>	<u>End Fiscal</u> <u>" 70 "</u>	<u>End Fiscal</u> <u>" 71 "</u>
<u>Current Liabilities</u>			
Accounts and loans payable			
1. To Government sector	_____	_____	_____
2. To domestic banks	_____	_____	_____
3. To domestic supplies	_____	_____	_____
4. To foreign sources	_____	_____	_____
5. To other creditors	_____	_____	_____
Interest payable	_____	_____	_____
Taxes payable	_____	_____	_____
<u>Total current liabilities</u>	_____	_____	_____
<u>Long-term Liabilities</u>			
Loans payable			
1. To government sector	_____	_____	_____
2. To domestic banks	_____	_____	_____
3. To other domestic institutions	_____	_____	_____
4. To foreign sources	_____	_____	_____
<u>Total Long-term Liabilities</u>	_____	_____	_____
TOTAL LIABILITIES	_____	_____	_____

APPENDIX II
PROFIT & LOSS

Schedule A: Raw Materials Used

(In JD's)

	1969	1970	1971
Beginning Inventor Raw Materials			
Raw Materials purchased			
Ending Inventory Raw Materials			
Raw Materials Used			

Schedule B: Factory Overhead⁽¹⁾

(In JD's)

	1969	1970	1971
Indirect Labor Salaries			
Repairs to Buildings & Equipment			
Depreciation - Buildings			
Depreciation - Equipment			
Factory Supplies Used			
Insurance			
Property Taxes			
Payroll Taxes			
Heat, Light and Power			
Miscellaneous Factory Costs			
Total Factory Overhead			

(1) Includes general and administrative expenses if such costs cannot be obtained seperately. Make note on this page if general and administrative expenses are included.

Schedule C: Cost of Goods Manufactured

(In JD's)

	1969	1970	1971
Raw Materials Used			
Total Factory Overhead			
Direct Labor Wages			
Work in Process Beginning of Year			
Work in Process End of Year			
Cost of Goods Manufactured			

Schedule D: Cost of Goods Sold

(In JD's)

	1969	1970	1971
Beginning Finished Goods Inventory			
Cost of Goods Manufactured			
Ending Finished Goods Inventory			
Cost of Goods Sold			

Schedule E: Selling Expenses

(In JD's)

	1969	1970	1971
Sales Salaries & Commissions			
Advertising Expenses			
Uncollectible Accounts			
Other Selling Expenses			

Schedule F: General & Administrative Expense (1)

	(In JD's)		
	1969	1970	1971
General & Administrative Salaries			
Repairs to Buildings & Equipment			
Depreciation - Buildings			
Depreciation - Equipment			
Office Supplies Used			
Insurance			
Property Taxes			
Payroll Taxes			
Heat Light & Power			
Other General & Administrative Exp.			
Total General & Administrative Exp.			

Schedule G: Profit & Loss Statement

	(In JD's)		
	1969	1970	1971
Gross Sales			
Less: Returns & Discounts			
Net Sales			
Less: Cost of Goods Sold			
Gross Profit (or loss)			
Less: Selling Expense			
Less: General & Administrative Exp.			
Less: Other operating Expense			
Net Income Before Taxes			

(1) See Note on Factory Overhead

<u>Capital Section</u>	<u>End Fiscal</u> <u>" 69 "</u>	<u>End Fiscal</u> <u>" 70 "</u>	<u>End Fiscal</u> <u>" 71 "</u>
Capital Stock (paid up)			
1. Government share	_____	_____	_____
2. Domestic share	_____	_____	_____
3. Foreign share	_____	_____	_____
Retained Earnings	_____	_____	_____
<u>Total Capital</u>	_____	_____	_____
<u>Total Liabilities (from above)</u>	_____	_____	_____
TOTAL EQUITIES	=====	=====	=====

APPENDIX III

ESTABLISHMENT NUMBER _____

GEOGRAPHICAL DISTRIBUTION OF EXPORTS & IMPORTS
(VALUE IN JD'S)

	TOTAL	Arab Nations		Europe	North America	South America	Other
		Common Market	Other				
Shipped To:							
Purchased From:							

SUMMARY OF GENERAL RECOMMENDATIONS

1. Make a comprehensive operations research analysis of the existing industrial development apparatus (laws, agencies, and institutions) which establishes overall objectives and priorities, delineates functions responsibilities, and lines of authority, and sets standards and procedures for evaluating proposed projects in terms of their potential, long-range contribution to the economy.
2. Recruit the services of short and long-term industrial development specialists, preferably from the highly industrialized areas of the world, to assist in organizing, formulating and coordinating the work plans of such institutions as the Industrial Development Corporation and to lend expertise to all critical phases of planning and implementing the industrialization program.
3. Conduct a census and diagnostic survey of the commercial, financial, governmental and agricultural sectors of the economy to complement the present Industrial Survey.
4. Survey, evaluate, and program the exploitation of all known mineral deposits. Explore for petroleum, sub-surface water, and other forms of natural wealth which have the potential to provide raw materials to industry directly or indirectly.
5. Formulate a broad program for agricultural development which will include incentives to encourage optimum agricultural land use, improved seed and crop selection, planting, fertilizing, pest and weed control, harvesting and marketing of all agricultural products. The objective: to provide an adequate base for development of agro-industry.
6. Provide vocational training courses specifically designed to develop a cadre of trained mechanics for industry.
7. Provide seminar-type "crash" courses for businessmen on accounting and modern business methods.
8. Systematize and improve the methods of purchasing of all equipment and supplies from abroad.
9. Organize an Export Marketing Commission.

SECTION I

ARCHITECTURE OF THE ECONOMY

A. CURRENT PROBLEMS AND ASSUMPTIONS OF NORMAL OPERATING ENVIRONMENT

The field work associated with the survey was carried out in the period December 1971 to May 1972. In that period, the economy of Jordan was struggling back toward a condition of comparative normalcy after the disruptive effects of the civil strife which occurred between September 1970 and mid-1971 superimposed on the effects of the 1967 War. The principal residual effects of these events, adverse to the economic viability of Jordan, were:

- o Closing of the Jordan-Syria border which cut off trade with Beirut, the major port for Jordan imports and exports to and from Europe, North Africa, and the Western Hemisphere, and cut off trade with one of Jordan's major Arab trading partners, Lebanon, as well as with Syria.
- o Closing of Syrian air space to Royal Jordanian Air Lines.
- o Closing the Jordan border with Iraq--another major trading partner.
- o Discontinuance of the principal amount of foreign aid formerly supplied to Jordan under the terms of the Khartoum Agreement of August 1967.
- o Flight of capital and scarcity of new investment capital commitments due to lack of confidence in the future safety and viability of Jordan on the part of both domestic and foreign investors.
- o Continued deprivation of markets, production facilities, and raw materials supply sources due to occupation of the West Bank.
- o Destruction of some production and infrastructure facilities.
- o Continued deprivation of the Aqaba-Mediterranean shipping route via the Suez Canal.

Jordan's industrial community demonstrated remarkable resourcefulness in overcoming or accommodating itself to these new conditions. This adjustment process, which was in full swing at the time of the survey, however, necessitated making many radical changes in the products, sources, and types of raw materials, markets, and organization of many firms. Even though the effects of these events had been ameliorated to some degree, it must be recognized that the survey was made during a period of rapid and radical change which complicated the data collection and analysis processes. Records of some firms had been destroyed or were no longer meaningful because of product or other changes.

In order to make meaningful recommendations and projections of economic development, it is necessary to hypothecate a condition of relatively normal investment climate in East Bank Jordan. There is some logic in referring to 1969, for purposes of making assumptions, since GNP at current prices for the first half of 1972 is estimated to have reached approximately the same level as for the same period in 1969.

The following assumptions are made:

- o Air space and all borders with neighboring Arab States will be open for unrestricted transport of goods and passengers.
- o Goods will be exchanged in accordance with now existing trade agreements and protocols.
- o Subsidy payments to Jordan by other Arab countries will be reinstated or replaced by equivalent amounts from other friendly nations.
- o The economic, political and military status quo vis-à-vis Israel will be unchanged.
- o No major international or internecine disturbances, adverse to the interest of Jordan, will occur in the course of the next five years.
- o The Suez Canal will remain closed.

B. RESOURCES

1. Natural Resources

Jordan's East Bank is, comparatively speaking, a deprived area with respect to natural resources, and has something less than ideal geographic and climatic characteristics.

Forests Its forest resources have been badly depleted through past years of wasteful cutting practices and neglect. Parts of the country which were forested have been referred to as "man-made deserts." Only about 2% of the land area is now forested; a situation which will be corrected when the effects of the present reforestation program are seen.

Land Only 97,000 km² or about 11% of the land is cultivable; only 6% of the land receives the minimum 300 mm of rainfall needed to support agriculture. Surface water suitable for irrigation is limited principally to the Jordan Valley and the watersheds of the Zarqa and Yarmouk rivers.

Water Sub-surface water is found in scattered locations, but is expensive to exploit for irrigation purposes. Salinity presents a problem to irrigation projects.

Hydro
Electric
Potential The nature of the terrain and deficiencies in quantity and distribution of rainfall militate against developing hydro electric power generation facilities although some plans were drawn for such development in 1966.

Axis The distribution of population, industry, water, and hence agriculture; and the location of entry ports, overland international trade routes, and Aqaba, its single access to the sea, have the effect of reducing the East Bank to a long narrow strip of land. This characteristic in turn militates against development of extensive communications, transportation, or transmission grids. The economic axis of Jordan runs strongly north and south.

Minerals Certain mineral deposits, rock, and other natural wealth, are known or thought to exist in commercial quantities in the East Bank area:

Phosphate rock	Iron ore
Copper ore	Sulphur
Calcium and other cement-making materials	Feldspar
Kaolin, refractory and other clays	Salt
Glass sand	Bituminous rock
Manganese	Tripoli
Potash, magnesium, and bromine in the Dead Sea	Gypsum
Oil shale	Marble
	Granite
	Limestone

To date, only phosphate rock, certain clays, cement, limestone, building stone and rock have been exploited on a commercially viable scale. Although preliminary studies have been made of ceramic clays, feldspar, copper, manganese, tripoli and a few other deposits, extensive surveys and studies are needed to establish the existence and project the feasibility of exploiting these and other resources to their full potential.

Fuel The depleted forests are incapable of supplying wood for fuel or lumber, and no fossil fuels, other than oil-bearing shale, have been discovered. Jordan East Bank is wholly dependent on crude oil imported by pipeline from Saudi Arabia for its fuel. The crude oil is refined in a modern facility. In 1971, the refinery purchased some 592,000 tons of crude oil at a cost of JD 3,000,000 and produced and sold JD 5,689,000 worth of gasoline, aviation fuel, diesel fuel, liquid gas, asphalt and kerosene. Jordan realizes a rental income for permitting pipelines to cross its territory.

2. Human Resources

No population census has been taken of Jordan since 1961, at which time the population of the Kingdom was reported to be 1,711,000, out of which the labor force was 22.9% or 393,000 workers.*

* Analysis of Population Statistics-H. Wander, Jordan Department of Statistics, 1966.

In 1961, 47% of the population lived on the West Bank of the Jordan River, and 49.7% on the East Bank. The nomadic Bedouins constituted the remaining 3.3% of the population.

The population was projected to rise to 2,302,000 by 1970, and to 3,281,000 by 1980, with the labor force constituting 23.5% of the population by 1980. Following the 1967 War, a major migration from the West Bank to the East Bank occurred; an estimated 300,000 to 400,000 persons, principally Palestinians, thus sought refuge from the Israeli-controlled areas. The movement of the people and the events of late 1970 and early 1971 no doubt combined to distort demographic trends as well as the population distribution. The degree of the distortion cannot be determined with any degree of accuracy from known data.

For purposes of this study, it was necessary to make some broad population assumptions. Assuming a continuation of the previously projected rate of growth in the population of the Kingdom and no distortion in distribution between the East and West Banks other than that caused by the shift of an estimated 350,000 to the East Bank, the following population data was extrapolated:

ESTIMATED EAST BANK POPULATION 1971

Urban and Rural Population	1,263,000
Bedouin	50,000
Refugees from West Bank not Absorbed into East Bank Economy	<u>350,000</u>
TOTAL	1,663,000

The 1971 Industrial Survey of Jordan reports a total employment by East Bank establishments having 5 or more employees at 14,887. Using ratios from earlier surveys, the distribution of the labor force of the Kingdom is extrapolated as follows:

TOTAL INDUSTRIAL EMPLOYMENT	40,782
In West Bank Establishments	15,000
In East Bank Establishments with 5 or more employees	14,887
with less than 5 employees	10,895

Jordan has a high rate of literacy, estimated to be between 35% and 40%. In 11,730 marriages performed in East Bank Jordan in 1970, 89.5% of the grooms and 59% of the brides were literate. The East Bank in 1971 had 1,531 schools employing almost 12,000 teachers and enrolling approximately 391,000 students. The Kingdom had an average of 612,000 students, 27% of the population, enrolled in schools in academic year 1970-71.* The University of Jordan enrolls over 3,000 students in Arts, Commerce & Industry, Sciences, and Religion (Sharia) schools. Several dozen vocational secondary schools of various types round out the educational institutions in Jordan's East Bank.

It is estimated that there are in excess of 22,000 Jordanians studying in institutions of higher learning, 78% in other Arab countries--principally Lebanon and the UAR--with a few thousand also in European and other foreign institutions.

One of Jordan's important sources of foreign exchange revenue comes from "export of brains" i.e. remittances from Jordanians working abroad. In 1969, this source of income provided JD 6,915,000 or 17% of foreign exchange receipts, excluding transfer payments, private investments, and loans.

By 1971, this income appeared to have dropped to about one-third of its former level due to fears and uncertainties engendered by the internecine disturbances of 1970-71 and the fact that remittances paid to Jordanians living on the West Bank are not included in the statistics.

The civil services of many Arab Governments are reported to have an important underpinning of talented Jordanians working in their bureaus, ministries and agencies.

3. Infrastructure

Roads Jordan East Bank has 5,000 km of primary, paved roads and 1,400 km of secondary roads. Approximately 14,000 private cars and taxis and 10,000 trucks and tractors are registered.

* Statistical Yearbook, 1970.

Rail-roads The government-owned Jordan Hijaz Railroad consists of a single track narrow-gauge line running from the Syrian border south 363 km to Ma'an. In 1970, it owned 26 locomotives, 290 freight cars, 48 tankers and other freight carriers, and 6 passenger cars. It carried 170,000 tons of freight and 17,000 passengers in 1970. Plans are far advanced to construct a rail line, the Hittiye-Aqaba Railway, from Hittiye south 117 km to Aqaba, principally to haul phosphate from Hasa for export. This new line will cost approximately JD 13 million including additional rolling stock and will connect with the Jordan-Hijaz Railroad. An extension, previously constructed, running from Ma'an to the Saudi Arabian border at El Mudawwara, is not used. It was built as part of a tri-country agreement to reconstruct and extend the rail system running through Jordan from Damascus, Syria to Al Medinah, Saudi Arabia. The plan was suspended in 1970.

Port of Aqaba Jordan's only direct access to the sea is located at the northern tip of the Gulf of Aqaba--an arm of the Red Sea. It has deep draft and loading dock space for a limited number of vessels and offers good anchorage and lighterage service for a large number of vessels. Phosphate docks, storage warehouses and handling equipment are modern and adequate for the volume of rock currently being handled. There are also limited oil handling facilities. Dockside facilities for general cargo--cranes, lift-trucks, warehouses, and so on--are limited. Total investment in the port facility is in excess of JD 5 million.

Cargos handled by the port in 1970, 382,000 tons, were 623,000 tons less than in 1967. In the same period, the number of vessels serviced dropped from 452 to 220. Loadings of export cargos dropped 72%, discharge of incoming cargos dropped 45%.

Plans have been made to create a fishing industry based in Aqaba. A trawler is now operating for exploring fishing potential in the Red Sea and for training crews.

Airlines The government-owned Royal Jordanian Airline (ALIA) carried 1,132,000 tons of freight and 119,000 passengers in 1970. The airport at Amman is adequate to handle the present level of international jet traffic. Closing the Syrian air space in 1971, sometimes to all Jordan-bound, and sometimes only to ALIA, aircraft has caused serious disruption to service.

Electric
Power

The East Bank power system operates under the aegis of the Electricity Department of the Ministry of National Economy and consists of three electric companies and five small municipally-owned power stations. A number of industrial firms are self-sufficient in power, i.e. they own and operate their own generators which they use part time, to supplement the purchased public power, or hold on stand-by to take care of outages.

Production and consumption for 1970 are shown in TABLE 1 on the following page.

Power production by publicly owned facilities increased to 150,457,000 KWH and sales to 125,606,000 KWH in 1971. Power sales were JD 2,309,000. All power is produced by diesel-driven generators. Rates are relatively high, as can be seen on TABLE 2.

Although some power stations service more than one community, there is no power grid in the accepted sense of the word.

Jordan industry is somewhat short of power. Several of the firms interviewed indicated that they were forced to operate on curtailed production schedules due to shortage of power at peak load periods.

It is understood that in 1973 work will start on a steam generating plant and a grid distribution system which will supplement the present diesel generating plants and ease the power shortage. It should also produce power at lower cost; perhaps permitting a general lowering of rates.

Water and
Irrigation
Works

Potable water and water for irrigation rank as scarce resources in East Bank Jordan. Some communities in the northern section, such as Irbid, are supplied with potable water by pipeline from the springs of Azraq, 140 km away. Other communities are supplied by driven wells or water from the river system.

Extensive irrigation works are operating or in prospect, particularly in the Jordan Valley, which has some 540,000 dunums of land for agriculture, of which 481,000 dunums are classed as suitable for irrigation. In 1971, 137,000 dunums were under controlled-gravity irrigation.

TABLE 1

ELECTRIC POWER PRODUCTION AND CONSUMPTION
EAST BANK - 1970 (000 KWH)

<u>Source</u>	<u>Generated</u>	<u>Sold or Consumed</u>
Electric companies	129,829	107,040
Municipal stations	2,525	2,370
PUBLIC SOURCES	<u>132,354</u>	<u>109,410</u>
Private Industry	55,004	54,538
TOTAL	<u>187,358</u>	<u>163,948</u>

SOURCE: Electric companies, Municipalities; Manufacturing industries--as reported in Statistical Yearbook, 1970.

TABLE 2

ELECTRIC RATES - 1970

Irbid

1 to 50 KWH	40 fils / KWH
51 to 100	25
101 to 1,000	20
1,001 and over	15

Madaba-Amman

1 to 50 KWH	30
51 to 2,500	15
2,501 and over	11

Municipal Stations

25 to 65 fils / KWH

SOURCE: Electricity Department, Ministry of National Economy.

Communica- Jordan East Bank had approximately 18,000 installed
tions telephones at the end of 1970. A newly constructed
satellite earth station which went into operation in
1971 assures good overseas telephone service.

A telephone network, a number of radio stations, and telegraph
service provide adequate communications facilities.

4. The Agricultural Base

Land The land area of the East Bank is 88,866,000 dunums,
only 11% of which is suitable for agriculture. The
area is classified approximately as shown in TABLE 3 on the following
page.

Agricultural The principal cash crops are tomatoes, wheat, vine
Production crops, melons, eggplant and tobacco. Areas under
principal crops and production in 1970 are shown on
TABLE 4.

The Jordan River Valley, with its several tributary rivers and the East
Ghor canal, is the principal irrigated area and has been described as
Jordan's "hothouse". It produces the bulk of the off-season vegetables
exported annually.

Plans have been made for repairing damage and expanding the irriga-
tion facilities in the Jordan Valley and contiguous areas. Much work
remains to be done in discovering and exploiting surface water for
irrigation in other areas of Jordan.

Agro-Climatic Production of rain-fed dry land farming areas is un-
and Culture predictable since they are subject to frequent droughts
Characteristics interspersed with periods of adequate rains which are
well distributed throughout the growing season, and
occasionally adequate rains which occur at the wrong season of the
year.

TABLE 3

EAST BANK LAND CLASSIFICATION

	<u>Dunums</u>
Irrigated	137,000
Suitable for irrigation, but not irrigated	<u>344,000</u>
TOTAL IRRIGABLE	481,000
Suitable for dry land farming	<u>9,274,000</u>
TOTAL CULTIVABLE	9,755,000
Not suitable for cultivation	<u>79,111,000</u>
TOTAL LAND AREA	88,966,000

SOURCE: Ministry of Agriculture

TABLE 4

PRINCIPAL CROPS - 1970

	Dunums Under Cultivation	Production (Tons)
Grains	3,016,500	69,400
Vegetables	274,100	216,300
Fruits and Nuts	287,800	27,000
Tobacco	<u>27,300</u>	862
	3,605,700	

SOURCE: Statistical Yearbook - 1970

1970 was a bad year for grain production. The wheat harvest, for example, was far below the normal yield:

1967 - 168,000 tons	1970 - 56,000 tons
1968 - 128,000	1971 - 168,000
1969 - 159,000	1972 - 190,000 (forecast)

It was necessary to import JD 3,966,000 worth of wheat and wheat flour to make up the deficit. After loss of production in 1970 due to weather and internecine disturbances, crop production improved materially in 1971. The improvement, which is attributable to a combination of a reduced level of civil strife and unusually heavy rainfall, well distributed both in time and in geographic area, appears to be continuing into 1972.

Soils generally have normal characteristics necessary to support agriculture, although in some areas both soil and water tests indicate medium-high salinity hazard; and the zinc content of soil in the Jordan Valley is only slightly higher than the minimum required for most crops.

Yields, growth rates, and quality of most crops in Jordan are far below world averages. Deficiencies are due principally to technological and varietal problems and secondarily to basic limitations of climate and soil; given sufficient water, most deficiencies can be corrected.*

Low levels of annual rainfall, inadequate irrigation water, use of improper seed varieties and seeds which are often infested with viruses and plant parasites, and inadequate use of fertilizer and other agricultural chemicals are the principal factors limiting agricultural production. The average farm is too small to warrant the use of many modern agricultural techniques.*

Position of Agriculture in the Economy In spite of the dominant position of agriculture in the economy, Jordan is a net importer of agricultural products and foodstuffs (see TABLE 5 on the following page).

Over the 5-year period, 1965-69, the value of agriculture's contribution to the Gross Domestic Product has averaged JD 32,870,000 (19.5%). Agriculture has shared the position of largest contributor to GDP with wholesale and retail trade (JD 33,380,000 -- 19.7%).

* Source: Prefeasibility Study, Fruit & Vegetable Processing, MINER, 1971.

TABLE 5

IMPORTS AND EXPORTS OF AGRICULTURAL PRODUCTS

(JD 000)

<u>Imports</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Food & Live Animals	13,635	15,745	17,837	18,684	18,282
Crude Tobacco	991	1,045	993	608	939
<u>Exports</u>					
Food & Live Animals	4,639	5,560	5,492	4,663	3,508
Tobacco Products	663	536	563	519	367
<u>Deficit</u>					
Food & Live Animals	8,996	10,185	12,345	14,021	14,774
Tobacco Products	<u>328</u>	<u>509</u>	<u>430</u>	<u>89</u>	<u>572</u>
TOTAL	9,324	10,694	12,775	14,110	15,346

SOURCE: Department of Statistics.

and makes almost twice the average contribution of the Mining and Manufacturing sector (JD 18,920,000--11.2%).

Agricultural products have provided, on the average, in excess of 46% of foreign exchange earnings. Fresh tomatoes are the principal export crop. In 1970, the East Bank produced 137,000 tons of tomatoes, of which 53,000 tons valued at JD 1,570,000 were exported. Twenty thousand dunums of the East Ghor project (of 120,000 dunums) are planted in citrus fruits and bananas. JD 978,000 and JD 671,000 worth of these products, respectively, were exported in 1971. Dry land farming areas also produce vegetables, nuts and fruits, including olives; however, their major crop is grain, principally wheat and barley, for domestic consumption.

Potential for Agro-Industrial Development The following table shows the salient characteristics of 52 firms in 10 industrial sectors engaged principally in processing agricultural and animal husbandry raw materials. See TABLE 6.

The shortcomings of farming practice in Jordan are almost as well established as the vagaries of the climate. It is doubtful that the deficiencies can be corrected within a reasonable time without imposition of strict government regulation of almost every aspect of agriculture. A system of contract planting for those crops which provide raw materials for industry would provide a measure of control over farming practice for part of the agricultural sector and would help not only the industries concerned but would also provide an example for other farmers to follow.

Until improvement is made in yields and quality, the agricultural sector will continue to provide an unsatisfactory raw material base for industry.

Meanwhile, production of off-season fresh vegetables should be increased and quality improved so that higher prices obtainable in European markets can be realized.

The East Bank is in a position to initiate two agricultural supply industries: phosphate fertilizers and certified vegetable seeds.*

* Prefeasibility Study, Vegetable Seed Production--MINER, 1971.

TABLE 6

AGRO-INDUSTRY

(JD 000 Except No. of Firms)

<u>Industrial Sector</u>	<u>No. of Firms</u>	<u>Sales</u>	<u>Value Added</u>	<u>Raw Material Purchased</u>		
				<u>Total</u>	<u>Imported</u>	<u>Domestic</u>
Dairy Products	6	62,978	25,388	37,290	6,994	30,296
Preserved Fruits & Vegetables	2	206,529	38,345	195,877	42,910	152,967
Vegetable & Chemical Oils	3	8,303	13,606	8,367	8,367	0
Grain Mill Products	8	1,753,604	183,436	1,889,858	783,595	1,106,263
Chocolate & Sugar Products	20	741,843	172,769	580,640	166,984	413,656
Other Food Products	5	211,296	66,987	156,389	149,924	6,465
Prepared Animal Feeds	2	1,918,253	63,504	1,865,029	1,475,043	389,986
Malt and Malt Liquor	2	192,147	144,973	56,607	39,788	16,819
Tobacco Products	3	2,606,115	981,349	1,900,637	84,066	1,816,571
Tannery Products	1	515,414	180,979	329,745	267,797	61,948
	52	8,216,482	1,871,336	7,020,439	3,025,468	3,994,971

C. FISCAL AND FINANCIAL STRUCTURE OF JORDAN

1. Revenues of Central Government

As shown on TABLE 7, domestic revenues have risen 41.6% since 1967, whereas revenues from borrowing from foreign sources declined 6.7% from 1968 to 1971 due largely to the fact that budget support and other assistance from Arab states, which were curtailed starting in 1970, have not been fully compensated by augmented receipts from non-Arab sources.

Analysis of the source of foreign revenues provides a "fever chart" of Jordan's year-to-year political status vis-à-vis its Arab neighbors, as well as the United States and European powers. The ratio of receipts from Arab states to receipts from other foreign sources shifted from 86% Arab states, 14% others in 1968 to 44% Arab states, 56% others in 1971.

The shift, in broad terms, reflects the Arab states' concern for Jordan's welfare in 1967 after the damage and deprivation suffered in the Israeli War, and later (1971) disapproval of Jordan's handling of the civil strife which occurred in September of 1970. It reflects, congruently, the U.S. reaction to the 1967 War and subsequent (1971) approval of Jordan's political posture after the occurrences of September 1970. In 1971, the U.S. budget support contribution to Jordan was JD 17,000,000; the Arab states' contribution was JD 18,000,000. In 1972, it is projected that the U.S. contribution will be equal to or slightly higher than in 1971. Because of its complexity, the interplay of the forces brought to bear on the Middle East by Russia and the United States affects Jordan's fortunes somewhat unpredictably.

Due principally to increases in domestic revenues, Jordan has reduced its dependence on foreign grants and loans from 63.5% in 1967 to 53.9% in 1971 -- a period which saw total government receipts increase 12% from JD 70.4 million to JD 78.8 million.

2. Central Government Expenditure and the National Budget

Expenditures crested in 1969, having increased 30% from JD 68 million in 1967 to JD 88.4 million in 1969. Expenditures in 1971 were JD 85,000,000. As shown on TABLE 8, the largest single item in the budget, Defense and Public Security, accounts for approximately 46% of total

CENTRAL GOVERNMENT REVENUES

(JD 000)

<u>SOURCE</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u> ⁽¹⁾
<u>Domestic</u>					
<u>Revenue-Total</u>	<u>25,497</u>	<u>26,269</u>	<u>32,520</u>	<u>30,259</u>	<u>36,100</u>
Indirect taxes	16,115	17,270	20,715	18,965	20,757
Direct taxes	2,157	1,823	2,277	2,494	2,928
Non-tax revenues	7,225	7,176	9,528	8,800	12,415
<u>Foreign</u>					
<u>Receipts-Total</u>	<u>44,701</u>	<u>45,551</u>	<u>43,214</u>	<u>37,703</u>	<u>42,506</u>
Budget support-					
Arab	9,806	37,601	37,553	33,070	17,951
Other	7,090	1,949	-----	-----	16,976
Economic and technical aid-					
Arab	1,022	-----	-----	2,072	-----
Other	1,350	313	824	282	407
Emergency aid and other international sources	21,141 ⁽²⁾	250	-----	-----	343 ⁽³⁾
Development loans					
Arab	2,133	1,667	2,058	777	599
Other	2,159	3,171	2,779	1,502	3,142
Loan repayments	<u>219</u>	<u>99</u>	<u>648</u>	<u>415</u>	<u>201</u>
TOTAL REVENUES	70,417	71,919	76,382	68,377	78,807

SOURCE: National Planning Council.

Notes: (1) Preliminary.

(2) JD 21 million emergency aid in 1967 from Arab and other country sources.

(3) IMF Compensatory Financing and Special Drawing Rights Allocation.

CENTRAL GOVERNMENT BUDGET EXPENDITURES

(JD 000)

	<u>Allocation of Expenditures</u>				
	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Defense & Public Security	28,557	38,463	46,165	38,214	39,094
Administration	13,479	16,863	12,305	10,467	15,810
Social Services	9,613	9,962	12,400	13,693	13,544
Economic Services	11,491	8,837	12,963	13,081	13,060
Communications & Transportation	<u>5,015</u>	<u>6,395</u>	<u>4,577</u>	<u>5,251</u>	<u>3,510</u>
TOTAL EXPENDITURES	68,155	80,520	88,410	80,706	85,018
TOTAL REVENUES	<u>70,417</u>	<u>71,919</u>	<u>76,382</u>	<u>68,377</u>	<u>78,807</u>
NET SURPLUS OR DEFICIT	2,262	- 8,601	-12,028	-12,329	- 6,211

	<u>Percentage Distribution of Expenditures</u>				
Defense & Public Security	41.9	47.8	52.2	47.3	45.9
Administration	19.8	20.9	13.8	13.0	18.6
Social Services	14.1	12.4	14.0	17.0	15.9
Economic Services	16.9	11.0	14.8	16.2	15.4
Communications and Transportation	7.3	7.9	5.2	6.5	4.2
TOTAL EXPENDITURES	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
Recurring	65.5	71.0	73.8	73.1	72.1
Development	34.5	29.0	26.2	26.9	27.9

SOURCE: National Planning Council

expenditures reflecting the generally disturbed political climate in the Middle East and Jordan's long border exposure to Israel.

The budget deficit has been financed by sale of Treasury Bills and long-term Government Bonds sold largely to the Central Bank, Commercial Banks and provident funds. The Central Bank's holding of Jordanian Treasury Bills increased from JD 3,948,000 in 1969 to JD 12,592,000 in 1971. Commercial Bank's holdings of Government bonds and bills increased from JD 3,765,000 at the end of 1969 to JD 9,452,000 in March, 1972. Government Bonds have not drawn out any appreciable amount of what are estimated to be large hoardings of currency, "mattress money" and bank deposits in the hands of the public. The volume of short-term Treasury Bills in circulation is limited by law to a percentage of currency in circulation. As a consequence, holdings of Treasury Bills are rolled over by the Commercial Banks but the Government is estopped from increasing the volume outstanding. Special Drawing Rights were exercised to the extent of JD 1,840,000 and IMF provided an additional JD 1,591,000 in 1971. These measures reflect the fact that cash availability is tight for government fiscals and will remain so for the near term.

3. Balance of Payments and Foreign Exchange Reserves

Jordan's Reserve position, including gold, dropped from a peak of JD 109,444,000 in 1968 to JD 88,601,000 in March 1972. In other words, Jordan has the equivalent of about 17 months of hard currency receipts in reserve which may be considered to be a strong current position.

Unfortunately, as previously mentioned, a high percentage of the receipts are official invisibles, transfer payments and loans. In 1971, these receipts, which are subject in some degree to the whims of international politics, amounted to JD 37.8 million or 61% of total receipts for that year.

Jordan has a perennial trade deficit as shown on the following page, TABLE 9.

TABLE 9

	<u>EXTERNAL TRADE</u>				
	(JD Million)				
	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Exports (f.o.b.)	11.3	14.3	14.7	12.2	11.4
Domestic	10.0	12.2	11.9	9.3	8.8
Re-exports	1.3	2.1	2.8	2.9	2.6
Imports (c.i.f.)	55.0	57.5	67.8	65.9	76.6
Trade Deficit	43.7	43.2	53.1	53.7	65.2

SOURCE: Department of Statistics, Statistical Yearbook, 1970.
Central Bank of Jordan, Monthly Statistical Bulletin.

4. Other National Accounts

Most National Accounts data contains a high percentage of estimation due to unavailability of hard statistical information from the West Bank. Such data as appears to reflect the condition of the economy of the East Bank indicates rising levels of money and credit liquidity, higher prices, stepped-up levels of industrial activity, higher employment and wage rates, increased imports and a congruent inflationary trend. The salient characteristics of these trends are shown in TABLE 10.

D. PROFILE OF THE INDUSTRIAL SECTOR OF THE ECONOMY

1. The Industrial Sector

Employment and Earnings The industrial sector, as defined in the census, is comprised of 589 mining and manufacturing establishments having 5 or more employees, and employs 14,887 workers and working proprietors. An estimated 4,000 smaller industrial establishments, employing fewer than 5 persons, in what might be identified as the cottage industry sector, employ in aggregate some 11,600 additional workers and working proprietors.

The industrial sector employs about 4% of the estimated 369,000 man total work force of the East Bank. Production workers make up 75.5% of the manpower engaged in industry with overhead personnel (those engaged in sales, distribution, administrative, clerical and other pursuits not directly involved in production) accounting for the remaining 24.5%.

Only 9.4% of the employees and 2.2% of the working proprietors are female.

Earnings per production worker averaged JD 320.7 for an average of 207.8 man-days of work in 1971, or JD 1.54 per man per day. Overhead personnel worked an average of 201.7 man-days and earned JD 466.2, or JD 2.31 per man per day; approximately 50% more than production workers.

ECONOMIC TREND INDICATORS

(JD 000)

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
Money Supply (JD 000)	75,237	87,977	96,221	105,462	107,997	107,692 ⁽¹⁾
Gold and Foreign Exchange Reserves	94,539	109,444	99,489	98,111	92,885	92,069 ⁽¹⁾
GNP at Market Prices	205,950	197,280	231,540	206,100 ⁽²⁾	222,900 ⁽²⁾	-
Private Sector Deposits in Commercial Banks	40,627	42,915	45,320	43,445	48,816	49,829 ⁽¹⁾
Imports--Total (JD 000)	55,048	57,492	67,752	65,882	76,627	
Consumer Goods	23,870	27,606	33,887	33,025	27,101	
Raw Materials	13,722	12,213	14,593	15,144	10,734	
Capital Goods	14,744	13,922	15,239	13,375	15,082	

INDICES

Cost of Living Index--Amman	100.0	99.7	107.5	114.8	119.7	125.2 ⁽¹⁾
Industrial Pro- duction Index ⁽³⁾	91.1	92.7	110.8	95.9	113.7	120.9

UNITS

Building Permits Issued--Amman and Zarqa	83.5	257.9	305.6	220.0	154.2	213.8 ^(E)
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SOURCE: Department of Statistics

(1) 3-month average

(2) Estimated--U.S. Department of Commerce

(3) East Bank only

(E) Estimate based on 3 month' data

Investment The 589 industrial firms employ a total of JD 36,439,000 in fixed assets of which JD 8,331,000 is invested in buildings and JD 28,108,000 in production and transport equipment and other fixed assets. The depreciated value of fixed assets is JD 30,054,000, or an average of JD 51,025 per establishment; JD 2,000 per worker.

Net Capital formation (consisting of JD 2,140,000 assets purchased, plus JD 312,000 assets produced, less JD 138,000 sold) amounted to a net of JD 2,314,000; approximately 7.7% of year-end Total Fixed Assets were created during 1971.

Raw materials Consumed The Industrial Sector purchased JD 19,870,000 worth of raw materials in 1971, of which JD 8,568,000 (43.1%) were imported; and slightly over JD 11,302,000 (56.9%) were of domestic origin. JD 20,691,000 worth of raw materials were consumed resulting in a reduction of raw materials inventories of JD 820,000 as of the end of the year. A single establishment--the petroleum refinery-- is the largest importer and consumer of raw materials, having used 591,757 tons of imported crude oil at a cost of JD 3,043,000--15% of all raw material consumed, 27% of all raw materials imported--in 1971.

Production and Sales East Bank industry produced some JD 35,500,000* worth of mined and manufactured products in 1971. Gross sales were slightly over JD 36,000,000 including goods sold as purchased (JD 713,500) and are estimated to be approximately 29%** of East Bank Gross Domestic Product at current prices. Export sales of the industrial sector, JD 2,289,000, were approximately 26% of total exports of the East Bank.

Revenues Total industrial revenues, composed of sales, other revenues, income from industrial services, interest income, and rents received, amounted to JD 46,400,000.

* at FOB factory prices

** Last published GDP (1969) included an estimate for the West Bank. The present estimated East Bank GDP (JD 123,077,000) is derived from that data and is good for order of magnitude comparisons only.

Value Added Value added for the sector was JD 15,317,000, equ... to
By 77% of the cost of raw materials consumed, 42.5% of
Manufacture total sales. Value added per worker was JD 1,028.9, or
 nearly three times the JD 356.3 average annual wage per
 worker. Value added was 440 fils per dinar of fixed investment employed;
 JD 2.27 of fixed investment was required to produce one dinar of value
 added in 1971. See TABLE 14.

Unused "Theoretical capacity," "design capacity," "equipment
Capacity capacity," "rated capacity," are terms used to indicate
 the production capability of a product line or occasionally,
 in multi-product operations, of an entire plant. In some industries,
 "capacity" is a meaningful term; in many industries it is not meaningful
 unless qualified by an explanation of the operating circumstances. For
 instance, the tonnage produced by a paper mill in a shift often varies by
 one to four or five multiples, depending on the product mix -- i.e. the
 grade of paper being produced.

Capacity data does not lend itself to aggregation across the spectrum of
 industry. It is meaningless, for instance, to add the tons of tomato paste,
 steel reinforcing rods, plastic shoes, etc., which could be produced under
 optimum conditions to arrive at a capacity rating for the industrial sector.

In order to arrive at a realistic overview of the level of industrial activity
 in Jordan compared to capacity, actual daily production of 42 individual
 large firms was compared to available production; actual operating days
 were compared to available operating days; and results analyzed to arrive
 at a percentage of capacity used. See TABLE 11.

Management was asked to indicate the reasons for shortfalls in production.
 Thirty-four of the 56 large companies responded to this question; some
 cited more than one reason for low production:

<u>Under-Capacity Production</u>	<u>Number of</u>
<u>Cause</u>	<u>Establishments</u>
Lack of domestic demand	22
Border closing reduced export market	3
Border closing caused shortage of raw materials	6
Shortage of skilled labor	1
Excessive custom duties on imported raw materials	4
Domestic raw material problems	2
Other local problems	1

TABLE 11

UNUSED CAPACITY

<u>Establishment Number</u>	<u>ISIC Code</u>	<u>Estimated Production Rate as a Percent of Capacity</u>	<u>Number of Workers Affected</u>
505	3560	33%	133
512	3691	40%	22
513	3620	35%	30
548	3691	70%	40
549	3691	40%	94
563	3692	90%	660
571	3819	60%	24
572	3710	94%	80
578	3811	60%	25
660	3839	60%	61
661	3839	*	343
668	4101	*	787
669	4101	*	283
898	3699	25%	79
924	3134	Less than 10%	43
906	3121	55%	6
654	3812	*	65
503	3559	About 10%	24
293	3220	60%	209
240	3133	30%	40
102	2902	*	1019
143	3112	85%	31
145	3113	80%	89
156	3116	50%	43

**UNUSED CAPACITY
(Continued)**

<u>Establishment Number</u>	<u>ISIC Code</u>	<u>Estimated Production Rate as a Percent of Capacity</u>	<u>Number of Workers Affected</u>
157	3116	67%	52
161	3116	30%	35
196	3116	90%	65
218	3119	80%	28
220	3119	20%	43
233	3122	66%	45
234	3122	70%	46
238	3131	40%	24
239	3133	25%	23
241	3134	50%	27
244	3134	76%	205
249	3140	Close to 100%	382
289	3213	85%	52
290	3212	100%	52
292	3220	70%	170
294	3211	*	214
346	3220	*	51
347	3220	80%	53
359	3231	100%	204
386	3240	*	142
442	3320	16%	40
444	3311	*	36
455	3420	*	43
458	3411	50%	76
459	3411	*	186
483	3420	30%	48

UNUSED CAPACITY
(Continued)

<u>Establishment Number</u>	<u>ISIC Code</u>	<u>Estimated Production Rate as a Percent of Capacity</u>	<u>Number of Workers Affected</u>
484	3420	40%	121
485	3420	Less than 60%	40
487	3420	*	44
494	3522	*	140
499	3523	*	253
500	3530	90%	1,080

* Data insufficient to form basis of estimate.

2. Large Firms

Financial data was gathered for 56 large firms; that is, firms having 30 or more employees, or sales of JD 50,000 or more.

As shown in TABLE 12, in 1971 large firms' sales added up to JD 28,881,000, or 82% of the JD 35,358,000 total sales for the industrial sector (census frame). They employed 8,189 workers and working proprietors, 55% of the total, and JD 26,287,000 worth of fixed assets or 87.4% of the total industrial sector. They accounted for 78% of the total value added by manufacture.

Critical operating ratios for these firms are given in Section III, Reports O and P.

As shown in TABLE 13, a very high percentage of Jordan's industrial production, sales, and employment is concentrated in a few large single-establishment industrial sectors.

3. Sectoral Profile

The characteristics of the 29 major sectoral groupings into which the East Bank industrial establishments fall is clearly shown in the tabulated statistical data Reports A through H in Section III.

It is noteworthy that the greatest number of firms are found in quarrying; food manufacture; textiles and wearing apparel; fabricated metal products; and printing and publishing, whereas the value added is concentrated in the sectors which are dominated by a few larger firms. Value added per employee and per JD of investment in fixed assets for each sector is shown in TABLE 14.

TABLE 12

CONCENTRATION OF INDUSTRIAL ACTIVITY IN LARGE FIRMS

(JD 000)

	UNITS		Wages Paid	Raw Mat'ls Consumed	Imports	Sales	Exports	Value Added	Fixed Assets
	No. of Firms	No. of Employees							
Census Frame	589	14,887	5,304	20,691	8,568	35,358	2,886	16,031	30,054
Large Firms	56	8,189	3,775	15,727	7,204	28,881	1,886	12,443	26,287
Large Firms' Percentage	9.5%	55.0%	71.2%	76.0%	84.1%	81.7%	65.3%	77.6%	87.4%

TABLE 13

MAJOR SINGLE ESTABLISHMENT INDUSTRIES

<u>Establishment No.</u>	<u>No. of Employees</u>	<u>(JD 000)</u>		
		<u>Fixed Assets</u>	<u>Sales</u>	<u>Value Added</u>
500	1,080	12,138	5,689	2,219
102	1,019	6,892	2,563	2,005
563	660	4,214	2,292	1,481
249	403	814	2,606	1,005
284	284	529	1,129	339
572	80	177	1,144	318
1	199	223	598	268
494	140	344	458	243
661	306	805	1,134	507
359	204	473	515	181
SINGLE ESTABLISH- MENT TOTAL:	4,375	26,609	18,128	8,566
% OF INDUSTRIAL SECTOR:	29%	73%	51%	53%

TABLE 14

ANALYSIS OF VALUE ADDED BY SECTOR

<u>ISIC Code</u>	<u>Sector</u>	<u>No. of Employees</u>	<u>Value Added/Employee</u>	<u>Dinars of Fixed Investment Required to Produce 1 Dinar of Value Added</u>
290	Quarrying Ind., Stone Crushing	2,033	1,162	3.22
311	Food Manufacturing	1,269	482	2.10
312	Food Manufacturing	126	1,036	2.60
313	Beverage Industries	477	1,279	2.06
314	Tobacco Manufacturing	403	2,557	.79
320	Textiles & Leather Industry	8	316	--
321	Manufacture of Textiles	1,111	858	1.36
322	Wearing Apparel--Except Shoes	1,203	599	.80
323	Leather Products--Except Shoes	274	782	2.70
324	Manufacture of Footwear	260	903	1.03
331	Wood Products--Except Furniture	132	417	.69
332	Non-Metal Furniture	283	536	1.26
341	Paper and Paper Products	292	451	5.44
342	Printing and Publishing	951	467	3.57
351	Industrial Chemicals	26	808	5.33
352	Other Chemical Products	478	1,667	1.48
353	Petroleum Refinery	1,080	2,055	5.47
355	Rubber Products	55	575	4.72
356	Plastic Products	297	992	2.15
362	Glass and Glass Products	93	329	1.16
369	Other Mineral Products	1,454	1,319	2.60
370	Basic Metal Industries	11	410	--
371	Basic Iron and Steel	80	3,973	.56
381	Fabricated Metal Products	685	594	1.21
382	Machinery Except Electric	220	668	1.72
383	Electric Machinery Apparatus	352	774	2.10
384	Transport Equipment	68	468	2.97
390	Other Manufacturing	20	318	.50
410	Electricity, Gas, and Steam	1,146	1,638	4.35

4. Geographic Profile

Of the 589 firms in the Industrial Sector, 497 are located in the Al Asimah district which includes the cities of Amman and Zarqa. Sixty-five firms are located in Irbid district, which includes the city of Irbid. Balqa district has 12 firms, including the petroleum refinery. Ma'an district, which includes the cities of Ma'an and Aqaba, has 6 firms.

TABLE 15, on the following page, further illuminates the heavy concentration of industry in the Amman-Zarqa area (Al Asimah).

E. GOVERNMENT ATTITUDE, POLICY, AND LAWS PERTAINING TO BUSINESS AND INDUSTRY.

1. Government Policy

Jordan enjoys a free private enterprise economy toward which the Government takes a benign, essentially laissez-faire attitude, except in the matter of agricultural and industrial development, which it promotes very vigorously. Laws, institutions, and agencies relating to industry fall into two categories -- control and promotion. The orientation of government policy is strongly favorable to industrial expansion.

Business controls are generally applied on a discretionary basis and with a light touch. Discretion lies with the ministries concerned with each particular industrial sector, as well as with the Ministry of National Economy and the Ministry of Finance. Controls are exercised by more-or-less ad hoc decrees issued by the Ministry of National Economy. The Companies Law, No. 12 of 1964, requires that businesses over a certain size be registered with the Ministry of National Economy. The registration of an enterprise is, in many respects, tantamount to licensing.

Through selective registration, the government attempts to influence the structure of the industrial sector in order to prevent severe overcapacity in any sub-sector and at the same time provide the buying public with a measure of protection from exploitation by maintaining a reasonable level of competition.

TABLE 15

GEOGRAPHIC DISTRIBUTION OF INDUSTRY

	(JD 000)						
	No. Firms	Employees	Wages (JD 000)	Fixed Capital*	Sales	Raw Materials Consumed	Sale of Power by Electric Co.'s 000 KWH
Al Asimah	497	12,370	4,003	21,443	27,595	16,005	112,918
Irbid	65	966	489	1,382	1,145	564	10,875
Balqa	12	1,356	766	6,780	6,600	4,031	45
Karak	9	127	28	0	104	48	800
Ma'an	6	68	18	450	59	40	968
TOTAL	589	14,887	5,304	30,055	35,503	20,688	125,606

* Depreciated Value

In practice, offering incentives to attract investment capital to particular industries is used in preference to denying licenses to prospective enterprises.

The industrial economy of Jordan's East Bank is thin. Industrial sales are about JD 35 million (less than the individual sales of 693 large corporations in the U.S.) and not widely diversified. As a result, some monopolies and oligopolies are created inadvertently in the course of industrial promotion.

Price controls are imposed, also on a discretionary basis, in instances where the public interest would be adversely affected by the free action of the forces of supply and demand.

Imports of certain commodities are controlled and financed directly by the government. Others are controlled by the imposition of duties and tariffs.

Apparently, across-the-board intervention by the Central Bank has not been used as a means of import control in the recent past.

2. Promotion of Industrial Development

a. Laws

The apparatus for encouraging industrial development includes two laws: the Encouragement of Investment Law No. 1 of 1967, and the Export Incentives Law. The former law, as the name implies, offers tax and duty exemptions to certain industrial, tourism, and housing projects, and to financial investment companies established to underwrite such projects.

It also provides that foreign investment shall be afforded treatment equal to that afforded local capital under the law. It provides for repatriation of profits, salaries, interest, and capital arising from foreign investments.

The law creates two bodies, the Jordan Investment Promotion Office, which has an information gathering and publishing staff function in connection with its promotional responsibility, and the Encouragement of Investment Committee, which has power to administer and implement the purposes of the law. Its functions are essentially regulatory. Both organizations function directly under the Ministry of National Economy.

On first reading, the law appears to have some weaknesses. No investment criteria or priorities upon which the Committee is to base its judgments are established, or referred to, by the law. The objectives of the law are implied by its title but are not clearly stated.

Apparently it is intended that the Promotion Office assemble existing studies and use them in its industrial development promotion efforts. No provision is made for either body to initiate and conduct studies.

The Committee is empowered to grant the investment incentives provided by law, and also to revoke them "if ... (the company) has not assisted in attaining the objectives of this law." Since the objectives are not clearly stated, the revocation process would be subject to non-uniform application.

It is suggested that (1) objectives of the law be stated, (2) criteria and priorities both for granting and revoking incentives be established, and (3) facilities for initiating studies be provided to the Committee.

The Export Incentives law provides for rebates of duties paid on the imports of raw material component of exported goods. In practice, the administration of the law appears cumbersome. Exporters complain that the work involved in proving to the Export Incentives Committee the foreign origin and duties paid on raw materials is excessive, and frequently not worth the trouble.

b. Agencies and Institutions.

The principal agencies and institutions having responsibility for industrial development are:

The National Planning Council
(formerly the Jordan Development Board)
Jordan Center for Industrial Development
Industrial Development Corporation (in process of being formed)
Industrial Development Bank.

The responsibilities and functions of these agencies follow, roughly, the pattern implied by their names. The Planning Council has responsibility for formulating development policy. The Jordan Industrial Development Center is an arm of the Ministry of National Economy.

The Industrial Development Corporation was in the process of formation at the time of the survey. A draft of the law creating it indicates that it will be essentially a private corporation operating under the supervision of the Ministry of National Economy and financed initially by a ten-year government loan of JD 100,000. Government-owned equity in industrial corporations will be transferred to it and as need arises, new capital will be provided to it for investment in new projects.

The primary objective of the Corporation is to promote a high rate of industrial development. Functionally, it will:

- o seek opportunities for industrial development;
- o determine what surveys are to be made;
- o establish industrial projects in both private and public sectors;
- o represent government in enterprises in which the GOJ has an interest;
- o undertake the sale of government interest in industries to private investors.

The Industrial Development Bank, with an authorized capital of JD 3 million, is one-third government and two-thirds privately owned. Its function is to promote industrial development by providing medium and long-term financing and technical advice.

Since its founding in 1965, the Bank has negotiated 128 loans totalling JD 3.7 million; 19 loans totalling JD 626,000 have been cancelled. The addition to the Bank's industrial loan portfolio in 1970 was a total of JD 500,000 in 17 separate loans. The loans, broken down by purpose, are shown in TABLE 16.

The Government frequently takes an equity position or makes loans to help finance development of industry. Financing is usually arranged through one of the agencies mentioned above. At the end of 1971, the Government held approximately JD 5.7 million worth of equity, or 20.6% of the total in 12 large industrial firms, and had JD 1.8 million in loans outstanding with five large firms.

c. Three Year Plan.

Kingdom of Jordan industry expanded rapidly under the seven-year program (1963-1970). Sectoral contribution to Gross Domestic Product* rose from JD 11.6 million in 1963 to JD 19.3 million in 1967. If estimates for the West Bank are accurate, the sectoral contribution in 1969 was JD 25.2 million and JD 22.5 million in 1970 -- a net increase of nearly 100%, while the total GDP rose 47%. The number of industrial firms increased 45% from 5,064 in 1963 to 7,350 in 1969.

A new development plan, the Three Year Plan, covering the years 1973-1975, was in the process of being drafted during the Industrial Survey of Jordan. This plan is the joint product of a committee composed of representatives of the ministries and agencies of the government which relate to the economy. Development of the plan was ordered by the Prime Minister and is scheduled to be published at about the time this Industrial Survey of Jordan is published.

The plan will stress the need for a program to employ foreign capital to discover and exploit deposits of minerals for export as well as for domestic use. It will recommend, among other things, establishing quality standards for local products so that they can compete in international market places and will recommend greater geographic dispersal of domestic industry.

* SOURCE: Department of Statistics.

TABLE 16

INDUSTRIAL DEVELOPMENT BANK LOANS *

	<u>1967</u>	<u>%</u>	<u>1968</u>	<u>%</u>	<u>1969</u>	<u>%</u>	<u>1970</u>	<u>%</u>
Industrial Machinery	178,500	38	274,000	50	604,900	79	81,600	15
Construction	36,500	8	215,000	39	46,400	6	134,400	26
Raw Materials	<u>257,800</u>	<u>54</u>	<u>60,000</u>	<u>11</u>	<u>111,500</u>	<u>15</u>	<u>311,000</u>	<u>59</u>
	472,800	100	549,000	100	762,800	100	527,000	100

* including tourist loans

SOURCE: Jordan Industrial Development Bank, 6th Annual Report, 1970.

The Three Year Plan will recommend measures for attracting foreign and domestic capital investments, which include broadening and liberalizing some features of the Encouragement of Investment Law and offering special concessions and guarantees to foreign investors.

It will enumerate certain sectoral goals and recommend policy for licensing, protecting, and encouraging creation of new industry. Prominent in the recommended steps to enhance industrial development is the formation of an "industrial zone" or "industrial park" in Aqaba to "amalgamate" certain industries.

The Plan visualizes development of domestic industry along interrelated lines so that one industry supplies and supports another and so that the inter-Arab industrial coordination called for in the Arab Common Market Agreement is implemented.

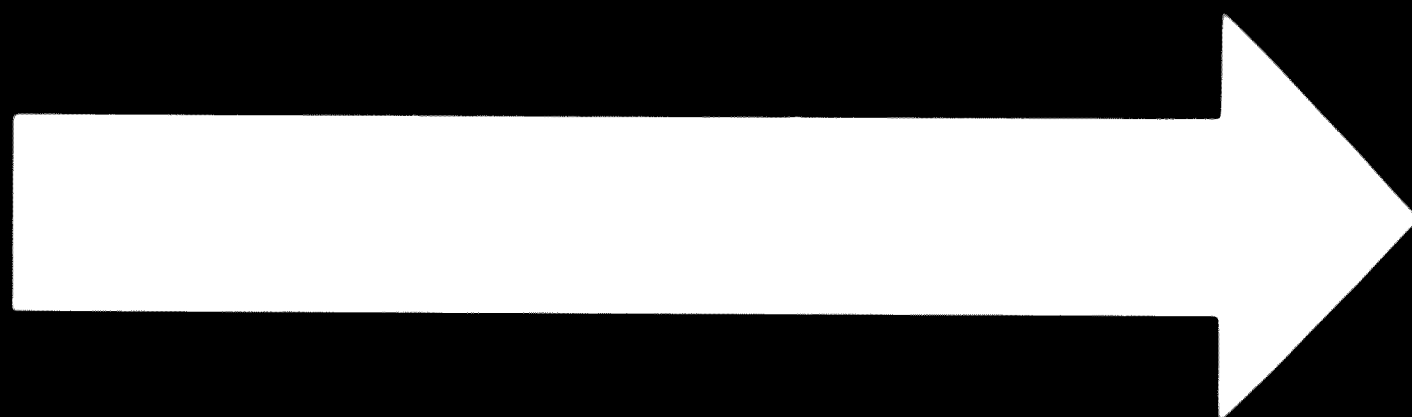
Total cost of all features of the Plan over four years (including planning and study expenses in 1972) is estimated at JD 19,890,000. Studies and implementation of seven projects included in the mining program will cost an estimated JD 14,676,000.

3. Labor Climate

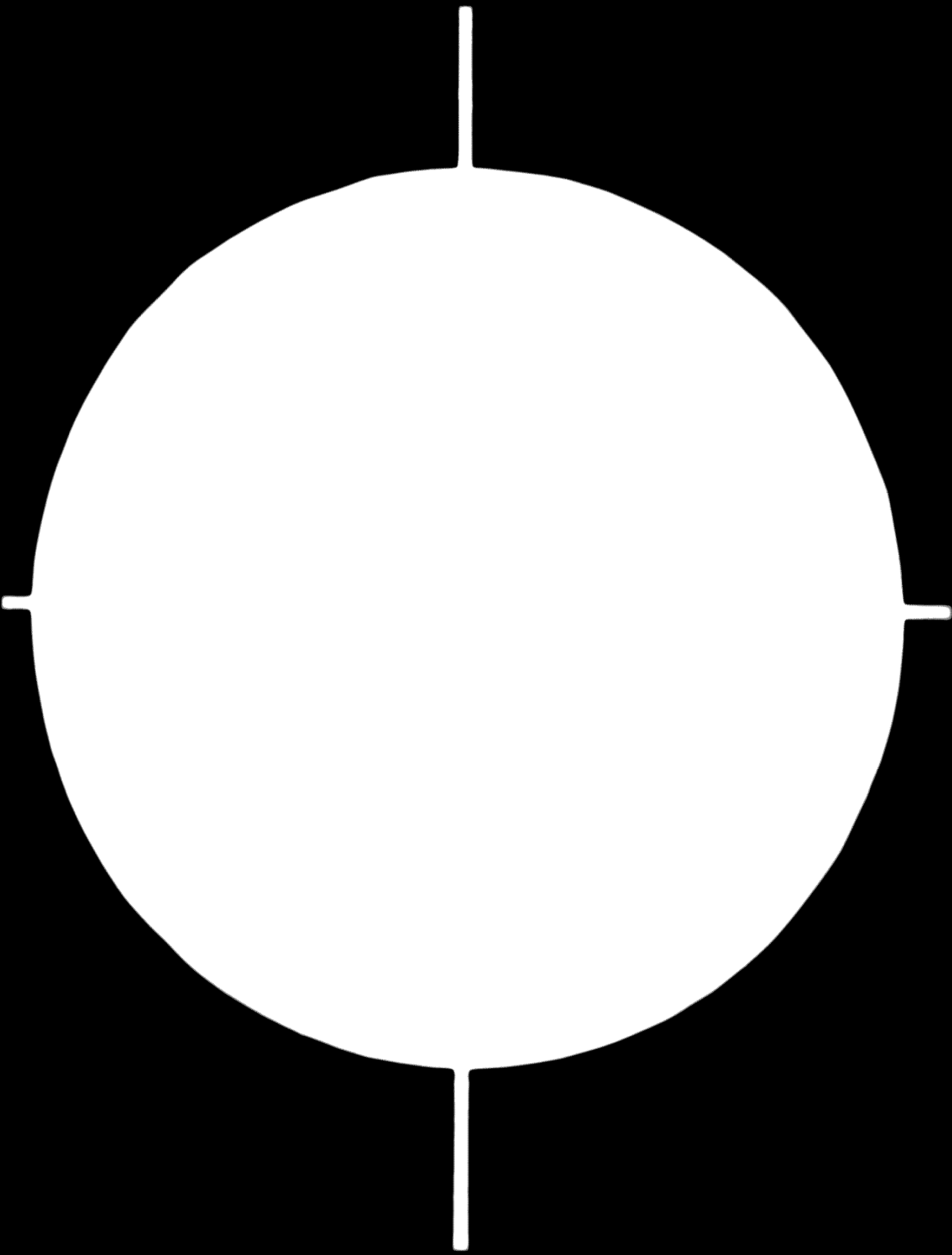
Labor Supply

The labor climate of Jordan East Bank is strongly influenced by the presence of several hundred thousand Palestinian refugees who have not been wholly integrated into the economy and are being supported partially by funds from outside the country, principally the United Nations, and partly by the Jordan Government. They are largely unemployed or underemployed and constitute a large reservoir of untapped manpower. This artificially induced labor surplus is partially offset by the export of skilled labor to other Arab and some European countries. The unusual requirement of national defense absorbs some manpower although a high percentage of the army is made up of Bedouins who do not compete extensively for jobs in industry. It is difficult to arrive at statistically meaningful unemployment and underemployment figures. Irrespective of the refugee problem, jobs are still scarce due to the reduction in both industrial and agricultural activity following the September, 1970 disturbances.

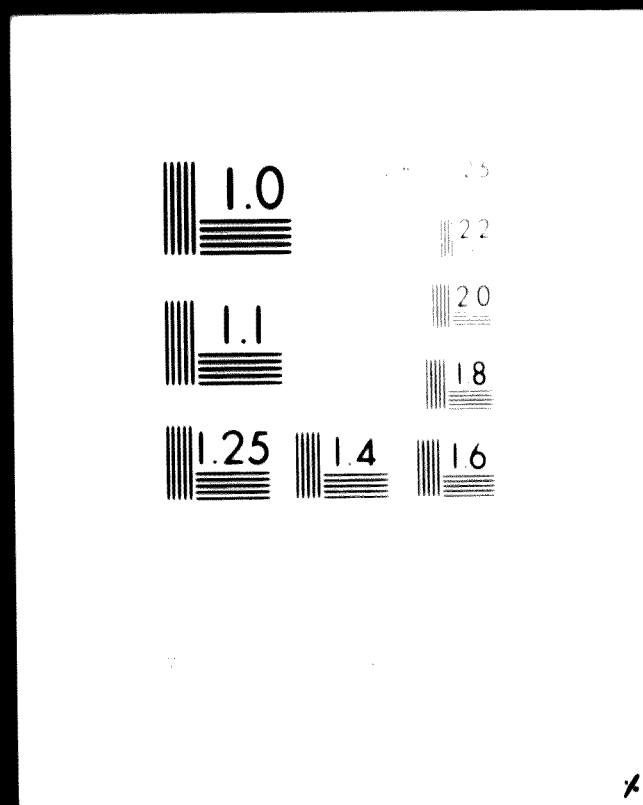
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Salaries In spite of the unemployment and the apparent "buyer's market" for labor, wage and salary rates are increasing --particularly for skilled overhead employees. (See TABLE 17)

Labor Law Labor legislation and administration are the responsibility of the Ministry of Social Welfare and Labor. There are two central labor organizations, the General Federation of Trade Unions and the General Federation of Transport Workers and Employees in Jordan. The original labor law was passed in 1960 and amended in 1965 and in September of 1970.

Labor disputes are adjudicated by an arbitration committee under the Department of Labor.

A recent survey by the Department of Statistics of 24 industrial establishments employing 5,305 workers disclosed the following fringe benefits:

<u>Benefit</u>	<u>Number of Establishments Granting Benefits</u>
Family Allowances	13
Time and One-half Overtime	16
Additional Compensation	14
Loan Facilities	20
Clothing Allowance	13
Health Security	19
Additions to Salary for Years Worked	24

Fringe allowances for the average overhead employee add 10.5% to his annual salary.

TABLE 17

SALARY TRENDS

	Average Annual Increase From Starting Salary	After Years of Service	1970 Increase	Value of Fringe Benefits Received in 1970 (JD's per Month)
General Clerk	12%	5	2.7%	5.6
Accountant	25	4	4.0	3.0
Messenger	11	6	1.5	2.4
Driver	8	6	2.0	1.5
Automobile Mechanic	8	6	2.3	---
Heavy Equipment Mechanic	10	4	2.0	3.0
Electrician	11	6	3.0	4.0
Chemist	8	6	5.0	5.5
Auditor	5	14	5.0	22.2

SOURCE: Statistical Yearbook--1970.

SECTION II

ANALYSIS OF INDUSTRIAL DEVELOPMENT POTENTIAL

A. THE BASE FOR FUTURE INDUSTRIAL DEVELOPMENT

The East Bank has adequate infrastructure and human resources to support a major industrial development program. It appears capable of attracting sufficient financial resources from friendly nations and international assistance agencies to underwrite such a program. Due largely to the unstable political situation in the Middle East, however, both domestic and foreign private investors have been consistently reluctant to commit funds to the creation or expansion of industry, in spite of the fact that the Government offers attractive tax exemptions, guarantees, and other inducements to investors.

The agricultural sector must be greatly improved before it can be considered capable of supporting agro-industry development on an important scale.

Natural resources now provide only a limited supply of raw materials to industry, although if a vigorous survey program were instituted the prospects for discovering minerals in commercial quantities appear encouraging.

On balance, in spite of the short-falls, the total resource inventory appears capable of supporting a major industrial development program which would make significant incremental contribution to the Gross Domestic Product. Resources must be developed and utilized fully and efficiently, however, if industry is to develop and thrive.

A relatively high level of educated and trained people with a large back-up of unemployed or underemployed labor is perhaps Jordan's most valuable industrial asset. The value of this asset could be enhanced by added training on several levels -- general business management, accounting, production management, and mechanical skills.

Existing infrastructure is generally well conceived, well constructed, and adequate to support the present levels of economic activity. If current plans for expanding electric power facilities and extending roads, railways, and the telephone system are implemented, the infrastructure will be able to support a substantially higher level of activity. Improvement and expansion of the port facilities at Aqaba will become increasingly important as Jordan

progressively shifts the pattern of its exports of phosphates to the Far East.

Jordan's financial resources, reinforced by budgetary support, loans, and grants-in-aid from friendly foreign, Arab and non-Arab, governments, appear adequate to underwrite a reasonable amount of new industrial development.

The improvements in economic activity experienced in 1969 and again in 1971 have clearly demonstrated Jordan's capacity to "bounce back" after the effects of military and civil disturbances. A period of political stability in the Middle East would give it an opportunity to reassert its industrial growth potential; it would encourage the repatriation of flight capital, the investment of accumulations of private capital held in domestic banks and, eventually, an influx of private foreign investment. Lessening of tension would permit a reduction in the military and internal security items which now represent some 46% of the budget. A redirecting of at least a part of these expenditures to civil pursuits would hasten the day when Jordan would be free of dependence on foreign assistance.

The principal deterrents to economic development, however, relate to the geo-physiology of the area: the arid climate, with vast desert areas, indifferently developed agriculture, lack of fossil fuels, limited and unfound or undeveloped mineral resources, and only limited or indirect access to ocean shipping lanes.

In order to compensate for these natural shortcomings and exploit all available assets, a high level of planning, measuring, and evaluating every investment is required, to determine in advance its total effect on the economy.

B. THE PRESENT STRUCTURE OF INDUSTRY

The present structure of Jordan's industry is not inimical to future growth. It is characterized, however, by heavy geographic concentration of manufacturing, primarily in the Amman-Zarqa area and, secondarily, near Irbid. Aqaba possibly has the best potential for growth, since it provides the only direct access to the sea lanes and is located near an area in which commercial-scale mineral deposits are believed to be located.

Jordan's industry is dominated by a few large companies, most of which have been financed heavily by the government. The remainder of the industrial

ector is composed of many small and medium size establishments and, outside the sector, thousands of cottage industry and artisanal units. With the exception of the Phosphate Mining Company, the sector is predominantly engaged in processing imported raw and intermediate products into finished consumer goods. Most firms are owner-managed.

Considerable care should be exercised in attempting to alter the present industrial structure:

The geographic concentration of industrial firms is congruous with concentrations of labor, electric generating facilities, service industries such as repair shops, transport and warehousing firms, banks, insurance firms, and access to markets and trained administrative help such as accountants and secretaries. If industry is to be dispersed, the cost of duplicating these facilities in other areas must be weighted against the values to be realized from dispersing industrial employment and earning power.

The size concentration found in basic industries in Jordan is probably unavoidable:

For the most part, the largest firms are in basic utilities and bulk raw materials industries and are not large by international standards. The sizes of the largest manufacturing firms are not far above the lower limits of size efficiency.

Encouraging the merger of small competing firms in order to realize the efficiencies of scale is a laudable undertaking. However, the results of such a program are often disappointing. The small to medium size firms, which are the most likely candidates for consolidation, are in most instances managed by the owner who is often also the founder. The entrepreneurial genius and drive needed to found and manage an industrial enterprise, however small, are seldom compatible with the same characteristics in another entrepreneur. The slower process of eliminating a multiplicity of small competing firms through attrition by sale or failure will, in the long run, prove to be the most efficient means of reconstructing industry in a pattern of larger, more efficient units.

Industrial "parks" or "estates" have been formed in most highly industrialized, as well as underdeveloped, areas of the world. The common denominator of these establishments is their ability to offer industrial firms a better physical environment in which to build and operate their factories than they would be able to obtain, for the same cost, acting singly.

Many secondary benefits accrue from creating these concentrations of industry, particularly in underdeveloped areas. They offer local governments and international assistance agencies a vehicle for helping to finance industrial development across a broad spectrum of industry. By dividing the cost of installing utilities and access roads among a number of establishments, they reduce the cost of individual factory construction. They attract labor and service industries and, if they are well managed, encourage construction of better quality factory buildings than would evolve in a scattered, uncontrolled industrial community.

A proposal has been made to establish an industrial park in East Bank Jordan, which will provide technical assistance and special (tax) exemptions to participating "similar" industries after amalgamation.

C. MEASURES OF VALUE OF PROPOSED DEVELOPMENT PROJECTS

The laws, agencies, and institutions in Jordan appear to be reasonably adequate to plan and implement an effective program of industrial development, although there is some duplication of function and some areas left uncovered. There is no comprehensive plan which shows exactly how each of the elements is to function, where responsibilities rest, and so on.

Jordan's problems and limitations, as well as its resources and advantages, have been identified in numerous previous surveys and studies, however, and some overall plans, such as the Three Year Plan, have been formulated. Specific projects are given high priority ratings based principally on projected value added, new job opportunities created, foreign exchange savings, and/or earnings and other basic evaluations.

It is suggested that all major industrial projects contemplated for Jordan be subjected to additional, more intensive, and penetrating evaluation techniques. The present level of planning seems to stop short of making complete evaluations or of providing a real basis for making go or no-go decision or establishing priorities.

The commonly used evaluating techniques listed below are suggested for use:

(1) Measurement of the Effect of Granting Investment Incentives.

Investment incentives, particularly tax and duty exemptions, provided by law to attract investment to industry are not without cost to the economy. The direct cost of the taxes and duties foregone by virtue of granting these incentives should be pre-computed for each proposed project, and these costs weighed against the hoped-for benefits accruing to the economy from the new enterprise.

(2) Determination of Supply Gap.

A determination should be made of the domestic demand-supply gap plus export potential.

(3) Social Rate of Return.

The Social Rate of Return measures net FOB value of an exportable product per dinar of investment.

$$SRR = \frac{\text{Net FOB Value of Exportable Product}}{\text{Total Investment}}$$

Net FOB value is FOB value less the sum of alternative costs of raw materials and labor and all other costs except taxes.

(4) Foreign Exchange Earnings or Savings.

FEES = FOB value* of product less:
cost of imported raw materials,
cost of amortizing imported equipment,
all other hard currency outflows.

*FOB value = FOB cost for computing earnings;
sales price for computing savings.

$$(5) \text{ Labor Intensiveness} = \frac{\text{Jobs Created}}{\text{Total Investment}}$$

(6) Linkage.

$$\text{Forward / Backward Linkage} = \frac{\text{Interindustry purchase}}{\text{Total Production}} + \frac{\text{Interindustry sales}}{\text{Total Demand}}$$

$$(7) \text{ Insufficiency Index} = \frac{\text{Total Demand} - \text{Total Supply}}{\text{Total Demand}} \times \text{Essentiality Factor}$$

This formula measures the volume of demand that cannot be met by existing production facilities.

Tests (2) through (7) above can be weighted and aggregated to provide an overall evaluation for establishing priorities.

In conjunction with the final phase of the counterpart training program, which was concluded in Amman, the report on the use of Input - Output Analysis, Linear Programming, and Multiple Regression Analysis in measuring the relative values of alternative industrial development projects was prepared. These evaluation and analytical techniques should be made a regular part of the process of establishing development priorities.

D. FINANCING INDUSTRIAL DEVELOPMENT

It is unlikely that Jordan can attract much private investment capital from foreign sources until the general level of tension in the Middle East is relaxed. Meanwhile, means of inducing investment of funds held in private bank accounts and hoarded currency should be explored. One commonly used method is for government to guarantee loans made to domestic industry by private investors. As long as government credit remains intact, this method tends to draw otherwise idle funds into the economy and provide a multiplier for use of government credit.

At present, government direct assistance in financing of individual industries is conducted on a somewhat opportunistic basis. This activity should be programmed in such a manner that the government investment is liquidated on a pre-determined schedule, so that the high risk capital is recycled -- i.e., is made available serially for new projects.

E. SUMMARY OF FINDINGS OF TECHNICAL SURVEY

In general, the quality of Jordan industry -- plant, equipment, and managerial talent -- was found to be high compared to that of other developing areas having comparable levels of national income, comparable dependence on agriculture,

and comparable natural resources. Many company managements have demonstrated great resourcefulness in overcoming the effects of recent political and military disruptions to the economy.

The results of the plant tours and discussions with management were not uniform. Some firms had a great many problems, some had no problems worthy of comment. Some had problems which were wholly an outgrowth of international political problems and no unilateral solution was available. Some operations suggested potential for increasing efficiency with present products and opportunities for broadening operations into new product lines.

The findings listed below indicate areas which the assessors found to be worthy of further investigation:

1. Education and Training.

The general efficiency and competitive posture of Jordan industry would be improved materially by raising the level of education and experience in the following areas:

a. Accounting Practice.

With the exception of the large corporations, accounting practice was found to be deficient over a wide range of industrial firms. The deficiency was both qualitative and quantitative. Some firms had or claimed to have virtually no accounting records; many had no balance sheet data.

The explanation occasionally advanced that some firms "kept two sets of books -- one for the tax collector" or that the firm "did not keep books because it did not want to disclose the true state of its finances" may be true in some instances. The impression was gained, however, that if the managements of a number of small and medium size firms had a better understanding of accounting, they would maintain more complete records and would use them effectively as a management tool.

A series of intensive basic accounting courses for businessmen, conducted in Amman or at the University, is suggested. The primary objective would be to teach small businessmen how to set up, maintain, and use basic accounting records. Government sponsorship and Chamber of Commerce

cooperation are suggested in organizing the program. The curriculum should include the following:

- o Basic and executive uses of accounting;
- o Information technology;
- o Cost accounting;
- o Planning and budgeting;
- o Taxation and international accounting.

b. Production Engineering.

A number of factories were found to be badly laid out; in others, obsolete technology and equipment are being used. Jordan appears to have well educated engineers; however, practical experience is lacking -- experience which can be gained only from direct exposure to modern methods and equipment such as are employed in more industrially developed parts of the world.

In addition to sending individual company engineers abroad to visit equipment suppliers and industrial firms, which has been done by a number of firms, it is suggested that a technical library be established which would be open, free, to Jordan industrialists. This library would contain general text material on engineering subjects related directly to Jordan industry and, more importantly, would subscribe to and maintain a file of technical industry periodicals from abroad.

U.S. industry is perhaps better supplied with technical literature than that of any other country. Trade associations are organized for even very small segments of industry; most publish technical periodicals and conduct seminars and symposiums on every aspect of their respective industries for the benefit of their members. Jordan industry can take advantage of this vast fountain of information for a very small investment. Foreign members are generally welcome to join U.S. trade and technical associations or to subscribe to their publications.

c. Mechanical Skills.

Jordan industry shows the need for trained, skilled maintenance and repair mechanics. Over the years, industrialists have been disappointed in the results of sending Jordanians abroad to learn trades because of the high

rate of losses to the attractive earnings available in more developed areas.

It is suggested that a general course in maintenance mechanics be added to the curriculums of the trade (vocational) schools in Jordan. Funding such an operation can frequently be accomplished through one of the large international assistance agencies: USAID, UNIDO, FAC, FED, and others.

d. Techniques of Modern Industrial Management.

Stress should be placed on the theoretical and practical aspects of the following areas as related to Jordan, the regional market, and any other markets of practical concern:

Economics

- o Business and economic statistics;
- o Economic theory and analysis;
- o Management economics and economic forecasting;
- o Business policy, pricing, and wage theory.

Finance

- o Finance and public policy;
- o Corporate finance methods and policy.

Management

- o Administration;
- o Quantitative methods of business control and decision making;
- o Production management and operations research;
- o Systems design and implementation.

Marketing

- o Marketing management, decision-making and research;
- o Product management and research and development;
- o Marketing strategy, organization, and pricing.

2. Procurement of Equipment and Supplies.

Several instances were noted in which it was apparent that Jordan industry had purchased the wrong type of equipment or equipment which was misrepresented by the vendor as to age, amount of previous use, condition, and the number of spare and interchange parts included with the basic unit. Appropriateness, efficiency and capacity of newly purchased equipment were on occasion misunderstood by the Jordan purchaser and its true capability not discovered until the machinery was set up and operating.

It was notable in the survey that efficiency was found to be highest in plants which had been equipped by European or American equipment suppliers under a turnkey arrangement which provided start-up supervision and operator training.

There are engineering firms in both Europe and the U.S. which will find, negotiate purchase of, and guarantee quality of equipment for clients. The fee for such service is in the neighborhood of 5% to 8% of the FAS cost of the equipment.

The Afro-American Purchasing Center, Inc., New York, takes a somewhat different approach to this service. Afro-American is a private, non-profit corporation which, according to its management

- acts as a purchasing agency for foreign governments and quasi-public institutions;

- trains foreign nationals in modern procurement techniques that enable them to buy effectively in international markets.

A recently published brochure on this organization is quoted here:

"Afro-American was created as a result of a feasibility study conducted by the Ohio State University financed by the U.S. State Department Agency for International Development. It is backed by a number of institutions and individuals in American industry, education, and philanthropy.

"The A.A.P.C. purchases equipment and supplies only in the United States. However, it will perform its services for any nation in the

world -- is not limited to African clients as the name would imply. Its fees are designed primarily to cover the cost of overhead and educational activities of the Center. They are not based on a profit objective. Any excess of revenue over expenses will be used to broaden A.A.P.C.'s educational program.

"The fee for purchasing service is quoted as 3-1/2% of the value of the commodity, delivered to the port of embarkation (FAS), on purchases of \$100,000 and over; 5% on purchases under \$100,000."

3. Export Marketing.

Several of the firms interviewed indicated that they did not know how to go about determining the feasibility of marketing their products abroad or of setting up a foreign market penetration program if demand warranted.

Organization of an Export Marketing Commission is suggested to seek and exploit export demand for Jordan products.

Such a commission would handle every aspect of developing Jordan's export potential:

- o Find markets abroad for present Jordan-made products;
- o Find products which Jordan can manufacture for export;
- o Identify buyers; negotiate sales agreements;
- o Establish the procedures to follow to exploit foreign markets:
 - Negotiation of contracts with foreign sales agents or distributors;
 - Price and payment procedures;
 - Shipping arrangements;
 - Handling duty and port charges, other clearances.
- o Advise GOJ in respect to trade agreements;
- o Promote Jordan products in foreign markets.

It might be practical for the same Commission to handle other products in addition to manufactures -- agricultural and mining products, for instance.

4. New Product Potentials -- Opportunities for Increasing Inter-Industry Trade in Jordan.

The following product possibilities are suggested as subjects for feasibility study and cost-benefit evaluation:

(1) Sugar.

The refining of imported raw sugar for packaging for retail sales, and for bulk sales to the soft drink and candy manufacturers, bakeries, manufacturers of alcohol, pharmaceutical, and sugar content products.

The production of by-product molasses and syrups in the contemplated sugar refinery, for sale to animal feed manufacturers.

(2) Sulfuric Acid.

Manufacture of sulfuric acid using the sulfur dioxide and sulfide waste gases from the petroleum refinery.

(3) Heat Treating.

Provide custom heat treating service to machine shops and others who weld or cut metal in the course of manufacture or making repairs.

(4) Metal Brazing.

Provide a custom metal brazing service for repairing or manufacturing small, lightly-stressed non-ferrous structural parts.

(5) Plastic Parts.

Expand the use of existing injection molding equipment to make plugs for paint cans, tops for pharmaceutical containers, stoppers for wine and brandy bottles, lead battery spacers, and other products.

(6) Liquid-Tight Containers.

It is suggested that the demand for liquid-tight containers in Jordan and the feasibility of local production be examined as a whole. The two

most important products in this field -- tin cans and glass bottles (including closures) are alternative packages for several of the products manufactured in Jordan. There probably is not enough demand to support manufacture of both.

Because of their high bulk-to-value ratio, the economics of importing set-up liquid-tight containers is generally tenuous; conversely, local manufacture may be economically attractive.

It is suggested that the feasibility study be limited to only three products:

Cans

The establishment of a single, modern can plant which would import tin or galvanized plate and/or sheet aluminum to manufacture several sizes of cans for use in the packaging of soft drinks, beer, tomato paste, vegetable oil, sauces, petroleum products, paint, and vegetable seeds.

Bottle Caps and Liners

Establishment of a secondary operation in an existing plant which would manufacture metal bottle caps and plastic liners for sale to soft drink and beer producers and the distilleries. Such an operation might be compatible with one of the user companies or in a conglomerate or in one of the light metal fabricating firms.

The establishment of a secondary operation in an existing plant having extruding equipment which would manufacture push-on and safety seal caps for the pharmaceutical industry.

Glass Bottles

The manufacture of glass bottles using local materials is included in a recent survey of the potential for glass and ceramics manufacture. This potential industry should be considered carefully.

(7) Electric Furnace or Oil-Fired Open Hearth Furnace Operation.

Manufacture of steel ingot from scrap metal available in Jordan.

Manufacture of cylindrical and round steel grinding balls for use in cement plant.

(8) Cement Bags.

Manufacture of multi-wall paper cement bags for sale to cement plant. Equipment of existing paper plant would require extensive up-grading; furnish would include virgin pulp.

(9) Phosphates.

Manufacture of normal superphosphate for local and possible export sale. Improved techniques and equipment over that now used in the pilot plant at Ruseifa would be required.

Manufacture of triple superphosphate for local and export sale using either the wet method, requiring sulfuric acid, or the dry method, requiring the electric furnace reduction of phosphate rock to elemental phosphorus for the production of the necessary phosphoric acid.

Manufacture of elemental phosphorus by the electric furnace method for export and local use to manufacture triple superphosphate. High iron and aluminum and low grade phosphate rock are more economically processed by this method than any other provided electric power rates are low.

At this stage of the phosphate industry development in Jordan, information on new local and foreign processes should be accumulated and evaluated to eliminate the possibility of installing obsolete or "soon to be obsoleted" processes and equipment. This procedure is applicable to all industries mentioned in this report.

(10) Feed Components.

Use of raw organic waste from abattoirs and tannery beam house in manufacture of concentrate supplement used in animal feed manufacture.

Use of molasses from prospective sugar refinery in manufacture of animal feed.

(11) Potassium Salts.

Recovery of potassium salts from salts which accumulate in dryer section of calcinators in cement plant for use in manufacture of mixed fertilizer.

(12) Fire Brick.

Development of Jordan's deposits of fire clay, diaspore, bauxite clays, magnesite, olivine, dolomite, silica and micaceous materials for the production of fire and insulation brick for use in the furnaces of the cement, iron and steel and battery manufacturers.

(13) Mill Scale.

Mill scale from the iron and steel company -- about 40 tons per month -- might be used by the cement plant to help balance out the iron deficiency in the material received from its present quarry. The amount of mill scale currently available will make up not more than 10-12% of the amount of iron oxide required for the production of higher grades of cement. When the contemplated new merchant rolling mill comes on stream, the amount of scale available will double.

(14) Agro-Industrial Products.

Eggs

Jordan has a thriving poultry business which produces broiling chickens almost exclusively. The potentials of raising laying hens as a base for an egg industry should be studied. At present, most of Jordan's eggs are imported.

Vegetable Seeds

Most of Jordan's vegetable seeds are imported. A recent study (Prefeasibility Study, Vegetable Seed Production, Thomas H. Miner & Associates, Inc., 1971) indicates that a vegetable seed packing facility would be successful.

Canned Foods

The product line of the existing tomato paste plant should be broadened to include reconstituted products, canned whole tomatoes, fermented pickles and olives, and co-product tomato seeds. These lines should be added at the same time the equipment is replaced. (See Prefeasibility Study, Processed Fruits and Vegetables, Thomas H. Miner & Associates, Inc., 1971)

5. Improvement of Existing Operations

Consideration should be given by individual company managements to the following areas for opportunities to improve present plant operation.

(1) Quarries.

Breaking up large rocks by mud capping a small dynamite charge in preference to continuing present sledge hammer method.

Elevation of the hammer mill and screens so that screens will feed by gravity into bins, according to rock size; bins in turn feed into delivery truck by gravity through chutes fitted with sliding doors.

(2) Flour Mills.

Improvement in housekeeping. Prohibition of smoking in the mill proper and in all areas in which dust content may be near lower explosive limit.

(3) Distillery.

Extraction of essence of anise by leaching seed with alcohol solution. Manufacture Arak by adding essence to alcohol.

When replacement of present oil-fired cooper pot stills is necessary, replace with stainless steel stills of more advanced design.

(4) Cigarette Manufacturer.

Purchase of green leaf and performance of drying and curing operations in lieu of purchasing badly dried leaf from farmers. Alternatively, instruct farmers in modern drying and curing methods.

(5) Tile Manufacture.

Substitution of silica sand for limestone fines in manufacture of tiles.

Testing effect on quality of brick when it is immersed in water instead of sprayed during curing operation.

(6) Cement Manufacture.

Control over the iron content of cement would permit manufacture of better quality and of more grades. Several methods of enhancing the mineral balance are suggested elsewhere in this survey.

Examination of the feasibility of bulk handling of cement, marketing pre-mixed concrete.

Consideration should be given to using wet process for any future cement plants built in Jordan.

(7) Needle Trades.

Testing the strength of thread, quality of sewing and fade resistance of textile dyes -- compare to U.S. or European standards.

Making sure threads and yarns used for sewing have same shrink rate as cloth, so that sewing threads do not cut their way out of the garment as a result of laundering. Thread ends should be tied before cutting.

Studying means of reducing the number of sewing operations by the use of single thread sewing.

Consideration of the advantages of limiting the variety (both type and make) of equipment operated.

6. General Problem Areas.

In the course of the interviews held with industry management, the following points were made:

Government subsidies paid for growing tobacco might better be based on the price of dried leaf and the cost passed on to the ultimate consumer via a tax on cigarettes instead of being charged to the tobacco purchaser as at present.

Quality standards for green or dried leaf should be established by the government as a part of the price control regulations.

(1) Jordan-Made Consumer Goods.

A campaign might profitably be undertaken by the government or the Chamber of Commerce and Industry to promote domestic demand for Jordan-made products. Reports are rife that some Jordan-made products must be mislabeled -- indicating foreign origin -- in order to sell on the local market. Producers of consumer goods claim that the public entertains an unfair bias favoring imported products. Conversely, if a monopoly situation is created through direct or indirect government intervention, the Government should take steps to assure the quality of the product or products affected by the monopoly.

(2) Customs Control.

Corollary to the foregoing, the Customs Department should increase its surveillance over labeling of imported products. Reports of false quality claims on labels of imported goods are worthy of investigation.

(3) Re-Use of Scrap Materials.

Present law requires destruction by burning of waste from leather operations and cigarette manufacture. These materials have value as a source of nitrogen in fertilizer manufacture.

Scrap steel and iron and mill scale apparently are not being recycled through industry on any organized basis.

(4) Tariff Protection.

The shoe industry suffers from foreign competition. The effectiveness of present tariff protection -- 78% ad valorem on foreign-made shoes -- is partially diluted by the 40% duty which domestic shoemakers must pay for imported materials.

(5) Export Incentive.

The export incentives provided by law are too cumbersome for practical use. The clerical work involved in proving eligibility for rebates of various components of a product is burdensome. A simpler system is needed.

7. Raw Materials and Services

It is in the national interest and the policy of Government to spread employment to the extent practical. To that end, several of the firms interviewed "make-work" for their labor; i.e., the plants have sufficient volume to operate only part of the year or part of a shift, but pay their labor for the full term. There must, therefore, be some excess labor available to these firms which could be used to improve housekeeping, make repairs to plant property, and to salvage materials which are in a number of instances being left to deteriorate from exposure to the elements.

In a thin economy like that of Jordan, every resource must be exploited to the maximum; every waste product should be examined to discover opportunities for recycling or use in production of secondary products.

Deposits of minerals and other raw material should be sought for use by Jordan industry to replace imported materials and to open the door to new production.

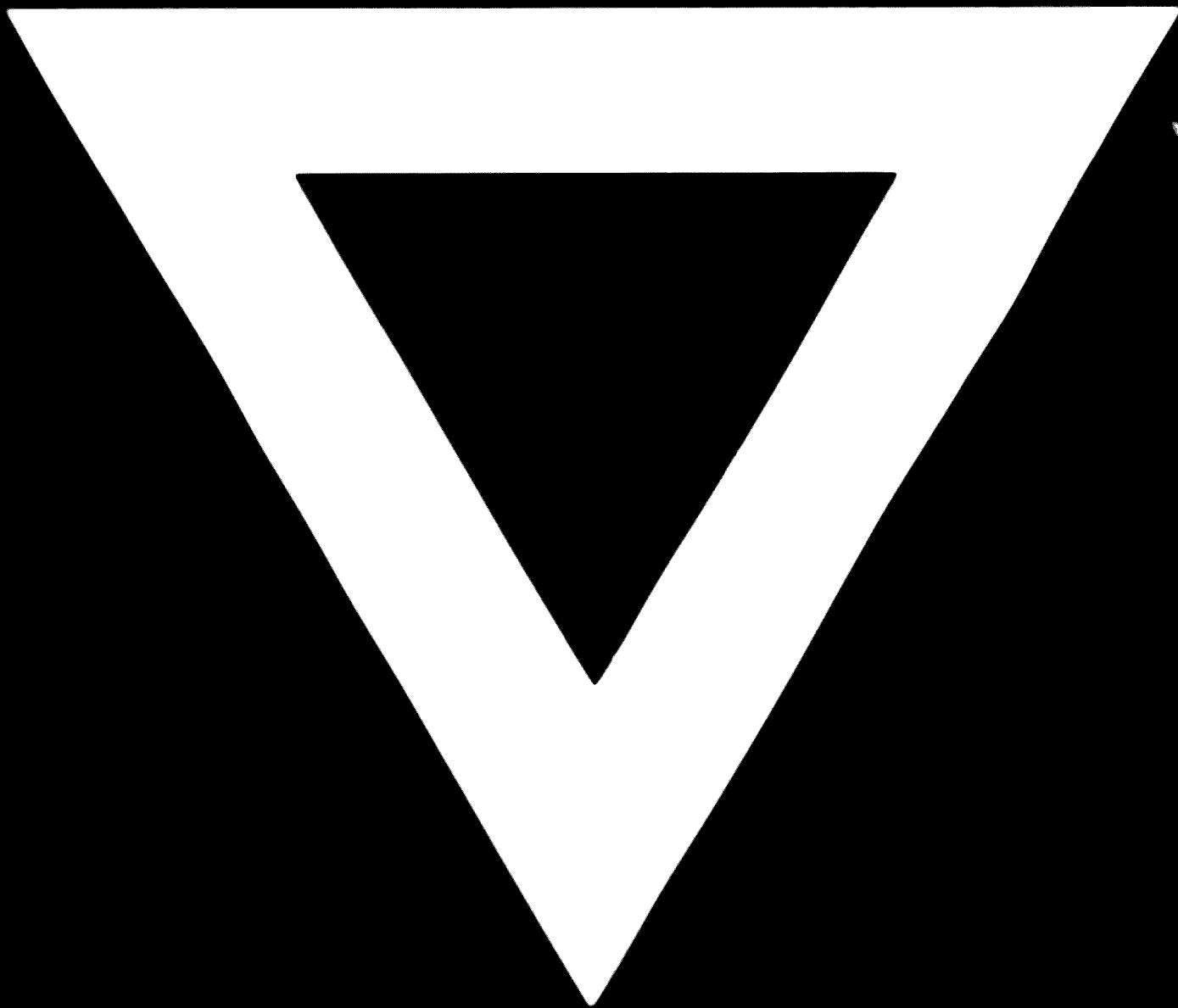
Kaolin	chinaware, stoneware paint, rubber and plastic fillers paper sizing whiteware refractories electric insulator
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Fire clays	refractories stoneware electrical insulators
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Tripoli	paint filler, metal polish, sound and heat insulator
Iron and copper ores	iron, copper, paint pigments
Manganese ores	dry cells alloys (steel) chemical oxidizing agent
Silica	refractories tile, architectural brick, concrete cement
High iron content siliceous materials	cement
Potash	fertilizer
Oil shale	oil (for reserves)



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