

(21)

STUDY REPORT
ON
THE SMALL SCALE INDUSTRIES
IN IRAN

JANUARY, 1968

OVERSEAS TECHNICAL COOPERATION AGENCY

GOVERNMENT OF JAPAN

ARY

JICA LIBRARY



1044000[6]

国際協力事業団	
受入 月日	'84. 3. 28
	309
	60
登録No.	02108
	KE

Preface

The industrialization in developing countries seems to have thus far been concentrated in the field of basic and large-scale industries such as steel, fertilizer, cement, paper and pulp, etc. and consequently most government money and foreign aid have chiefly been invested in this field. However, it is also of importance that in line with the above small-scale industries in various fields could be harmoniously fostered.

The supply of parts for large-scale industries, manufacturing of goods for daily life and other sundries such as pan, pot, match, pencil, chinaware, bicycle, textile goods, etc. ---in these activities, small-scale industries will enjoy less capital-intensive investment, and produce a higher rate of employment and reduce consumers goods import.

From this point of view, a number of developing countries tend to call on Japan for cooperation or assistance towards the establishment of various small-scale enterprises.

The Government of Japan in response entrusted the Overseas Technical Cooperation Agency with the task of the implementation of survey and study in the said field. The Agency had organized three study teams to be dispatched to their countries separately, i. e., Southeast Asia, the Middle East and Africa, and the Central and South America. On August 19, 1967 the first team consisting of five experts headed by Mr. Kyoichi Miyagi, Executive Director of Japan Consulting Institute, was sent to the Middle East and Africa including Iran, Tanzania and Kenya.

During the twenty-four days field trip, the team called on these three Governments and authorities concerned, and exchanged views concerning their common interest. Hereby submitted is a report based upon the outcome of the field trip. Nothing would be more gratifying to our Agency than if this report could be of any help for the acceleration of the development of small-scale industries in the above three countries, and thus contribute to the enhancement of closer economic cooperation and friendship between Japan and the countries involved.

In conclusion, I take this opportunity to express my gratitude to the Government and People concerned in respective countries with which the team came into contact for their kind cooperation and support shown the team while it was in their countries.



Shinichi Shibusawa
Director General

Overseas Technical Cooperation Agency
Government of Japan

CONTENTS

GENERAL DESCRIPTION

1. Basic subject	1
2. Insufficient cooperation of advanced countries in promoting small scale industries	2
3. Concrete forms of cooperation which Japan should take for the advancement of small scale industries ¹	3

DETAILED EXPLANATION

IRAN

Chapter 1	General condition of economy	5
Chapter 2	International trade, balance of international payments, foreign exchange control system	6
Chapter 3	Foreign Capital	10
Chapter 4	Financing and capital procurement	11
Chapter 5	Economic development program	14
Chapter 6	Basis of industries such as electric power transportation and industrial estate	19
Chapter 7	Labor and employment	23
Chapter 8	Advancement of enterprises	24
Chapter 9	Related industries, equipment machinery and procurement of raw materials and parts	26
Chapter 10	Present state of industrialization	27
Chapter 11	Status of the advancement of foreign enterprises	28
Chapter 12	Small scale industries whose establishment are requested in Iran	29

GENERAL DESCRIPTION

The main object for this study team is to seek causes that Japan has failed in economic cooperation with developing countries in the field of small scale industries.

In view of the fact, this team performed investigation works from various angles as set forth below :

1. Basic subject

(1) Government authorities concerned are hoping for the rapid development and fostering of small scale industries with a view to the following.

- a. Economic development through industrialization and increasing of national income will be attainable.
- b. Use of foreign currency will be reducible.
- c. Rising of employment rate will be attainable.

It is noteworthy that the setting-up of even an assembly plant which imports every material and parts from abroad will bring about an effect of foreign reserve savings to a certain extent, and produce a higher rate of employment absorption as compared with every use of foreign money for finish products import.

A gradual transition to domestic production of parts will also be attainable whenever possible.

(2) Obstructive factors in small scale industries development.

a. The number of business men who can confidently establish and manage a plant and the number of engineers are very few. There are those who have the funds in local currency but the majority of the funds have been accumulated by commercial activities and very few business men have a project worthy of converting investing to production capital. Since they have a strong desire to invest their funds in production capital, they would be willing to do so if a prospective plant were constructed and if a qualified person was to manage it. In regard to foreign currency, this country is not in so difficult a position at present when compared with other developing countries. However, the Government is cautiously against the rapid increase of import in a foreign goods and desires for loans or deferred accounts for purchasing heavy equipment such as a plant, etc.

b. In making a profit for a specific small scale industries, it becomes difficult to estimate the demand for products and to decide on the size of the plant because the majority of statistical data is not complete. However, since the export and import statistics (customs statistics) are fairly complete, it is possible to estimate the demand to some extent based on these statistics.

c. Demand is low because population is small and moreover national income per capita is low. Therefore, it seems difficult to find a small scale industry which comes in the range of profitable industries. It is considered, therefore that the unsatisfactory progress in small scale industries is due to the above three points.

(3) It is hoped that there will be capital participation by advanced countries. Because of few business men and due to the difficulty in finding a promising project as stated previously, there is no other way but to invite them from advanced countries and have them construct and operate the plants. With the idea of investing the previously mentioned available in the country in the plant.

Against the real intention of the Government for recommending the establishment of enterprises with 100 % national capital, the investors are strongly hoping for foreign capital, management of the plants by foreign business men may not be realized in years.

Therefore, a law has been established to protect foreign capital and with the guarantee of right to remit the capital and profit under the specified conditions. Also, there are countries which offer a favorable treatment on taxation (recognized depreciation and reduction in corporation tax) to newly established enterprises. Also in these countries, other favorable treatment such as arrangement for procuring the land at low prices, are being offered, For details of favorable treatment, refer to Chapter 3 of the Detailed Explanation.

2. Insufficient cooperation of advanced countries in promoting small scale industries.

(1) In spite of relatively small monetary figures in supplying plants, the small scale industries require expenses for surveying the site and personnel expenses for traveling back and forth for negotiations, etc. before a contract is concluded, in the case of a large plant. In addition, it requires a considerable expenditure for the dispatchment of engineers for construction work, test operations of the plant and others. Therefore, the plant cost will be high.

(2) In regard to the export of large scale industrial plants, machinery manufacturers of Japan has experience and are well prepared. However, as to the small scale industries of types, Japan is not equipped with a sufficient number of engineers to

cover these enterprises and therefore are ill equipped to make a design and estimate of the plant.

(3) In Japan, designs of small and medium sized plants are done only by the enterprisers, operators of small scale industries. With the exception of some businesses these operators do not wish to expand overseas and instead in many cases these enterprisers are presently over burdened with domestic production.

(4) Most of the inquiries from developing countries on small and medium sized plants are accompanied by request for foreign investment. However, the management of small and medium scale industries in Japan do not wish to make oversea investments, the reasons being, that they do not have funds sufficient enough to invest overseas and also that they lack engineers and management personnel to despatch overseas.

3. Concrete forms of cooperation which Japan should take for the advancement of industries.

It is difficult for Japan to provide economic cooperation on the same level as other advanced countries because of her small accumulation of capital and national resources. However, in order to meet requests by these developing countries for materialization of small scale industries, the following measures inevitably become necessary in view of the facts previously mentioned (the sequence of the following measures are in accordance with the procedures for exporting industrial plants or overseas investment for small scale industries).

(1) To make a complete feasibility survey on the proposed small scale industries. Business plans based on complete surveys on the demand for products, physical layout of the plant, working condition, profitability, etc. for the proposed small scale industries have an influence on success in the future by which the desire to advance overseas is greatly promoted.

(2) To promote the desire of Japanese enterprises, particularly, those of small scale industries, to expand overseas by means of advertisement in Japan.

(3) To provide yen credit, bank loans or deferred accounts in order to promote small scale industries in developing countries.

Though it is possible to utilize private capital (local currency) to some extent in developing countries, the Government authorities are requesting yen credit, bank loans and deferred accounts for purchasing equipment and machinery foreign currency.

(a) Yen credit

There was a complaint that if the yen credit was provided the Japanese side was inconvenienced by the considerable time required for processing the procedures for yen credit for a smaller sized plant. However, from the standpoint of promoting small scale industries in the future, it is necessary to provide yen credit to the projects one after another whenever they are ready though the projects may be small in size.

(b) Bank loans

A desire as expressed that they expect bank loans from Japan for small scale industries. They wish that credit line be given to the banks of the country concerned and that the selection of individual projects for yen credit rest with these banks and that the yen credit be used for procurement of machinery from Japan. The other party is showing desire for this method and this matter is considered to be worthy of attention by the Japanese.

(4) To provide measures for favorable treatment of the investment in relation to the export of small scale industrial plants which accompany capital investments. As stated previously, because of the small number of engineers available for the operation of the plant, capital participation by foreign countries is requested in order to stabilize the operation of the plant for a long period of time. Accordingly, the majority of the projects on small scale industries require capital participation of 50% or less of the total capital. Therefore the Japanese Government should work out measures for favourable treatment of these investments.

Chapter 1. General Condition of Economy

GNP in Iran from 1963 through 1964 was 24.2% in the agriculture and fishing industries followed by 18.2% in commerce, 19.7% in oilwell drilling and oil refining and 11.2% in manufacturing.

Though the weight of the agriculture and fishing industries has decreased in recent years, these industries are still occupying an important position in Iran's economy.

The main agricultural products are wheat, barley, rice, cotton, tea, and tobacco. The main livestock products are wool, sheep intestines and leather.

The petroleum industry also occupies an important position. Iran is the sixth largest petroleum producing country in the world (Third in the middle east following Kuwait and Saudi Arabia) with an estimated deposit of 35 billion barrels. Presently, exploitation, drilling, refining and sales of petroleum are being conducted by consortium NIOC and 8 other companies with the permission of NIOC, and the revenue from petroleum related industries is playing a major role in making up the deficit in international trade and finances.

Though the weight of the manufacturing industry is still low, it has steadily grown in recent years and showed a growth of 16.5% during the period from 1963 to 1964.

The GNP showed an increase of 28% from 303.7 billion rial (4.3 billion dollars) in 1959 - 1960 period to 389.3 billion rial (5.5 billion dollars) in 1963 - 1964 a period 4 years later and in the following 2 years it showed an increase of about 15%. It is estimated that it reached 450 billion rial (6.4 billion dollars) during the 1965 - 1966 period.

National income per capita increased from 176 dollars in 1959 - 1960 to 200 dollars in 1963 - 1964. Because of the subsequent increase in population, national income per capita is estimated at about 200 dollars also in the 1965 - 1966 period. The non-consumer's price index is relatively stabilized. (Note: One dollars equivalent to approximately 75 rial)

Chapter 2. International Trade, Balance of International Payment, Foreign Exchange Control System

1. Trend of international trade and the balance of international payments

The Government of Iran has been implementing the policy of international trade for the applicable fiscal year by announcing the export and import regulations and releasing a table of tariff rates at the beginning of the fiscal year. The Government is exerting efforts in an attempt to materialize the policy with three major objectives, i. e. protection and promotion domestic industries, encouragement of export, protection of the interest of consumers and in the form of balanced international payments as support of the policy.

The Iranian Government, with these problems of international payments, has decided to slow down its development project in order to hold down further expansion of import of capital goods, which has been the main cause of rapid increase of import. The Central Bank has also turned towards a "tight" money policy to hold down credit expansion which had been supporting an investment boom. A series of such measures is now beginning to show its effectiveness to some extent. Moreover, the negotiation with CONSOC LAM on increased petroleum production, which began in the fall of 1966 was concluded in December. It can be said one of the promising factors is that as a result of the negotiations, a basic line, such as (1) an additional transfer of a considerable amount of oil to the National Iranian Oil Company (NIO) and (2) an early return of one fourth of the concession area, has been firmly established. This interpretation is based on the fact that though the increase of 17.5% annual rate in the size of production, which Iran insisted upon, was not materialized, a real increase of 17.5% seems to have been secured in the form of a revenue from petroleum and that if these figures are converted to foreign currency, an increase of 40 to 50 million dollars in revenues can be expected.

2. Export Trend of Commodities

In classifying the structure of export in Iran by commodities it is found that the majority of the exported goods except for carpets are accounted for by primary products. Items amounting to more than 11% of the total amount of export are cotton (28% in 1965), carpets (25% in 1965) and fruits (13% in 1965). These three items are earning over 60% of the total foreign currency. The expansion of export of these items was particularly remarkable in 1965 and the rate of increase reached 99% in that year. On the other hand, the carpet with their history as an industrial art object and high quality has reached a stabilized demand and is considered an important item for export to neighboring countries, Europe and the United States.

In 1965 it showed an increase of 38% compared with the previous year and in 1966 it showed a stabilized growth with an increase of 25% over the previous year. In addition, it is worthy of note that the export of mineral resources the exploitation of which has been pushed forward in recent years, is continuing its growth. In 1965 the total share of mineral resources exported increased to 6% and is now becoming the fourth major item of export following the three items previously mentioned.

3. Import Trend of Commodities

In classifying the structure of import in Iran by special category, it is found that the trend of increase in capital import is particularly remarkable in recent years. The rate of increase in capital goods in 1964 and 1965 in comparison with the previous years was 59% and 32% respectively and their shares in total import increased from 35% to 41%. Such phenomena is supported by an invest boom brought about by the progress of the 3rd development project. Along with the capital goods, import of raw materials and semi-finished goods has shown a considerable increase and recorded a rate of increase of 34% 1964, compared with the previous year and 23% in 1965 in comparison with the previous year. On the other hand, expansion of import of consumers' goods was completely restrained with the full influence of a tight money policy. Against the increase of 41% in 1964 compared with the previous year, import in 1965 reversed and decreased 0.5% with a decreasing tendency. Among capital goods, increase of machinery and steel was particularly remarkable and their share in the total import increased from 27% to 34%. Electrical equipment moved from 5% in 1965 and is steadily increasing. Regarding the import of foodstuffs, the main items are seasonings and articles of luxury such as oils and fats, sugar and tea and their share is far below 10% of the total import. It should be said that there is almost no problem concerning wheat which is the staple food. Regarding the textile products, on the other hand, domestic production had been pushed forward primarily on cotton textiles and its share in the total import dropped from 9% in 1960 to 20% in 1965.

4. Trend of Export and Import by Country

First, regarding the structure of Iran's trade by country, trade with advanced countries overwhelmingly accounts for a large portion, and the phenomenon conspicuous with the trade is that export with these countries accounts for around 50% of the total export, while import from these countries exceeds roughly 70% of the total export. In regards to the structure of the export of main commodities by country, carpets have their largest customers in West Germany followed by Switzerland, Kuwait and the United States. The majority of cotton is sold to the EEC countries and a considerably large quantity is also exported to

Japan. The majority of fruits goes to the United States followed by West Germany and England. The structure of import by country most of the so-called heavy and chemical products such as machinery steel products and chemicals, which account for more than 40% of the total import are being supplied by countries in Europe and the United States.

Though imports from Japan are increasing yearly, absolute quantity is still small. Among the items imported from Japan, ceramic ware, galvanized steel sheet, electric fan, thermos bottle, sewing machine, plate glass, tire tubing and motorcycles almost monopolize the markets. In addition, wool textile, paper, raw materials of chemical fibers, steel tubing and dry-cell batteries also account for a considerable large share amid a high competition. The market for tractors, trucks and agricultural equipment is monopolized by the United States; passenger automobiles and spinning machines by West Germany, deep well pumps by England and electronic equipment by East Germany respectively. Competition for the market is seen in bolt-nuts among England, West Germany and Japan, batteries between West Germany and Japan, automobile parts between West Germany and the United States, wool yarn between Formosa and Japan, steel tin plate among West Germany, England and Japan, and band steel among West Germany, Japan and Italy respectively.

5. International Trade, Foreign Exchange Control System

(1) Foreign Exchange Control

All foreign exchange settlements are placed under the exchange control of the central bank. Foreign exchange for payment of licensed import items and their related services can be freely obtained at foreign exchange banks. Remittance of foreign capital and profit requires permission on each occasion but is not specifically restricted. Foreign exchanges obtained through export or by other means must be either converted to real or reported on their use.

(2) Trade Control

The export and import of commodities is controlled and implemented by export and import regulations and the tariff rate table which is publicized every year by the ministry of economy. The purpose of these regulations and the table is to secure required materials, to protect the interests of consumers, to maintain the balance of international payments, to protect and promote domestic industries and to promote export.

a. Import Restrictions

(A) The import item license system: to regulate import items quantitatively, imported items are divided into "prohibited", and "permitted" items.

(B) Tariff : The tariff rate table is prepared yearly.

(C) Commercial profit tax : This is composed of specific duties and ad valorem duties and:

(1) Since this tax does not require the approval of the National Assembly, this system has frequently been utilized for tariff also. The majority of tariff rates range from 30 to 80% and the maximum rate is 225%.

(D) Import Registration Deposits : When an import contract is concluded a registration deposit is made at the central bank and the deposit is repaid after the imported items have been cleared through the customs office.

Rate of deposit differs with the type of commodities but it is fixed in range from 3 to 76.50 rial.

b. Export Restrictions

(A) The Export Item License System : Exportation of items which are scarce in the country requires permission.

(B) Export Subsidies : The scope of application has been reduced and presently only manganese ore (20%), leather (9%) and chrome ore (7.5%) are under this category.

(C) Commercial profit tax : This tax is imposed on the export of a few consumers' goods and raw materials.

Chapter 3. Foreign Capital

1. Basic requirements for foreign capital

First of all, absolute requirements for the qualification of foreign investors are that the applicant must be an individual, private enterprise or organization of foreign nationality and any foreign government is allowed to participate in private investment. Qualified parties may invest their funds for the purpose of development, production, manufacturing, agriculture or transportation in Iran. However, in order to be eligible for special benefits provided by law, they are required to fulfill the following three basic requirements.

(1) To invest in the fields which are open to and permitted Iranian private investors.

(2) Investment will not accompany any monopoly right or special privilege.

(3) Investment will be owned by private parties and no foreign governments whatsoever will be involved in the investment.

When establishing a joint stock corporation in Iran, it is necessary to pay attention to the following points.

(1) Except for the enterprises with the purpose of financing, insurance, transportation and petroleum production, there is no particular restriction imposed on the share of foreign capital.

(2) The number of promoters should be at least 2 and executive directors should be 3 at a minimum but it is not necessary to be Iranian.

(3) Investment in kind in the form of tangible or intangible assets is authorized but at least one third of the total investment should be in cash.

(4) There is no provision in the Iranian Commercial Law which protects the minor share holders nor is there any such custom existing. Therefore, obtaining the majority of issued shares substantiates the control of a company.

Chapter 4. Financing and Capital Procurement

1. Financial System

It was after the enactment of the Monetary and Banking Act in 1960 that the structure of financing was established institutionally in Iran. In compliance with this law, Bank Markazi Iran (Central Bank of Iran) was newly established as the central bank and the functions of the central bank such as issuance of bank notes, supervision of other banks, adjustment of financing and holding of Government accounts was separated and transferred from Bank Melli Iran (National Bank of Iran).

Besides the central bank, banks officially approved for business in Iran at present are 7 National Banks, 9 private banks, 1 foreign bank and 8 banks under joint management with foreign countries and a total of 25.

2. Financial Condition

Iran put in force the 3rd Development Project (5-1/2 years) as of September 1962 following the 2nd seven year Development Project. In 1964, using a bonus revenue of 185 million dollars from new oil right accords as the main fund, Iran increased her investment project greatly from the initial 140 billion rial to 200 billion rial and set up a full scale development project. This resulted in an increase of investment in the public sector, which in turn stimulated and brought about active investment in the private sector and developed unprecedented activities in the Iranian economy with an annual growth of more than 10%. It was the credit expansion by the central bank, besides the revenue from oil, that supported such economic prosperity. Net increase in the loan to the Government from the central bank in 1964 and 1965 sharply rose to 6.2 billion rial and 13.4 billion rial respectively compared with 0.86 billion rial in 1963. Also, net increase in loans to private enterprise in the same period showed an expansion amounting to 15.2 billion rial and 14.1 billion rial respectively compared with 11.4 billion rial in 1963. The amount of currency issued totaled 92.8 billion rial at the end of 1964 and reached 106.2 billion rial at the end of 1965 and expanded by 13.3% and 14.4% respectively compared with the previous year end. Also, the price index at the end of 1964 exceeds the standard at the same period of the previous year by approximately 4.7%.

As 6% annual growth of the economy was anticipated in the 3rd development project growth of 10% seemed excessive. It was natural that the failure of economy caused by this booming finally become evident in the form of a large unfavorable balance of international payments. That is though the settlement of accounts in 1964 showed black-ink figures of 113 million dollars nominal, it was

actually a red figure of 72 million dollars with the exception of the extraordinary revenue, from oil. Also in 1965 international payments converted to the red even numerically and though the range of the deficit was limited to approximately 65 million dollars this was a deficit of 105 million dollars in rial when a 5 million dollars bonus from oil and 35 million dollars short-term loan from oil CONSORTIUM were taken into consideration. It is evident that the cause of this large unfavorable balance of international payment was a sudden increase in import particularly a sudden increase in the importation of capital goods aided by an investment boom, judging from the fact that the rate of increase in the import of capital goods in 1964 and 1965 were 44% and 68% respectively.

The Iranian Government, in order to extricate itself from such a crisis in international payments, slowed down the development project, in particular, to make a complete restudy of the project and to postpone or suspend for the present all projects which are not accompanied by foreign loans or those which are not substantiated by foreign currency. The central Bank also adopted a series of money measures as described below with the aim at restraining import expansion, excess credit and a sharp rise in prices.

July 1964 : A redeposit system of import advance payment deposits
(15%, 40%, 100% according to type of commodities) at the
Central Bank

August 1965 : Establishment of a 2% import registration deposit

September 1965 : A rise of the reserve requirement ratio of private banks
as follows:

Sight deposits	From 12% to 15%
Savings deposits	From 7.5% to 10%
Time deposits	From 5% to 10%

August 1966 : (1) A rise in official bank rate from 4% to 5%

(2) A rise in import registration deposits from 2% to 4%

These money policies, along with the restrained policy of the Government on the development project, brought about a decrease in the rate of expansion of overall import, centering the retreat in the rate of increase of capital goods, and resulted in a dull in the expansion rate in the amount of the currency issued because of the gradual decrease in the amount of loans to the Government by the central bank and was beginning to show some effectiveness of the measures. However, the balance of payments in 1966 still showed a deficit of about 32 million dollars and the problem is still unsolved. Therefore, conversion of the present restricted policy to a more liberal policy is not expected in the near future, and the situation tends toward a more restricted policy.

The general money market rate in Iran had been relatively high, 10% and it is said the rate had risen again ranging from 1 to 2.5% because of the rise in the official rate. Moreover, it is not unreasonable to expect at financing would be more restricted than before when the money policy had shown its full effectiveness and problems such as procuring operational funds at the site when establishing enterprises will have to be a focal point.

3. Financial institutions related with the development project

Financial aids to private enterprises in Iran in the past were all provided through Government organizations and by Government funds such as financing by the Industrial Credit Bank (ICB) of National Development Financial Institutions, backed by the budget of the Plan Organizations. However, the Iranian Government, prior to the implementation of the 3rd Development Project, had decided that the promotion of private investment in the manufacturing industry is most important. For this reason, the Government concluded that it was desirable to establish a financial institution which was experienced in management and in addition possessed effective means to introduce foreign capital and techniques to Iran, that the new institution must be a private organization and that, at the same time, there was a need to request the capital participation of banks and investment companies in European countries and the United States while retaining 50% or more of the shares for Iran. Under such circumstances and with the cooperation of the World Bank, the Industrial and Mining Development Bank of Iran (IMDBI) was established in 1959 as a private middle and long term financial institution.

The fields of business of ICB and IMDBI are not necessarily distinctly divided. However, there seemed a basic difference in the attitude of the two toward financing, one being a Government institution and the other a private organization. The policy of ICB is to take up the applicable projects even if they involve some risks or prove unprofitable when they are determined from a national standpoint as requiring investment and financing. While, on the other hand, IMDBI is fulfilling a complete, sound management as a private financial organization and takes the positional not financing unprofitable projects or those with a rise involved. When establishing enterprises in Iran, it becomes necessary to make contact with these middle and long term financial organizations. It is said that ICB is not experienced in joint ventures. On the other hand, it is understood that IMDBI, because it is a joint venture itself, has handled many loans from the World Bank and AID, has an excellent international sense and a sufficient staff. Judging from the volume of business handled by this institution, it seems that this institution has far more opportunities to make contact with Iranian business men than ICB has. This fact indicates that IMDBI provides a greater utility value for business men in selecting and making a credit inquiry of other parties in joint ventures. It is the IMDBI that is requesting a bank loan from Japan, which is mentioned in the general section of this report.

Chapter 5. Economic Development Program

Iranian economy has always relied heavily on agriculture, forestry and fisheries which still account for 20 - 30% of the Iranian G.N.P. But, the development of these natural resources has been slow and the general economic development as in other countries in the near and middle East. To advance economic development a program to nationalize the mining industry was instituted prior to World War II; after the War Iran has had three Economic Development Programs financed mainly by its oil resources.

At present the Third Economic Development Program is in effect, its term ending in September, 1968. This Program is executed as a part of a long range plan of seven programs ending in 1988, which has been drafted by the Iranian Planning Organization. When compared with the pre-war development policies, the post-war programs, supported by the profits from the development of oil resources and economic aid from various countries, seem to have shifted emphasis to public investment and the development of private enterprises such as highways and schools.

1. The 3rd Economic Development Program covers a period of five and a half years, from September, 1966 to March, 1968:

This program had planned to have a public investment of 190.2 billion rial at first; but later was to 140 billion rial because of difficulty in raising funds; But because of financial and economic changes the Program has undergone several changes; and the revised figure of February, 1966, shows that the rate of investment achieved is 41% as of March 20th, 1966.

This Program aims at a yearly average of 6% of the economic development rate, and at the development of basic economic fields, particularly agriculture and industry. In agriculture the percentage given to the construction of irrigation and dams is slightly reduced compared with that in the second Development Program, and instead emphasis has been put on the stimulative measures of production such as easier finance necessary for the betterment of agricultural techniques. In industry, the Third Program places emphasis on electric power development and the development of heavy industry which tends to be neglected by private investments; and it almost stopped expanding the government owned, nationalized factories; is transferring them to private ownership, and at the same time highly encourages private enterprises. Emphasis on the governmental, large-scaled enterprise program is planned for the Fourth Development Program.

In the transportation division, highway construction is regarded as most important, followed by improvement of harbor facilities airports, etc. On a social and cultural level, the program also notes the high illiteracy rate and poor medical facilities, commonly

seen in underdeveloped countries, and emphasizes investment for improvement. The establishment of a man-power development funds is due to the necessity of training skilled workers for the developing industries.

Before executing the program, it was divided into basic and non-basic in order to avoid excess investment and a shortage of foreign money. The non-basic program is flexible so that it can be halted or postponed according to various conditions such as foreign aid. The Planning Organization of Iran stated, in a recent investigation, that the total investment in the field of industry would reach 70 billions rial, out of which 40 billion would be private investments and 24 billion government investments. 4 billion rial, of the governmental investment of 24 billion, will be invested in aiding the private mining industry.

The object of the their economic development program is first, to develop and expand the industries that will increase the national income; second, to increase employment; third, to increase foreign exchange holdings; and fourth, to see that profits are more equally distributed. In the line of these objects, projects selected are those given aid by the third development program. Their priority order is as follows:

1. Industry that will increase the production of necessary consumer goods to the level of self-sufficiency, and that will protect Iran from having to depend on foreign countries.
2. The export industry which includes oil, minerals, dried fruit, dates, carpets, has potentiality in foreign markets.
3. Industry that will have a favorable influences on Iran's balance of payments.

Iran welcomes the entry of foreign enterprises, joint concerns, and introduction of techniques, and thus, directly or indirectly, is encouraging the domestic manufacture of those goods which have had to be imported thus far.

To small and medium-sized enterprises, the Program offers aids according to the financial system, as shown in a separate section; in addition, it accomodates factory areas, and also invites enterprises to the concentrated factory areas constructed by the Government. But, there seems to be no more aid expecially designed for small and medium-sized enterprises, than in Japan.

The plan for raising funds for the execution of this Program is shown in table 5. The Iranian Government pressures International Oil consortium for increased production of crude oil, by which it aims for the increase of foreign currency income, tax, and oil right. It is reported that oil profits have almost reached the planned sum. But, the incoming of foreign money has not been as successful. As it is clear in the table of achievement rate, total funds collected by March 30, 1966, was 43% of the expected sum;

and since there was no indication that the primal cause for the low percentage, that is the foreign money shortage should be rapidly improved within the expected period of the Program, the fund is expected to be far below the original plan. The Planning Organization also seems to expect the achievement rate of investment in the mining industry to be about 75% of the original 70 billion rials.

Table 1. The fund raising plan for the Third Economic Development Program

(100 million rial)

Classification of Fund Raising Plans	Planned Sum (percentage of the total fund)	Achieved Sum by March 20, 1966 (achieved rate)
Oil Income	1,537 (61%)	796 (52%)
Foreign Loan	609 (24%)	64 (11%)
Short-term Loan	35 (1%)	86 (246%)
Public Loan	277 (12%)	87 (31%)
Balance Carried Over from the 2nd Program	42 (2%)	37 (88%)
Others	2,500 (100%)	1,070 (43%)
Total		

Comments on the state of the executed Third Program and its problems are as follows:

There have been few problems with the fund sources, especially in regard to foreign money, because of the favorable outcome of oil income including the new oil interests, bonus, and the slow pace of the Program's execution. Thus the Program has had a smooth beginning. However, the Program was put into execution almost one year behind the planned date due to several changes made in its beginning because of Government circumstances. Many projects were not accompanied by detailed and well drawn plans so that therefore the expenditure of the fund was postponed, and part of the expenditure fund thus postponed, was shifted to cover the loss of the general account. As the Program progresses, it will face financial difficulty in recovering the lost time and push forward the coming year's Program.

Though the oil income has increased 20% since the last war in the Middle East, Iran is primarily deferring payment on imported development facilities because of a shortage in funds for achieving the Program. Thus the present problem is how to procure the originally planned foreign loan. As it is clear in the last table, the procured rate of foreign loans is low, and it will be difficult to procure the planned total sum within the term of the Program. The Planning Organization expects the achievement rate of the fund in mining industry to be about 75% of originally planned, and also indicates that it will welcome investments from foreign countries including Japan.

Due to these circumstances the Planning Organization reexamined the projects of the Program, and has decided to suspend for the present time those projects that are not endorsed by foreign loans or foreign money, and at present in preparing the Fourth Economic Development Program in relation to these items.

2. The Fourth Economic Development Program

The Fourth Economic Development Program covering the five year period from March 20, 1968 to March 20, 1973, is currently being prepared by the Iranian Planning Organization. The mining industry section of the Fourth Program seems to have a higher investment plan; the outline is as follows:

The estimate of total investment in the mining industry section is 212 billion rial. Out of this, the Iranian Government expects 50 billion in foreign investments, 122 billions relies on private investments, and 90 billions on the Government division. The investment by the Government division includes large scale industry development which can not be accomplished on the private investment level. The projects accepted so far are as follows:

Iran manufacturing plant (U.S.R. aid; to be constructed in Isfahan, yearly production , capacity : 60,000 tons; aiming at production of 120,000 tons in 1971.

Petro chemical plant (U.S. technical aid; production items: ammonia, sulphur, L.P.G., melanin, urea, polyester, methanol, ethylene, etc.)

Pump and dynamo manufacturing plant (Czechoslovakian aid : to be consturcted in Tabriz)

Tructor factory (Rumanian aid; proposed yearly production: 5,000tractors,)

Agricultural equipment, mfg. plant, machine factory, cement plant
Sugar plant (expansion of one factory, and construction of three new factories)

Aluminum plant (U.S. aid: Reynolds Metal Co.)

In the Fourth Program small and medium sized enterprises are left to private investment and the Government will accomodate a low-interest loan. 10 billion rials out of the Government sector investment of 90 billions is expected to be the source of the low interest loan. The rate of interest will be 7.5 percent (6.5 percent in a specially approcuted area), and the term of a loan is from 2 to 10 year.

In any case, there is much hope and confidence in the progress of Iran's Economic Development Progresses, though they have not been a hundred percent successful, and do have economic problems brought forward by rapid investments. They are expected to make a continual progress with the help of revenue from abundant oil resources. They also involve the low-cost offer of concentrated factory areas including factory buildings, the completion of industrial conditions such as water supply, electric power, etc. and other positive measures to receive foreign investments including import restrictions of the similar, competitive goods with those to be turned out newly.

**Chapter 6. Basis of Industries such as Electric
Power, Transportation and Industrial Estate.**

1. Industrial foundations such as electric power and transportation

(1) Electric power

Iran is now capable of generating about 1,500,000 KW of power compared with 253,000KW in 1956. The amount is due to the nation's population growth, rapid expansion of industrial plants owned by both the Government and private enterprisers. It is not enough to meet demands from every part of the country, but there is no major problems at present. However, when some of the factories operate on two or three shifts, independent electric power plants attached to them are sometimes used for a few hours at night when the voltage drops.

(2) Highways

Iran is a large country dotted with densely populated places throughout the country. Transportation depends heavily on navigable rivers, appropriate railways and highways. The total length of Iran's roads is about 34,000km, of which 20,000km are all-weather roads. Major highways run from Khorramshahr, Bandan, Pah Lavic and Khesravi to Tehran, and those running from Bazagan to Tehran, from Taicbat to Tehran, and from Muyaveh to Tehran.

Recent development of Tehran and its neighboring area has been remarkable. The Government, in order to avoid overcrowding Iran by a growth in population and factories, is trying to disperse factories to provincial areas. For this reason the Government is constructing concentrated factory areas in Ahwaz, or granting special privileges for construction of factories in provincial areas, or facilitating factory areas and constructing highways, that is, by choosing equipped areas other than Tehran also enterprises can find enough labor at a low cost. Thus provincial industry has been strongly encouraged. But, since the central market is still Tehran, provincial industry should pay much attention to transportation and communication in addition to the supply of electric power, water, labor and raw materials.

(3) Railway, Air Service and Marine Transportation

The total length of Iranian railway in 1965 was 3,915km, and is expected to be extended to 4,368km in 1967. The number of railway vehcles are: diesel engines, 199; steam engines, 25; passenger coaches, 447; freight cars, 5,882.

The major lives are Trans-Iranian Railway (about 895 miles long; the line starts from Kharramshahr and Bandar Shahpur by the Perusian Gulf and goes north to Bandar Shah and Gorgan by the Caspian Sea by way of Tehran); Tehran-

Tabriz Line (opened in April, 1958; by way of Qaguin, Zanjan, Mianek and Moragheh); Garm-Sar-Meshed Line (opened in April, 1954); Bandar Shar-Gorgan Line (opened in October, 1960); Qum-za-kidam Line (opened in 1949); Tabriz-Tulfa Line (opened in 1965); Ahwaz-Khorramshahr Line (opened in June, 1942).

There are two A-class international airports in Iran. One is Mehravad airport near Tehran, where international airway lines cross one another. There are direct flights from Tokyo: AF, AZ, BOAC, JAL, PAA, SAS. The other is Abadan airport. Bandar Abbas airport which will be built in future will be important as a major international airport by the Persian Gulg. There are ten B-class airports such as Tabriz, Meshed, Isfahan, Shiraz Ahwaz, Kermanshah, and Zaheden; and eleven C-class airports.

Marine transportation major Iranian ports are, along the Persian Gulf, Khorramshahr, Bandar Shahpur, Bushire, Bandar Abhas; along the Caspian Sea, and Bandar Pahlai. The largest is Kharramshahr port where railway connect with Tehran and northern Iran. It is also connected by Highways with various other parts Iran. The port is equipped to accomodate nine ocean-liners, making itself available for an 80,000m² indoor storage, and a 230,000m² outdoor storage. Bandar Shahpur port is used mainly for shipping and unloading Government goods.

The total amount of goods that passed through Iranian ports within a year ending in March 20, 1964, was 1,730,000 tons. Out of this 1,000,000 passed through the port of Khorramshahr. Crude oil is shipped mainly from Kharg Island, and petroleum products from Abadan which will be replaced by Bandar Mashur when its port facilities are completed.

(4) Land and Building Construction

When there is a plan to build factories in Iran; if they are built in Government appointed areas or concentrated industry areas in Ahwaz etc., they are well equipped for industry, are low in cost, and are given certain business privilege. Therefore it is important to choose one of these areas.

2. Ahwaz Industrial Estate

In order to help smaller enterprises grow the Iranian Industrial Estate Authority with help from UN is constructing an industrial estate 4km northeast of Ahwaz, the first in Iranian history.

An industrial estate is constructed, taking into consideration the special nature of concentrated engineering works expected there, in an area most appropriate for industry construction and with a good industrial environment

such as electric power, water supply, raw materials, labor, and related industries so that participating industries, can engage in their production effectively. Construction of an industrial estate is commonly done by public organizations under the protection of the Government or local authorities. It is because an industrial estate plays a great role in the country's economy by developing an underdeveloped area and at the same time solving the unemployment problem and reducing difference in income; and it also disperses over crowding in cities. In an industrially underdeveloped country such as Iran, it also aids the growth of smaller enterprises by accommodating industrial environment.

As to Ahwaz industrial estate, in 1960, the UN Commission made an investigation of the possibility of constructing an industrial estate, and reported the following year that Ahwaz was the most suitable site. Because there was enough water and electric power generated by Kae Khah dam, completed in 1954; it was near Khoramshar port; and was connected by railway and highway to Tehran. Also there is an airport nearby, and there are many unemployed thus providing labor resources.

The first stage of construction is currently underway, construction will include six bloc of 1,498m² factories. One bloc contains a steel frame factory accompanied by four office buildings. One factory bloc can be divided into four workshops by building partitions. The Industrial Estate Authority has an office on the estate for guiding and aiding the management of the estate; it also provides for common use a processing factory of various parts, a casting plant (yearly production: about 500 tons of iron and brass), a heat treatment plant and a training station (the number of trainees about 30 workers for six months).

Factories in the estate are rented at low cost to applicants. A standard factory is furnished with affiliated facilities, an office, a storehouse, an outdoor storage, a reserve lot for factory expansion, gateways for trucks, gateways for workers, restrooms and shower bath rooms, dining room, locker room, and a parking lot.

As facilities serving all the participating enterprises, the estate provides gate control fire hydrants, street lights, a medical clinic, an exhibition room, bank, post office, telephone office, telex communication room, a research material library, and accommodations for visitors, parking lot and play ground for workers.

The construction currently underway is expected to be complete in February, 1968, when 24 factories will be ready for use. Construction will

continue, and will end with the third construction work. When completed, 48 units of factories will be ready for use.

Participating factories in the estate can rent the factories at a lower cost than building one for themselves; and in addition to being able to use related factories and affiliated facilities, they are exempt from the cooperation tax for five years from their beginning (the Industrial Estate Authority is considering extending the five years exemption to ten years). The reduction of the cost of electricity is planned for less than one rial per K.W. ; industrial water less than 5 rials per Im^3 . It seems to be fairly favorable conditions.

One problem is that the temperature in Ahwaz is very high in certain seasons. The cost for air conditioning is 33,000 rials. But the simple facilities can be built for 12,000 rials.

The Iranian Industrial Estate Authority invites smaller enterprises from Japan to participate in the industrial estate. The enterprise preferences are as follows:

- a. football outer cover of leather (yearly production about 100 dozens)
- b. fishing and tennis nets (4,000 dozen yearly)
- c. tennis balls
- d. tennis rackets (1,500 dozen yearly) badminton rackets
- e. stationary supplies such as pencils, envelopes, paper clips, safety pins.
- f. work clothes, work gloves.
- g. spare parts for automobiles
- h. tap for service water (dye-cast, 400 tons yearly)
- i. motors (less than 2HP)
- j. Adiabatic material (polyurethane)
- k. hand pumps

Chapter 7. Labor and Employment

The labor population of Iran in 1965 was about 7,200,000 31 percent of the total population. Most of the labor population is engaged in agriculture; and the number of factory workers is estimated to be about 200,000. 75 percent of the factory workers are engaged in the oil industry. Female workers account for 10 percent of the total number of factory workers. The Iran Almanac 1966 estimates the following figures of 1966 based on the data taken in 1959. The total number of employees will be 5,908,000. The unemployment rate varies according to different reports, but is estimated to be some where between 5 and 30 percent.

Iran's Labor Laws and labor administration are about the same as more developed countries. At this point Iran can be called a modern nation.

Several attempts have been made since 1941 to organize labor unions. Organization of labor unions was provided for in the Labor Law of 1946. There were sixty labor unions in 1963. The number of union members is estimated to be 25,000, and this figure is increasing rapidly.

But, since most of the workers are inexperienced, and not used to a modern employment system, employers will have to be careful, especially during the first period of employment, guidance and management. If guidance is successful, they often show a high degree of adaptability, and the attendance rate taken in six enterprises all show as high as 95 percent or more. Productivity per capital of laborer with regard to an electric equipment assembly plant shows 70 to 80 percent of that of Japan. It is reported that it would not be difficult to bring this figure up to a 100 percent. Though it can not be the same in every type of enterprise, on the whole there seem to be very few problems.

Chapter 8. Advancement of Enterprises

1. Estimate of the Economic Population

When one is about to invest in a developing country, it is most important to investigate and estimate the purchasing population in deciding the amount of the investment, scale of production, brand, quality, and finally the feasibility of the enterprise.

For example the economic population of Iran is brought forward hereunder in relation to its soap industry. The yearly production of soap for a population of 22,500,000 is about 28,679 tons (Report on the Results of the Annual Industry Survey, 1963), which makes the yearly soap consumption per person about 1.2kg.

We try to determine the level of this figure in relation to that of Japan. In Japan, the yearly soap production is about 600,000 tons (Soap Report 1966), which makes the yearly soap consumption per person about 6kg.

According to the above comparison, the level of soap consumption in Iran is determined to be about 1/5 of that of Japan. It is clear that there are latent demands for soap in Iran. But, how much should be counted for an economic population? If we decide the minimum desirable soap consumption per person to be 3kg, the economic population is determined as 9,550,000, which means that the soap industry has a favorable probability of expansion with the background of the general growing economy.

2. Selection of Investors

(1) Most investors in the joint enterprises which are already under way are those who, before the establishment of an enterprise, were engaged in the trade of importing the same goods, and thus have market connections. When an enterprise selects investors, the safest way is to give the first choice to those investors.

(2) As to the selection of investors in enterprises of those goods which were not traded in the past, "Center for the Attraction and Protection of Foreign Investments" of the Bank Markazi Iran, and IMDBI are acting as a mediator between home investors and foreign investors. This medium is regarded as the safest.

3. Commodity Circulation Structure (Machine)

Earning approximately \$700,000,000, per year only for oil right, among

others, Iran used to depend on imports for consumer goods. The commodity circulation structure usually shows that importers work as originators for foreign consumer goods, which are sold directly to the consumer, or to the wholesaler the retailer and finally to the consumer. But in the past few years a small number of home manufactured goods have appeared, on the market, and changing the form of part of the sales route for imported goods to manufacture and sales route, which greatly stimulated former importers to invest in home industries.

Therefore many well-financed traders show great interest in joint enterprise. In the near future there will be a driving force for the birth of a new form of circulation system, thus greatly changing the commodity circulation structure of the Iranian economy.

In order to protect a home enterprise and prevent the outflow of foreign money, the Iranian government forbids import of other than materials for their manufactures. Accordingly there are some home-manufactured goods the producer price counts for 80 to 85 percent of their retail price. In Iran the manufacturer is king, not the consumer

Chapter 9. Related Industries, Equipment, Machinery and Procurement of Raw Materials and Parts

Since most of the smaller enterprises have been set up within the past year or two, there is little correlation between them such as modern industry has. Accordingly in order to acquire machine parts or repair them, they must be imported, or it is necessary to set up a machine manufacturing department or repair department.

There are no restrictions on the import of these necessary parts, repair materials and machines to manufacture the parts.

In the industrial estate currently being constructed near Ahwaz, one unit is designed for all participating enterprises to use for repairing and manufacturing machinery parts.

Those materials and parts necessary for factory management with the exception of those that are made at home can be imported freely.

Chapter 10. Present State of Industrialization

With the exception of the oil industry, Iran's manufacturing industry is in the first stage of development. Domestic industry, mostly handicraft is spread throughout the country. Carpets, silver handicraft, tile, and china ware are well known. Carpets are a particularly important export item, which earns more than 20 percent of the total export profits. Earning 3,3 billion rials. Handworked cloth is another important domestic industry item.

Manufacturing factories have greatly developed in recent years with the help of active encouragement from the Government such as development programs. The scale of Iranian factories belongs to the largest in the Middle East. According to a report by the Office of Economy, there were 112,464 major manufacturing factories from 1963 to 1964, and the number of workers numbered 449,000. Out of this, there were 16 large enterprises with more than 1,000 workers, 112 enterprises with more than 100 workers and 3,500 enterprises with more than 10 workers. Major kinds of industry are cotton spinning, wool spinning, textile processing, milling, the manufacturing of sugar, timber, tires, tubing, tobacco, and metal processing. Items that are self-supplied are cotton and cement. Sugar can also be self-sufficient. From 1965 to 1966 Iran has produced 350 million meters of cotton cloth, a million tons of cement, and 330,000 tons of sugar. In addition, there are also assembly plants for cars, trucks, T.V. sets, refrigerators and stoves. (The number of cars in Iran in 1965 - 1966 was 150,000; trucks, 44,000.) These factories are located mainly in Tehran, Isfahan, Tabriz, and an industrial area on the shore of the Caspian Sea.

The largest private enterprise industry is the textile industry. Cotton spinning and wool spinning are located mainly in Isfahan and Tabriz. Cotton spinning mills have 730,000 spindles and 15,700 spinning machines. (as of 1963. The figures included national enterprises--20 percent of the total enterprises). Consumption of cotton and wool in 1965 - 1966 was 50,000 tons, which makes that Iran is the largest textile industry nation in the Middle and Near East with the exception of Turkey and Egypt.

Since Iran is short of industrial funds, the government often sets up factories. There were 206 national enterprises as of January, 1967. The most important of them are the textile factories, which supply 25 percent of the national demand ; and secondly, jute processing, which supplies 80 percent of the national demand. But the Iranian Government plans to transfer most of its national enterprises except public ones such public utilities as electric power and water supply to private ownership in order to develop private funds. Since August, 1966, when it started, the Government has transferred soap, glycerin, tinning, and edible oil factories to private ownership.

Chapter 11. The Status of the Advancement of Foreign Enterprises

In parallel with helping the growth of funds at home the Iranian Government is actively accepting foreign funds. There were 60 foreign financed enterprises as of January, 1966, of which the US financed, 18 enterprises; West Germany, 10, England, 8 and Pakistan, 7. The types of enterprises, are medical, mining, automobiles, truck (assembling), timber, sugar, various types of electric machinery (assembling), paint and varnish. The only Japanese enterprise is Inoue Rubber which manufactures bicycle tires and tubes. (It is not included in the table, because it was set up very recently).

Recently there has been active foreign aid and investment in heavy chemical industrialization. For example in the Iran-USSR Treaty concluded in January, 1966, Russia is supposed to build by 1971 an iron manufacturing factory with a yearly production capacity of 600,000 tons (it is expected to expand to 1,200,000 by 1973), an agricultural machine, bridge and industrial machine, manufacturing factory with the yearly production capacity of 30,000 tons (it will start in 1969), in Isfahan and Arak. Czechoslovakia is financing a lathe, motor, pump and diesel engine factory (which will begin in 1969) in Tabriz; also a tractor factory (which will start in 1970) is being constructed with Rumanian aid. Goodrich and General Tire of U.S. have completed a large-scaled tire and tube factory in Tehran; and in Ahwaz a steel rolling mill is expected to be built by a U.S.-West Germany joint fund. Also an Iran-Pakistan joint fund will construct an aluminium factory with aid from the U.S. Reynolds Aluminium Co. There is also rapid progress in the automobile industry: Lyland plans to expand its truck factory in Tehran; and Mack will be producing trucks in the near future. In 1967 production of automobiles PEIKAN (50 percent or more of the parts will be Iranian made) with technical aid by Rootes; Volkswagen, Fiat, Rambler and Citroem also are preparing to manufacture. In the field of petro-chemistry Iranian Chemical Co. is constructing a factory with aid from US Allied Chemical (ammonia, Urea), US American International Oil (LLPG) and U.S. B.F. Goodrich (caustic soda).

Chapter 12. Smaller Scaled Industries whose
Establishment are Requested in Iran

The list presented by the Iranian Office of Economy includes the following items.

Bolt and Nut

Tools (planing tool, jig, metal mold, work tool)

Automobile parts (piston, liner, piston ring, gear, carboratter, fuel
pump, electronic instrument, meter, flusher, doorlock
hinges, wire, filter, break lining, ignition plug, loading
tools, jack etc.)

For assembling and repairing works of 17,000 automobiles, 4,000 buses,
7,000 trucks, 10,000 motorcycles, per year.

Switchs for industrial use

Grinder Wheel

Tin (container) for milk transportation (201, 30,000 per year)

Tennis balls, rackets (or kit)

Rivets

Springs

T. V. and radio parts (transformer, capacitor, resister dial, speaker)

For the production of 450,000 radios and 45,000 T.V. sets per year.

V-belt, conveyor belt

Flange coupling

Fuses

Cable circuits

Dye cast

Bearings

Welding rods

Bath tubes, toilet equipment

Portable electric tool (drill, saw etc.)

Textile machinery parts (ring traveler, shuttle, bobbin, loom, tec.)

Concrete mixer, jaw crusher

Belt fastener

Agricultural tools (plough, ax, picker, hoe)

Valve for automobile and bicycle tube titanie oxide, methyl parathion,
acid dye

Chlormonycetin, Vitamin B₁₂

