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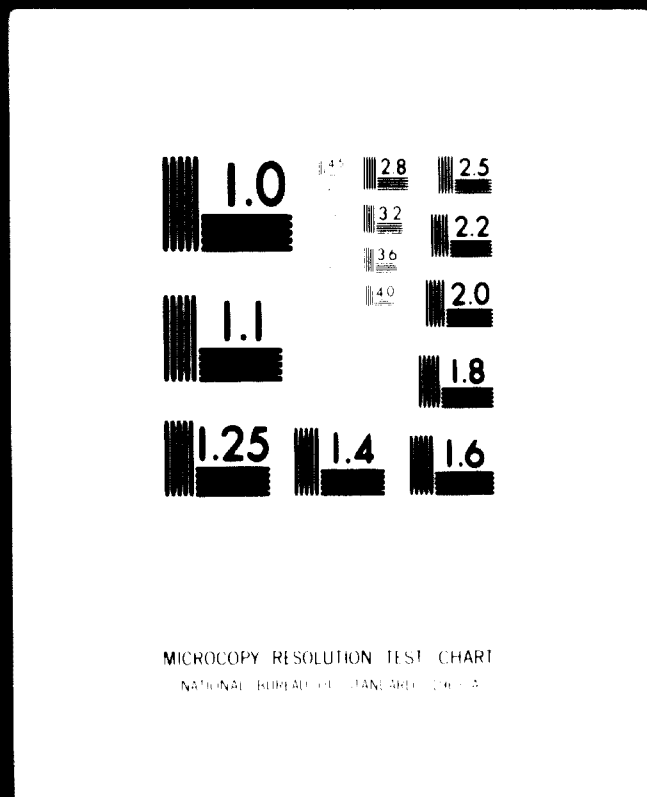
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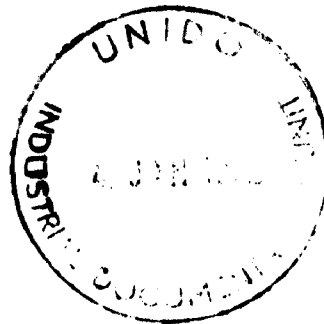
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ESTABLISHMENT OF AN INDUSTRIAL ESTATE

Report of the Review Mission



February 1971

1871

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## SUMMARY OF FINDINGS AND RECOMMENDATIONS

### Findings

The UNDF/UNIDO project "Establishment of a Demonstration Industrial Estate, Teheran" commenced in February 1965. As a result of a Supplementary Allocation approved at the January 1969 Governing Council Session, it is now estimated that the project will terminate in mid-1972. The purpose of the project was to assist in the establishment of a permanent Industrial Estates Authority and to assist in the planning, construction and initial operation of a demonstration industrial estate at Ahwaz. The Mission concluded that the physical facilities established at Ahwaz are excellent, and that the Central Services Workshop is already proving useful to industries in the Estate as well as those located in the surrounding area. Presently, eight firms are occupying all but two of the Stage I worksheds and it is now estimated that all of the Stage II worksheds will be allocated within several month's time. The Mission concluded that all the Central Services Workshop equipment should be operational and the counterparts trained by the end of 1971.

The Government counterpart Organization for Small Scale Industries and Industrial Estates in Iran (OSSSI & IIEI) has gained practical experience from the pilot industrial state at Ahwaz, experience which is reflected in its present activities as well as its proposals for activities to be incorporated into the new Five-Year Development Plan (1973-78). The experience at Ahwaz has helped to emphasize the importance of establishing the policies and support programs essential for the rapid development of small industries generally. In this connexion the project is presently helping to develop the capacity of OSSSI & IIEI to provide advisory assistance and training courses for small industries and to undertake industrial estate feasibility studies. The project is also helping to develop adequate credit facilities and other arrangements believed necessary to promote the rapid development of small industries.

The Mission concluded that the failure of the Plan of Operation to

provide the experts and counterpart staff required in order to deal effectively with these basic policy and supporting program requisites for the rapid development of small industry generally was a serious weakness in the project design. Moreover, the Plan of Operation did not provide the expertise required to enable adequate attention to the project's counterpart agency strengthening objective in addition to the objective of successfully establishing an industrial Estate at Ahwaz. Finally, the omission of an industrial economist post from the Plan of Operation was a weakness in the project design, as this competence would be required on studies making recommendations with respect to the location of industrial estates and the types of production (and common service facilities) believed most desirable.

The project experienced a number of long delays in the recruitment of key experts which had the effect inter alia of leaving the project without suitable leadership for 10 months, and seriously delaying the installation of equipment in the foundry and electroplating shops at Ahwaz. While the technical qualifications and overall effectiveness of the present expert team were judged to be generally good, several experts proved unable to work closely and effectively with their counterparts. This appeared to be due to several factors including personality differences both on the international and national sides and the pressure on several project staff to undertake a volume of work too great for the counterpart staff available to keep up with.

Project fellowships which tended to be short and practically oriented (in many cases study tours) were judged to be effective on the whole.

While there were considerable delays in the ordering and delivery of equipment, the delays with respect to the equipment for the foundry and the electroplating shops were overshadowed by the even greater delays in the recruitment of experts able to install the equipment properly. It was the consensus of project personnel that the equipment delivered would be put to good use at the Estate.

The Government has met its essential counterpart obligations to the project, except with respect to the provision of adequate numbers of qualified professional personnel to enable smooth continuing operations after termination of international assistance. This pertains both at the



Industrial Estate at Ahwas, where a permanent Estate Manager and a Chief Mechanical Engineer are yet to be appointed, and at OSSSI & IEI where there are presently insufficient national staff to undertake the variety of activities and responsibilities envisaged by the Director. The difficulty stems largely from the low public service salaries that are offered which have proved uncompetitive with those offered in the private sector for similar qualifications. The establishment of OSSSI & IEI on a legislative, rather than on a ministerial decree, basis would help to provide OSSSI & IEI with the administrative and financial independence required to tackle this staff recruitment problem.

#### Recommendations

The mission is recommending initially a six month expansion and extension to 31 December 1972. This would enable the project and OSSSI & IEI to: (1) establish the basic policies and support programs necessary for the rapid promotion of small industries (including those within industrial estates); (2) develop OSSSI & IEI capability to provide essential services to small industry and (3) complete counterpart training at the industrial estate at Ahwas and to withdraw completely (by December 1971). New posts in Cost Accounting, Chemical Engineering, Credit Facilities, and Data Collection are supported. It is estimated that approximately \$152,284 from project contingency funds would be required for this purpose.

The Mission is also recommending that assistance be continued in the 1973-75 period, if, in the opinion of the Project Manager and the Resident Representative, the Government has, by December 1972, taken the steps necessary to establish the policy measures and small industry support programs believed essential for the success of the small industry development schemes now being proposed for the new Five-Year Development Plan. It is recommended that assistance in this period be considerably more modest (including a Project Manager, an Industrial Economist and an Industrial Engineer) and be oriented toward helping to ensure the successful implementation of the schemes incorporated into the first three years of the new plan. These project costs would be financed from the Iran country programming target figure which will become operative in January 1973.

## INTRODUCTION

### A. Background

The purpose of the UNDP/UNIDO project 'Establishment of an Industrial Estate' as stated in the Plan of Operation was to assist in the establishment of an Industrial Estate Authority and in the planning, construction and initial operation of a pilot industrial estate at Ahwaz. The project was approved in June 1963 for a duration of 5 years. The project had a Governing Council earmarking of \$637,000 and a Government counterpart contribution of \$1,123,000.

Project field activities commenced in February 1965 and the Plan of Operation was signed by the parties concerned on 24 May 1965. The planning, construction and initial operation of the industrial estate at Ahwaz proved to be more problematic and time consuming than earlier anticipated; and largely for this reason the UNDP requested, and received, at the January 1969 Governing Council session a supplementary allocation of funds which made it possible to extend the project for an additional two years.

The approval of supplementary assistance also had the effect of giving greater project emphasis to activities designed to increase the capability of the Organization for Small-Scale Industries and Industrial Estates in Iran (OSSSI & IIE) to execute its responsibilities for the formulation and implementation of policies and programmes in support of the development of small industries in Iran. These responsibilities include, but are not restricted to, the promotion of industrial estates. The project has been pursuing broadened objectives since 1969 along lines reflected in the draft Amendment No. 1 to the Plan of Operation (which describes in detail the supplementary allocation). The broadened objectives of the project include: (1) completion of the Ahwaz Estate; (2) assistance to the Government in formulating proper policies for small industries development; (3) promotion of ancillary industries; (4) provision of extension services to small industries; and (5) creation of suitable credit facilities for small industries. The Project Manager expressed the opinion in a mid-term review paper dated 25 June 1970 that it would be impossible to implement the expanded activities by June 1972, and accordingly recommended that the project be extended further until the end of 1973.

In order to ascertain the desirability of expanding and extending the work of the project as recommended by the Project Manager, UNIDO proposed at the June 1970 Agency Review Meeting, that a mid-project review be undertaken

as soon as mutually convenient. This proposal met with the UNDP approval.

**B. Mission Membership and Terms of Reference**

A joint UNDP/UNIDO review mission was accordingly assembled to evaluate the success with which the project had been able to attain its immediate purposes and ultimate objectives and to identify those factors facilitating and impeding their achievement. On the basis of such an evaluation, an appraisal was to be made of the need for additional assistance in order that the immediate purposes and ultimate objectives of the project might be achieved. Recommendations were then to be made on the nature and scope of any further action believed necessary and desirable\*. The members of the Mission included:

Mr. Subramanian Nanjundan, Technical Advisor, Small-Scale Industry Section, UNIDO Headquarters;

Mr. Arthur N. Holcombe, Evaluation Officer, Evaluation Division, Headquarters.

**C. Acknowledgements**

The Mission would like to acknowledge the assistance and cooperation received from Mr. H. Ansari, Managing Director of OSSSI & IEI and from his staff. In addition, the Mission would like to express its appreciation for the kind assistance rendered by Dr. P. C. Alexander, Project Manager and from the various project experts. Finally, the Mission would like to express its gratitude for the advice and assistance provided by Mr. Nassim Shallon, Resident Representative and by his staff.

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\* The Terms of Reference of the Mission are attached as Annex I.

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PART I: EVALUATION OF THE PROJECT

A. FORMULATION OF THE PROJECT

1. Project Purpose and Ultimate Objectives

The Plan of Operation describes the immediate purpose of the project as to assist in the establishment of a permanent Industrial Estates Authority and in the planning, construction and initial operation of a Demonstration Estate at Ahwaz. More specifically, the project was to:

- (1) provide consulting services to the newly established Industrial Estates Authority 'to assist in the formulation of general policies, rules and regulations and administrative arrangements, and to advise in the day-to-day operation of the Authority, in-service training, and fellowships"; and
- (2) provide the Authority with a demonstration industrial estate at Ahwaz by determining 'its location, plans for lay-out with requisite services and amenities and equipment specifications, supervision of construction and installation of equipment, surveys of industries suitable for location on the Estate and consultant services to prospective occupants, and initial operation of the estate, including the common services to be provided to the industries by the Estate."

According to the Government request, the ultimate objective of the project was the rapid development of small and medium scale industries throughout the country in estates designed and operated on the basis of experience gained from the pilot or experimental industrial estate established with international assistance.

2. Socio-Economic Perspective

An evaluation of the role and contribution by the Industrial Estates project must be undertaken in the context of the economic and social conditions existing in Iran at the time the project was being formulated and approved (1963).

At the time the project was approved the Iranian population was estimated to be roughly 23 million and growing at about 2.5 per cent per annum. About 22 per cent of the employed population were engaged

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in industry in 1964 as against the 46 per cent estimated to be employed in the agricultural sector. Estimates of unemployment ranged from 5 - 35 per cent of the labor force at the time. The labor force was characterized by widespread seasonal unemployment and under-employment due to the overwhelmingly rural, agricultural nature of the population.

Iran's first urban Industrial Census undertaken in 1963 indicated that there were approximately 112,000 industrial establishments in the country, about 62 per cent of them employing less than 3 persons. "Large" industries (employing 10 persons or more) comprised only 2.8 per cent of total establishments although they employed about 33 per cent of all persons engaged in industry and were responsible for about 70 per cent of value added. Tehran, with an estimated 30% of the estimated total urban population, accounted for 27 per cent of total industrial establishments, and 29 per cent of total workers in the industrial sector.

In order to reduce the over concentration of industry in Tehran the Government had been promoting balanced regional development during the 1960's by locating large public sector enterprises in 10 designated "pole" areas such as Tabriz, Isfahan, Arak, Ahwaz and Shiraz, and then employing its power to grant licenses, tax concessions and industrial credit (via the Industrial and Mining Development Bank of Iran) to attract private investment to these new "poles." As a result of these policies considerable industrial diversification had taken place into such fields as fertilizers, food processing, tires, light engineering and metal fabrication.\* The relatively modern processing and services

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\* During this period, industries for the assembly of autos, trucks, radios, TV receivers, refrigerators, stoves, etc. were rapidly establishing themselves and/or expanding production facilities. Since 1964 major basic industries, including iron and steel, aluminum and pipe production, etc. have been established.

industries were expanding very rapidly during this period. In 1962-63 (and since) industrial production was increasing at an average annual rate of 12 per cent. This rapid rate of growth was almost totally accounted for by a relatively few, large-scale modern industrial enterprises being established with Government encouragement.

With respect to the industrial sector, the Third Development Plan (1962-68) gave emphasis primarily to the promotion of those large modern industries contributing to a maximum increase in national income and secondarily to those increasing employment opportunities, realizing foreign exchange savings (import substitution), and bringing about a more even distribution of income among regions and social classes. As indicated above priority was also being given to industry locating outside of Tehran.

The project request indicated that greater emphasis was being given in the Third Five Year Plan to the development of small and medium scale industries meeting the above mentioned investment criteria. To stimulate medium and small scale industry, the Plan provided for: (1) an extension and improvement of the existing small scale industries credit program then administered by the Industrial Credit Bank (ICB)\*; (2) the establishment of three pilot industrial estates which would subsequently lead to the undertaking of a large industrial estate program throughout the country; (3) the establishment of an Industrial Management Institute and a Productivity Center to provide training and advisory services; (4) a survey of small industry problems; and (5) trade promotion in order to develop further the markets for Persian carpets. In addition, small scale industries were to receive income tax exemption benefits for five years from their date of production.

According to the project request the only previous Iranian experience with industrial estates was a costly abortive effort by the Ministry of Industry and Mines to develop an "industrial zone" at Karaj, some 42 kms

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\*The ICB granted loans with a maximum duration of 10 years, charged 7.5% rate of interest, and required collateral in the form of physical plant. These requirements on the whole proved too rigorous to permit participation by small scale industries.

to the west of Tehran during the mid-fifties. The electricity and other services to be provided were never installed and only two factories were ever attracted. They were still in operation in 1963.

The Industrial Management Institute, the successor to an earlier Industrial Centre, was established in 1962 as an independent institute with a responsibility for the improvement of the management and operation of private industry and for centralizing technical assistance by various organisations in the industrial management field. At the time this Institute was in the process of recruiting its staff, and was yet to make its full contribution.

At the time the project was under review assistance to small-scale industries in Iran was not receiving strong emphasis by the Government in its drive to promote rapid industrialization, despite the relative preponderance of small industries. In this connection Government credit agencies proved ill-suited to the needs of small businessmen who in most instances lacked the property assets necessary to qualify for credit\*. Similarly small industries often lacked the technical know-how required to modernize or to invest in a modern small-scale plant successfully, while no advisory assistance services existed at a price they could afford. At the same time the Government's unwillingness and/or inability to restrict imports or to eliminate the smuggling of such products which could be produced domestically by small industry-although at a considerably higher cost and thus selling price to the consumer in Iran was in effect discouraging local small industry development. The Government licensing policies, and particularly the benefits derived from having a license (such as import possibilities, access to Government credit at 6 to 7 per cent instead of commercial bank credit at 11-12 per cent, etc.) were not available to most small industrialists who often found it difficult if not impossible to meet the licensing criteria imposed by the Government

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\*The Investment Guarantee Fund established in 1961 inter alia to make funds available to small industries through the commercial banking system required property security (i.e. excluding equipment and machinery) valued at three times the amount asked for. It was estimated by the Managing Director of OSSI & IEI that 90 per cent of all small industries didn't have the fixed property to qualify for meaningful assistance under such terms.

which were more relevant to large modern enterprises (proper accounting procedures, insured workers, profit sharing with workers, etc.).

The promotion of small industry was made more difficult by the lack of any systematic data on the nature, extent, and basic problems of small industries which might assist in the development of policies and support programs able to meet essential needs. There was no Government Ministry attempting to collect such data on small enterprises.

### 3. Formulation of the Project

The Government request was prepared with the assistance of Mr. Norman Lees of the UN Industrial Development Division (ESA) who visited Iran during the 27 May - 7 July 1962 period. This request was limited in scope to the provision of international assistance in the selection, design, construction and initial operation of one pilot industrial estate, and assistance to the industries located therein. In commenting on the request the United Nations Center for Industrial Development (C.I.D.) indicated the desirability of further preparatory assistance to determine more precisely such matters as: (1) the interest in occupancy of the estates on the part of private firms; (2) the availability of markets; and (3) determination of the final location of the pilot estate and the likely construction costs. The Centre indicated that these factors would have a bearing on the eventual success of the project and that it would therefore be desirable to clear up these matters prior to Governing Council approval. In order to submit the project to the May 1963 Governing Council session for approval, the Special Fund decided to recommend the project as it stood without reflecting these clarifications but on the assumption that the Plan of Operation would be prepared on the basis of further preparatory assistance looking more carefully inter alia into the matters brought to their attention by C.I.D.

To undertake this additional preliminary work, the UN sent Mr. T. Tudor and Mr. P. Quigley to Iran in July and August 1963. Their terms of reference included: (1) selection of a suitable industrial estate location; (2) preparation of estate cost estimates; and (3) recommendation of suitable types of industries for the estate. They remained in the country for periods of 5 and 1 month respectively. During the course of this preparatory work it became evident that the establishment of an industrial estates organization would be necessary to give adequate



administrative and policy support to the development of industrial estates in Iran. This need was impressed upon the Government which subsequently drafted a Bill setting up a semi-autonomous Industrial Estates Organization within the Plan Organization. (This Bill was approved by the Council of Ministers in August 1964).

During the period in which the Plan of Operation was being prepared the Special Fund had expressed its view that the Plan of Operation could only be finalized on the basis of: (1) the establishment, under law, of the Industrial Estates Authority; (2) the prior selection of an estate site and its actual purchase by the Government; (3) sufficient knowledge of the financial and other measures the Government could and would take to promote interest on the part of potential investors in locating at industrial estate facilities; and (4) full Government awareness of its counterpart responsibilities under the project including the provision of the housing, social and other supporting facilities necessary at the proposed estate. Assurances were never received from the Government with respect to points (2) through (4) during this period, and they were therefore incorporated into the "prior obligation" section of the Plan of Operation.

The final report of Mr. Tudor reporting on the preliminary work undertaken inter alia indicated: (1) a preference for the establishment of the pilot estate at Ahwas; (2) the establishment of a common service facility at the estate only if private entrepreneurs did not take the initiative in this respect; (3) that it had not been possible to assess the demand for factory accommodation from existing and prospective industrialists in the time available; and (4) that in the light of (3) standard type factories be given emphasis in the estate layout planning although the capacity for custom factories also be taken into consideration to a lesser extent.

In August 1964, Mr. P.C. Alexander, then attached to the Small Scale Industries Section of C.I.D., visited Iran in order to review problems impeding implementation of the preliminary operations. In the course of discussions with Government officials he proposed that the project objectives be broadened to include assistance in developing the competence of the new Industrial Estates Organization, in the economic and physical planning of other estates, and in small industry development as a whole.

These proposals were accepted by the Government and subsequently reflected in the Plan of Operation.

4. Project Design in Retrospect (Means-Ends Analysis)

The project as designed was intended to promote small-scale industries in Iran through a policy of encouraging the establishment of industrial estates, without first establishing the policies and support programs necessary to attract substantial investment in modern small industries and to ensure their viable growth. This excessively narrow view as to the requisites for the rapid development of small industries in Iran was in turn imposed upon the Industrial Estate Authority (within the Plan Organization) which was established by the Government in August 1964 as a "prior obligation" for Special Fund assistance. The narrow responsibility for industrial estates development granted to the Industrial Estates Authority meant in effect that it would have no direct influence over the establishment of the proper financial and other incentive policies and supporting programs necessary for small industry to flourish, although the existence of such measures would have an important bearing on the success of the industrial estates program itself.

It was mentioned in the previous section that the emphasis given to assisting the Industrial Estates Authority to undertake its responsibilities came after project approval. For this reason only limited expert component resources were available in support of this work. Effectively, only 15 man-months of short-term consultant funds were available in addition to the four long-term experts who would be preoccupied with the planning, construction and initial operation of the industrial estate located at considerable distance from Tehran. In addition to technical specialists working with counterpart agency staff on a full-time basis, an industrial economist was clearly needed to help undertake a preliminary small-scale industry survey, demand and industry possibility studies, and preliminary industrial estate feasibility studies. In this latter connection the Industrial Economist was needed to help with the location and occupation of the pilot industrial estate receiving prime project attention as well as for other proposed estate schemes to be promoted in the country.

## B. IMPLEMENTATION OF THE PROJECT

### 1. Negotiation of the Plan of Operation

About 24 months elapsed before the Plan of Operation was deemed ready for signature (between May 1963 and 27 May 1965). At least five successive Planop drafts were prepared during this period incorporating increased information and detail as it became available as a result of preparatory assistance work undertaken. As indicated in a previous section (page 7), the long delay in Plan of Operation signature was primarily due to Special Fund insistence upon the inclusion within the Planop itself of the findings of certain preliminary operations regarded to be essential. Apart from the establishment of the Industrial Estates Authority (in August 1964) it did not prove practical to delay Planop signature long enough to secure the information desired and the Special Fund finally decided to sign the Plan of Operation and get the project formally underway while leaving the remaining 'prior' obligations to the Executing Agency (Project Manager) and Government to carry out as best they could.

The provision of assistance to help strengthen the organization and activities of the Authority were anticipated neither in the Government request nor in the first Planop draft dated 8 June 1963. In order to include the activity within the third Planop draft (dated 30 November 1964) without exceeding the \$434,000 figure indicated for expert costs in the Governing Council Document, reductions were made in man months to be provided for the long term posts. Partly for this reason, the third Planop draft expert component was modified from the first and second drafts as follows:

	<u>Third Draft</u> (n/m)	<u>First and Second Drafts</u> (n/m)
Project Manager	63	60
Civil Engineer	36	36
Mechanical Engineer	60	42
Chemical Engineer	60	-
Chemist	-	12
Construction Engineer	-	36
Industrial Engineer	-	24
Industrial Estates Consultants (2)	6*	3
Short Term Consultants	<u>15</u>	<u>-</u>
Total Expert Man Months	240	243

The fellowship and equipment components were untouched during the period. Additional detail was added with respect to the Government counterpart contribution in kind, however, particularly with respect to cost estimates on the construction, equipping and maintenance of the industrial estate. The Appendices of the final Planop draft signed in May 1965 were identical (from a substantive standpoint) to those of the November 1964 draft with the exception of a revised upward costing of the Government counterpart Professional and Other Staff estimates (in each case they were doubled). The reasoning for this is unclear.\*\*

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\* Utilized during the preliminary activity period by Messrs. Tudor and Quigley.

\*\* There was a feeling among UN technical personnel involved that the counterpart salaries were not competitive with private industrial sector equivalents. The subsequent history of the project demonstrated convincingly that the alteration of the counterpart contribution for staff salaries had no bearing on the level of the public service salary scale that could be paid, and that for this reason the problem of uncompetitiveness remained to prevent the hiring of the numbers of qualified counterpart staff necessary to enable the counterpart agency to cope effectively with the responsibilities entrusted to it.

## 2. UNDP/UNIDO Inputs and their Utilization

Tables showing the international expert, fellowship and equipment contributions as planned and as actually implemented are attached as Annexes III and V.

### a) Experts and Consultants

As indicated in Annex III, the expert and consultant component of the project was implemented with notable delays, particularly with respect to the replacement of certain departing experts in 1969 and 1970. The Project Manager (Chief Adviser), Mechanical Engineer, Foundry Metallurgical Engineer and short-term Consultant posts were relevant in this respect. The absence of key experts during 1969 and 1970 was inter alia holding up the installation of machinery in the foundry and electroplating shops.

The extent to which the expert component of the project has been modified over time is also striking. The Chemical Engineer post (60 man-months) was dropped altogether in favor of increased emphasis upon civil engineering (6 extra man-months), new industrial economist and metallurgical engineer posts (33 and 34 man-months respectively), and additional consultant services. To a certain extent these modifications reflected the progress made in the establishment of the industrial estate at Ahvas by 1969, and the consequent increase in project emphasis given to industrial feasibility and policy formulation work, extension activities and to training in order to help promote and modernize small industry generally in Iran. On the other hand there was, and still remains, a serious need for the Chemical Engineer post eliminated in order to help finance the experts believed most essential in support of the counterpart agency strengthening (or "institution building") aspects of the project. The Technical Section of OSSI & IRI has not been able to develop a competence to undertake a strong research program or to provide extension assistance in the chemical engineering field.\*

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\* In this sense the project has been unduly constrained by the financial limitations imposed upon it by the Governing Council project allocation figure.

While the technical qualifications of experts were generally good several experts proved unable to work closely and effectively with their counterparts on account of personality differences. The two Foundry Engineers who succeeded each other spent a total of 28-1/2 man-months at Ahwaz but were unable to solve the problem of how to line properly the rotary kiln acquired for the Foundry at Ahwaz, or to agree on the design of a core drying oven fabricated with local materials (there was a problem of variable temperature within the chamber). This problem still remains unsolved. The second expert left the country prematurely as a result of illness. The Mission regarded the expert team presently in the field to be generally of good technical competence and effectiveness.

b) Fellowships

A total of five fellowships have been implemented to date.\* The fellowships implemented have been granted to counterpart personnel within the Industrial estate at Ahwaz,\*\* and have largely been in the form of study tours to industrial estates regarded to be operating successfully (in several instances in less developed countries). They have generally been of shorter duration than the six months originally envisaged. It was originally planned that the fellowships would all be implemented in 1965 and early 1966, enabling the counterpart personnel concerned to be back in the country during the industrial estate construction and operation stages. This did not prove to be possible however for a number of reasons including the lack of qualified counterpart personnel at the estate who were available for overseas training. In addition five counterparts have received overseas training and experience on fellowships financed from bilateral and other sources.

Three additional project fellowships are envisaged in the fields of Industrial Design, Marketing, and Foundry. Nominations have been made for all three, and the first two are now being processed.

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\* They are summarized in Annex IV.

\*\* Apart from the short fellowships granted to the first and second project Co-Managers.

Of the five Iranians sent on fellowships to date, three are still with the OSSSI and IEI. The former Director of OSSSI and IEI and the former chief mechanical engineer for the Ahwaz Industrial Estate left the posts for which they received overseas training. Those that have remained with OSSSI and IEI indicated their satisfaction with the experience and information gained from the short, but practical orientation of their fellowships.

c) Equipment

Annex V summarises the equipment provided to the project to date. With respect to the \$129,000 envisaged in the Plan of Operation Adjustment Advice No. 2 for the purchase of equipment and supplies, all but about \$15,000 had in fact been committed for this purpose by 31 December 1970. These funds have been employed to equip the Central Services Workshop at the Ahwaz Industrial Estate. This includes equipment for a machine shop, a foundry shop and an electroplating shop.

The initial selection of appropriate equipment for the Central Services Workshop at the Industrial Estate was made more difficult by lack of prior information on the types of industries that would be established there, and their specific servicing needs. The initial selection and requisitioning of equipment was undertaken by project personnel in 1966. Subsequent delays in the actual ordering and delivery of equipment (presumably in part to phase equipment delivery with the completion of the Central Services facilities) resulted in the actual arrival of equipment only in late 1968, 1969 and early 1970. (The facilities were completed in August 1968). Further delays in the installation and operation of this equipment were experienced, particularly with respect to the equipment for the foundry and the installation work as indicated in (a) above. It is now estimated that the equipment of the Central Services Workshop will be completely operational by the end of February 1971.

It was the consensus of project personnel that the equipment ordered and delivered would be put to good use at the Estate. While in some instances the machinery ordered was unbalanced from a production point of view this does not appear to be very significant as the Central Services Workshop equipment were intended primarily for demonstration and training purposes.

### 3. Government Counterpart Contribution

The Plan of Operation as approved indicates that the Government would spend about Rials 172.3 million on the purchase of land and the construction of facilities at Ahwas. This figure included airconditioning but excluded architect fees. In an effort to reduce the total costs of the Ahmaz Estate as earlier agreed upon in the Plan of Operation the Government subsequently decided to eliminate air conditioning and to modify the design of the standard factories. As a result the total costs were reduced to about Rials 142 million: Rials 88 million for Phase I; Rials 33 million for Phase II; Rials 12 million for additional works and installation costs; and Rials 9 million for administrative expenses.

The project initially experienced some delay stemming from difficulties in making a final decision on the site for the proposed industrial estate. The Government did finally agree to proceed on the basis of the recommendation of the project experts to select and purchase Site No. 9 (at Ahwas) identified in the Tudor-Quigley Report. (The Report itself had favored Site No. 10 at Ahwas).

The engineering firm selected by the Government to construct the Stage I facilities at Ahwas proved unable to meet its contract obligations for a number of reasons including a reimbursement pattern inadequate to meet its working capital requirements at Ahwas. As a consequence the Stage I factory sheds were completed over a year after originally envisaged. Moreover defective construction was a further source of delay, particularly in the electroplating workshop where the flooring was not acid proofed, the drains were not deep enough to function during the rainy season, and the wiring was done improperly. These difficulties have since been corrected. Altogether the Stage I and Stage II construction took about one and a half years longer than originally



envisaged in the Plan of Operation. The facilities as a whole are regarded to be well designed and constructed.

The Government has not been able to attract to the Ahwez Industrial Estate the numbers of professional and other personnel envisaged in the Plan of Operation and regarded to be necessary for the Estate to operate on an efficient basis after termination of international assistance. The absence of a Chief Mechanical Engineer and an Estate Manager are particularly notable in this respect. Similarly the Government has not been able to recruit the numbers of qualified nationals needed to develop a capacity by OSSI & IEI to undertake the variety of activities and responsibilities presently envisaged for it by its Director. In each case the recruitment difficulties have been largely due to the low salaries that can be offered for permanent posts\* in line with public service salary scale regulations, and the resultant inability to compete with the private industrial sector itself for the services of trained and experienced personnel. OSSI & IEI has lost personnel who had gained experience with the Organization for the same reason.

The fact that OSSI & IEI was established by Ministerial decree rather than by legislation guaranteeing certain freedom of action has inter alia meant that it must operate without suitable administrative and financial independence from the Ministry of Economy and Plan Organization respectively. With respect to the former OSSI & IEI has been unable to obtain adequate authority to approve licences for new small enterprises or even to require registration of existing ones, for example. In no other way could OSSI & IEI expect to obtain the information on small scale industries necessary to plan for their future needs adequately. With respect to the latter OSSI & IEI must presently justify in considerable detail all salary and other

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\* The Director of OSSI & IEI can offer higher salaries on a renewable "contract" basis, but Iranians generally do not care for the insecurity involved. Even these salaries are not competitive with what a qualified individual could obtain in the private sector.

expenditures to the Plan Organization and this has on occasion resulted in a lack of flexibility to use its budgetary resources in areas regarded to be of greatest urgency by it, including with respect to salaries. The establishment of OSSSI & IEI on the basis of suitably drafted legislation specifying its responsibilities and scope for independent action would go far toward solving these administrative and financial difficulties now confronting it.

#### 4. Implementation of Activities

The Plan of Operation indicated that project assistance should be focused on the establishment of both an Industrial Estate Authority and the demonstration industrial estate at Ahwaz. The progress made with respect to each is discussed in turn.

##### a) Establishment of an Industrial Estate Authority

The Industrial Estates Authority (IEA) was formally established within the Plan Organization in August 1964 in order to stimulate the establishment of industrial estates in Iran as a vehicle for promoting the development of small scale industries more generally. In July 1968 IEA was shifted to the Ministry of Economy and merged with the Small Scale Industries unit transferred from the Industrial Management Institute (IMI). The new OSSSI & IEI was granted considerably broader responsibility for the formulation and execution of policies and programs designed to foster the rapid development of modern small industries in Iran. Apart from continued support to the demonstration Industrial Estate at Ahwaz, OSSSI & IEI, with project support, has given priority to: (i) formulation and promotion of Government policies and programs regarded essential for the rapid development of modern small scale industries; (ii) undertaking of activities calculated to promote small industries development; and (iii) initiation of industry extension, and training. The tempo of such activities picked up considerably during 1969 and particularly 1970.

1) Promotion of Essential Policies and Programs

Until July 1968 when IEA was incorporated into the more broadly conceived OSSSI & IEI, project activities in the policy formulation area were limited to several studies leading to recommendations on policies regarded to be essential for promotion of industrial estates. One was a study on Industrial Estate Policy Objectives which was developed during the course of 1966. This policy paper attempted: to clarify the objectives of the industrial estate promotion program envisaged; to describe the specific policy measures to be taken in order to achieve these objectives; to spell out the criteria by which small industries should be admitted to estates; and to elaborate the rules and regulations bearing upon the tenants of industrial estates.

At about the same time project personnel gave in depth consideration to the specific action programs that the IEA should undertake, or encourage other Government departments or agencies to establish, in order to attract potential tenants to industrial estates and to retain them there on a viable basis. A Development Program was formulated with particular reference to the Ahwas industrial estate although it was equally relevant to the promotion of industrial estates generally. It spelled out inter alia: ways to publicize the facilities and services at industrial estates; the need to ensure location of viable, high priority industries at estates by seeking investors for industries identified as being sound; the necessity to establish suitable financial incentives (including attractive tax, customs, tariff, rental and credit policies); and the importance of promoting other non-financial incentives for small industries, including centralized bulk raw material and equipment purchasing arrangements, government stores purchasing programs, and industry extension and training activities.

These policy and program proposals were not actively promoted by the IEA at the time, and there is little evidence that much progress was made until 1969 and particularly 1970, except in regard to rental policy for the Ahwas industrial estate.

In early 1970 a policy statement on small industry development was prepared with project assistance which inter alia recognized the important role of modern small scale industry in the strengthening and diversifying of the country's industrial sector, and also the need for

special promotion and assistance measures to overcome such problems, as lack of access to credit, inadequate technical and managerial skills, unsatisfactory working premises and poor marketing arrangements. The issuance of this statement by the Minister of Economy in the fall of 1970 constituted the first formal policy declaration by the Government on the importance of, and its support to, the development of small industries.\*

At project instigation, a modification in the working definition of small scale industries was effected in the course of 1970. This involved the expansion of the total assets ceiling criterion from Riels five million (of which not more than 25% could be in the form of land and buildings) to Riels 7.5 million (in terms of machinery and equipment alone). This change in the working definition is regarded to be essential for the development of effective assistance programs for modern small scale industries.

ii) Promotion of Modern Small Industries

Industrial promotion activities beyond efforts associated with the industrial estate at Ahwaz commenced in 1969 with the undertaking of a number of small scale industry possibility and industrial estate feasibility studies. They included (during 1969 and 1970): (1) the feasibility of establishing ancillary industrial units within an estate at Tabriz (mostly manufacturing items for the automotive industry there) and at Shiraz (producing items for the telephone industry there); (2) the best alternative sites for industrial estates at Isfahan and at Mashad; (3) area studies to determine small scale industry development possibilities at Bantar Abbas Garmsar, Baluchestan and Sistan; (4) feasibility studies on the establishment of modern small scale lens grinding, spectacle frames, plastic button, plastic bottle and footwear industries; and (5) technical notes on the market prospects and relevant production processes for sodium silicate and sheet iron vitreous enamelling.

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\* The 4th Five-Year Plan (1968-72) in two lines makes one direct reference to the need for the establishment of infrastructure for small scale industries throughout Iran.

In addition, project personnel helped to draft a list of industries regarded suitable for development on a small scale basis. A total of 109 such industries was finally approved by the Government. This list, as well as the work of OSSI & IEI, received publicity during its participation in a two day session on Small Scale Industries at the Second Asian International Trade Fair held at Tehran.

Most recently OSSI & IEI and project personnel have helped draft the proposals for small industry promotion and development over the next 7 years; that is for 1971 and 1972, and for incorporation in the Fifth Five-Year Development Plan (March 1973 - March 1978).

iii) Industry Extension and Training Activities

Limited extension activities by project experts and their counterparts within OSSI & IEI commenced in April 1970. Since then, some 50 - 60 small scale industrial enterprises have received assistance. To date extension work has been limited to the mechanical engineering, industrial engineering, marketing and tool and die design fields.\*

Extension activities by project and counterpart personnel are presently selected on the basis of the preliminary findings of an OSSI & IEI representative assigned to visiting small scale industries in selected centers from time to time. Largely on the basis of this man's judgment as to the usefulness of advisory assistance, the international expert and his counterpart(s) make plant inspections. To the extent possible follow-up visits are made to check on progress and to help ensure that difficulties in implementing recommendations are overcome. Files are kept on the equipment being employed, the visits made, the advice given, and to the extent possible, the impact of the advisory assistance rendered. Project personnel are now assisting OSSI & IEI publish a quarterly bulletin which inter alia is being used to advertise the availability of such advisory services. Project experts and their counterparts initiated modest training programs for small scale industrialists during 1970. To date four industry

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\* It is envisaged that extension activities in the cost accounting field will be possible with the arrival of a cost accounting expert in January 1971.

representatives have completed a course in electroplating and about 44 have completed an orientation and training seminar in small scale industries. At present there are an average of nine industrialists sitting for an industrial engineering course, twelve for a marketing course, four for a blue print reading course, and four for a machine shop practice course.

These courses are prepared jointly by the project experts and their counterparts, and are actually delivered by the latter in Farsi although the expert also attends in order to help answer questions as necessary. The courses are given two evenings a week and last for one month each on average.

**B. Establish a Demonstration Industrial Estate at Ahwas**

International experts were primarily concerned with the successful establishment of the industrial estate at Ahwas in the first five years of international assistance. In this period various experts were influential in the choice of the estate site, the design of the physical layout, the selection of equipment and the training of Iranians to utilize it, the development of estate admittance criteria as well as its operation policy, the approval of industrialists applying for admittance, and the provision of assistance to them as needed. Virtually all of the UNDP-financed equipment was utilized in order to equip the Central Services Workshop at the estate.

**1) Stage I Facilities**

As indicated above the actual construction was undertaken in two stages. The Stage I construction include six super-blocks (15 workshops occupying a total of 8,200 sq.metres), an administration building, a guest house and a central services workshop. Each super-block is divided into three bays so that tenants can occupy "A-type" facilities of 265 sq.metres, "B-type" facilities of 492 sq.metres and/or "C-type" facilities of 1,250 sq.metres.

A summary of the items presently being produced in the Stage I facilities is attached as Annex VI. It is significant to note that about 50 per cent of the firms admitted to the Estate were not manufacturing a product and/or utilizing equipment that would enable it to take advantage

of the Central Services Workshop established with project assistance. Project personnel had conducted initial surveys of the Khuzestan Province (in which Ahwas is located) during the latter half of 1966 and had concluded in line with formal admittance criteria earlier established, that priority at the estate should be given to industries manufacturing agricultural equipment, pipe fittings, paper articles, pumps, transport articles, aluminum kitchen equipment, tool-forge items (primary hardware), sheet metal items (air-conditioning equipment, fans, etc.) ready-made clothing, and malleable pipe fittings. On the basis of these conclusions the equipment for the Central Services Workshop was selected and requisitioned. It appears that at least in part due to the Stage I construction delays and the resultant pressure to occupy the facilities as soon as possible, the admittance criteria were not strictly enforced.

It was reported to the Mission that in a few cases factory units showed little inclination to meet their rent payments. The thermos flask unit for instance was one year in arrears. The kitchen wares unit never made an investment at Ahwas and legal action is now being taken prior to a re-allocation of the premises. The milling stones unit vacated its premises after only several months at the estate. Apart from the milling stone and kitchen ware firms referred to above, the firms presently occupying spare are employing modern equipment and production procedures and should prove to be viable, expanding enterprises. The eight firms in production during the fall of 1970 had invested more than Rials 13 million at Ahwas, were producing goods valued at over Rials 2.75 million a month, and employed about 105 persons.

11) Stage II Facilities

The Stage II construction is now completed, except for minor electrical and other work. It includes an additional six super-blocks occupying a total of 7,400 sq. metres. As with the Stage I facilities each super-block

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\* The project had formally recommended that admittance to the estate should be based upon: (1) experience and potential of the firm to develop; (2) effective use the firm can make of the common services; (3) import-substitution; (4) potential employment; (5) ability to act as an ancillary of feeder industry; (6) contribution of the firm to the balanced industrial development of the estate; and (7) the financial state of the firm.

is divided into three bays to enable accommodation of from one to three production units, depending on requirements.

During the spring and summer of 1970 a joint committee of project and OSSI & IEI representatives was appointed to study the small industry possibilities of the Ahwas region and, on the basis of criteria developed\*, to make recommendations on industries suitable for location in the Stage II workshops at the estate. A list of 32 industries was recommended. The joint committee subsequently prepared "entrepreneur information sheets" describing in detail 20 of these industries regarded to have particular potential and relevance.

To date some 200 tradesmen, engineers and doctors have enquired about locating a small-scale industry at Ahwas. Eleven of these are apparently convinced upon locating at Ahwas, and seven of these eleven have made up their minds about the type of production they will undertake. They include: electric panels; transformers (for welding purposes); brass curtain fixtures; auto springs and bicycle parts; lens grinding; watch crystals (plastic and glass); and transistor radio assembly and repair. With the exception of the latter two industrial products, the proposals appear to be broadly in conformity with the recommendations of the joint committee for products to be manufactured there. An OSSI & IEI public relations man is actively contacting tradesmen and other well established individuals in Ahwas and from the province in order to stir up interest in establishing a small industry at the estate. Confidence is expressed among project and OSSI & IEI staff that the Stage II and vacant Stage I workshops will be allocated to suitable industries without difficulty.

#### iii) Central Services Workshop

The Central Services Workshop includes: a machine shop with three sections for machine tools, heat treatment and forging and welding; a foundry with four sections for pattern making, moulding, metal melting and laboratory facilities; and an electroplating shop with four sections for

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\* The criteria gave priority to industries that were (1) new; (2) import-substituting; (3) capable of using the Central Services Workshop facilities; and (4) showing evidence of management and progress potential.

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preparation, plating, polishing and laboratory services. All of the construction work has been completed and the bulk of the equipment has been delivered. Only the machine shop is in full operation at this time, however.

The machine shop has been essentially operational for two years. During this period, the equipment has been utilized at a steadily increasing tempo largely to service the needs of several factories at the estate (on a payment basis), to facilitate the installation of equipment within the Central Services Workshop itself, and to manufacture four lens grinding machines to be utilized for training purposes in Teheran in support of a lens grinding industry development scheme being promoted by OSSSI & IRI with project assistance. More attention has recently been given to specific machinery jobs for industries in the region.

In addition training activities have been undertaken. Five counterparts have received two years of intensive training in machine shop practices (machining, tool and die making or drawing and designing) and they are now competent to supervise most of the industry servicing, training, development and demonstration work envisaged with facilities. In addition six machine shop workers have been receiving training on the equipment. Four of these will complete their apprenticeship in March 1971, and the remaining two in March 1972. These workers are already capable of doing specific jobs required by industry. The training of groups of about 10 local workers at a time in various machine shop practices will commence in April 1971. This training will be undertaken in successive three to six month courses. A United States Peace Corps engineer is presently assisting with the training activities within the machine section of the machine shop, and will remain until July 1972. He has replaced four Norwegian Peace Corps volunteers who assisted with the training of shop personnel in the September 1968-May 1970 period. It is now anticipated that a "follow-up" United States Peace Corps volunteer will be assigned to the machine shop in early 1972 to give instruction in such areas as worker safety and proper equipment maintenance.

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The foundry shop remains closed due to the continued absence of a foundry expert able to finish the installation of equipment and to train national staff to administer and operate the shop activities. Certain technical problems remain to be solved in the foundry before it becomes fully operational. They include: determination of appropriate sands for the lining of the rotary kiln; installation of a magnetic drum; and the inability of the sand moulding pit and the gyratory screen pit to withstand subsoil water pressure during the rainy season. It is estimated that these difficulties can be corrected in about one or two months by the UNIDO metallurgical engineer now expected to arrive in January or February 1971.

Despite the delays in getting the foundry operational, three foundry workers have received training in core and mould making, metal melting technology and other relevant foundry practices. Further counterpart training and the initiation of short courses in foundry practices for industrialists are envisaged after the arrival of the international expert.

The installation of equipment in the electroplating shop has proceeded steadily since the belated arrival of an electroplating expert at Ahwas in April 1970. This expert has not only been supervising the installation and initial operation of equipment but has also been advising on the correction of certain errors in the construction of the electroplating workshop itself\*. It is anticipated that this work will be completed by February 1971. In addition the expert has been training three counterparts since August 1970. It is envisaged that after the facilities are completed, industry extension, demonstration and training activities will be undertaken as a service to the industries in the region.

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\* With respect to the lack of acid proofing in the drains, proper drainage during the rainy season, and faulty electrical wiring.

### C. PROJECT RESULTS

#### 1. Project Results and Achievement of its Purposes

##### (a) Establishment of an Industrial Estate Authority

Although the need for an effective Industrial Estate Authority was recognized in the Plan of Operation, there was grossly inadequate provision for this aspect of the work\*, and as a result it did not prove possible to give broad support to the policy and industry support programme requisites for rapid small industry development until 1969 and particularly 1970. As a result project assistance in the realization by OSSI & IEI of the small industry policies and support programmes required to promote the rapid development of small industries has not yet had much impact in terms of either the establishment of new modern small industries or the modernization of equipment and practices in existing industries.

On the other hand, the project has contributed significantly in less tangible ways. It has helped to convince the Government of the role of small industries in the industrial development process, particularly by giving emphasis to the economic advantages of promoting ancillary industrial activities in the large industry centres established throughout the country. In this sense the Government may well be more disposed in the future to support sound policy measures designed to promote small-scale industries which are economically viable.

Secondly, the project has helped to identify and to bring to the attention of the Government the types of policies and support programmes needed to promote small industries, as well as the specific measures necessary to effect them. On the recommendation of project personnel, OSSI & IEI has recently decided to give top priority to policy decisions in three areas regarded to be crucial for the effective promotion of small industry development. They include: (1) availability of credit on concessional terms; (2) preference to small industries in Government stores purchase programmes; and (3) reservation of items exclusively for production on a small-scale basis where economically justified, and the introduction of common small and large industry production programmes for certain other items.

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\* The modification of the expert component to include experts in industrial economy, marketing, industrial engineering, industrial credit, and data collection is a reflection of the importance of appropriate policies, promotion activities and extension and training activities for the rapid development of modern small industries in Iran. It is recognized that the development of OSSI & IEI staff capabilities in all these respects is essential.

OSSI & IEI, with project assistance, plans to work out specific policy proposals for approval by the Government in order to realize these objectives in the next two-year period (in order to set the stage for vigorous development activities during the new Five-Year Plan period). In addition the project has been instrumental in establishing the embryo of a small industry extension service and of training courses in various fields for industrialists. It is envisaged that these essential services will be expanded as the capability of OSSI & IEI permits.

Thirdly, the project has helped to demonstrate the feasibility of a number of ancillary industrial estate and modern small industry development schemes that show good promise of being implemented in the near future. At the same time this work has helped to provide valuable training to counterparts, to point out the extent to which OSSI & IEI is staffed to participate in such feasibility work, and to determine the ways that such work can be undertaken most effectively given the national personnel available and qualified for such work. In this regard a valuable contribution has been made by the undertaking of a study determining the "preliminary" or potential feasibility of an ancillary industrial estate at Tabriz. With respect to this industrial estate proposal project staff first undertook a brief preliminary survey to determine the best site and production possibilities in October 1965. Together with counterpart engineers from OSSI & IEI project staff carried out further investigations in October 1969. An arrangement was worked out whereby a detailed feasibility study (including both industry feasibility and estate physical planning) was undertaken by an autonomous consulting firm, Technolog, Inc. located within the Industrial Development and Renovation Organisation. This work was financed by the Industrial Credit Bank which expected to be reimbursed in due course from charges for land and facilities to industrialists located within the estate. The scheme at Tabriz is regarded to have an excellent chance for success. In addition there are good prospects for follow-up by industrialists on the feasibility study recommendations of project and OSSI & IEI staff for new modern small consumer industries producing plastic buttons, spectacle frames and ground lenses.

A number of factors have helped to undermine the effectiveness of the work to strengthen IEA (and subsequently OSSI & IEI), which should have been anticipated and taken into account at a much earlier stage. The more significant are discussed in turn.

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The inability of the Director of OSSSI & IEI to attract adequate numbers of qualified staff to date has impaired the ability of the counterpart staff to derive maximum benefit from their association with project staff. This has in turn tended to direct much of the initiative for the planning and execution of OSSSI & IEI activities into the hands of project personnel. In the view of the Mission this difficulty also constitutes a serious inhibiting factor jeopardizing the success of the activities now planned for the future. The shortage of staff with adequate backgrounds in the fields of engineering and economics is in a large part due to the low salary scales offered by the public service salary systems and the resultant inability to compete for the best university graduates with the private industrial sector. As a result: (1) project experts are not always working closely with nationals in the planning and execution of project activities; (2) nationals find themselves at times shifted to different experts and to unrelated types of activity, making more difficult the training process; and (3) nationals are required to undertake translations of technical reports to Farsi and other such basically administrative duties when their time could be better spent in close association with international experts helping to prepare for the next job assignments. The Mission concluded that unless this situation was rectified the "institution-building" or counterpart strengthening aspects of the project would not be successful, and strong support to small industry promotion activities would not continue beyond the duration of international assistance. In this connection granting OSSSI & IEI legal status appears to be essential in order to give it the financial and administrative autonomy necessary to deal effectively with its serious staff shortage problems.

The lack of any reliable statistical data on the size, nature and location of the small-scale industry sector in Iran has made it extremely difficult to determine the basic needs and therefore to plan the policies and programmes necessary to meet those needs. As a result the industry extension and training activities have been undertaken with inadequate knowledge as to the priority needs to be tackled. The policy papers of a number of the experts have been largely based on impressions gathered from personal "surveys" of conditions within the country and from the interpretation of available import data. Such work has been made more difficult by the fact that small industries have never been required by law to obtain a license or to register with the Ministry of Economy. The licensing of small-scale industries at this time appears to

be mainly limited to those industries wishing to move from Teheran to more spacious accommodations outside of the city. Some 10 to 20 licenses a week are issued to small-scale industries relocating outside of Teheran\*. OSSSI & IEI does not presently even get copies of the licenses issued by the Ministry of Economy. A procedure whereby basic data on all small industries is collected systematically by OSSSI & IEI is fundamental to its work. Project personnel have suggested that such basic statistical information could be collected if all small-scale industries were required by law to register with OSSSI & IEI.

(b) Establish a Demonstration Industrial Estate at Ahwas

While the establishment of the Estate at Ahwas has taken longer and been considerably more problematic than originally hoped for reasons spelled out in previous sections, there is little doubt that much valuable experience has been gained which has already proved useful in the planning of OSSSI & IEI's present and future estate promotion activities. In particular the experience at Ahwas has taught that (1) industrial estates, properly planned, can successfully promote the establishment of modern small industries in Iran if undertaken within a framework of policies conducive to investment in modern small enterprises; (2) standard factory facilities need not be erected in advance of demand in all cases; (3) related to (2) entrepreneurs rather than OSSSI & IEI should generally bear the financial burden of, and responsibility for, the construction of factory sheds\*\* ; (4) the number and size of factories within an estate should correlate closely with the actual product demand determined in advance\*\* ; (5) the availability of technical advisory services and carefully planned common service facilities are important factors contributing to successful establishment of modern small enterprises

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\* The Government power and water authorities are presently under instruction not to provide basic utilities to any new or relocating industries not possessing a license.

\*\* In order to avoid tying up its limited financial resources in long-term investment schemes in the future, OSSSI & IEI now plans to focus on preliminary estate feasibility activities leaving the design of factories (within certain predetermined standards) as well as their financing to entrepreneurs. In other instances OSSSI & IEI proposes to encourage financial institutions such as the Industrial Credit Bank to help meet construction and/or equipment costs on a reimbursable basis.

in industrial estates,<sup>4</sup> and (6) industrial estates should be set up as autonomous corporations with their own management free from the financial and administrative restrictions placed upon public service (OSSI & IEI) personnel who would otherwise have to assume these functions without the skilled manpower availability to do so effectively.

It was indicated above that the establishment of the industrial estate at Ahwas was hindered by construction delays, by delays in the provision of essential equipment for the Central Services Workshops, and by delays in the recruitment of experts able to install this equipment and to bring it into operation. In addition, however, the demand for estate facilities by the types of modern small industries deemed by the project and by the counterpart agency to be most desirable from the national standpoint was compromised by the pressure from the Plan Organisation to fill the estate with any enterprises regarded to be economically viable in order to help reduce the heavy capital and recurrent costs of the scheme to the Government; and more fundamentally by the lack of adequate financial, technical and other incentives for the stimulation of investment in modern small enterprises. In the view of the Mission the Project Manager has rightly given top priority to the realization of the policy and programme measures necessary to establish conditions conducive with the rapid development of modern small industries.

At the same time OSSI & IEI is taking steps to correct deficiencies at Ahwas in the light of the experience gained. In particular it is being more deliberate in the selection of tenants for the Stage II workshops and the Stage I facilities remaining unfilled or turning over. OSSI & IEI is also taking steps to transfer effective management of the estate to an autonomous corporation established as its subsidiary in order to free itself from day to day operational responsibilities there. Finally OSSI & IEI decided against proceeding with the construction of the Stage II factory workshops as envisaged in the Plan of Operation, and has decided instead to make space available to entrepreneurs who would then design, finance and construct their own "custom" facilities to their own specifications (meeting basic estate standards) while taking advantage of the utilities and Central Services

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\* In particular tool rooms able to meet the requirements of maintenance, repair and manufacture of tools and dies and spare parts appear desirable, and it is anticipated that future industrial estates planned by OSSI & IEI will take this need into account.

Workshop facilities already available at the estate. It is now judged that the estate would become economically viable after the Stage III factories come into production.

2. Contribution to Achievement of Ultimate Objectives

The ultimate objective of the project was to facilitate the rapid development of modern small- and medium-scale industries throughout Iran. After five years of operation the project has not had much impact in terms of realising its ultimate objective.\* The Mission has concluded however that the policy and programme measures necessary for the ultimate objective of the project to be achieved could be firmly established in the next two-year period and that vigorous investment in modern small- and medium-scale industries could take place in the Fifth Five-Year Development Plan period as a result.

The recommendations of the Mission for further UNDP/UNIDO assistance are intended to help ensure that the policy and programme requisites for the rapid development of small- and medium industries in Iran are realised.

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\* To date investments in new modern small enterprises are limited largely to those of the Phase I at Ahwas although more are anticipated in the near future with regard to Phase II at Ahwas, to the ancillary industrial estate at Tabriz, to the manufacture of plastic buttons and to lens grinding. In addition a number of small enterprises have invested in new equipment as a result of advice from OSSSI & IIEI and the project.



PART IV: FINDINGS AND RECOMMENDATIONS

A. Summary of Factors Affecting Achievement of Project Objectives

Although limited investments in small enterprise have already taken place as a result of project supported activities and there are good prospects for more in the near future, the Mission believes that the main contribution of the project by the time it terminates should be the realization of a sound, comprehensive policy for the promotion of small industries throughout the country. As indicated above, progress has already been made in this regard although much remains to be done.

Several outstanding factors can be identified which have contributed to the progress already made. They are touched upon in turn.

(1) Project effectiveness was greatly improved by the consolidation of Government agencies concerned with the development of small-scale industries in July 1968 and the subsequent broadening of the consolidated organization's scope to encompass (potentially) all programme and policy measures relevant to the promotion of small-scale industries. In this connection the aggressive, progressive support given to the promotion of modern small industries by the new Managing Director of OSSSI & IEI was an important contributing factor.

(2) Plan Organisation determination to follow through with the completion of stages I and II at Ahwas despite the large costs involved, the difficulties experienced by the sub-contractors, and the difficulties in locating suitable tenants was instrumental in helping to ensure that maximum practical experience was gained from the pilot small industry promotion effort at Ahwas. The failure of this second pilot industrial estate in Iran would have seriously retarded the development of modern small industries.\*

(3) The completion of estate construction, the installation of Central Services Workshop equipment and the occupation of factory workshop facilities at Ahwas in 1969 and 1970 meant that greater project emphasis could be given to the essential policy and programme measures requisite to the promotion of small industries more generally - measures that have given OSSSI & IEI (and the project) - greater recognition and support throughout the Government and small industrial sector.

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\* As indicated above Iran's first experience with small industrial estates at Karaj during the mid-fifties had been a conspicuous and costly failure.

(4) The improved recruitment of project experts in 1969 and 1970 helped considerably to increase the rate of implementation and with it the impact of the project. In this connection the recruitment of a new Project Manager able to command the respect and confidence of the Government was an important factor contributing to the success of OSSSI & IEI in obtaining Ministry of Economy enactment of certain policy measures recommended by it.

Other factors are evident which have tended to undermine the potential effectiveness of the project. The more significant are summarized below:

(1) The project as formulated lacked proper perspective as to the basic factors preventing investment in modern small industry in that it was trying to promote small-scale industry development within the framework of industrial estates without first establishing the policy and programme measures necessary for the rapid development of viable small industries.

(2) In order to remain within the Governing Council allocation figure the project was not subsequently designed with the numbers and types of experts necessary to achieve its fundamental counterpart agency strengthening objective. The failure of the Plan of Operation to include an industrial economist to assist with planning activities was also a serious weakness.

(3) Particularly in the earlier years the project appears to have suffered, at least insofar as it proposed enactment of small industry incentive measures, from a lack of Government appreciation of the significance of small industry in the country's economic development\*. Related to this, the project suffered from the inability of project and Government counterpart personnel to articulate a convincing case for special small industry inducements, or to propose policy measures in a form and manner acceptable to the Plan Organisation and Ministry of Economy. A mutual lack of confidence in the competence and dedication of the project and counterpart agency personnel on the part of each in the early years also hindered project effectiveness.

(4) One of the most serious constraints on the project has been the inability of the OSSSI & IEI to attract and retain the numbers of qualified personnel needed to participate fully in the various activities being carried out with project assistance. This should continue to jeopardize the counterpart training (or institution-building) function of the project unless ways to improve salaries and otherwise to improve conditions of work are found.

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\* This was reflected in the lack of any real attention to the needs of small industry in the Fourth Five-Year Plan.

**B. Government Interest in Extended Assistance**

Amendment No.1 to the Plan of Operation, which is presently being readied for signature by UNDP and UNIDO, would provide supplementary funds sufficient to carry the project through mid-1972. While the Government has not formally requested assistance beyond this date, the Director of OSSI & IEI informed the Mission that he believed international assistance at least through 1975 to be essential in order to maintain the present momentum of work in this field.

An idea of the nature of further assistance believed desirable can be gathered from a Mid-term Review report prepared by the Project Manager in June 1970. In this report the Project Manager identified five priority tasks to be completed with international assistance: (1) completion of the Ahwas Industrial Estate (international assistance terminating there in April 1972), (2) formulation of proper policies for small-scale industries development (international assistance terminating in December 1973 in this regard); (4) development of an industrial extension service within OSSI & IEI (various experts terminating assistance in the course of 1972); and (5) development of credit facilities for small industries (assistance for two years terminating at the end of 1972 or early 1973).

More specifically the Project Manager estimated the continued needs for international expertise as follows:

<u>Expert task and field of specialisation</u>	<u>Timing</u>
(1) Ahwas Industrial Estate:	
Mechanical Engineer	Until 1 April 1972
Foundry Metallurgical Engineer	"    "    "
Electroplating Expert	Until 1 April 1971
(2) Formulating of Policy:	
Project Manager	Until 31 December 1973
Industrial Economist	"    "    "
Industrial Engineer	"    "    "
Chemical Engineer	"    "    "
(3) Promotion of Ancillary Industry Activities:	
Industrial Economist	As in (2) above
Industrial Engineer	"    "    "
Chemical Engineer	"    "    "

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<u>Expert task and field of specialisation</u>	<u>Timing</u>
(4) Industrial Extension Service:	
Tool and die design	Until 1 April 1972
Lens grinding	" " "
Marketing	(18 months) until 1 April 1972
Cost Accounting	(12 months) " " "
Chemical Industries	(12 months) " " "
Chemical Industries	(12 months) " " "
Short-term Consultants	(12 months) " " "
(5) Credit Facilities Development:	
Credit facilities	(24 months) until 31 December 1972

No additional fellowships or equipment were believed required beyond that provided for in the Plan of Operation and Amendment No.1

C. Recommendations of the Mission for extended UNDP/UNIDO Assistance

The Mission is recommending that the project be extended initially to 31 December 1972 in order to provide sufficient time for the small-scale industry policy formulation and programme planning activities presently envisaged to come to a successful conclusion. The Mission is also recommending that, conditional upon the establishment by the Government of certain policy measures and small industry support programmes regarded to be essential for the successful promotion of small-scale industry in Iran, an additional three years of assistance (phasing out at the end of 1975) should be provided. This would help to ensure the successful implementation by OSSI & IEI of the small industry development programme formulated by it for inclusion in the Fifth Five-Year Development Plan (1973/74 - 1977/78).

(a) Recommended Assistance during 1971 and 1972

During 1971 and 1972, the project should give emphasis to: (1) the formulation and enactment of small-scale industry development policies regarded to be essential; (2) the development of OSSI & IEI capability to undertake limited extension activities, preliminary industrial estate feasibility studies, area studies determining production possibilities for modern small-scale industries, and limited training courses for small-scale industrialists; and (3) completion of the counterpart training at the demonstration industrial estate at Ahwas, and termination of full-time international assistance there. Each of these objectives is briefly summarised in turn.

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(1) Small-scale Industry Development Policy

Project and OSSSI & IEI personnel agree on three fundamental areas in which policy decisions are required by the Government if modern small-scale industries are to be promoted on a viable, widespread basis. They include:

- (1) provision of credit to qualifying small industries on concessional terms;
- (2) preference to small industries in Governmental purchase programmes where pre-determined product specifications can be met; and
- (3) Government licensing of small and large industries so as to protect and to encourage the former in those areas where they can be demonstrated to be relatively economic as a result of studies determining viable scale of operation.

In the light of the Government's declared policy of encouraging balanced industrial development among regions and a more even distribution of income among social classes, the Mission supports the policy priorities of OSSSI & IEI and the project and believes that they should be tackled with all possible speed.

(ii) Strengthening of the Capabilities of OSSSI & IEI

The Mission was left with the impression that the project was pressing forward with certain studies and industry support programmes at a pace too rapid to enable counterparts to gain maximum possible experience and benefit. In this connection, it is believed that additional emphasis should be given by the project to the training of OSSSI & IEI staff to manage the essential responsibilities they will be required to undertake after termination of international assistance. Counterpart training should be of an "on the job" nature in the course of undertaking: limited industrial extension activities; preliminary industrial estate feasibility studies; advisory support to industries wishing to take advantage of liberalized credit, Government stores purchasing and other such programmes; limited industry training activities and preliminary industrial feasibility studies (individually and by geographic area). The Mission is convinced that these small industry modernization and promotion activities should only be undertaken to the extent that counterpart staff can participate actively in them. The pace of such activities should, therefore, increase to the extent that the numbers and competence of national OSSSI & IEI staff permit.

In this regard, the Mission believes that project OSSSI & IEI staff should limit themselves to preliminary industrial feasibility studies, and that formal industrial estate feasibility studies, ancillary industry

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feasibility studies, etc. should be left to Technolog. Inc. or some other such consulting organisation under overall OSSSI & IEI technical guidance\*. Where practical, consideration should also be given to the sub-contracting of regional industrial training activities to the Industrial Management Institute\*\*. As the quantity and capacity of OSSSI & IEI staff increases, more of such activities might be undertaken directly by staff members.

(iii) Completion of the Industrial Estate at Ahwas

The Central Services Workshop facilities of the estate should be completely operational by the end of February 1971. Future project activities should therefore be focussed upon the training of nationals to operate the electroplating, foundry and machine shop facilities. The international experts should assist with the organisation of training and extension programmes to the extent that counterpart capabilities exist to participate fully in such activities.

The lack of sufficient numbers of suitable nationals to work in the Workshop facilities constitutes a major constraint on the volume of work undertaken by the national staff. In this connection, the Mission supports the proposal under consideration that the estate be re-established as an autonomous company as soon as possible. This would help to free OSSSI & IEI of its presently cumbersome operational responsibilities at the estate, enabling it to concentrate its scarce human and financial resources on other higher priority work. At the same time it would permit the estate to pay the level of salaries necessary to attract and retain the numbers of qualified staff required to undertake the scope of activities envisaged. Such a measure appears essential if the chief mechanical engineer and estate manager positions are to be filled with suitably qualified personnel in the foreseeable future. It is essential that these posts be filled in the immediate future if the personnel concerned are to benefit adequately from the presence of international personnel at Ahwas. The Mission recommends that these experts be pulled out at the end of 1971.

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\* The approach taken with respect to the proposed Tabris ancillary industrial estate scheme should be seriously considered as a model in this respect.

\*\* It may not always prove possible to find external financing for such "sub-contracted" technical feasibility and industrialist training activities, and it may be desirable for OSSSI & IEI to establish a small (revolving) fund to finance such activities until reimbursed by future estate tenants, by trainees, etc.

(iv) Summary of Further UNDP/INIDO Assistance

The Mission is recommending immediate signature of Amendment No.1 to the Plan of Operation (providing funds sufficient to carry out the project through until mid-1972), and from there an extension of six months utilizing project contingency funds. The Mission's recommendations for extended expert services to carry the project through until 31 December 1972 are as follows:

<u>Expert</u>	<u>NTE Dates</u>		<u>Presently budgeted Amendment No.1</u>	<u>Total proposed by Mission</u>	<u>Additional man-months proposed</u>
	<u>Present</u>	<u>Proposed</u>			
Chief Adviser (Alexander)	24. 2.72	31.12.72	87	84	-3
Ind. Economist (Khosla)	29.12.71	31.12.72	42	60	+18
Civil Engineer ( - )	21. 2.69	—	42	42	—
Cost Accountant (Gentile)	—	31.12.72	18	24	+6
Ind. Engineer (Luton)	8. 8.71	31.12.72	—	31	+31
Marketing Expert (Sforza)	4. 7.71	31.12.72	24	30	+6
Tool & Die Design (Turner)	9. 3.71	31.12.72	24	21	-3
Mechanical Eng. (Akram)	22. 9.70	31.12.71	70	70	—
Foundry Metallurgical Engineer (Kentisher)	—	31.12.71	36	40	+4
Chemical Engineer ( - )	—	31.12.72	12	18	+6
Electroplating Expert (Jarrett)	14. 4.71	15. 4.71	6	12	+6
Lens Grinding Expert (Nielsen)	31. 7.70	31. 7.70	—	6	+6
Credit Facilities Expert ( - )	—	31.12.72	—	18	+18
Data Collection Expert ( - )	—	31. 3.72	—	6	+6
Extension Expert ( - )	—	—	24	—	-24
Consultants (unspecified)	—	—	23	29	+6
			408	491	+83

It can be seen that the Mission is initially recommending a continuation of existing experts through 31 December 1972\* with the exception of the Lens

\* This would include the Cost Accountant post incorporated in Amendment No.1 which is intended to help expand the industrial extension and training activities of OSSI & IEI.

Grinding 'expert' post (which reverted to a UNDP/TA-financed post after 31 December 1970) and the Mechanical Engineer; Foundry Metallurgical Engineer and Electroplating posts (which will be phased out respectively on 31 December 1971, 31 December 1971 and 13 April 1971).

New posts in Chemical Engineering, Credit Facilities and Data Collection should commence in the second half of 1971 for the duration indicated. The Chemical Engineering expert would be required to: (1) assist with policy planning studies as required; (2) help to develop a capability within the Technical Section of OSSSI & IEI to provide extension assistance to industry in the chemical engineering field; and (3) develop the capacity of the Technical Section to identify and promote chemical processing possibilities with local resources that are economically viable.

The Credit Facilities expert should: (1) advise the Government on the establishment of a small-scale industry credit programme along lines now being worked out with short term Indian bilateral assistance; (2) assist with the initial operation of the credit programme; (3) train counterparts to advise industry on how to obtain credit; and (4) advise on the establishment of equipment hire-purchase, bulk raw material purchase, or other advantageous financial incentive schemes believed desirable.

The Data Collection expert should help establish procedures within OSSSI & IEI whereby basic data on existing and new small-scale industries could be collected on a systematic and comprehensive basis in support of planning and programming work undertaken. It is the view of the Mission that this data collection work will only be undertaken adequately as part of a requirement that all small industries must register with OSSSI & IEI under penalty of the law. In this connection the Mission strongly urges that steps be taken in the near future to get OSSSI & IEI itself legally established in order to provide it with the authority necessary to enforce registration procedures believed to be essential for proper planning in support of small industry needs.

According to the Mission's estimates, the recommended extension of experts by 83 man-months beyond that provided for in the Plan of Operation Amendment No.1 would require an additional \$152,284 from contingency funds\*.

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\* A net addition of 34 man-months of the senior expert posts (for the Chief Adviser, Ind. Engineer and Marketing Expert) at \$25,800 per annum or \$73,100 and a net addition of 49 man-months of intermediate expert posts at \$19,400 per annum or \$79,184.



The Mission is not recommending additional fellowships or equipment. The increase in expert costs over that provided for in Amendment No.1 would raise the miscellaneous costs of the project by \$9,137 and therefore the total requirements for additional contingency funds would come to \$161,421. It is recommended that this amount of contingency funds be allocated to carry the project through to 31 December 1972.

(b) Recommended Assistance during 1973-75

The Mission is also recommending that assistance be extended through December 1975, if, in the opinion of the Project Manager and the Resident Representative, the Government has, by December 1972, taken the steps necessary to establish the policy measures and small industry support programmes regarded to be essential for the success of the small industry development schemes now being proposed for the Fifth Five-Year Development Plan\*. This continued assistance should be designed to help ensure the successful implementation of the schemes incorporated into the first three years of this Plan. The expert assistance being recommended for the 1973-75 period is considerably more modest than that provided in the 1971-72 period and is designed to phase out completely by December 1975. Specifically, the Mission is recommending expert assistance in this period as follows:

	Total Man-months	1973	1974 (US \$)	1975
Project Manager	36	25,800	25,800	25,800
Industrial Economist	12	19,400	-	-
Industrial Engineer	36	25,800	25,800	25,800
Short-term Consultants	24	25,800	25,800	-
Total:	108	96,800	77,400	51,600

These project costs would be financed from the Iran country programming target figure which will become operative in January 1973.

\* As indicated in PART II (C) these include establishment of: (1) a credit fund able to meet the basic needs of qualifying small industries; (2) a Government purchase programme giving preference to small industry where predetermined product specifications are met; and (3) a Government licensing policy which protects and encourages small industry where they can be demonstrated to be relatively economic.

D. Government Counterpart Contribution

The increase in expert costs proposed for the 1971-72 period will mean that the local operating cost obligation of the Government will increase by approximately \$22,842 in that period. The Mission was led to believe that the Government was fully aware of this increased obligation and was prepared to accept it.

While the Mission was in Iran an agreement between the Indian and Iranian Governments was reached whereby the former would provide the latter with short-term assistance in the field of small-scale industry development. This assistance has been closely co-ordinated with that being provided by the UNDP and UNIDO to OSSSI & IEI and includes: (1) a financial adviser for two months starting in January or February 1971; (2) three teams of specialists who would spend from three to four months each undertaking economic feasibility studies; and (3) study tours in India for three groups of from eight to ten small entrepreneurs in such fields as foundry and mechanical engineering workshops. The Mission would like to emphasize the importance of OSSSI & IEI assigning staff to work closely with these Indian experts, in order to gain maximum experience from their presence. The Mission is not convinced that OSSSI & IEI presently has the numbers of qualified staff required to contribute strongly to the work which will be simultaneously undertaken by Indian and UNDP/UNIDO personnel. It therefore urges that all possible measures be taken to attract the national staff required to fulfil its counterpart obligations. The Mission left Iran convinced that the greater administrative and financial autonomy that would be accorded OSSSI & IEI with its being granted "legal" as distinct from its present "decree" status would help materially to enable it to attract university graduates and to hold them.

The Mission was also left with the impression that OSSSI & IEI would not be staffed to undertake detailed area, industry, or industrial estate feasibility studies in the next several years and that it would therefore be desirable to find other ways by which such work could be done. While the financial arrangement agreed upon by Technolog, Inc. and the Industrial Credit Bank with respect to the Tabriz industrial estate scheme worked well and should be encouraged in the future, this might not always be possible. In this connection OSSSI & IEI might wish to give thought to the establishment of a modest revolving fund by which it could directly finance sub-contracted work of a highly technical nature.

## Annex I

### Terms of Reference of the Joint UNDP/UNIDO Review Mission

The primary purposes of the review of the project are:

- to evaluate it in order to determine how adequately its immediate purposes are being attained and how effective it has been or is likely to be in helping the Government to achieve the relevant sectoral and/or national development objectives;
- to identify the factors which may have facilitated or deterred the achievement of the project's immediate purposes and ultimate objectives; and
- to make recommendations for future action.

The Mission should feel free to review all steps in the formulation and implementation of the project and make recommendations as to its future.

In carrying out these purposes, the Mission will in particular:

- (a) evaluate the current status of the project, in relation to the country's plan of development, objectives and programmes for small industry development, and the present and potential capabilities of the Organization for Small-Scale Industries and Industrial Estates of Iran; and
- (b) determine the extent of interest in the industrial estate approach to small industry development by local entrepreneurs.

If the Mission deems that further UNDP (Special Fund) assistance to the project beyond its presently scheduled termination date is desirable, the Mission should recommend, for the consideration of the UNDP Administrator, the scope and duration of such supplementary assistance from the UNDP,

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including appropriate additional counterpart contribution. The possible UNDP contribution and the proposed Government counterpart contribution as well as the payment the Government would be expected to make to the UNDP as a contribution towards the local operating costs, should be discussed with the Government.

## Annex II

### Itinerary and List of Persons Consulted

**Saturday, 5 December:** Meeting with Project Staff

Dr. P.C. Alexander - Project Manager

Meeting with UNDP Representatives

Mr. E. Cacouris - Second Deputy Resident Representative

**Sunday, 6 December:** Meeting with Project Staff

Dr. P.C. Alexander - Project Manager  
Mr. Hans Neilsen - Lens Grinding Expert  
Mr. Charles Luton - Industrial Engineer  
Mr. P. Turner - Tool and Die Design Expert  
Mr. S. Sforza-Chrzanowski - Marketing Expert  
Mr. J. Gentlé - Cost Accountant (designate)  
Mr. Krishan Khosla - Industrial Economist

**Monday, 7 December:** Discussions with Project Staff

Dr. P.C. Alexander - Project Manager

Discussions at Industrial Credit Bank

Dr. A. Farmanfarmaian - Managing Director

**Tuesday, 8 December:** Meeting with Project Staff

Dr. R.C. Alexander - Project Manager

Meeting with OSSl & IEI Staff

Mr. Hassan Ansari - Managing Director

Meeting with Ministry of Economy

H.E. Mr. J. Vafa - Deputy Minister for International Relations

Meeting with Project Personnel

Mr. C. Luton - Industrial Engineer  
Mr. N. Akhavan - OSSl & IEI counterpart  
Mr. M. Hoshmati - " "

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Wednesday, 9 December: Meeting with Project Personnel

Dr. P.C. Alexander - Project Manager

Meeting with Industry Section,  
Plan Organisation

Mr. A. Noban - Director  
Mr. K. Khosla - Project Industrial  
Economist

Travel to Ahwas Industrial Estate

Thursday, 10 December: Discussions with Industrial Estate Management

Mr. Fakhroul - Acting Plant Manager  
Mr. Rafadja - Maintenance Engineer  
Mr. Taberpoor - Industrial Promotion  
Mr. K. Khosla - Project Industrial Economist

Visit to Machinshop at Estate

Mr. Mohammed Akram - Project Mechanical Engineer  
Mr. Mohammadi - Foreman and Counterpart  
Mr. K. Khosla - Project Industrial Economist  
Peace Corps Machinist

Visit to Foundry at Estate

Mr. Modressi - Foundry Foreman  
Mr. K. Khosla - Project Industrial Economist

Visit to Electroplating Shop at Estate

Mr. G.D. Jarrett - Electroplating Expert  
Mr. Kamsi - Foreman and Project  
Counterpart  
Mr. K. Khosla - Project Industrial Economist

Visit to Small Industries at Ahwas Estate

Paper Bag Manufacturing Factory  
Par's Neon Signs Factory  
Iran, Khuzestan (Metal furniture)  
Teletex (Irrigation Canal Gates)  
Wooden Furniture Unit  
Fatchpouri Screw Manufacturing Factory

Thursday, 10 December: Visit to Small Industries in Surrounding Area

Foundry Shop, Ahwas  
Agricultural Implements Shop, Ahwas  
Automobile Parts Manufacturing and Repair Shop, Ahwas

Discussions with Project Staff at Ahwas

Mr. G.D. Jarrett - Electroplating Expert  
Mr. M. Akram - Project Mechanical Engineer

Friday, 11 December: Visit to proposed Industrial Estate site at Khorramshahr

Travel to Shiraz

Discussions with Ministry of Economy Regional Officials at Hotel

Mr. Zamanzadeh - Regional Director  
Mr. Kamran - Economist  
Mr. K. Khosla - Project Industrial Economist

Saturday, 12 December: Visit to Persepolis

Discussions at Ministry of Economy Regional Office, Shiraz

Mr. Zamanzadeh - Regional Director  
Mr. Kamran - Economist  
Mr. K. Khosla - Project Industrial Economist

Visit to Small Industry in Shiraz

Mr. Dastur - Pump Manufacturer

Visit to Sherkate Sahani Siemens, Iran (Telecommunications equipment manufacturing Plant with Siemens Corp. participation)

Mr. Roland Schuler - Managing Director  
Mr. Kamran - Economist, Ministry of Economy  
Mr. Dastur - Pump Manufacturer  
Mr. K. Khosla - Project Industrial Economist

Return to Teheran

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- Sunday, 13 December: Meeting with Industry Section Ministry of Economy  
H.E. Mr. Bakhtiar - Deputy Minister for Industry
- Meeting with UNDP/ILO Project IRA-30: Management Development and Supervisory Training in Provincial Centres (Industrial Management Institute)  
Dr. H. Thompson - Project Manager
- Meeting with Project Staff  
Dr. P.C. Alexander - Project Manager
- Meeting with Economic Analysis Section, OSSI & IEI  
Mr. Kasei - Chief  
Mr. A.F. Marashi - Section Member
- Monday, 14 December: Meeting with UNDP/UNIDO Project IRA-16: Research Center for Industrial and Trade Development (Ministry of Economy)  
Dr. A.N. Rao - Project Manager
- Meeting at Labour and Social Security Institute, Ministry of Labour  
Mr. F. Taleb-Beigi - Director
- Meeting with Technical Section, OSSI & IEI  
Mr. Azami - Chief  
Mr. Bafahani Zadeh - Section Member  
Mr. A. Hakim "
- Tuesday, 15 December: Meeting with Techbolog, Inc.  
Mr. Askari - Director  
Mr. Narasimhan - Consultant
- Wednesday, 16 December: Travel to Isfahan  
Visit to proposed Industrial Estate Site, Isfahan  
Discussions at Ministry of Economy Regional Office  
Mr. Najafi - Regional Director

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Wednesday, 16 December: Visit to Small Industry at Isfahan

Technopol Compressor Manufacturing Shop  
Hadid Industries Workshop  
Carpet Weaving Shop

Thursday, 17 December: Meeting at Iran Chamber of Commerce, Industries and Mines

Mr. Reza Razmara - Secretary-General

Meeting with UNDP Representatives

Mr. Nessim Shallon - Resident Representative  
Mr. J.C. Petitpierre - Deputy Resident Representative  
Mr. E. Cacouris - Deputy Resident Representative

Meeting with Industrial Management Section, OSSSI & IEI

Mr. F. Moezzi - Chief

Meeting with Industrial Promotion Section, OSSSI & IEI

Mrs. Tohidlew - Chief  
Mr. A.F. Marashi - Section Member

Meeting with OSSSI & IEI Staff

Mr. H. Ansari - Managing Director

Meeting with Project Staff

Mr. S. Sforza-Chrsanowsky - Marketing Expert  
Mr. P. Turner - Tool and Die Design Expert

Annex III

Project Expert and Fellowship Components as Planned  
and as Implemented as of End of Original Project (2/10/70)

<u>Expert Component</u>	<u>Plan of Operation as Approved (24/5/65)</u>	<u>Adj. Adv. No.1 (14/3/67)</u>	<u>Adj. Adv. No.2 (10/12/68)</u>	<u>Estimated Total Provided by End of Original Project (2/10/70)</u>
Chief Adviser (O'Regan - 1/2/65 to 30/4/69) (Alexander - 25/2/70 to present)	63	63	63	51 ) 6 ) 57
Mechanical Engineer (Bohlin - 1/3/65 to 11/8/66) (Herheim - 7/2/67 to 5/2/69) (Sen - 23/9/69 to 22/9/70) (Akram - 2/10/70 to present)	60	42	52	18 ) 24 ) 52 1/2 10 1/2 ) -2
Chemical Engineer	60	36	-	-
Civil Engineer (Chang - 24/8/65 to 21/2/69)	36	-	42	42
Industrial Estates Consultant (Tudor - 18/7/63 to 15/12/63) (Quigley - 21/8/63 to 29/9/63)	6	6	6	5 ) 1 ) 6
Industrial Economist (Nielsen - 3/9/67 to 2/9/68) (Khosla - 30/12/68 to present)	-	-	24	12 ) 20 ) 32
Foundry Metallurgical Engineer (Csab - 8/10/67 to 7/10/69) (Myrman - 1/12/69 to 14/4/70)	-	-	24	24 ) 1/2 ) 24 1/2
Short Term Consultants:	15	9	29	20
(a) Tool and Die Design (Turner - 10/3/70 to present)				1/2
(b) Industrial Engineer (Linton - 9/8/70 to present)				1
(c) Marketing (Sforza - Chrsanowski - 5/7/70 to present)				2
(d) Ophthalmic lensgrinding (P. Nielsen - 1/2/70 to present)				7
(e) Electroplating (Jarrett - 15/4/70 to present)				1/2
<b>Total Expert Man-Months</b>	<b>240</b>	<b>240</b>	<b>240</b>	<b>246</b>

Project Expert and Fellowship Components as Planned  
and as Implemented as of End of Original Project (210/70) (cont'd)

<u>Fellowship Component</u>	<u>Original Provision</u>	<u>Actually Provided*</u>
Industrial Estates	6	3
Industrial Estates	6	6
Industrial Estates	6	2
Industrial Estates	6	6
Small-Scale Industries	-	1
	<u>24</u>	<u>18</u>
<b>Total Fellowship Man-Months</b>		

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\* Three additional short-term fellowships for counterparts in the fields of industrial design, marketing and foundry are now envisaged.

Annex IV

UNDP/UNIDO Fellowship Programs as Implemented

<u>Subject of Fellowship</u>	<u>Name of Fellow</u>	<u>Date of Fellowship</u>	<u>Location of Fellowship</u>
Industrial Estates	M. Ashmafi*	3/1/66 to 25/3/66	various (study
Industrial Estates	A.R. Shafiq**	15/11/67 to 14/5/68	India tour)
Industrial Estates	M. Jaharmir	23/10/67 to 20/12/67	UK
Industrial Estates	S. Khaseii	8/1/69 to 22/6/69	Netherlands
Small Scale Industries	H. Ansari	9/11/69 to 27/11/69	Japan and India
Industrial Design	K. Besharatsadeh	- ( 4 mos.)***	Various (study tour)
Marketing	-	-	
Foundry	-	-	

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- \* The former Project Co-Manager. He left the project in July 1968.  
\*\* Trained as Mechanical Engineer for Amwas Industrial Estate but left Project.  
\*\*\* Yet to depart.

Annex V

UNDP/UNIDO Project Equipment Component - Comparison of Plan  
of Operation with Actual Position as of 31 December 1970

	<u>Estimated Cost (Expressed in US Dollars)</u>	<u>Equipment at the project as per 31.12.70</u>
<b>I. <u>Machine Tool &amp; Sheet Metal Workshop</u></b>		
a. Lathe 355 x 3000	6,940	6,137.00
b. Lathe 280 x 3000	5,520	3,682.00
c. Shaper 850 mm.	6,890	-
d. Shaper 400 mm.	1,900	-
e. Radial Drill 40 mm.	2,570	1,892.00
f. Production Drill 35	900	-
g. Production Drill 32	510	-
h. Bench Drill 19	130	118.00
i. Bench Drill 22	230	180.80
j. Milling Machine 1300 x 305	7,970	8,703.49
k. Hacksaw 240 mm.	450	637.60
l. Two Grinding Wheel 8"	330	297.80
m. Welding Generator	670	678.88
n. Oxy-Acetylene 2 x 10 kg.	370	424.00
o. Guillotine Shear 2 mm.	1,240	-
p. Roller Bending 2 mm.	480	-
q. Folding Machine	800	-
r. Nibbling Machine 4 mm.	1,280	-
s. Beading Machine 1 mm.	150	-
t. Small Tools	6,200	9,915.00
u. Other	-	<u>8,606.00</u>
<b>Total</b>	<b>45,530</b>	<b>41,272.57</b>
<b>II. <u>Foundry</u></b>		
a. Rotary Drum Furnace 500 Kg/h	8,050	8,484.00
b. Crucible Furnace 200 Kg.	1,610	1,510.00
c. Grinding Wheel 12"	200	222.24

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	Estimated Cost (Expressed in US Dollars)	Equipment at the project as per <u>31.12.70</u>
<b>II. Foundry (cont'd)</b>		
<b>d. Hauling Equipment</b>		
i. Travelling Hoist Block 2 Ton	270	-
ii. Travelling Hoist Block 5 Ton	480	758.34
iii. Gantry 5 Ton	410	-
iv. Electric Hoist and Geared Crane ladle	-	1,642.00
e. Sand Conditioner	570	-
f. Gyrotory Sand Riddle	730	1,831.40
g. Sand Mixer-Miller	1,980	3,450.00
h. Core Baking Oven	690	1,375.00
i. Small Tools	<u>2,500</u>	<u>2,536.00</u>
Total	17,490	21,808.98
<b>III. Forge &amp; Heat Treatment Workshop</b>		
a. Forging Furnace	1,780	1,284.00
b. Forging Hammer 65 Kg.	3,250	3,315.75
c. Forge Hearth Double Sided	210	344.96
d. High-Speed Heat-Treatment Furnace	460	719.00
e. Electric Muffle	1,560	1,344.00
f. Salt-Bath Furnace	2,020	1,838.50
g. Hardness Tester	950	1,012.90
h. Small Tools	<u>2,000</u>	<u>-</u>
Total	12,230	9,859.11
<b>IV. Metallurgical &amp; Foundry Moulding Sand Laboratory</b>		
Total	7,610	7,052.62

/...

Estimated Cost Equipment at  
(Expressed in the project as per  
US Dollars) 31.12.70

<b>V. <u>Pattern Making Workshop</u></b>		
a. Chain Mortising (490 x 220 mm.)	720	
b. Hollow Chisel Mortiser (740 x 160 mm.)	880	
c. Wood Turning Lathe (915 mm.)	780	}
d. Circular Saw Bench (915 x 865 mm.)	840	
e. Band Saw (860 x 860 mm.)	1,040	
f. Saw Sharpening	80	
g. Electrical Band Saw Brazing	110	
h. Scroll Saw (390 x 390 mm.)	180	
i. Combined Belt & Disc Sander (2500 x 800 mm.)	1,180	
j. Vertical Bobbin Sander (660 x 650 mm.)	900	
k. Knot Hole Boring	220	
l. Moulding Cutter & Tools Grinder 1.1. HP	720	
m. Rigid Spindle-Shaper	1,460	
n. Small Tools	<u>3,300</u>	
<b>Total</b>	<b>12,410</b>	<b>3,311.63</b>
<b>VI. <u>Electro-Plating Workshop</u></b>		
a. Copper/Nickel Plating	5,290	}
b. Chrome/Zinc Plating	4,740	
c. Barrel Plater	3,170	
d. Tin Plating	2,050	
e. Boiler (Estimated)	<u>1,480</u>	
<b>Total</b>	<b>16,730</b>	<b>13,163.00</b>
	<b>112,000</b>	<b>96,467.91</b>
<b>VII. <u>Estimated freight CIF</u></b>	<b>17,000</b>	
<b>Sub-Total</b>	<b>129,000</b>	
<b>VIII. <u>Preparation of Final Report</u></b>	<b>5,000</b>	-
<b><u>Total Equipment</u></b>	<b><u>134,000</u></b>	

Annex VI

Occupancy Status of Workshops at Industrial  
Estate, Ahwas - Stage I Facilities

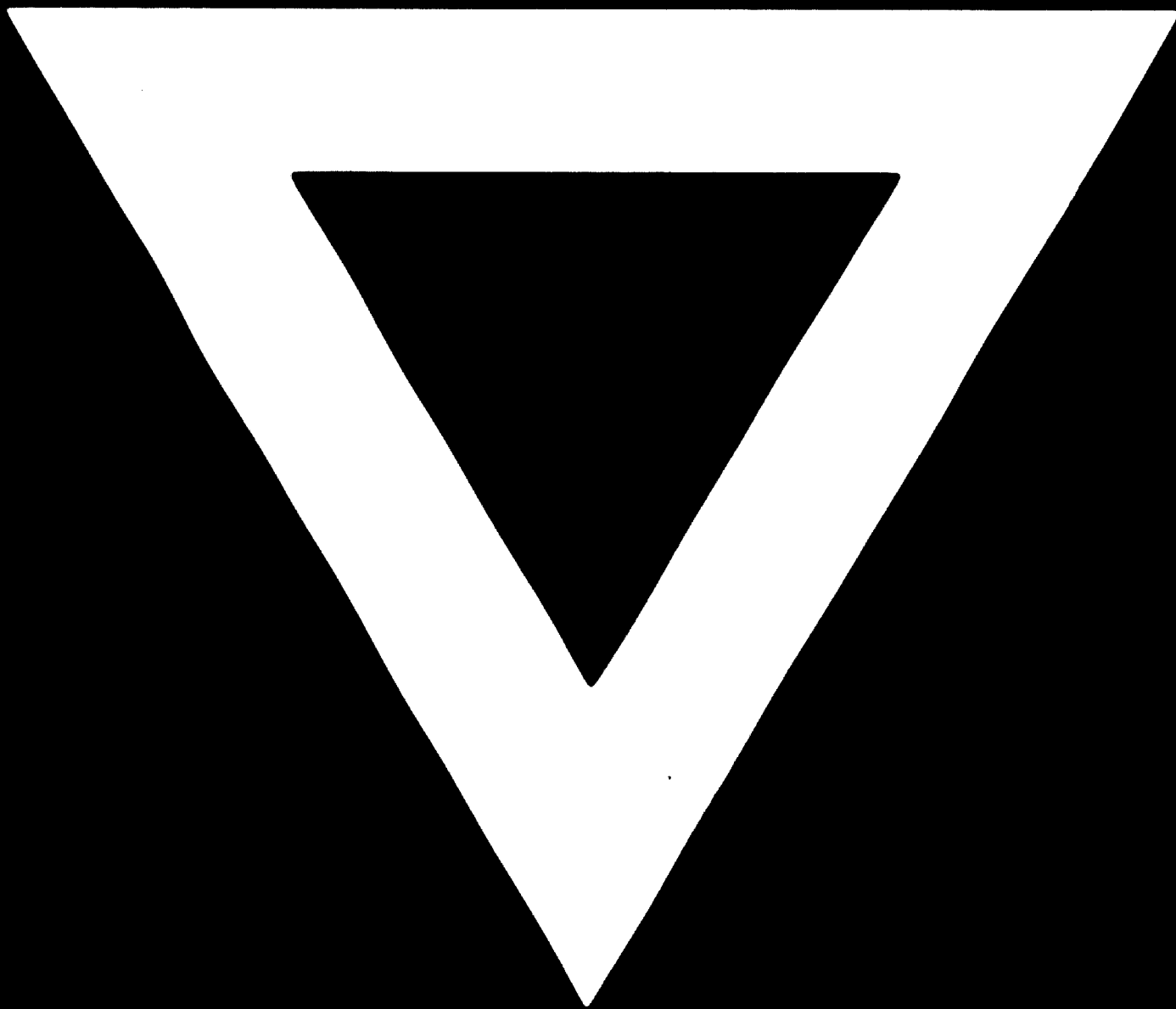
<u>Product being Produced</u>	<u>Product Related to Central Services Workshop Facilities</u>	<u>Stage I Units at Ahwas</u>	<u>Old or New Unit on Entry</u>	<u>Reinvested Profit for New Equipment or Space</u>
1. Steel furniture, thermos flasks	Yes	A+B+C	Old	Yes
2. Neon Sign Boards	No	B	Old	
3. Wood Screws*	Yes	B	New	
4. Irrigation Canal Gates	Yes	A+C	Old	Yes
5. Wooden Furniture	No	B	New	Yes
6. Paper Bags	No	A	New	Yes
7. Oil Company Equip- ment Renovation*	Yes	C	New	
8. Refrigerator Cabinets	Yes	A+B	Old	
9. Milling Stones**	No	A+B	Old	
10. Kitchen Wares**	No	A	Old	

\* Yet to achieve production.

\*\* Now vacated and space being reallocated.



**G-350**



**80.11.21**

