OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

07180

Distr.
LIMITED

ID/WG.231/6
23 September 1976
ORIGINAL: ENGLISH

United Nations Industrial Development Organization

Expert Group Meeting on Evaluation of the Effectiveness of Industrial Estates in Developing Countries

Vienna, Austria, 14 - 16 December 1976

EVALUATION REPORT ON INDUSTRIAL ESTATES NO. 6 : IRAN 1/

by

David Hall *

* Consultant

1/ The views and opinions expressed in this paper are those of the consultant and do not necessarily reflect the views of the secretariat of UNIDO or of the Swedish International Development Authority (SIDA), under whose joint auspices the study was undertaken. This document has been reproduced without formal editing.

id.76-4943

TABLE OF CONTENTS page

THE ROLE OF INDUSTRIAL ESTATES IN IRAN

Introduction

Background

The most notable feature of industry in Iran is that its contribution to the gross domestic product of the nation remains relatively low. This holds true despite the rapid growth in industrial output - 16.6% per annum over the period 1967-72 and in excess of that since the oil price began to rise rapidly in November 1973. The combined value added in manufacturing and mining was only 13.2% of gross domestic product (GDP) in 1972, having fallen from 13.5% in 1967. This poor comparative performance is due to the large and rapidly growing contribution of oil and ancillary tertiary services to GDP: in 1972 (i.e. before the boom) oil already contributed 26.7% of GDP, its contribution growing at the rate of 24.0% over the period 1967-72. Despite an acceleration in the rate of growth of industrial output since 1972, and rates of growth of capital investment in industry in excess of 20% p.a., its share has continued to fall as oil income has risen sharply.[1]

The second notable feature of industrial output in Iran is its concentrated composition in terms of product mix. Non-durable consumer goods accounted for almost two-thirds of gross manufacturing output in 1970-71, with processed food and beverages contributing 46.6% of the total and textiles, including garments, another 20.1%. Fabricated metal products including machinery and equipment contributed a further 20.1% - mostly transport and electrical equipment. This product concentration is even more marked where numbers of establishments and persons engaged are concerned. 82.5% of all establishments in Iran, and 81.0% of all persons engaged in industry were in the processed foods, textiles and garments, and fabricated metal sectors.[2]

---

1 Data in this paragraph from IBRD "The Economic Development of Iran" 1973. Table 3.1.

2 Data in this paragraph from Appendix Table 4.

A third feature of industrial development in Iran is its geographical concentration. Much of Iran is covered by deserts and mountain ranges with restricted availability of water. Four of the twenty states of Iran (each with one of the four main rivers) accounted for 76.45% of gross industrial output in 1970-71, 83.10% of value added, 70.10% of persons engaged, and 64.72% of all industrial establishments. Of these four states - Central Province, East Azarbijan, Khuzestan and Isfahan - Central Province, which includes Tehran, is most important with 60.60% of gross output, 69.70% of value added, 43.27% of persons employed and 36.8% of establishments.[1]

A further distinguishing characteristic of Iranian industry is the preponderance of small scale units. Of the 165,280 industrial units identified as such in a nation wide survey in 1970, no less than 97.5% were firms employing fewer than 10 people.[2] Government data[3] indicate that in 1969, 172,508 small units, 97.1% of all establishments covered by those data, employed 66.1% of the total industrial labour force, and contributed 35.8% of industrial value added (34.0% of gross output). Another survey in 1970[4] indicated that 97.5% of the 167,619 establishments employed fewer than 10 workers, employed 72.4% of the total industrial work force and contributed 32.1% of industrial value added (37.0% of gross output). By way of contrast, this survey showed the 335 firms employing more than 100 people as contributing 51.5% of industrial value added (44.6% of gross output) with 17.5% of the industrial work force.

Industrial Policy

The parameters within which policy makers in Iran have to formulate their industrial policy framework have been pushed back by the recent substantial increase in revenues from oil. This has necessitated a complete re-evaluation of the objectives of and plans for industrialization in Iran. So far no new fully consistent framework has been developed.

---

1 Data in this paragraph from Appendix Table 5.

2 Both figures - from Table 1 - are widely believed to be underestimates due to a lack of full coverage for rural units.

3 As reprinted in IBRD, op. cit. Table 12.17.

4 Conducted by the organization for small scale industries in Iran.

The current industrial policy consists simply of a set of ad hoc decisions concerned with a wide variety of issues, possibilities, and constraints. Iran's position is unique and consequently uncertainty abounds as to the relative merits of alternative policy decisions. Rapid industrialization is an objective of the Iranian Government but it is not clear yet what that means in quantitative terms. Consequently, it is not known with any degree of confidence what elements should be incorporated into industrial policy in order to ensure that rapid industrialization will be attained with maximum efficiency. The picture is further complicated by a wide measure of uncertainty as to where Iran's comparative advantage in industry will lie when the dust of the oil boom has settled.

As of now the most the outside observer can see amid the (understandable) confusion is that various constraints are being imposed on the industrialisation process and that ad hoc decisions have been taken in response to the specific issues mentioned above. But given that the objective is as rapid an industrialization as possible, on the basis of the resources available, we can identify the two main routes along which this process is being guided. First there is the large scale development of processing of Iran's natural resources of oil, natural gas and metallic minerals. This is being carried out by the state sector in conjunction with foreign (private and government) assistance. Secondly, private business, both domestic and foreign, is being encouraged to establish import substitution industries as fast as possible across a wide range of products, but with little guidance as to the actual selection of products.

The large scale natural resource processing plants are being developed as individual projects, each with its own locational logic and its own individual development of captive infrastructure and service facilities. Consequently they are not within the scope of this report. Our main concern is with the import substitution based industrialization. This is being based on more-or-less free issuance of development permits - for example in 1974-75, 650 permits were issued for middle to large scale plants. Total projected capital outlay of all plants sanctioned in 1974-75 is 200,000 million rials. Of this, 50% is in the state sector. The private sector's 50% includes all smaller scale units. In addition to the ready availability of permits, import substitution is encouraged by a protective commercial policy and free availability of foreign exchange for imports of raw materials, capital equipment, and technical assistance.

The free availability of foreign exchange is in fact opening up new opportunities for import substitution, as more and more new products are introduced onto the Iranian market. However, while this industrialisation for import substitution is proceeding rapidly on the basis of the ready availability of foreign exchange, it is beginning to be realized that the industries being created are heavily import dependent. They will not be able to survive after the oil revenues begin to decrease unless alternative sources of foreign exchange can be assured. Although the problem has been recognized, little has been done to generate the required level of export orientation into the industrialization programme.

The main constraint on the industrialization process, for the present, is Iran's absorbtive capacity. The development of new industry can only proceed at a pace consistent with the capacity of Iran's natural and manmade physical infrastructure to cope with it. In order to speed up the process, and at the same time attempt to ensure the protection of a fragile natural environment, the Government has decided, initially at least, to allow industrial development in a restricted number of locations (geographically balanced for social, political and environmental reasons). In this way it is hoped that the economies of scale of localized infrastructural development can be realized. It is felt that this policy of concentrated development will also help in the process of urbanizing the population and developing it into an industrial work force. It should be possible to reap economies of scale in the development of social infrastructure and education and training facilities.

This policy of concentration is based on the old system of industrial zoning, which arose (in 1967) from the decision to prohibit all further expansion of industry in or within 120 kilometres of Tehran. At that time pollution, congestion, and water supply problems were felt to have reached critical levels. Under this policy four cities were initially identified as zones for industrial development: Tabriz in the north west for heavy industry; Rasht in the north (on the Caspian Sea), and Shiraz in the south, for electronics and electrical industries; and Isfahan in the centre of the country for steel based products (using the steel from the steel mill already located there), and light consumer goods. Later, the eastern border state of Khorasan, the town of Arak (about 200 kilometres south west of Tehran), and the south west Gulf state of Khuzestan were identified as

zones for the development of food processing, aluminium based, and "mixed" industries respectively. In practice little new industrial development took place in Khorasan or Isfahan, while the other zones developed more or less according to plan. In addition unplanned, spontaneous, industrial growth occurred at towns just over the 120 kilometre boundary from Tehran. They were thus close enough to be managed from Tehran-based head offices and to benefit from the proximity of Government offices and the capital's commercial infrastructure. The two main centres of such development were Qazvin to the west and Saveh to the south.

The old system of concentrating industrial development therefore led to haphazard location of industry around the zoned towns and spontaneous growth in non-zoned towns. As a new element in its industrial strategy the Government is identifying more towns for development and taking steps to ensure that all (or most) new plants will be established on industrial parks (sometimes called industrial towns, due to translation problems). These are specially constructed by government-sponsored agencies for the purpose. These parks, discussed in more detail in a later section, will provide with developed land and all necessary infrastructure and service facilities on which to build their own factories. At the same time they will allow the Government to ensure the protection of the environment; prevent over-crowding in the towns; prevent overdevelopment with respect to (limited) water and energy supplies; and ensure regionally balanced growth. Also they will ease the problems of developing the social infrastructure by allowing economies of scale in their development to be reaped.

The industrial park programme is specifically designed for middle to large scale industry. Little serious thought is being given to the development of small scale industry, which is being left to its own devices within the flexible policy structure concerning imports of capital and raw materials. The positive measures which are being introduced are being channelled through the Organization for Small Scale Industries and Industrial Estates of Iran (hereafter OSSI), an offshoot of the Ministry of Economy and Finance. OSSI's contribution has so far been marginal. (For example it has only provided technical assistance to about 100 Tehran based small units out of the estimated 165 thousand such units in Iran.) This is due to lack of staff and finance, which are themselves due to a lack of will on the part of the Government to establish a meaningful policy towards small scale units.

Much of OSSI's effort has gone into developing and managing the one industrial estate in Iran (at Ahwaz in the south west), and into planning the establishment of others. The lack of serious concern expressed in Iran's industrial policy for the small scale sector is further indicated by the fact that only four new industrial estates are in the active planning stage in OSSI, and only one of these can be said to be derived from industrial policy objectives. The remaining three emanate from regional policy decisions. Details of Ahwaz and the planned estates are given in later sections.

The final point which should be made here (on Iran's industrial policy) concerns the Government machine itself. Iran's government bureaucracy is inefficient by any standard. It is also overstaffed but additionally there is a chronic shortage of trained and experienced specialists. Those that there are are aware that problems exist to which they simply do not have time to give attention. In the context of this report, for example, the revised Fifth Five Year Plan calls for the establishment of at least 30 new industrial estates, whereas only four are in the active planning stage and it is unlikely that any more will be established within the five year period, even these may not actually be operating within that period. This is not because any decision has been taken, since the revised plan was written, to slow down the development of such estates, but because among all the many problems facing the competent Government officials, those concerning the establishment of new estates are not recognized as demanding priority allocation of bureaucratic resources - or increasingly scarce Government finance. The impression is that the same resources allocated to larger scale industries will, in the short run at least, have a larger pay-off in terms of meeting the objective of rapid industrialization. Some of the consequences of the lack of attention given to the development of industrial estates for small scale industry will become apparent in subsequent sections of this report.

AHWAZ INDUSTRIAL ESTATE

History

Ahwaz Industrial Estate (AIE hereafter) is the only one recognized as an industrial estate by the Iranian Government and is the only developed estate of any type. It is not clear now where the initiative for establishing the estate came from - the earliest reference to it in the relevant files is the terms of reference of a United Nation feasibility mission which was carried out in 1962. This preliminary mission was charged solely with identifying and marking alternative sites for a demonstration, or model, industrial estate designed to help modernise small scale industries in Iran. The mission inspected many sites, and proposed the choice of one of several possible sites at Bandor Pahlavi on the Caspian, or as a second best, one of several possible sites at Ahwaz in Khuzestan state in the south west of Iran. A second U.N. mission in 1963 dismissed all the sites at Bandor Pahlavi on the grounds of inadequate supplies of pure water, and recommended the selection of a site at Ahwaz. This mission (carried out by U.N. consultants, Messrs. Tudor and Quigley) inspected seventeen possible locations in Iran and eleven possible sites in Ahwaz. They preferred Ahwaz because it had good road and rail connections, was close to a major seaport (Khorramshahr), could draw on water and power from the Pahlavi dam, had adequate supplies of skilled workers (being made redundant from nearby oil companies), and had "an excellent industrial atmosphere".

Tudor and Quigley identified only two raw materials available locally - natural gas and bagasse - both of which were waste products of existing industries. But they did provide a long list of products suitable for small scale units which would have required their raw materials to be imported either from abroad or from elsewhere in Iran. They recommended that the estate should be developed in three stages. Stages One and Two would have involved the development of 500,000 square feet each, including the construction of factories covering 70,000 and 167,000 square feet respectively. Stage III would have involved developing 1,000,000 square feet, of which 196,000 would have been Government constructed factories and 500,000 would have been land made available to firms to construct their own factories.

Apart from its function as a demonstration/model estate, Tudor and Quigley also expected that AIE would make significant contribution to total industrial employment and production in the area. Thus they expected the estate to employ some 3000 workers when completed, compared to the 1971 workers employed in all industrial units in Ahwaz in 1966 - out of a total population of about 210,000. They expected that these employment opportunities could be created for a total outlay of £4.45 million. Once established they expected the estate to be self-sufficient, in that rents charged would cover all running costs. They did not expect any revenue to accrue from central workshops, which they recommended should be left to private enterprise as and when the need arose and was identified. This mission also made many subsidiary recommendations, such as that the estate be provided with a waste treatment plant and that all factories and offices have air-conditioning installed as original equipment. (Ahwaz suffers from extremely hot summers).

It was some four years before work began (in 1968) on the actual construction of the estate and in the event the only one of the major recommendation made by Tudor and Quigley which was accepted was that the estate should be located in Ahwaz. The five year delay between the submission of the feasibility report and the commencement of production was partly due to difficulties encountered in establishing a technical assistance team, and partly due to defaults and defects on the part of the contractors retained to construct the estate. The United Nations project to provide technical assistance was approved by the Iranian Government and the United Nations in 1963 but the project document was not signed until May 1965, although the project manager was approved and appointed in February 1965. Between 1965 and 1968 delays were caused by difficulties encountered in recruiting relevant foreign experts and by the difficulties with the contractor already mentioned. In the event the first unit went into production in 1969 and contracts for all the units were signed by 1971 - although some units are still not in production.

Infrastructure and Construction

The estate as it now exists (and there are no plans to extend it) consists of 24 factory units. The units are in three sizes: eight 'A' units of 188 square metres on plots of 260m^2; eight 'B' units of 365m^2 on plots of 492m^2; and eight 'C' units on plots of 1,260m^2. The total factory space

of 13,272m^2 has been increased slightly as a few units have been allowed to build extensions. In addition to the factory units the estate also has three central service workshops[1], a guest house, an administration building (containing a post office, bank, conference room, and showroom in addition to the administrative offices), and various ancillary buildings (such as gatehouse, pumphouse, and co-operative shop for the work force).

The land for the estate was purchased from the National Iranian Oil Company (NIOC) for two million rials (Rls). Initially the land had no access to any utility services: all those required had to be installed by the estate authority. The total cost of developing the land - i.e. installing water supplies, waste disposal facilities, roads, enclosing walls, parking area, and gardens etc. is estimated at about Rls 42.62 million[2] (including engineers' fees of Rls 2.26 million). The construction costs of the 24 factory units is estimated at Rls 90.74 million, the central workshops at Rls 14.44 million, the guest house at Rls 5.50 million, the administration building at Rls 8.38 million, and ancillary and miscellaneous works at Rls 15.9 million. The total cost of developing the estate, inclusive of buildings is Rls 177.18 - or approximately Rls 13,350 per square metre of factory space. In addition, a large share of the (until 1975) $1.37 million costs of the U.N. project should be counted as development costs of the estate - say $1 million, or Rls 67.5 million (at the average exchange rate over most of the period), giving an overall development and construction cost of Rls 244.68 million, or Rls 18,436 per square metre of factory space.

Management

The management of the estate is in the hands of a resident manager (currently a government official appointed from OSSI's Tehran staff) supported by a local staff of 88 (including 15 gardeners who maintain the extensive landscaping of the estate). The estate manager is responsible to the (acting) managing director of OSSI and IEA, who operates within the administrative

---

1 Machine shop, foundry, and electroplating shop.

2 All cost data is in current prices, data not being available in a form which would allow conversion to constant prices.

structure of the Ministry of Economy and is responsible to a ministerial level governing council.

The local manager and his staff are responsible for the day-to-day running of the estate including the central facilities, the maintenance of the factory units, and for negotiating with local and central government offices on behalf of the firms on the estate. Negotiations with central government offices on such issues as raw material permits and credit facilities are usually carried on via the office of the Managing Director of OSSI and IEA. The Managing Director is also responsible for ensuring the correct implementation of government policy towards the estate, and the units on it, and for the negotiation of the estate's budgeting allocation and finance for expansion and development.

Ahwaz is, then, seen as a government agency with its expenses coming out of the central government budget. Its expenses are heavy. In 1974-75 the salary and allowances cost of the manager and his staff amounted to Rls 17.05 million. In addition the office expenses of the central facilities and administration were Rls 2.55 million; their utility costs were Rls 2.09 million; the cost of office and garden equipment and furniture for the guest house (plus spare parts) was Rls .74 million, and infrastructure (roads, buildings etc.) repair costs were Rls 0.50 million. Thus the total current direct cost of running the estate in 1974-75 was Rls 26.93, independent of the indirect costs arising from that part of the work of OSSI's central office which were attributable to the estate. The direct gross running cost per square metre of factory space was, therefore, Rls 2029 on an annual basis, as against the reported average annual rent of Rls 207 per square metre.

The estate's income from renting the factory units is estimated at a total of Rls 2.72 million in 1974-75, (on the basis of monthly rents of 3,975, 7,380, and 18,900 rials per month for the A, B and C units respectively). The estate also obtains income from charges for work done in the central workshops and from the guest house. Payments received by the Central Workshops were estimated at Rls 2.81 million in the last full year for which accounts are available (1973-74) and the income from the guest house was estimated at Rls 0.30 million. Deducting the income from the guest house and central workshops (assuming no increases in 1974-75) from the total

running cost. in 1974-75 indicates that Rls 1795 per m p.a. would be notionally recoverable as rent from the units. Given that the rent actually recovered is Rls 207 per m^2 p.a., the implication is that the factory units are "costing" the government. in current terms only, some Rls 1588 per square metre per annum. If we add in an allowance for development costs at 10% of the total, per annum, then the notional "subsidy" paid by the Government to each of the units is of the order of Rls 2923 per m^2 p.a. ignoring the U.N. contribution of Rls 3432 per m^2 p.a.

On a factory by factory basis this amounts to Rls 645,216 p.a. for A size units, Rls 1,222,660 for B size units, and Rls 3,795,792 for C size units - or US $ 9,331, $ 18,115, and $ 54,892 respectively at current exchange rates. By way of comparison an estimate[1] of rent subsidy (i.e. the difference between rents paid by units on the estate as against those off it, but not allowing for differential sizes) per factory unit in 1973 gave a figure of $15,000 p.a.

The Units

It was originally intended that AIE should be a demonstration estate for small scale industries, according to the Government of Iran's definition of that concept. This definition uses a double criterion: less than ten workers or a capital investment of less than Rls 7.5 million. It proved impossible, however, to allocate all 24 units to small scale firms - largely, it is believed, because credit facilities at the time were made available by the banking system only on the basis of collateral in the form of buildings owned by the firms, and AIE rents the factory units to firms. Similarly, initial hopes of attracting firms which used local raw materials, or which could be serviced by the estate's central workshops, or were locally based, had to be dropped in order to rent all the units as soon as possible. In addition, the requirement that firms renting the units should all be engaged in industrial manufacturing activities was dropped, as was the original rule that only one unit could be rented by each firm.

---

1 By a World Bank research consultant in a confidential report.

Data on the individual units is scant and what there is is of questionable reliability. For example different sources disagree as to whether firms are or are not in operation, as to the nature of their business, and as to the numbers of workers they employ. No data at all is available concerning the financial operations of the firms, their capital stock, or even output on a reliable basis.

On the basis of the latest OSSI and UN Project data (see Table 6) it appears that fifteen firms currently rent 22 of the 24 units available, one B unit and one C unit being vacant. Of the 15 firms, five rent more than one unit, accounting for 12 units between them, leaving ten firms with one unit each. Eight of the fifteen firms have owners based in Tehran, or are subsidiaries of firms based in Tehran. Two of the units with absentee owners are managed by members of the AIE staff on a part time basis, and two C units are used solely as warehouses by a relative of the Shah engaged in supplying equipment to the oil industry.

All but five of the units are engaged in metal based industries (although two others have non-metal based ancillary activities). The five exceptions are a paper bag maker, a plastic toy maker, a neon sign maker, a wooden furniture maker, and a printer. Only the printer, paper bag maker, and wooden furniture maker are thought to be based on the local market, the rest are all believed to market their output in Tehran, either through Tehran branches of their businesses or through wholesalers. Only the plastic toy maker and a wooden screw manufacturer are thought by OSSI ever to have exported at all, and then only to Persian Gulf States in minor quantities. As far as it was possible to discover, all the firms obtain all their raw materials from abroad, either directly or indirectly via agents in Tehran.

In terms of the International Standard Industrial Classification (ISIC) system, and using 1974-75 UN project data, most - 54.6% - of the output of AIE fell into group 38 - "Fabricated metal products, machinery, and equipment". Second in importance was group 34 - "Paper products, printing and publishing" - which accounted for 28.4% of total output. "Wood products, including furniture" (ISIC group 33) accounted for 3.2%, and 13.8% fell into group 39 - others (neon signs and plastic toys). This product mix differs from that of industry in Iran as a whole (in 1970-71 see Table 4), where 56.2% of all manufacturing output falls into groups 31 ("Food, beverages and

tobacco") and 32 ("Textiles, wearing apparel, and leather products"). The product mix of AIE output also differs from that in Khuzestan (also in 1970-71 - the state in which AIE is located - in which groups 31 and 32 also predominate (although the presence of a modern steel works biases the output figures for the state, with 59.0% of gross output being produced by 7.6% of the industrial work force).

AIE is also not typical of Iranian industry as a whole in that larger firms are more than proportionately represented on the estate. The 53.2% of firms on the estate in the 10 to 49 employees category in 1974-75 - even using the minimum employment figures of Table 1 - compares with the 2.1% in 1973-74 in that category for Iran as a whole, the 2.1% in Central Province, and the 1.2% in Khuzestan. This tendency towards larger firms is contrary to the original intentions of those establishing the estate and indicates the difficulties found by the AIE administrators in encouraging small scale firms to locate on the estate. This tendency towards large size (and greater capital intensity) is reflected in value-added per person engaged: for Iran as a whole (in 1970-71) this figure was 170 thousand rials, in Khuzestan (in 1970-71, exclusive of the steel works) it was 83 thousand rials, while on AIE in 1973-74 the figure was 242 thousand rials. The belief of the AIE administration (which is not substantiated with any hard data) that wages on the estate are well above industrial averages is consistent with these figures.

The tendency to atypicality of industrial activities on the AIE has two main explanations. We have already noted the bias against small firms implied by the credit system which demands owned fixed assets such as buildings as collateral. OSSI recently introduced a credit scheme to support small scale units without this requirement but it has not been of much help because it was made available only to those units already on the estate. Of the seven credits made so far, two have gone to units not defined as small scale, two more have gone to subsidiaries of Tehran firms, two have gone to firms which are suspected by OSSI of having labour forces in excess of the maximum to qualify as "small scale", and only one has gone to a genuine small scale unit.

The second explanation of the tendency towards larger scale units, and greater than average capital intensity, is the conjunction of the policy

prohibiting the establishment of new, or expansion of existing, industrial units in Tehran and the location of the estate viz-a-viz Ahwaz town The Tehran prohibition meant that Tehran-based industrialists (not worried by credit constraints) who were considering expanding or establishing subsidiaries, were encouraged by AIE administrators to locate in readily available factory units on the estate. They did this because they were having difficulty in persuading small units, currently operating in their traditional bazaar/shopping area locations in downtown Ahwaz, to relocate 4.5 kilometres away, on sites off all public transport routes and away from their customers, suppliers, and workers' housing.

The relatively high and increasing[1] capital intensity of industrial activity on AIE - which it has been Government policy to encourage since the oil-boom - means that the estate has made little contribution to total employment in the area. This is true whether one takes the UN project's survey data of 207 employees (in 1974-75) or OSSI's estimate of around 500. (The difference between these two figures is explained by OSSI, which believes that most workers on the estate have two jobs but that they are not reported by secondary employers due to social security regulations.) A hard evaluation of the contribution to total employment in the area is not possible due to the absence of up-to-date broken down employment data. A census figure for all urban industrial workers in the whole of Khuzestan in 1970-71 was 35,000, and it is estimated[2] that there has been a 30% increase since then. 60% of the total is in Ahwaz itself. This would imply that AIE has only increased industrial employment in the Ahwaz area by 0.76% on the UN figures and about 1.8% on OSSI's figures.

As well as contributing little to total employment opportunities in the area AIE has failed to contribute infrastructural or social service spin-off to the local community. All the facilities which have been developed by the AIE administration are used entirely by the estate, and no off-estate facilities, such as workers housing, have been provided. Similarly, the planned social amenities complex, including a swimming pool, games field, and recreation hall, for which the Government has allocated OSSI 27 million rials, will only be available to the small number of workers on the estate.

---

1 Between 1971-72 and 1973-74 capital invested in machinery and equipment by firms on AIE increased by 181% while employment rose by only 48%, and wages and salaries fell by 9%.

2 By Ahwaz staff of OSSI.

Overall, given that virtually all raw materials are imported, that most managers and entrepreneurs have been brought in from Tehran, and that very little of the estate's production is sold locally, the only involvement of the estate with the local community (other than the minor contribution to employment opportunities) comes via the Central Service Workshops. And even this involvement has diminished over time.

Central Service Workshops

Contrary to the recommendations of the original U.N. feasibility and evaluation mission, Central Service Workshops (CSW) were incorporated into the plans for AIE prior to the arrival of any firms (and therefore of any knowledge of what sort of services would be required or on what scale) and with UN support in the form of advisors and machinery. The three workshops incorporated into the estate are a machine shop, a foundry, and an electroplating shop. They did not become operational until 1971 due to the late arrival of machines and UN experts.

The machine shop contains equipment for tool (and part) making, heat treatment, welding, machining, forging, and die-making. The foundry contains basic foundry equipment, a pattern making shop, a metallurgical laboratory, and sand testing machinery. The electroplating shop is equipped with all the basic electroplating machinery including chemical analysis equipment.

The theory was that the electroplating shop would serve as a demonstration unit and a common servicing facility for units on the estate; that the foundry and ancillaries would be used as common service facilities and as a demonstration unit for introducing improved techniques to small scale foundries off the estate; and that the machine shop would serve units on the estate as a common service facility and prototype development centre and as a training centre for small scale units on and off the estate. Practice, as of mid-1975, is far from this theory, according to a report on the CSW by a UN advisor.[1]

---

1 Mr. P.R. Hansen, of the UN's OSSI Project Staff.

In mid-1975 the electroplating shop had one skilled and two semi-skilled workers and was working far below capacity; the foundry had four skilled and six semi-skilled workers and one other skilled worker in the pattern making shop. The sand testing and metallurgical laboratory sections had no staff. The foundry and ancillaries were hardly working at all, due to both a lack of orders and a paucity of raw materials. This had also prevented this section from functioning as a demonstration unit for local foundries. The machine shop (with 19 machines) had one skilled and one semi-skilled machine operator (the administrative staff of this unit outnumbered the workers), two skilled workers in the welding and drop-forging section, and no-one in the die-making section. The die-making and forging sections were inoperative in mid-1975, and very little welding work was being done, while the machine shop's capacity utilization was limited by its small workforce (both of whom were fully occupied). A few trainees from outside the estate were receiving instruction in the machine shop, but teaching was limited to that which could be provided by the one skilled man.

While the detailed difficulties and inefficiencies of the CSW would go beyond the scope of this report it is clear that they are falling far short of their theoretical objectives. Expert opinion expressed to the author was to the effect that in the four years they had been operating AIE, CSW have acquired a reputation on and off the estate for high cost, low quality and late work on job orders, that demonstration objectives have not been met at all, and that trainee programmes are inadequate. The income received by the CSW is thought to originate mostly in the use made by units off the estate of these facilities to overcome bottlenecks in their own workshops. This is reflected in OSSI's estimate that 80% of the CSW's income (2.9 million rials in 1973-74) is derived from jobs for firms off the estate. The basic faults of the CSW can be listed as: lack of complementarity with industrial activities on the estate; poor pay which attracts insufficient workers and only those with other jobs off the estate (on which they concentrate their energy and initiative); inadequate financing of operations; and poor management.

Lessons learnt from AIE

Critics of AIE, including the UN OSSI project team, fail to make adequate allowance for conditions in Iran which militate against optimal implementation of an industrial estate policy. Even after allowance has been made for these conditions the performance of the AIE falls short of what might be expected. This author would attribute avoidable shortcomings of AIE to: (a) a lack of coordination in planning of the estates facilities with local industrialists; (b) poor location of the site in Iran and vis-a-vis Ahwaz town; (c) weak coordination between Government departments (leading to inadequate supporting facilities); (d) ineffective technical assistance from the U.N. project team; and (e) poor local management of the estate.

The management of OSSI, in particular its Acting Managing Director, is well aware that AIE falls short of expectations. It takes the view that establishing AIE - Iran's first serious attempt to establish an industrial estate - has been a learning experience and that lessons have been learnt which will markedly affect the way in which the new industrial estates currently being planned will be set up and operated (see next section). OSSI has, however, to work within the limitations of its situation and plan to adapt its industrial estate policy where feasible, to take account of peculiarly Iranian conditions, and to minimize the inefficiencies interest in some overriding constraints of the situation.

The most important overriding constraint is that OSSI is not a free agent in choosing locations for future industrial estates. Decisions have been taken higher up in the Government machine that industrial estates will be used as an instrument of regional policy, to generate industry where none existed before, regardless of the economies of the situation.

A second constraint, to which industrial estate policy could well be adapted in ways that it was not for AIE, is that industrial estates are a relatively minor element of overall Iranian industrial policy. Industrial estate policy must, if it is to be successful in conventional terms, be consistent with the main thrust of that policy - which is the generation of large scale new industry in concentrated geographic areas.

A third constraint which can and must be taken into account is that OSSI must work within the existing institutional framework of industry, rather than try to adapt the industrial structure to its own needs. For example, it is easier for OSSI to work within the existing institutional arrangements for industrial credit (as being modified by the Government), than to try to press for meaningful reforms specifically suited to the AIE method of operating industrial estates.

The fourth constraint, of which OSSI is aware, and which it must take into account when framing its industrial estate policy, is what we might call the "bureaucracy factor". This is partially represented by the marked tendency for overstaffing with "officials" by Government agencies. The other aspect of the problem is the tendency of the Government to underpay staff; the implications of this are that staff obtained are often inadequate for their duties, and/or hold two jobs (giving most of their energy to their non-government position), or that key positions are left vacant.

One can see how OSSI's management are intending to cope with these, and other, constraints, by examining the policies for new estates, as they evolve, in the light of its experience with AIE. First we shall examine general policy, before looking briefly at the problem of estates based on regional policy. This analysis is based on discussions held with the Acting Managing Director of OSSI and the responsible official in the Plan and Budget Organisation (Deputy to the Chief of the Industry and Mining Division).

First, it has been decided that the basic function of industrial estates will be to support the general industrialisation programme of a locality, rather than simply to attempt to provide a modern physical infrastructural setting for small scale industry regardless of the industrial situation in the area - as was the case in Ahwaz. Thus criteria for admission onto new

estates will be based on the needs of existing industry in the area, and criteria for the choice of location for new (non-regional policy) estates will take into account the existence of local industrial demand for the output of units on such estates.

Second, it has been decided that the Government (OSSI) input into new estates will be limited to the development phase only. After this period (expected to last five years) management of the estates will be left to the firms established on them and the OSSI team will be moved onto new estates. With this decision in mind OSSI management are currently seriously considering an offer by the firms on AIE to buy their factory units and to take over the management of the estate themselves.

Third, to allow OSSI's role to be restricted to the development phase and to ease the credit problem it has been decided that all factories on new estates will be built and owned by the firms themselves, or custom built for them, with subsidized credit being provided. There will be no rented units on the new estates. It has not yet been decided whether the land will be sold to the firms, or leased to them in order to allow the Government to maintain some control over the firms' activities.

Fourth, designed also to help with the credit problem, central warehouses will be established on the new estates to enable firms to hold stocks of raw materials and inventories of outputs as collateral for loans. This will also allow firms to use their factory units more efficiently - storage has been a significant problem on AIE. In addition, serious efforts will be made to ensure that an adequate institutional framework for credit exists in advance of the coming into operation of the estate. This will be done mainly by ensuring that one of the new Regional Development Banks is, or will be, established in the locality.

Fifth, while continuing to build common service facilities in advance (so that they exist when required), it is intended to ensure that they are relevant to the needs of the firms on the estate. This will be done by narrowing the objectives of each estate to cover a more limited range of activities than on AIE. Hopefully more flexibility for varied eventual uses will be designed into the construction and layout of these common service facilities than was the case in Ahwaz. No convincing case has been

pick up as to why these facilities should not be left to the private sector - their existence as a government input would seem to conflict with the plan to restrict OSSI's involvement to the development phase.

Sixth, in contrast to the AIE case, efforts will be made to ensure that adequate and relevant extension services will be available for the firms on the estate. This will be especially important inasmuch as strenuous efforts will be made to ensure that only genuine small scale units locate on the estates. A related point is that there will be less emphasis on training and demonstration functions in the new estates, though efforts will be made to ensure that adequate facilities do, or will, exist in established vocational training institutes or centres (which could conceivably establish branches on the estates if demand proved adequate).

Finally, it is planned that no incentives other than those necessary to attract small scale industrial firms onto the estates will be provided - i.e. temporary incentives on an "infant estate" basis. These will be restricted to small scale firms in ways which will, it is hoped, prevent larger scale firms (or their subsidiaries) from seeking ways around OSSI's intentions, as has happened at Ahwaz.

As far as possible OSSI will attempt to apply these "rules" to those industrial estates which they are being instructed to establish under the Government's regional policy. There will be one major difference, however, in that the basic objective behind establishing such estates will not be supportive, but will be the generation of industrial activity where none, or very little, existed before. Not being able to question the economic logic of location in such cases, OSSI will have to adapt its policies to the situation they find in the locations in which they have been instructed to establish estates. Initially, however, their plan is to try to attract the very small "industrial" operations which exist in any small town - such as repair shops and artisan activities - to relocate themselves on the estates. It will obviously be important to ensure optimal site locations for such traditionally bazaar-orientated activities, and to ensure that facilities provided are tailor made to the requirements of the clients. Beyond this, OSSI's ability to attract new small scale units onto "regional policy estates" will be a function of the incentives it can offer to encourage such firms to establish in what are almost by definition undesirable locations. It will also be essential for OSSI to be kept informed of any

Government plans relating to the possible establishment of larger scale industrial units, whether the plans are for private or Government projects. In this way, OSSI can seek out firms in relevant ancillary activities which would be well placed to establish themselves close to the large unit.

It is accepted by OSSI that in the case of "regional policy estates" it will be difficult to move on after a few years and leave the administration in the hands of the firms located on the estates. They do not plan to overcome this problem by setting up administrative units similar to that in Ahwaz. They intend to build on estate-administrative blocks which would house a small supervisory and extension OSSI staff, together with a larger group of local representatives of relevant Central Government Departments. The latter could provide on-the-spot support for units on the estates. OSSI is very much aware that the obligation to establish these regional policy estates will present it with difficulties, some as yet unforeseen, and it is an open question whether or not they can do so successfully.

Plans for the Future

For the reasons outlined above, in the section on industrial policy, the main thrust of Iran's industrialization effort over the coming decade will involve:

(a) the further development of the old industrial zones concept,

(b) the establishment of industrial parks, and

(c) the development of additional industrial estates for the small scale sector. (Some of the latter will relate to the old industrial zone policy, inasmuch as they can be used to build on existing zones).

Industrial Parks

Current plans call for the establishment of at least 15 industrial parks at various places in Iran. Six of these are already being developed - these are located in Qazvin, Isfahan, Resht, Kermanshah, Saveh, and Qum.

Locations selected for later development include Mashad, Shiraz, Gorgan, Mazandaran, Zanjan, Hamadan, Kurdestan, Loreetan, and Ahwaz.

The industrial parks are being developed according to a common pattern. Each will be developed by an autonomous non-profit joint stock company in which the various financial agencies of the Government will invest capital. These companies will ultimately be subject to the control of the Ministry of Industry and Mines, via the shareholdings of its subsidiary, the Industrial Development and Renovation Organization (IDRO). The companies will be responsible for site preparation, the provision of utilities, the selection of firms, the coordination of infrastructural and social developments (including workers housing), and the enforcement of environmental controls. Initially, it is planned that each park will provide employment for 45,000 workers and support a total population of 150,000. Each park will aim at having around 200 industrial units in the light and medium categories. Each firm allowed into the parks will be responsible for building its own factories. In each case the Ministry has carried out extensive pre-investment studies to evaluate the comparative advantage and resource base of the site, to assess the supply position of water and energy, and to ensure that transportation and communication services are adequate.

Of the six parks currently being developed those at Kermanshah and Qum are still in the early planning stage. That at Isfahan (the Aryamehr Industrial Town) is at an advanced planning stage and is to be based on the local (Aryamehr) steel works. The park will consist of plants producing ancillary inputs for the steel works, and plants using steel as a raw material. The park at Resht is one founded on existing development there, which arose from the old zone development concept. Most of its production is of electrical, electronic and telecommunication equipment. At Saveh, the Kuroush Industrial Park is in an advanced development stage, with plants producing lifts (elevators), truck trailers, and machine parts and tools already constructed.

The only park at an advanced operational phase, however, is the Albors Industrial Park at Qazvin (about 160 kilometres west of Tehran).

Industrial development at Qazvin got under way after the introduction of the prohibition of further industrial development within 120 kilometres of Tehran. Qazvin is one of the closest sizeable towns to Tehran, (its population is estimated at 700,000), with adequate supplies of water (from wells) and

electricity (from a dam in the nearby Alborz mountain range). Initially, the plants were established on a haphazard basis in and around the town (which is of historic importance), and they threatened to choke its antiquated transport systems and aggravated the pollution problem. It was in order to cope with the influx of new industry in a way which would "immunise" the town, while developing its economy, that Alborz Industrial Park (AIP) was planned and speedily developed, about 12 kilometres east of the town, on the main road and railway to Tehran.

The company established to develop AIP (see above) obtained the land for the park from the Pahlavi Foundation at nominal cost. Its initial development capital came from loan capital subscribed by Government financial agencies and from the commercial banks (it pays 10% interest on this capital). With this capital it prepared the site, installed the basic infrastructure of roads, sewage system, 60 tube wells, and connections to the electricity supply. In addition, the company built a (very small) administrative block, various service units (such as shops, bank, and petrol station) which it then sold to the operatives, and common social service units such as schools (operated by local government) and sports grounds.

Once it has accepted an application from a firm to establish a unit on the estate, the company grants the firm a lease on a plot of land and the firm builds its own factory. The company obtains its operating income from the sale of these leases, which also provide it with some degree of control over the activities of the firms (e.g. with respect to environmental controls). Currently about 140 firms are established on the estate: about 80 are in production, about 40 are in the construction stage (involving some 2000 construction workers), and about 20 more have been sold leases but have yet to commence construction.

Unfortunately, there is no data available on the nature of the firms on the estate. It is not possible to indicate their product range, capital investment, work forces, sources of raw materials etc; all such information is held in the strictest confidence. Visual inspection (of name plates on factories written in English) indicated a wide range of products - mostly consumer goods. Those identified were motor oil, batteries, motor-cycles, washing powder, glucose, porcelain bathroom products, processed food (sauces and sugar), aluminium doors and window frames, structural steel building components, PVC pipes, spectacle frames and lenses, and refrigerators and coolers. Most of the factories operating are in the middle size range,

but there are a few large scale plants (e.g. the soap powder factory) and one small scale unit (the spectacle frame and lenses factory).

The joint stock company operating the park is still very actively engaged in its development, clearing new land for 80 more factories, building houses and flats (for sale to the workers), and extending the infrastructure and service facilities.

Industrial Estates

The Fifth Plan calls for the establishment of some 30 industrial estates, designed for small scale firms, over the next five years or so. (It is not clear whether this figure includes those estates intended to fulfil regional policy objectives). Initially, however, planning is proceeding only for 4 estates, 3 of which OSSI has been instructed to establish on regional policy grounds. These three are to be located in Zahedan (capital of the economically backward state of Sistan and Baluchistan in the south east of Iran on the Pakistan border), where land for the estate has already been bought; Sanandaj (capital of Kurdestan in the north-west, on the Iraq border); and Bushehr (capital of the state of Bushehr on the Persian Gulf in the south-west of Iran). In the cases of these last two, planning is still at the feasibility study stage.

The remaining small scale industry industrial estate is planned for Tabriz (capital of East Azerbaijan in the north, near the border with Russia.) The land for the estate has been acquired and OSSI's budget for it has been approved by the Plan and Budget Organization. Under the old industrial zone policy, and following the prohibition of industrial development in the Tehran area, Tabriz was selected as the "zone" in which Iran's heavy industry (other than steel) would be developed. In accordance with this policy several metal based machine making factories, and their ancillaries, have been established around the town. The product range includes tractors, private cars, diesel engines, machine tools, and power generations. OSSI's objective in locating an industrial estate in Tabriz is to collect together, and allow the development of small firms already in the area which serve the heavy industries as ancillaries. At the same time it is hoped to encourage the establishment of new units to fill gaps in the ancillary range. This estate will, then, be primarily intended for metal working firms and will be

developed on the Ahwaz model, subject to the modifications outlined in the previous section. It will be provided with metal working orientated central workshop facilities in order to strengthen the local orientation of the estate. OSSI plans to incorporate substantial extension services into the facilities available on the site, and to ensure the availability of adequate credit by developing a tailor made scheme in conjunction with the Regional Development Bank which has been established in Tabriz.

The site purchased for the estate in Tabriz covers 850,000 square metres and it is hoped to establish 40 to 50 units on it. Even so it is clear that in terms of employment and output the estate will only be of marginal significance to the area. This of course is consistent with OSSI's policy of regarding such estates as supportive of existing (or proposed) larger scale industrial developments, rather than as a means of developing new centres of industry. It remains to be seen whether such small scale orientated industrial estates can in fact be used to generate new centres of industry, as OSSI is expected to do with those estates it is being asked to establish under the Government's regional policy.

TABLE 1

DISTRIBUTION OF MANUFACTURING FIRMS BY NUMBER OF WORKERS

No. of Workers	IRAN 1970/71 1000s	(%)	IRAN 1973/74 1000s	(%)	CENTRAL PROVINCE INCLUDING TEHRAN 1970/71 1000s	(%)	KHUSTESTAN 1970/71 Nos.	(%)	AHWAZ[1] INDUSTRIAL ESTATE 1974/75 Nos.	(%)
0 - 9	161.1	(97.5)	236.2	(97.4)	59.1	(96.6)	8,362	(98.7)	7	(46.6)
10 - 19	2.6	(1.6)	5.1	(2.1)	1.3	(2.1)	90	(1.1)	4	(26.6)
20 - 49	0.9	(0.6)			0.5	(0.8)	7	(0.1)	4	(26.6)
50 - 99	0.3	(0.2)	0.5	(0.2)	0.2	(0.3)	2	(neg)	0	(-)
100 and more	0.3	(0.2)	0.6	(0.2)	0.2	(0.3)	12	(0.1)	0	(-)
Total, all firms	165,280		242,451		61,154		8,473		15	

SOURCE

Statistical Section, Organization for Small Scale Industry and Industrial Estates of Iran.

Note: There is considerable disagreement over the number of employees working on the estate. The figures used are minimums, official opinion is that actual numbers are more than double, as explained in the text. If official figures had been used the untypical distribution towards larger firms would have been even more marked.

TABLE 2

EMPLOYMENT, BY SIZE OF UNIT

No. of Workers	IRAN 1970/71 1000s	(%)	IRAN 1973/74 1000s	(%)	CENTRAL PROVINCE 1970/71 1000s	(%)	KHUSTESTAN 1970/71 Nos.	(%)	AHWAZ INDUSTRIAL ESTATE 1973/74 Nos.	(%)
0 - 9	569	(72)	473	(51)	228	(67)	28,948	(83)	45	(22)
10 -19	31	(4)	92	(10)	15	(4)	1,032	(3)	36	(17)
20 - 49	29	(4)			14	(4)	194	(1)	126	(61)
50 - 99	19	(2)	35	(3)	10	(3)	167	(neg)	-	(-)
100 and more	137	(17)	329	(35)	72	(21)	4,351	(13)	-	(-)
Totals	785	(100)	928	(100)	339	(100)	34,692	(100)	207	(100)

SOURCE AND NOTE - as for Table 1.

TABLE 3

GROSS OUTPUT AND VALUE ADDED, 1970/71, BY FIRM SIZE

No. of Workers	AHWAZ INDUSTRIAL ESTATE GROSS OUTPUT 1973/74	IRAN		CENTRAL PROVINCE		KHUSTESTAN	
		GROSS OUTPUT %	VALUE ADDED %	GROSS OUTPUT %	VALUE ADDED %	GROSS OUTPUT %	VALUE ADDED %
0 – 9	15.6	37.0	32.1	24.1	21.9	33.7	23.7
10 – 19	32.7	3.8	2.7	3.7	2.4	1.3	0.8
20 – 49	51.7	9.2	8.7	10.8	11.3	1.7	0.5
50 – 99	–	5.4	5.0	6.9	5.7	0.8	0.3
100 and more	–	44.6	51.4	54.6	58.6	62.5	74.7
Totals, Million Rials	109	276,000	134,000	159,252	89,378	15,696	9,769

SOURCE as for Table 1.

TABLE 4

INDUSTRIAL ESTABLISHMENTS, EMPLOYMENT AND OUTPUT BY ISIC CLASSIFICATION 1971/72 [1]

ISIC NO.		IRAN				KHUSESTAN				AHWAZ ESTATE		
		Establishments	Persons Engaged	Gross Output	Value Added	Establishments	Persons Engaged	Gross Output	Value Added	Establishments	Persons Engaged	Gross Output
31	Food, beverages and tobacco	16.9	21.4	36.1	36.6	21.9	35.8	25.2	11.4	–	–	–
32	Textiles, wearing apparel/and leather industries	45.9	44.4	20.1	17.6	32.7	28.1	6.7	7.5	–	–	–
33	Wood products, inc. furniture.	8.3	5.1	2.8	2.6	7.1	6.3	2.8	2.2	6.7	4.3	3.2
34	Paper products, inc. printing and publishing	1.3	2.0	3.6	3.9	2.0	2.2	1.4	0.9	13.3	17.9	28.4
35	Chemical, Petroleum, Coal, rubber and plastic products	1.5	2.4	4.0	3.2	2.0	0.8	0.4	0.4	–	–	–
36	Non-metallic mineral products except those of petroleum and coal	4.1	6.7	6.8	7.5	4.7	2.7	0.9	0.7	–	–	–
37	Basic metal industries	0.6	1.2	5.8	6.2	0.9	7.6	59.0	72.8	–	–	–
38	Fabricated metal products, machinery and equipment.	19.7	16.0	20.1	21.6	28.9	16.5	3.7	4.3	60.0	57.0	54.6
39	Other manufacturing industry	1.7	0.8	0.7	0.8	–	–	–	–	13.3	20.8	13.8
	All group 3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: As for Table 1

Note: 1. Ahwaz data is for 1974/75 and includes 2 firms setting up operations that year but with no reported output.

TABLE 5

REGIONAL DISTRIBUTION OF INDUSTRY[1] IN IRAN 1970/71

PROVINCE	NUMBER OF		VALUE OF	
	Establ.	Pers. eng.	Gross Output	Value Added
	in % of whole country			
	1	2	3	4
01 Central Province	36.8	43.27	60.60	69.7
02 Gilan	3.7	2.85	1.59	1.4
03 Mazandaran	3.6	3.20	4.27	2.6
04 East Azabeijan	11.05	10.07	4.47	3.0
05 West Azabeijan	2.30	1.76	1.38	0.8
06 Kermanshahan	2.80	1.39	1.14	0.6
07 Kurdestan	0.75	0.64	0.55	0.6
08 Khuzestan	5.12	4.41	5.32	6.4
09 Fars	4.04	3.75	4.13	3.3
10 Kerman	2.58	2.67	0.50	0.4
11 Khorasan	9.27	4.65	4.48	2.7
12 Isfahan	11.75	12.43	6.66	4.0
13 Sistan Balvedastan	0.55	0.52	0.23	0.1
14 Persian Gulf Islands Oman Sea Islands and Ports	0.20	0.14	1.34	1.2
15 Hamadan	2.92	2.13	0.87	0.6
16 Bakhtiari	0.48	0.27	0.16	0.0
17 Lurestan	1.25	0.83	0.80	0.6
18 Ilam	0.13	0.08	0.42	0.0
19 Semnan	0.94	0.50	0.46	0.5
20 Yazd	0.26	0.91	0.60	0.2
	100	100	100	100

SOURCE: As for Table 1

Note: 1 I.S.I.C. Class 3.

TABLE 6

AHWAZ INDUSTRIAL ESTATE

Firm Number	Description of Production, with ISIC Code	Type of Unit(s) Rented	Workers Employed[1] 1974/75	Value of Output in 1974/75 Million Rials	Remarks
1	Electrical and electronic items, and trailers and steel structures (mainly 3813)	C + A	35	15.0	Tehran based. Subsidiary of large organization.
2	Water coolers and refrigerators (3829)	A+A+B	9	4.0	
3	Printing and paperboard boxes (3420)	C	34-37	30.2	
4	-	C + C	-	-	Used as warehouses only. Tehran based company. Extension being built
5	Prefabricated building structures (3813)	C	9-12	-	Commenced operations during year. Tehran based, managed by member AIE staff.
6	Control panels, and fibre glass pipes (mainly 3831)	A + B	5-7	1.5	Tehran based.
7	Neon and plastic signs. (3909)	B	10	4.0	Tehran based.
8	Paper bags and sacks (3412)	A	3-4	0.7	Only operates intermittently.
9	Metal furniture	A+B+C	24	17.6	Half of activity is as agency for PVC pipes.
10	Wooden furniture (3320)	B	9	3.5	
11	Metal screws (3819)	B	10	5.0	Subsidiary of Ahwaz based commence group of companies, with Tehran office.

TABLE 6 (Cont/d)

AHWAZ INDUSTRIAL ESTATE

Firm Number	Description of Production, with ISIC Code	Type of Unit(s) Rented	Workers Employed[1] 1974/75	Value of Output in 1974/75	Remarks
12	Hinges, hasps and metal hardware (3811)	B	16	8.9	Also wholesales pumps.
13	Metal furniture (3812)	A	6	7.3	
14	Plastic toys (3909)	C	33	11.0	Tehran based.
15	Prefabricated metal girders (3813)	C	4	-	Commenced in 1975. Tehran based, managed by member of AIE staff.
	Totals	7A+7A+8C	207-216	108.7	

Sources

1. Sources of statistical material is given in the tables or in footnotes to the text.

2. Information on Iranian industrial policy was obtained from:

   i) I.B.R.D. "Economic Development of Iran" 1973.
   ii) Dr. Ford Shishch, Director General, Dept. of Industrial and Mining Economics, Ministry of Industry and Mines;
   iii) Dr. Farokhi (and his deputy), Chief, Industrial and Mining Division, Plan and Budget Organization;
   iv) Dr. Haj Yousefi, Chief, Regional Studies, Plan and Budget Organization;
   v) Reports in the newspaper "Kayhan International" dated June 20 and October 25, 1975;
   vi) Mr. Somanni, Head of Isfahan Office, Plan and Budget Organization; and
   vii) Mr. P. Lamming, Industrial Field Advisor, U.N. Tehran.

3. Information on Alborz Industrial Estate was obtained from:

   Dr. M. Nourbakhsh, General Manager, Industrial City of Alborz, Head Office, Tehran, and site engineers.

4. Information on Ahwaz Industrial Estate was obtained from:

   i) U.N. Project files, Tehran.
   ii) U.N. Project Manager, Mr. P. Shahbenderian.
   iii) Mr. P.R. Hansen, U.N. 7001 Room Expert, OSSI Project.
   iv) Mr. Waetzman, U.N. Industrial Statistician, OSSI Project.
   v) Dr. S. Khazei, Acting Managing Director of OSSI.
   vi) Mr. Mohamady, OSSI Staff Engineer, Ahwaz.
   vii) Drs. Fanokhi (and deputy) and Fard Shisheh, op.cit.

Other people than those listed were visited but contributed no usable material in addition to those named above. All interviews, except those in Ahwaz, were arranged through the office of Dr. R. Maconnick, Assistant Resident Representative of the U.N.D.P. in Tehran. The Ahwaz interviews were arranged through the offices of Dr. S. Khazei and Mr. P. Shahbenderian.

C-269

77.06.29