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ALGERIAN INDUSTRIAL PLANNING EXPERIENCE, 1/

with specific reference to the First Four-Year Plan (1970-1973).

by

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1/ The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Secretariat of UNIDO. This document has been translated from an unedited original.

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INTRODUCTION: A BRIEF HISTORICAL REVIEW

Algeria became independent in mid-1962. This date in fact marks a turning-point in the country's development strategy. To illustrate this, we shall examine very briefly in these introductory remarks:

The change in context;

The change in pace;

Rates of completion of industrial projects.

1. ALGERIA BEFORE AND AFTER INDEPENDENCE

Before independence, Algeria was a French region and its development took place in the context of French regional development.

Algeria was not at that time free to choose its own currency (monetary union), to protect itself against imports from abroad and from France in particular (no quotas on French goods, no specific import duty), or to finance its development by a budget deficit or an appropriate credit policy: the whole financial and fiscal context was determined by France.

In these conditions, the Algerian territory, being relatively backward in comparison with the other French regions, was able to develop only with SUBSIDIES from France.

This was the deliberate policy followed up to 1962, Algeria being at that time considered a particularly backward area: the benefits granted to backward metropolitan areas were all adopted for Algeria, with a considerable increase.

It should also be borne in mind that the French economy is of the LIBERAL TYPE, and, for the most part, private capitalists are left the task of developing industry in the light of their own interests.

The industrialization then desired as a means of absorbing in part the widespread underemployment in Algerian urban areas was assisted by very large subsidies of various types (financial, fiscal) which, it was hoped, would attract private investors to Algeria.

After independence, on the other hand, Algeria was able to control its currency, its trade and its budgetary and credit policies: it could determine its own financial and fiscal context.

Algeria's development could then be planned on the basis of a certain degree of protectionism.

PROTECTION was approved in mid-1962 and put into effect gradually. Algeria now protects itself in many ways: import quotas, protection against uncontrolled foreign investment, pricing policies, etc.

In addition, the new Algeria opts for SOCIALISM, with the establishment of State enterprises and the granting of priority (perhaps to an even greater degree in reality than in terms of announced intention) to industrial development.

Consequently:

The climate for industrialization is more favourable.

Industrialization is considered by the public authorities to be the prime factor in promoting development.

Altogether, Algerian capital investment in industry has increased very substantially over the last decade as a result.

2. THE PACE OF INVESTMENT

The last pre-independence development plan - of which we shall speak later at greater length - was known as the "Constantine Plan". Its investment goals were very ambitious, and over a period of five years, with 1961 as the mid-point, it provided for investments totalling 27,150 million French francs, with 10,020 million French francs (or 37 per cent) of this sum to be invested in:

Manufacturing industries;

Mining and quarrying;

Energy (including petroleum).

The First Four-Year Plan, for a period with 1971-1972 as the mid-point (or approximately ten years after the Constantine Plan), provided for investments totalling 27,740 million Algerian dinars, with 12,400 million dinars of this (or 45 per cent) to be invested in:

Manufacturing industries;

Mining and quarrying;

Energy (including petroleum).

The Second Four-Year Plan centred round 1975-1976 is considerably more ambitious, providing for total investments of 110,217 million dinars with 48,000 million dinars of this sum (or 48 per cent) to be channelled to industry in the broad sense.

Relating these figures to the population of Algeria:

10-11 million around 1961,

13-14 million around 1971-1972,

15-16 million around 1975-1976,

and taking into account the following (small) increases in investment costs:

40 per cent between 1961 and 1971 (less than 4 per cent per year),

30 per cent between 1971 and 1975 (approximately 7 per cent per year),

annual per capita investment in current dinars (1 dinar = 1.125 French francs) would have been, very roughly, the following:

	Total Investment	Investment in industry	Proportion of industry in total
Constantine Plan (1959-1963)	800	290	37%
First Four-Year Plan (1970-1973)	650	235	45%
Second Four-Year Plan (1974-1977)	1,750	750	48%

It emerges very clearly that (assuming the orders of magnitude indicated above to be correct):

- Total investment provisions practically doubled with the Second Four-Year Plan, following the revision of crude petroleum prices at the end of 1973 as the result of a policy of national independence and co-ordination among producing countries;

- Industry's share of total investment has steadily increased over the years, to reach nearly 50 per cent with the Second Four-Year Plan in line with the priority given to industrialization;
- Investments earmarked for industry almost tripled with the Second Four-Year Plan.

3. RATES OF COMPLETION OF INDUSTRIAL PROJECTS

The implementation of the Constantine Plan began towards the end of French rule in Algeria, in a context unfavourable to industrial development: its success, predicated largely on the interest of private investors in investing in Algeria rather than elsewhere, required confidence in a French, and liberal, future, whereas political developments indicated that the situation was likely to take quite a different turn.

As a result, relatively few industrial projects had been completed by mid-1962 under the Constantine Plan.

On the other hand, after independence, and once the breaking-in period was over, the Algerian, socialist approach made it possible for the targets set to be more or less reached (see below).

The present period is one in which industrial achievements and targets are being brought closer in line: industrial plans are thus acquiring more value, as their implementation becomes CREDIBLE.

I. PLANS UP TO 1969

A - BEFORE INDEPENDENCE

B - ANNUAL PLANS (1963-1966)

C - SEVEN-YEAR FORECASTS (1967-1973) AND THE THREE-YEAR PLAN (1967-1969)

A - BEFORE INDEPENDENCE

1. As a French territory, Algeria drew up and carried out a number of modernization and capital investment plans during the 1950s, in parallel with France.

These plans contained a whole series of projects - none of them, however, in the industrial sectors, for the very simple reason that "industry, being the province of free enterprise, could not meaningfully be placed within the confines of a plan".

Consequently, these modernization plans for the most part assisted the development of the Algerian infrastructure.

2. The implementation of the projects provided for in these plans was to lead Algeria into a number of financial difficulties, as the result of substantially increased expenditure under both the capital investment budget (major sums having to be invested) and the operational budget (recurring expenditure necessitated by the new projects), and of the semi-stagnation of receipts (since investment in infrastructure has, initially, only a small impact on production).

In the light of this situation, there was a substantial subsidy from France for the "regional" Algerian budget, spread over several years (report of the Study Group on Financial Relations between France and Algeria - 1955).

3. The problems involved in using this subsidy as rationally as possible for the development of the Algerian economy led to a study entitled: "Ten-year projections for Algerian economic development" (1958) which sketched a "plausible" situation in Algeria by 1965.

The development of each sector was studied, with particular reference to the industrial sectors. Appropriate policies were proposed: thus, for the industrial sectors, substantial public assistance was recommended in the form of subsidies for investors.

4. It was on the basis of the "Ten-year projections for Algerian economic development" and in response to certain political necessities, related to both French domestic policy and the progress of the war in Algeria, that the "Constantine Plan" was drawn up. This was the first comprehensive plan - i.e. a plan dealing at the same time with all sectors and including a global strategy and a study of major balance factors - for Algeria.

The Plan was supposed to cover "an initial five-year period constituting the first of a series of several periods as a result of which it should be possible for Algeria to emerge permanently from its state of under-development".

Even a cursory study of the Plan is of considerable interest in giving one an understanding of both its short-run failure and its subsequent influence on the direction taken by Algerian industrialization.

To give a general picture, the table below compares the major targets of the Constantine Plan for 1964 with the initial situation in 1959 and gives the development expected by 1969, after the completion of the second proposed five-year plan (1964-1968).

Production and income (in thousands of millions of 1959 French francs)

	1959	1964		1969	
			Increase over 1959		Increase over 1964
Agriculture	2.69	3.17	18%	4.3 to 4.6	36 to 45%
Industry	1.84	3.45	88%	6.0 to 7.0	74 to 103%
Construction	1.00	2.90	190%	3.3 to 3.6	14 to 24%
Services	5.35	7.65	43%	9.5 to 11.0	24 to 44%
Total	10.88	17.17	58%	23.1 to 26.2	34 to 52%

The following will be observed:

The slow development of agriculture;

The faster development of industry;

The substantial development of construction, at least during the first Plan.

Throughout this period, annual requirements for new jobs were put at 80,000-100,000, and these requirements were to have been more or less covered by the Plans.

5. The strategy adopted in the Constantine Plan was conditioned both by Algeria's geography and by the situation in the territory in 1958-1959.

To summarise very briefly:

- Algeria had just discovered petroleum deposits in the Sahara, and, particularly with gas, was in possession of extensive energy resources; it was conceivable that in the long term these resources could be processed locally, but their short-term development required the construction of transport systems (roads and pipelines);

- As a region of France, Algeria could not protect its economy from a certain amount of domination by the French economy: it could develop only on the basis of its being a backward region (i.e. through subsidies), as part of a Franco-Algerian complex.

Example: The idea of an iron and steel plant at Bône (Annaba), the marine outlet for the Algerian iron ore deposits, was originally conceived within this framework (the Franco-Algerian complex required another iron and steel plant, and it seemed "desirable" to locate it in Algeria).

- Lastly, Algeria was in a state of internal war: on the one hand the countryside, with the absence of security, did not lend itself to development efforts; on the other hand, there could be no question of bringing about the structural changes required for agricultural development.

The Constantine Plan consequently assumed rural-urban migration to be inevitable, and provided only for a few measures in rural areas to slow down the movement (rural renewal, CAPER, etc.).

Housing and employment had to be found for these new arrivals in the cities.

So far as housing was concerned, a fairly specific time-table was set. During the period of the Plan, it was proposed to construct 210,000 dwelling units (or an average of 42,000 per year) - 90,000 in the Algiers region, 58,000 in the Oran region and 62,000 in the Constantine region.

Urban employment was possible only in the secondary (industrial) sector or the tertiary (services) sector, and since the authorities did not wish to increase the already considerable volume of services to too great an extent an intensive industrialization effort was necessary.

The basic strategy was therefore to develop the construction and industrial sectors, as shown in the following table, which indicates the employment situation in 1959 and the jobs to be created during the subsequent five years (employment outside agriculture):

	Existing in 1959 (in units)	To be created within 5 years (in units)	Situation in 1966 (base 100 in 1968)
Construction	130 000	145 000	212
Industry	214 000	115 000	154
Services	360 000	80 000	122
Administration	123 000	50 000	155
Total	827 000	390 000	147

Employment in the administrative sector was expected to increase quite sharply, as Algeria was considered to be "under-administered".

To make all this possible, a concentrated effort was required as regards manpower training and certain infrastructure aspects.

6. The Constantine Plan, being much concerned with the urban population problem, gave major attention to the planned development of the national territory and recommended a vigorous policy of industrial decentralization, the imprint of which can still be discerned today.

The broad outlines of this policy were as follows:

- Establishment of two development poles for large-scale industry:

  Bône (Annaba), the development of which would be spurred by the establishment of the iron and steel plant;

  Arzew, chosen site for the chemical industry.

- Establishment of overspill areas around major cities to reduce congestion: Boufia Blida for the area around Algiers; Tlelat near Oran; suburbs of Bône and Constantine;

- Establishment of decentralization areas, pre-industrialization zones, etc., in the major Algerian towns, and concomitant development of these towns.

The proposed urban development projects were complemented by major infrastructure projects (transport, telecommunications).

7. The investment sum provided for in the Constantine Plan was extremely large (27,000 million 1959 French francs). It was divided among the major sectors as follows:

Constantine Plan - investment by sector
(in millions of 1959 French francs)

	Total	Building	Engineering Work	Equipment
Hydraulic engineering, agriculture	3 680	580	2 510	590
Petroleum	5 520	200	4 050	1 270
Energy	1 300	100	410	790
Industry	3 200	760	270	2 170
Enterprises, building	1 530	460	40	1 020
Public works, infrastructure	2 010	150	1 390	470
Housing and urban development	4 980	3 900	1 080	-
Education, health	1 570	1 210	90	270
Administrative infrastructure	670	570	50	50
Renewal	2 700	470	430	1 800
Total	27 150	8 400	10 320	8 430

The private sector (financial institutions, banking sector, financial market, self-financing) was expected to provide approximately 40 per cent of the total, and the public sector (Capital Investment Fund (Caisse d'équipement) - administration)) 60 per cent.

As already noted in the introduction, the petroleum, energy and industrial sectors accounted for nearly 40 per cent of total investment earmarkings. However, the share expected from the private sector was considerable in these sectors; thus, for the industrial sector proper, it was two thirds.

8. The goals set in the industrial sectors were extremely ambitious, for the following reasons:

- Energy resources were now available;
- Public demand for industrial products was considerable;
- Industrial employment was needed to absorb urban under-employment and cope with migration.

It was considered that the industrial development of Algeria should:

- Permit the local processing of the natural resources of Algeria and the Sahara, as rapidly and on as large a scale as possible.
- Enable the various links of the industrial chain to have a real multiplier effect on one another.

The Constantine Plan anticipated a two-pronged industrial development: basic or heavy industry,[1/] to be developed mainly in the large port complexes being created, and light industry,[2/] distributed more evenly over the country as a whole.

1/ Heavy industry: It is primarily export-oriented. Although the investments required are larger in relation to the employment directly created, it is necessary in Algeria. It utilizes mineral resources and above all constitutes a favourable factor, from the technical, commercial and psychological points of view, for the establishment of smaller units. By stimulating upstream and down-stream activities it plays an invaluable role in promoting the development of medium-scale industry.

2/ Light industry: It manufactures consumer goods and light equipment. As a general rule, it generates a high level of employment for a limited investment. Moreover, it lends itself to decentralized development, owing to its technical characteristics and the high specific value of its products. It also meets the needs of an expanding domestic market. It is seen as the first objective of industrial development.

(a) Major basic projects

Examples:

Transportation of energy	the oil pipeline from Hassi Messaoud to Bougie;
	the gas pipeline from Hassi R'mel to to the Mediterranean.
Industry	the Bône iron and steel plant;
	the chemical complex in the Arzew region;
	the Algiers refinery etc.

(b) Manufacturing industries

The long-term objective was to increase production by a factor of:

1.5 for agro-industries and food industries;

2 for building materials, chemicals and miscellaneous industries;

2.5 for metal-processing;

4.5 for the leather and footwear industries;

6.5 for the textile industries.

The over-all development of industrial output proper (excluding hydrocarbons and energy) during the period 1959-1964 was expected to be the following (value added, in millions of 1959 French francs):

	1959	1964	Index
Mining and quarrying	118	166	140
Metal production	3	39	1 300
Metal-processing	386	705	182
Chemicals and rubber	92	239	260
Wood, paper, miscellaneous industries	193	349	182
Building materials	156	331	212
Food industries	541	817	151
Textiles and leather	152	429	182
Total	1 641	3 075	187

In other words, an increase to almost double within five years.

As a rough guide, the summary table below shows by sector (excluding hydrocarbons and energy):

- The 1964 market for industrial products (domestic and export), which would total 14,000 million 1959 French francs (production cost prices);

- The value of Algerian industrial output in 1964 (production cost prices) which would have amounted to around 8,000 million 1959 French francs, or approximately 55 per cent (45 per cent still being provided by imports);

- The investment to be made over five years in the industrial sectors, totalling approximately 600 million 1959 French francs per year;

- The employment created by the expected industrial development, or 118,000 jobs in five years (approximately 24,000 jobs per year).

9. Some of these ambitious goals were never reached, for at least two reasons:

- Firstly, political developments in Algeria caused the private sector (on which the industrialisation effort was particularly reliant) completely to lose CONFIDENCE, with the result that, as time went by, the discrepancy between results and targets increased;

- Secondly, the abrupt departure of the Europeans from Algeria caused a considerable DISRUPTION of the Algerian economy from mid-1962 onwards, which the Algerian Government that was established upon independence took several years to overcome.

Nevertheless, it was possible to follow through a considerable portion of planned public investment during the first years of the Plan: thus, certain major projects were launched and some even completed; new infrastructure and housing projects were implemented from 1960 onward.

On the other hand, most of the private projects, particularly industrial projects, were not followed through.

It is in this sense that one can speak of the Constantine Plan as a failure.

Constantine Plan: Industrial development targets 1959-1964 (excluding petroleum and energy) - 1959 French francs

	Market			Algerian output			Period 1959-1964		
	Export and local requirements Production value			Production value			Investment total	Increase in output	Additional employment
	1957	1959	1964	1957	1959	1964			
Mining and quarrying	248	273	470	198	165	232	154	67	0.3
Metal production	97	184	440	16	20	170	700	150	5.0
Metal-processing	1 644	2 482	4 160	496	806	1 855	613	1 049	38.6
Chemicals - rubber	440	634	1 130	170	240	586	413	346	5.3
Wood and furniture	271	409	710	119	202	357	78	155	5.2
Paper and printing	227	318	470	119	180	317	143	137	3.9
Miscellaneous industries	164	278	430	58	80	170	81	90	4.1
Building materials	191	340	720	164	284	581	266	297	14.2
Food industries	2 128	2 735	4 050	1 410	1 820	2 783	240	981	15.0
Textiles	679	880	1 280	164	212	597	290	385	20.6
Leather	161	228	320	74	93	260	55	167	6.0
Total	6 270	8 761	14 180	2 988	4 102	7 908	3 033	3 824	118.2

. Market, output and investment are expressed in millions of 1959 French francs.

. Additional employment is given in thousands of full-time jobs.

. The above figures relate to all the activities of the branch, including both production proper and repair work.

In fact, the Constantine Plan, although technically sound, did not take due account of the situation in Algeria in 1959: it thus showed a very grave lack of social and political realism.

We shall find, nevertheless, some of the idées-forces of the Constantine Plan (development of local resources, regional planning, ...), and even in some cases certain projects which had been a little neglected (Annaba iron and steel plant), recurring in the post-independence Plans.

B - ANNUAL PLANS (1963-1966)

1. The period from mid-1962 to the end of 1966 can be divided historically into two sub-periods on the basis of the government team in power in Algeria:

Mid-1962 to mid-1965: Ben Bella team
Mid-1965 to the end of 1966: Boumediemne team

This was in fact a period of TRANSITION, PUTTING IN ORDER, ORGANIZATION and ESTABLISHMENT OF NEW STRUCTURES rather than of PRODUCTION GROWTH.

2. In mid-1962, with the departure of the Europeans after independence, the Algerian economy was in a state of considerable disarray. It is true that on some farms and in some plants Algerian staff had taken over physical productions: this gave rise to a form of workers' management ("AUTOGESTION") at the production level. Marketing aspects and the management of these units suffered, however, from lack of qualified staff, and payments were not made on time.

It may be added that, in the industrial sector, the enterprises being run on a workers' management basis were few in number and most of them were small. This is readily understandable if it is borne in mind that the large-scale enterprises, financed mainly with French or foreign capital, had not become "vacant estates", because the management staff had not abandoned their functions when Algeria became independent. Thus, as far as industry was concerned, the "socialist" sector hardly existed.

As to output, it was tending to fall rather than increase: some industrial units were even laying off staff.

3. Faced with this rather alarming situation, the Algerian authorities did not attempt to draw up a new development plan: they limited themselves to carrying out a considerable number of structural reforms, which were associated with annual investment budgets.

The structural reforms consisted of:

- Firstly, control of the Algerian monetary and financial system: establishment of the Algerian Central Bank (December 1962), establishment of the Algerian Development Fund (Caisse algérienne de développement), exchange control, */ etc. These reforms were speeded up after mid-1965 in an effort to achieve greater independance (establishment of Algerian banks);

- Secondly, particularly towards the end of the transition period, the Algerian take-over of a number of foreign companies (mining concerns, etc.). The movement was subsequently to gain momentum, particularly with the nationalisation of a number of petroleum concerns and industrial enterprises starting in mid-1967.

4. Industrial development as such was relatively slow during this period of four to five years.

It is true that certain large-scale projects provided for in the Constantine Plan and already started up (Algiers refinery, Arzew gas liquefication plant, etc.)were completed; other projects also provided for but not yet initiated were re-examined in the light of the new "Algerian socialist" context and then launched (Annaba steelworks, petrochemical and fertilizer plants, etc.).

Likewise, in the manufacturing sector (textiles, leather, food products), an investment programme of approximately 500 million dinars was launched around 1963; it developed throughout the transition period, terminating around 1967. The following table gives the broad outlines of this programme.

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*/ Translator's note: It is assumed that "contrôle des charges" (= control of charges) should read "contrôle des changes".

Public industrial investment programme - 1963

Branch	Location	Production	Investment (millions of dinars)		Direct jobs (units)	Cost of direct employment (dinars/job)
			Initial	Final		
Textile	Draa Ben Khedda	Spinning, weaving, linen	101	152	1 750	87 000
	Oued Tlelat	Spinning, weaving	27.8	39.3	625	62 000
Cotton	Batna	Spinning, weaving	30.4	42.3	610	69 500
	Valmy	Spinning, weaving, linen	36.7	50.5	560	90 000
	Constantine	Spinning, weaving, ready-to-wear clothing	32.2	47.3	355	13 400
	El Harrach	Button manufacture	16.0	23.3	2 800	8 350
			0.6	1.0		
Total			244.7	355.7	6 700	53 000
Leather	Rouiba	Tanning	13,4	19.3	265	76 000
	Djidelli	Tanning	21,0	25.3	255	99 000
	Sétif	Footwear	3,7	6.0	105	57 000
	Mascara	"	2,8	3.8	115	36 000
	Tebessa	"	2.7	3.3	80	41 000
	Sidi Bel Abbès	"	1,5	6,5	179	38 000
Total			45,1	64.2	990	65 000
Foodstuffs	El Khemis	Sugar	60	61	150	408 000
	El Asnam	Fruit juices	9,8	13,8	50	276 000
	Saïda	Mineral water	3.4	3.8	25	152 000
Total			73,2	78.6	225	350 000
GRAND TOTAL			363,1	498,5	7 915	63 000

Observations were subsequently made on this programme, including a number of criticisms:

- Very high cost of employment (the Constantine Plan envisaged a figure of 30,000 dinars);
- Excessive cost of civil engineering;
- Lack of global studies;
- Hastily concluded contracts;
- Poor locations;
- Inadequate training programme.

5. In any event, the "Algerian socialist" road to industrialization was beginning to take shape.

For example, there was the establishment of "national companies", often of substantial size, which already combined several production units from one branch. These "national companies" were initially given managerial, and later also development, functions.

There was also the formula of workers' management, still used today in the socialist sector of industry; it had been applied after independence to a few small-scale industrial units, tending to decline over the years.

The nationalization of large units owned by foreign capital was a logical consequence, their field of activity being entrusted to the national company.

It may be added that, despite the promulgation of often advantageous investment codes, the role of private investment (foreign and even domestic) in Algeria's industrial development steadily decreased.

6. Without delving too deep into statistics, we can see from the following table on foreign trade that the import structure did not change radically during the transition period; in particular, imports of industrial capital goods remained more or less around 15 per cent.

Algerian foreign trade - 1963-1966

	Exports (%)				Imports (%)			
	1963	1964	1965	1966	1963	1964	1965	1966
Food, miscellaneous beverages	30.7	38.8	36.1	30.3	22.3	26.4	23.5	22.6
Energy, lubricants	57.9	53.8	53.7	59.0	7.2	-	0.8	1.1
Heavy products	8.3	4.1	6.0	4.9	6.2	6.5	7.6	6.7
Semi-finished products	1.4	1.6	1.7	2.3	12.6	16.2	17.7	16.6
Agricultural capital goods	-	-	-	-	1.1	1.1	1.9	1.9
Industrial capital goods	1.1	1.4	1.8	2.9	16.5	14.6	14.7	17.6
Consumer goods	0.5	0.3	0.1	0.5	32.3	34.2	34.1	33.5

Other statistical data indicate that the volume of investment in industry and energy (excluding hydrocarbons) remained around 100 million dinars/year throughout the period (?).

C - THE SEVEN-YEAR FORECASTS (1967-1973) AND THE THREE-YEAR PLAN (1967-1969)

1. Starting in 1966, seven-year forecasts, setting guidelines for the period 1967-1973, and a Three-Year Plan, fixing objectives for 1967-1968[1] -1969, were prepared.

While the Three-Year Plan is considered by some to be a "pre-plan", it is of interest inasmuch as it contained the elements which really set Algerian post-independence industrialisation in motion.

2. The seven-year forecasts set forth very clearly the policies of the authorities around 1966 for investment over the next seven years, namely:

- Priority for investment in production activities and, within that framework, for investment in direct production;
- Consequently, little investment in economic infrastructure.

In other words, agriculture and industry were given priority over services.

Investment earmarkings for industry in the broad sense, i.e. including hydrocarbons, totalled approximately 14,000 million 1966 dinars, or an average of 2,000 million dinars per year. This was an enormous sum in comparison with industrial investment during the transition period.

Very interesting distinctions were made between the types of industrial investment required.

(a) "Accumulation" investment (60% of the total) designed to earn foreign exchange.

This included:

. Investment designed to increase exports of crude and refined petroleum:

- Research and development of extraction;
- Transport to the sea by oil pipeline;
- The refining of a small part of the crude.

. Investment aimed at the processing of mineral resources before export:

- Processing of natural gas (fertilizers - petrochemicals - ores)

. Investment designed to increase exports of natural gas (piping, liquefaction, methane tankers).

1/ Translator's note: Original reads "1868".

It was envisaged that the gas could be supplied to local industries.

. Investment in certain branches of the food industry which would promote the export of local products.

. "Transformation" investment (for the continuing promotion of organization and productivity).

(b) "Integration" and "substitution" investment (30% of the total) designed to accentuate the links between the various branches of industry (integration) or to promote the production of consumer goods which would replace imports (substitution).

This covered:

. Iron and steel.

. Engineering industries:

- Agricultural implements;
- Transport equipment (road and rail);
- Equipment for industry itself;
- Essential durable household goods;

. Food industries: sugar, oil, flour, alimentary pastes.

. Chemical industries: pharmaceuticals, industrial agriculture.

. Textile and leather industries.

. Miscellaneous industries: glass, cork, cardboard, ceramics, wood.

Most of the projects coming under these categories had still to be studied and perhaps even others could be discovered.

As a result, the corresponding volume of investments was rather approximate.

(c) "Local promotion" investment (1% of the total)

This investment, which accounted for a very small proportion of the total, was designed to generate employment (industrial workshops, local industries, ...).

(d) Investment "induced by the foregoing" (8% of the total)

For example, investment in energy (electric power requirements of the Annaba iron and steel plant and the Arzew area).

Industrial investment for the seven-year period 1967-1973

	(in millions of dinars) (approximate)	
Accumulation	8 500	60%
Integration and substitution	4 200	30%
Local promotion	200	1%
Induced	1 100	8%
	14 000	

The investment of these sums was expected to lead to important results for Algeria's industrial development:

- An annual increase in industrial added value of approximately 14 per cent, or an increase by a factor of 2.5 between 1966 and 1973;
- An annual increase in industrial employment of approximately 13 per cent, or a twofold to threefold increase between 1966 and 1973, representing 100,000 additional permanent jobs (excluding repercussions in other sectors).

Anticipated development of Algerian industry

According to the "seven-year forecasts" for 1967-1973

(in millions of 1966 dinars)

	Base year	1973	Seven-year increase	Ratio 1973/ base year	Average annual growth rate
Approximate value of fixed assets	8 910	22 500	13 590	2.5	+14%
Turnover	6 290	18 580	12 290	2.9	+16%
Added value	3 370	8 220	4 850	2.5	+14%
Employment (in units)	77 300	179 600	102 300	2.3	+13%

The following table shows anticipated development by sector.

Anticipated development by industrial sector according to the seven-year forecasts, 1967-1969

(in millions of 1966 dinars)

Branch	Value of fixed assets	Turnover	Added value	Employment (units)
A. - SITUATION IN INDUSTRY IN THE BASE YEAR				
Hydrocarbons	4 200	3 200	1 900	8 600
Mining and quarrying	190	150	90	6 000
Energy/	2 300	300	230	4 500
Iron & steel & allied activities	10	9	3	300
Mechanical & electrical engineering	360	421	170	10 900
Chemical industries	210	350	140	6 600
Miscellaneous industries	150	270	120	9 000
Building materials	220	150	75	6 000
Food industries	870	1 250	550	14 900
Textiles and leather	400	190	90	10 500
Crafts	-	-	-	-
Total	8 910	6 290	3 368	77 300
B. - FORESEEABLE SITUATION IN INDUSTRY IN END YEAR				
Hydrocarbons	11 200	9 000	3 600	20 500
Mining and quarrying	550	270	160	9 000
Energy/	3 000	400	320	6 300
Iron & steel & allied activities	2 000	700	380	4 300
Mechanical & electrical engineering	940	1 500	680	34 100
Chemical industries	410	460	240	8 100
Miscellaneous industries	400	800	400	19 500
Building materials	420	400	240	10 800
Food industries	1 400	2 500	1 000	29 900
Textiles and leather	780	1 600	800	25 100
Crafts	100	?	?	10 000 (new)
Total	22 500	18 630	8 220	179 600

3. The seven-year forecasts were supposed to correspond to two successive plans: a three-year plan for 1967-1969 and a four-year plan for 1970-1973. We shall examine later at some length the contents and results of this four-year plan (First Four-Year Plan) which, in fact, modified the targets set in the seven-year forecasts in the light of experience gained during the Three-Year Plan.

The first phase of the seven-year forecasts, i.e. the Three-Year Plan, earmarked a total investment of approximately 11,000 million 1966 dinars, broken down as follows:

Investment earmarked under the Three-Year Plan, 1967-1969

	Investment planned	
	Millions of 1966 dinars	%
Agriculture	1 869	16.9
Industry	5 400	48.7
Infrastructure	1 124	10.1
Housing	413	3.7
Education	912	8.2
Training	127	1.2
Tourism	285	2.6
Social	295	2.7
Administrative	441	4.0
Miscellaneous	215	1.9
Total	11 081	100.0

Let us note, incidentally, the low figure set aside for housing (less than 4 per cent), which had accounted for around 20 per cent in the Constantine Plan.

Approximately 50 per cent of all investment was to go to industry, the corresponding amount being 5,400 million 1966 dinars (including hydrocarbons).

The following table indicates, by industrial sector, the investment anticipated during the three-year period (with reference to the seven-year forecasts) and the expected source of financing. It will be noted that the bulk of the capital is of public origin (coming either directly from the State or through the national companies), private capital being expected to account for barely 1%.

Anticipated investment in industry - Three-Year Plan 1967-1969, with reference to the seven-year forecasts (1967-1973)

(in millions of 1966 dinars)

Branches	Seven-year forecasts 67-73			Three-year plan 67-69 */			
	Total seven-year period	State	Private (est.)	Total three-year period	Public		Private
					State	Self-financing by enterprises	
Hydrocarbons	7 000	7 000	-	2 295	1 000	1 295	-
Mining and quarrying	400	400	-	200	200	-	-
Energy (EGA)	700	700	-	260	260	-	-
Iron and steel and allied activities	2 000	2 000	-	1 200	1 200	-	-
Mechanical and electrical engineering	580	550	30	215	200	-	15
Chemical industry	210	190	20	91	81	-	10
Heavy chemical and petrochemical industries	1 500	1 500	-	470	470		-
Miscellaneous industries	255	235	20	118	108		10
Building materials	220	210	10	100	95		5
Food industries	540	510	30	254	209	35	10
Textile industries	340	300	40	185	170		15
Leather	55	45	10	35	30		5
Crafts	70	60	10	35	30	-	5
Other	40	40	-	29	29	-	-
TOTAL INDUSTRY	13 910	13 740	170	5 478	4 073	1 330	75

*/ Translator's note: The original reads "67-73".

4. Of the 5,478 million 1966 dinars earmarked for industrial investment, 2,765 million (or approximately 50%) are set aside for hydrocarbons and petrochemicals, and 1,200 million (or approximately 22%) for iron and steel. The rest of the industrial sectors receive between them only 28% of the total.

Absolute priority is thus given to industries which make use of Algerian natural resources (hydrocarbons and iron ore) - a priority which should have been still further accentuated during the next Four-Year Plan - if we take into account the projections adopted in the seven-year forecasts:

Hydrocarbons and petrochemicals	61%
Iron and steel and allied activities	14%
	75% of total

On the other hand, mechanical and electrical engineering industries, which have a basic influence on both industrial integration and manpower training, seem to have been intentionally neglected; investment in this sector accounts for scarcely 4% of the total both in the Three-Year Plan and in the seven-year forecasts.

The other industrial sectors account for only 24% of total industrial investment in the Three-Year Plan (21% in the seven-year forecasts). The fact that less than 2% is allocated to the building materials industry is to be related to the modest housing programme adopted (housing, in 1966,*/ was "theoretically" in plentiful supply following the large-scale departure of Europeans in 1962,*/ and intensive development was not required, either here or in the Four-Year Plan, 1970-1973); as to the textile-clothing-leather-footwear industries (receiving around 3%), considerable progress had already been made during the transition period (see above).

5. Along with the expansion of industrial plant, the Three-Year Plan also placed emphasis on a number of measures to be taken and act on to be followed through at the enterprise and administrative level.

These included a whole series of organizational measures which we shall now examine.

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*/ Translator's note: The original reads "1866" and "186[illegible]".

These organizational measures emphasised the Algerian authorities' commitment to industrial development, taking into account in particular the fact that the industrial world is one in which time is of the essence and leadership essential.

. Reorganization and plan for the reform of existing industries

In the socialist industrial sector it was observed that:

- 10 per cent of enterprises were in a healthy condition;
- 20 per cent of enterprises were in financial difficulties;
- 10 per cent were technically sound but needed a revival of the market (e.g. construction);
- 40 per cent of the enterprises were in financial difficulties and were technically defective;
- 20 per cent of the enterprises should be closed down.

Accordingly, a number of reorganization measures, to be followed up by recovery measures, were contemplated:

- Programming of orders and purchases;
- Policies for the protection of enterprises against foreign competition (and incidentally putting an end to the myth of so-called Algerian production operations which were in fact merely assembly operations);
- Employment and wages.

. Organization of investment

- Investment code;
- Location policies and more generally policies for industrial and regional development;
- Fiscal system (customs duty, in particular elimination of import duty on capital goods);
- Centralization of industrial studies.

. Organization of economic administration

- Rational and efficient organization of studies of industrial projects;
- Central planning body closely associated with decisions taken.

Provision was also made for repurchasing operations, amounting to nationalization.

6. It is always difficult - and we shall see why in chapter III, where the Four-Year Plan for 1970-1973 is evaluated - to ascertain whether the targets of a plan, as a whole, have been attained or not.

For example, so far as investment in particular is concerned, while it is a simple matter to compare actual and targeted investment expenditure, it is on the other hand extremely difficult to assess, even in approximate terms, EFFECTIVE investment.

We shall, however, for lack of a better alternative, try to undertake this exercise, while being fully aware of its limitations.

(a) Total investment expenditure (all sectors)

(in millions of 1966 dinars for targets and current dinars for results)

	1967	1968	1969	Total
Three-Year Plan: target	2 747	3 322	5 012	11 081
Three-Year Plan: result	1 652	3 174	4 301	9 124
Rate of fulfilment	60%	96%	86%	82%

Total investment: results = 0.82 of objectives

(b) Investment expenditure in industry

(in millions of 1966 dinars for targets and current dinars for results)

	1967	1968	1969	Total
Plan	1 200	1 750	2 450	5 400
Results	798	1 755	2 616	5 168.5
Rate of fulfilment	66%	100%	105%	95%

Industrial investment: results = 0.95 of objectives 1/

(c) Sources of finance for expenditure in industrial sectors

	1967		1968		1969		Three-year total	
	Forecast	Result	Forecast	Result	Forecast	Result	Forecast	Result
Investment								
. Public	1 200	798	1 750	1 754.5	2 450	2 616	5 400	5 166.5
. Private	10	52	25	144	40	253	75	442
Total	1 210	850	1 775	1 898.5	2 490	2 869	5 475	5 [illegible]

1/ Another document (Four-Year Plan, 1970-1973) gives a fulfilment rate for equipment expenditure of only 0.87.

For industry:

- Public financing: results = 0.96 x objectives
- Private financing: results = 6.00 x objectives

It would therefore seem that over-all, industrial investment EXPENDITURE targets were more or less achieved. However, investment expenditure does not necessarily correspond to the volume of investment planned, [sic in the original] which is itself only one of the factors in the development of production, which should still, of course, be studied in detail.1/

7. One can, however, take the process a little further by comparing targeted and actual industrial investment expenditure on a sector-by-sector basis.

This gives the following, highly instructive, table:

Divergence between targeted and actual capital investment expenditure in industrial sectors - Three-Year Plan, 1966-1969

(in millions of 1966 dinars for targets and current dinars for results)

Branches	Targeted expenditure	Results 1967	Results 1968	Prov. results 1969	Total	% Fulfilment
Hydrocarbons	2 265	380	977.2	1 400	2 757.2	120%
Mining and quarrying	200	28	44.3	80	158.3	75%
Iron and steel	1 200	140	335.0	800	1 275.0	100%
Electricity	260	3	25.0	130	158.0	60%
Chemical industry	581	60	216.0	13	289.0	50%
Mechanical and electrical engineering	200	42	22.0	40	104.0	52%
Building materials	95	2	2.0	20	24.0	25%
Food industries	241	25	54.0	80	159.0	66%
Textile industries	170	70	41.0	15	126.0	76%
Leather	30	20	14.0	10	44.0	140%
Wood, paper and miscellaneous	108	-	14.0	20	34.0	35%
Crafts	50	28	10.0	8	46.0	92%
TOTAL	5 400	798	1 754	2 616	5 168	95%

It can be seen that actual expenditure was over 100 per cent of targeted expenditure for hydrocarbons and 100 per cent for iron and steel. Since these two sectors accounted for by far the largest proportion of investment expenditure earmarkings, the "industrial investment plan" was naturally more or less fulfilled (95 per cent).

1/ But which we will not examine here.

Nevertheless, it can be observed that the mechanical and electrical engineering branch had a capital investment fulfilment rate of only 52 per cent, while for building materials the figure was only 25 per cent.

The guidelines for the Three-Year Plan, together with the non-fulfilment of investment expenditure targets in these two branches, mean that there will be delays, in both the mechanical and electrical engineering branch and the building materials branch, which will somewhat impede Algeria's subsequent development by necessitating large-scale imports.

8. At this stage, the next step would be to extend the analysis to cover the measures and organizational action taken and then systematically to compare PRODUCTION TARGETS and ACTUAL PRODUCTION,[1/] then their impact (added value, employment). That would, however, involve research which would be beyond our capacity.

We will thus confine ourselves, in concluding this chapter I, to a presentation of the conclusions drawn by the Algerian officials from an evaluation of their Three-Year Plan.

> "Targets were more than 80 per cent fulfilled, which is indubitably a success. Nevertheless, many reorganization targets were not reached. It can be said in defence of the Three-Year Plan that it is independent Algeria's first plan, and, as such, first and foremost an expression of a political choice, a statement of intent, and a commitment to economic development.
>
> "But in practical terms the Three-Year Plan was essentially only a programme, an investment schedule. Since it was not concerned with other economic realities which condition development, it was never a complete planning tool, neglecting as it did price and wage policies, long-term and medium-term planning ... it was only a starting-point.
>
> "The Four-Year Plan for 1970-1973 must tackle the whole range of problems. Investment alone can never be an adequate, or complete, solution, even if it directly increases production and employment, because essentially it involves only an outlay of capital without any automatic guarantees regarding the impact and "overflow" consequences of this capital outlay.

1/ It is common knowledge that it is much easier to fulfil an expenditure plan 100 per cent or even 120 per cent than to fulfil a receipts plan.

"Moreover, the Three-Year Plan, conceived of as a pre-determined investment programme (even if increases were made during implementation), was still only an initial estimate which never reflected the country's actual economic evolution: it thus militated against the constant adjustment of projects and the scientific control of expenditure which are fundamental and essential prerequisites for real planning.

"Only the relationship between actual achievements and the real cost of projects, assessed at the end of the programme and readjusted to final conditions, can reflect the progress of operations and the true fulfilment rate. At any given time, such calculations should permit the planner to modify earlier decisions which no longer meet the new needs effectively. It is his task to discern, at all stages of the process, the "critical path" of each project which conditions the over-all result. A mere investment table alone cannot permit such an extensive task to be carried out. Consequently, from the technical point of view, the Three-Year Plan can certainly not claim to be a complete planning tool. Nevertheless, its results must be viewed as a success in so far as it provides basic statistical data, and indicates orders of magnitude, patterns of influence and objectively verified induced and linkage effects which can be put to good use in the Four-Year Plan, 1970-1973."

II. THE 1970-1973 FOUR-YEAR PLAN: ALL SECTORS

A - STRATEGY ADOPTED

B - EXPECTED PRODUCTION AND IMPACT

C - METHODS AND MEASURES ENVISAGED

D - RESULTS

A - STRATEGY ADOPTED

1. In drawing up its development strategy for the 1970-1973 Four-Year Plan, Algeria was no exception to the fundamental rule that any strategy must take into account both Government goals and existing potential.

The aims sought are very clearly expressed at the outset of the Four-Year Plan:

> "Inspired by the ideals of the Revolution, the economic policy defined in our second plan is a practical expression of the fundamental options which have guided the Government's domestic and foreign action since 19 June 1965:
>
> NATIONAL INDEPENDENCE
>
> SOCIALISM
>
> and DEVELOPMENT"
>
> (Message by the Chairman of the Revolutionary Council responsible for the 1970-73 Four-Year Plan).

So far as "existing potential" is concerned, Algeria, as noted above, has substantial deposits of certain raw materials (iron ore, petroleum, gas), the development of which had already been initiated under earlier plans; above ground, an agricultural sector which had to be both restructured and developed, and a large, but not fully trained population.

2. The preamble of the Four-Year Plan gives the broad outlines of the strategy adopted, with reference first to national independence:

> "Our country will rely first and foremost on its own resources to carry out the task of economic construction. The mobilisation of all its potential and all its forces is thus of crucial importance. Whether the resources in question are financial, material or human, we must make the fullest use of national possibilities before we consider external assistance. It is true that, in our present stage of development, such external assistance can be useful, but it should under no circumstances do more than complement national resources as a means of helping us to accelerate our rate of growth.
>
> "Although Algeria desires to develop international relations on a very broad basis, it nevertheless realizes that any foreign assistance it may be given must be consistent with the balanced relations which it establishes or maintains with a given country or group of countries."

Consequently, although various incentives are provided for under an "Investment Code", foreign investments can only be made through national "structures" and will as a result be very modest.

3. It then goes on to explain the significance of the "socialist option" which should be pursued on two levels:

> A more equitable distribution of the benefits of production among all Algerians;
>
> A more balanced distribution of activities over the national territory as a whole.
>
> "On the domestic front, our socialist option includes other equally pressing demands for the establishment of a just society in which all have an equal share in the benefits of development and there is no place for parasitic activities.
>
> > This just society requires first and foremost a permanent struggle against all social inequities, whether these are inherited or generated by development ...
> >
> > The just society which the Algerian Revolution wishes to construct therefore requires that all regions of the country be given equal chances to develop and to eliminate the severe inequities from which the country is suffering in this respect.
>
> This policy of regional equilibrium is expressed both through vigorous efforts to redress inequalities and to revitalize the sagging economies of certain regions through special programmes, and through the judicious distribution of capital investment over the entire territory with a view to ensuring the harmonious development of the country as a whole."
>
> Consequently, the private capital investment expected is of limited extent.

4. Lastly, an account is given of economic development tactics.

> "Our strategy places industrialization in the front rank of development factors.
>
> It is through the systematic processing of our natural resources, the establishment of a basic industry to provide the essential foundation for industrial processes, through the manufacture of the capital goods required for the development of the various sectors of the economy, and lastly through the provision of the goods needed to meet the country's consumer requirements, that it will be possible to achieve the complete transformation of national economic conditions which can on the one hand, make the right to work a reality as soon as possible and, on the other generate a self-sustaining growth movement.

Industrialisation goes hand in hand with the agricultural revolution, which will ensure its success. The objective of this agricultural revolution is the complete restructuring of production with the aim of feeding a rapidly expanding population and feeding it better, through the exhaustive use of natural resources and the conservation and development of production potential. The result of this in-depth action will be a real remodelling of the Algerian agricultural environment and a radical transformation of living and working conditions in rural areas.

Human betterment is in this context the major lever of success. The development strategy therefore accords this aspect a decisive place in the order of activities. This process of human betterment, which will be implemented partly through the rebirth of national culture and language, will rely on efforts to make education and training more generally available and to ensure that content and methods are adapted to suit national requirements in a modern world. The option in favour of scientific and technical education - a prime condition for rapid economic progress - will constitute an essential element of this process.

Industrialization, agricultural revolution and human betterment require the intensive mobilization of the country's resources and strict respect for priorities in their use. The continuation and intensification of the austerity policy, by cutting out secondary expenditure and conducting an unremitting struggle at all levels against all forms of waste is the first stage. The development of systems for collecting resources and the organization of all financial structures as far as and including the enterprise level, as well as efficient management in the socialist sector to enable it to participate fully in the accumulation effort, is the second."

These tactics follow on very logically from those of the Three-Year Plan (with the exception of some policy changes noted below).

(a) Absolute priority continues to be assigned to the development of the productive sectors, i.e. agriculture and industry.

In fact, as in the Three-Year Plan, it is industry which is given top priority (and, within the industrial sector, the hydrocarbon/petrochemical and iron and steel branches continue to play a predominant role);

(b) A dominant place is assigned to human betterment, mainly through education and training.

5. This economic development strategy fits well into the structure envisaged for global investment expenditure, nearly all of which is to be borne by the public sector (total and public investments will, indeed, often be taken as one and the same).

Global investment expenditure planned

	Four-Year Plan 70-73 (Millions of 1969 Algerian dinars)	%	Three-Year Plan 67-69 Structure in %
Agriculture	14 140	15.0	16.9
Industry	12 400	45.0	48.7
Infrastructure	2 307	8.0	10.1
Transport	800	3.0	-
Tourism	700	2.5	2.6
Housing	1 520	5.0	3.7
Education	2 720	10.0	8.2
Training	587	2.0	1.2
Social	934	3.5	2.7
Community	762	3.0	-
Administrative	870	3.0	4.0
Miscellaneous	-	-	1.9
Total	27 740	100.0	100.0

In relation to the structure of capital investment expenditure as included in the Three-Year Plan, a slight decrease will be noted for the productive sectors (agriculture and industry) and, on the other hand, a slight increase for the social sector in the broad sense (rising from 16 per cent in the Three-Year Plan to over 20 per cent in the Four-Year Plan).

B - EXPECTED PRODUCTION AND IMPACT

1. The increase in production between 1969 and 1973 is considerable, corresponding to an annual growth rate of 9 per cent (cf. table below).

Gross domestic production (in millions of 1969 Algerian dinars)

In 1969: 14,640

In 1973: 21,085

Increase over the period 1969-1973: 6,445, or 9 per cent annually.

An increase of this size was probably the result of better utilization of existing equipment, the maturation of projects executed during the Three-Year Plan and through investments provided for in the Four-Year Plan (some of which would not bear fruit until after 1973).

At the same time, extremely high rates of progress were expected in the social sectors. For example, a "leap forward" was expected in enrolments at all levels of national education:

Expected development of enrolments in national education

	Primary education	Secondary education (first level)	Secondary education (second level)	Higher education
1969-70	1 758 000	158 000	25 000	10 800
1970-71	1 974 000	191 000	34 000	12 800
1971-72	2 190 000	247 000	41 000	17 000
1972-73	2 406 000	330 000	50 000	21 000
1973-74	2 622 000	375 000	70 000	27 000

In housing (and while it must be fully realized that results for 1973 are still very inadequate), a three-fold increase in the number of dwelling units delivered between the beginning and the end of the Plan:

Three-Year Plan: 6,500 dwelling units each year

Four-Year Plan: 21,000 dwelling units each year

2. The contribution of the various sectors to the increase in the GDP was expected to be the following:

Table 1

	Value added in 1969	Additional value added: In millions of 1969 dinars	Additional value added: In %	Value added in 1973
Agriculture	2 400	+ 300	4.5	2 700
Hydrocarbons	2 610	+ 1 990	31.0	4 600
Industry	2 510	+ 1 625	25.2	4 135
Construction	1 020	+ 1 280	20.0	2 300
Transport - Services - Commerce	6 100	+ 1 250	19.3	7 350
Total	14 640	+ 6 445	100.0	21 085

The following will be noted in passing:

The modest increase in value added by agriculture (scarcely 4.5 per cent of the total), despite apparently large capital investment (15 per cent of the total) which in fact represented essentially renewal investment or investment with deferred effect;

The large increase in value added by industry in the broad sense (56.2 per cent of the total) of which more than half (31 per cent as against 25.2 per cent) is due to hydrocarbons;

The not inconsiderable contribution of the construction sector (20 per cent of the total), particularly civil engineering and enterprise construction (construction of plants, etc.).

3. The implementation of the Four-Year Plan for 1970-73 should result in the creation in the non-agricultural sector of 265,000 jobs, or 60-70,000 jobs a year, broken down by branch as follows:

Development of non-agricultural employment during the Four-Year Plan

	1969 Situation	Structure	Increase	Structure	Employment 1973	Structure
Hydrocarbons	7 500		2 950		10 450	
Mining and quarrying	10 500		3 500		14 000	
Energy	5 500		1 800		7 300	
Mechanical and electrical engineering	29 000		26 450		55 450	
Chemical industry	9 000		4 430		13 430	
Miscellaneous industries	6 500		5 680		12 180	
Building materials	14 500		5 680		20 180	
Food industries	31 000		9 610		40 610	
Textile and leather industries	22 000		15 000		37 000	
Construction	70 000		95 000		165 000	
Total, secondary sector	205 500	24%	170 100	65%	375 600	34%
Transport	60 000	6%	18 000	6.7%	78 000	7%
Commerce	200 000	34%	10 000	11.3%	210 000	30%
Services	100 000		20 000		120 000	
Administration	275 000	34%	47 000	17%	1 105 600	100%
GRAND TOTAL	840 500	100%	265 100	100%		

This result is in itself very satisying, but still falls somewhat short of the target.

In fact, the population forecasts made by the Secretariat of State for the Plan (SEP) and based on reasonable hypotheses of natural growth indicated a total population of 15 million inhabitants in 1973, only 6.5 million of whom would belong to the non-agricultural populations: the resultant theoretical labour force for the non-agricultural sectors - 1.22 million or one worker for every 5.3 inhabitants - is approximately 10 per cent higher than the non-agricultural employment figures planned.

Development of basic population data

(in millions)

	1969	1973	1980
Total population	13.2	15	18.5
Agricultural population	7.7	8.5	10.1
Non-agricultural population	5.5	6.5	8.4
Theoretical labour force (agr.)	1.54	1.73	2.0
Non-agricultural labour force	1.10	1.22	1.5
Total gross theoretical labour force	2.64	2.95	3.5

4. Income of households and, in particular, total wages and salaries paid were expected to increase in keeping with economic development and the generation of employment. Nevertheless, the First Four-Year Plan is still an AUSTERITY PLAN.

> "The Plan will put into effect the measures made necessary by the policy of austerity, particularly in national consumption and savings".
>
> (Article 9 of Order No. 70-10 of 20 January 1973 concerning the Four-Year Plan for 1970-73).

Income distributed should thus increase less rapidly than the GDP: an increase of 29 per cent, or 3,500 million 1969 Algerian dinars in four years (as against approximately 50 per cent for the GDP).

Expected increase in income of households

(in millions of 1969 Algerian dinars)

	1969		1969-1973	1973	
	Total	%		Total	%
1. Wages and salaries					
- Government	2 300	19.2	800	3 100	20.0
- Entrepreneurial	3 800	31.7	1 630	5 430	35.0
2. Income of unincorporated enterprises	3 600	30.0	750	4 350	28.0
3. External	1 250	10.4	-	1 250	8.0
4. Contributions	700	5.8	350	1 050	6.8
5. Government transfer	350	2.9	-	350	2.2
TOTAL	12 000	100.0	3 530	15 530	100.0

"Wage and salary earning activities created outside the agricultural sector are the main source of this increase. More than 2,400 million Algerian dinars will come from new wages distributed (one-third for government, two-thirds for enterprises), representing almost 80 per cent of the total increase in income".

Taking into account the growth in the population, the average per capita income should thus increase from 910 1969 Algerian dinars in 1969 to nearly 1,000 1969 Algerian dinars in 1973, or an increase of 10 per cent in dinars at constant prices.

5. Foreign trade would normally be expected to increase under the influence of two factors:

Increased imports of capital and producers' goods (for example, building materials) in connexion with the objectives of the Four-Year Plan;

Increased exports of hydrocarbons either in crude form (slightly increased production, slightly higher prices), or, more particularly, processed (petrochemicals).

(a) Imports

Imports were expected to increase from 4,850 million Algerian dinars in 1969 to 7,700 million 1969 Algerian dinars in 1973 (a 58 per cent increase) or, over the four years of the Four-Year Plan, approximately 25,000 million Algerian dinars (as against only 12,500 for the Three-Year Plan).

Increase in imports of goods and services during the Four-Year Plan as compared with the Three-Year Plan

	Three-Year Plan	Structure	Four-Year Plan	Structure
Consumer goods	5 200	42	6 600	26.4
Capital goods	5 750	46	14 650	58.4
Services	1 500	12	3 800	16.2
Total	12 450	100	25 050	100.0

This comparison between the Three-Year and Four-Year Plan shows that the import structure is expected to change substantially:

Reduction in the relative value of consumer goods;

On the other hand, a considerable increase (15 per cent annually) for capital goods.

(b) Exports

The volume of exports should increase from 4,400 million Algerian dinars in 1969 to 6,800 million 1969 Algerian dinars in 1973 (an increase of 55 per cent in four years), or a total of approximatley 23,000 million Algerian dinars for the period of the Plan.

Increase in exports - Three-Year/Four-Year Plan

	Three-Year Plan	Structure	Four-Year Plan	Structure
Agricultural and food products	2 170	18	3 590	15.7
Mining products	374	3	845	3.7
Hydrocarbons	9 170	75	16 980	74.6
Industrial goods	479	4	1 357	6.0
Total	12 193	100	22 772	100.0

Hydrocarbons clearly remain in first place, with approximately 75 per cent of the total (export target of 61-66 million tonnes of crude petroleum, or a 50 per cent increase over 1969, plus 2 million tonnes of refined products). Nonetheless, agricultural and food products (and exports of fruit, vegetables and tinned goods, in particular) are expected to remain at the same level (approximately 16 per cent).

Industry, on the other hand, is still too "young" to export in large quantities.

The balance of trade situation resulting from the foreign trade targets set is fairly satisfactory:

	1969	1973
Imports	4 850	7 700
Less exports	- 4 390	- 6 800
= Trade deficit	460	900

(i.e. largely covered by the wages transferred by Algerian workers in Europe alone): there would therefore be no really serious problems on this score.

6. On the subject of expected price increases, the Four-Year Plan document remains silent.

C - METHODS AND MEASURES ENVISAGED

1. As already indicated, the implementation of the Four-Year Plan requires capital investment totalling some 27,740 million 1969 Algerian dinars, including 12,400 million for the industrial sectors alone.

This considerable investment sum is to be drawn mainly from Algeria's own resources, that is from the equivalent of the national product, since the policy of INDEPENDENCE pursued allows for only limited external inputs.

The growth of investment vis-à-vis the gross national product means a very high gross capital investment rate, which should increase gradually from 25 per cent in 1969 to 35 per cent by about 1973 (and, by contrast, to a decline in consumption of the national product, in accordance with the austerity policy recommended).

We shall see later what is to be thought of such a rate, but at this point it should be noted that is of CONSIDERABLE magnitude.

2. The implementation of the Plan requires as a minimum the execution of the ambitious training programme envisaged.

In fact, a comparison of skilled personnel requirements and the "output" of the training system shows the following imbalances:

	Requirements	"Output"
Middle-level and senior personnel		
Scientific and technical training	17 700	9 610
Other training	10 700	10 700
	27 900	20 310

(plus "Algerianization" requirements totalling 15,000)

	Requirements	"Output"
Technicians and foremen	39 700	27 100
(plus "Algerianization" requirements totalling 10,000)		
Workers and skilled and highly skilled office workers	187 000	134 600

Consequently, either personnel will have to be "imported" or additional training provided for.

The most important of the measures envisaged with regard to other countries is the attempt to achieve GREATER INDEPENDENCE.

With that end in view, the systematic policy of nationalization, already started in preceding years, was pursued.

Accordingly, the proportion of foreign property in the "national capital" was expected to decrease considerably.

4. With regard to "domestic" measures, the Four-Year Plan primarily emphasized the ORGANIZATION OF PRODUCTION and, as an accessory, the decentralization of decision-making and physical planning.

(a) Organization of production

The autonomy of production units in the socialist sector was to be increased progressively.

Examples: The establishment of a statute for the national companies is envisaged;

Agricultural enterprises operating under the workers' management system were to become more independent from the wilaya (administrative district) authorities and the central administration.

At the same time, an "agrarian reform" of the private agricultural sector is envisaged: this will in fact be carried out in several stages, in order of increasing difficulty.

(b) Decentralization of decision-making - physical planning

An objective of democratic socialism is that decisions can be taken at all levels - commune, wilaya or national level, decisions of a certain type being taken at each level.

In this spirit, projects at the wilaya level were envisaged when the Four-Year Plan was formulated. The number of these projects subsequently increased with the introduction of "special programmes" at the wilaya level which were in fact a complement to the programmes proper of the Four-Year Plan.

5. There seems no need to elaborate here on the various measures (for example protection) adopted in Algeria, which are not particularly original.

D - RESULTS

1. While the goals of greater independence from abroad and the establishment of socialism within the country appear to have been fully achieved, some shortfalls are apparent in the strictly economic field. Some of these are, indeed, due indirectly to efforts to establish greater national independence or a socialist system.

Thus, to quote just one example, the nationalisation of most of the assets of foreign petroleum companies by 1971, a structural reform very much in line with the objectives of national independence and socialism, was accompanied by a disruption of the exports of crude petroleum to France which lasted throughout late 1971: foreign currency earnings suffered as a result and constraints on Algerian imports (although these were essential for achieving capital investment goals) were continued until the beginning of 1973.

On the other hand, as we shall see at the beginning of chapter IV, the policy of national independence and socialism started to bear fruit in the autumn of 1973 with the increase in crude petroleum prices and the transfer to the Algerian State budget of a large part of the new petroleum receipts.

2. During the period 1970-1973, Algeria, in accordance with its announced desire for INDEPENDENCE, expropriated most foreign property, particularly in the hydrocarbon and manufacturing industries sectors (the housing sector having been "Algerianised" with the departure of the Europeans on independence, "foreign"-owned land shortly thereafter, and the mining sector during the Three-Year Plan).

Consequently, by the end of the Four-Year Plan, Algeria "owned" all its land and most of its productive "capital".

Moreover, the share of the Algerian private sector, small to start with, had hardly increased at all, with the result that the public sector, in line with the Government's SOCIALIST doctrine, became preponderant.

The Plan thus achieved its objectives in so far as the first two targets are concerned.

3. With regard to over-all economic goals, the following can be noted:

(a) A very high gross investment rate varying from:

28 per cent in 1969, to
40 per cent in 1973,

corresponding fairly satisfactorily to the objectives sought.

We shall confine ourselves to this observation; it is not, in fact, easy to compare results and goals for capital investment expenditure or investment in physical equipment: original programmes are always considerably altered,[1/] delays arise, prices change, etc. (for industry cf. chapter III).

(b) An increase in the Algerian gross domestic product of:

11 per cent per year in current prices,
6 per cent a year in constant prices,

taking into account an average price increase (a possibility which had never been considered when the Four-Year Plan was drawn up) of 5 per cent over the period.

Real GDP = 6 per cent annually

The gap between the result and the target (9 per cent a year) is thus around 3 per cent.

(c) Foreign trade, by value, less well balanced than foreseen

(in millions of dinars)

	1969		1973	
	Targeted (1969 dinars)	Actual (1969 dinars)	Targeted (1969 dinars)	Actual (1973 dinars)
Imports	4 850	6 327	7 700	12 013
Exports	4 390	5 147	6 800	8 130
of which hydrocarbons	3 250	3 118	5 130	6 205
Trade deficit	460	1 180	900	3 883

1/ Introduction of special wilaya programmes (for example).

This is due partly to price increases and partly to certain general policy measures (as in the case of hydrocarbons, referred to above, and wine, as a result of restrictions by EEC).

It may, incidentally, be noted that Algeria's dependence on foreign supplies and markets increased; likewise, there was a certain financial dependence on foreign sources to cover the trade deficit.

On the other hand, the diversification of suppliers enabled Algeria to reduce its dependence on France (major supplier).

(d) Lastly, the continued inadequacy of employment generation, with an increase in emigration (and thus a certain dependence):

	1969 (in thousands)	1973
Algerian population in France	635	800
Among these, workers	352	440

At the same time, the gap between the "output" of qualified personnel and technical staff and requirements, particularly in the industrial sectors, means that such staff have to be "imported".

Thus, although the very high target for the investment rate was more or less fulfilled, the production, trade and employment targets set were not, on the other hand, fully achieved.

The structure of the general economic equilibrium (goods and services) thus altered in the direction of some opening up towards the outside world and a more substantial investment effort.

Structure of Algeria's balance in goods and services

(in percentages of the gross domestic product)

	1969	1973
Gross domestic product	100.0	100.0
Imports	30.6	38.6
Total	130.6	138.6
Exports	24.9	26.1
Consumption - private	58.4	56.6
" " - government	17.8	17.5
" " - investment	27.8	39.5
Variation of stock	1.7	- 1.1

This result is reflected also in the following table, showing the growth rates of the major aggregates in current prices (with reference to the results of the Three-Year Plan, 1967-1969).

Trends in major economic aggregates

(in current dinars)

	Annual growth rate (%)	
	1967-69	1970-73
Gross domestic product	12.1	10.8
Imports	24.1	17.4
Total	36.2	28.2
Exports	12.1	12.1
Consumption - private	9.7	9.9
" " - government	6.5	10.3
Investment	41.2	21.0

This shows, incidentally, that despite the austerity policy adopted (10 per cent increase in private consumption in current dinars, corresponding roughly to c 5 per cent increase in constant dinars and a 2 per cent increase per capita), the considerable increase in investment (21 per cent annually) could be realized only by an increase in the trade deficit (imports increasing by 17 per cent and exports by only 12 per cent).

4. The trade deficit was made good - and more generally the foreign balance brought into equilibrium - partly by transfers of wages of emigrant workers (more than 1,500 million dinars repatriated in 1973) and partly by a number of loans from foreign commercial banks or equipment suppliers.1/

Public finances continued to be "overbalanced", the regular budget surplus being close on 5,000 million dinars in 1973 (more than 4,000 million due to petroleum revenues).

If we bear in mind, moreover, that in 1973 the cash flow of SONATRACH was around 1,000 million dinars, it can be seen very clearly that it was possible for the bulk of investment to be financed from public sources: in particular, the new industrial units were ALGERIAN and SOCIALIST.

1/ These loans will become unnecessary after 1973, following the increase in crude petroleum prices.

5. These over-all results of the implementation of the Four-Year Plan need to be further refined on an economic sector basis.

The following table, based on an internal IBRD document, shows for the major sectors:

Increases in the gross domestic product between 1969 and 1973, with an indication of annual growth rates;

The volume of investment.

These results are expressed in current prices and should therefore be "deflated" before being compared with the objectives of the Four-Year Plan.

It may be added that they diverge quite markedly from the general table at the end of chapter II which shows anticipated and actual development of added value by sector.

Implementation of the Four-Year Plan, 1970-1973

(in dinars at current prices)

	Growth of GDP		Gross investment (in millions of current dinars)
	In millions of current dinars	% per year	
Agriculture	- 83	- 0.8	4 454
Hydrocarbons	2 858	17.9	7 880
Mining and energy	211	12.2	1 266
Manufacturing industry	1 160	9.5	9 051
Fuel	1 832	21.1	2 776
Secondary sector	6 061	15.7	20 973
Transport and telecomm.	338	9.9	2 663
Other services 1/	4 159	8.9	9 996
Services	4 497	9.4	12 659
Total	10 475	10.8	38 086

1/ Including miscellaneous.

We will note only - by comparison with the table at the end of chapter II and without attempting to make calculations in dinars at constant prices for each sector (since data on price increases are not readily available) - that:

Regarding GDP

The three sectors of construction, hydrocarbons and mining and energy rank first, both in results and in targets;

Agriculture comes last in both cases.

The result is a certain modification of the structure of the gross domestic product which can be summarized as follows:

Share accounted for by the sector in Algerian GDP

	1969		1973	
Agriculture		12%		8%
Industry		37%		51%
Including hydrocarbons	15%		22%	
manufactures	13%		15%	
Services		51%		41%
		100%		100%

Agriculture's share thus decreases very sharply, while the industrial sectors increase.

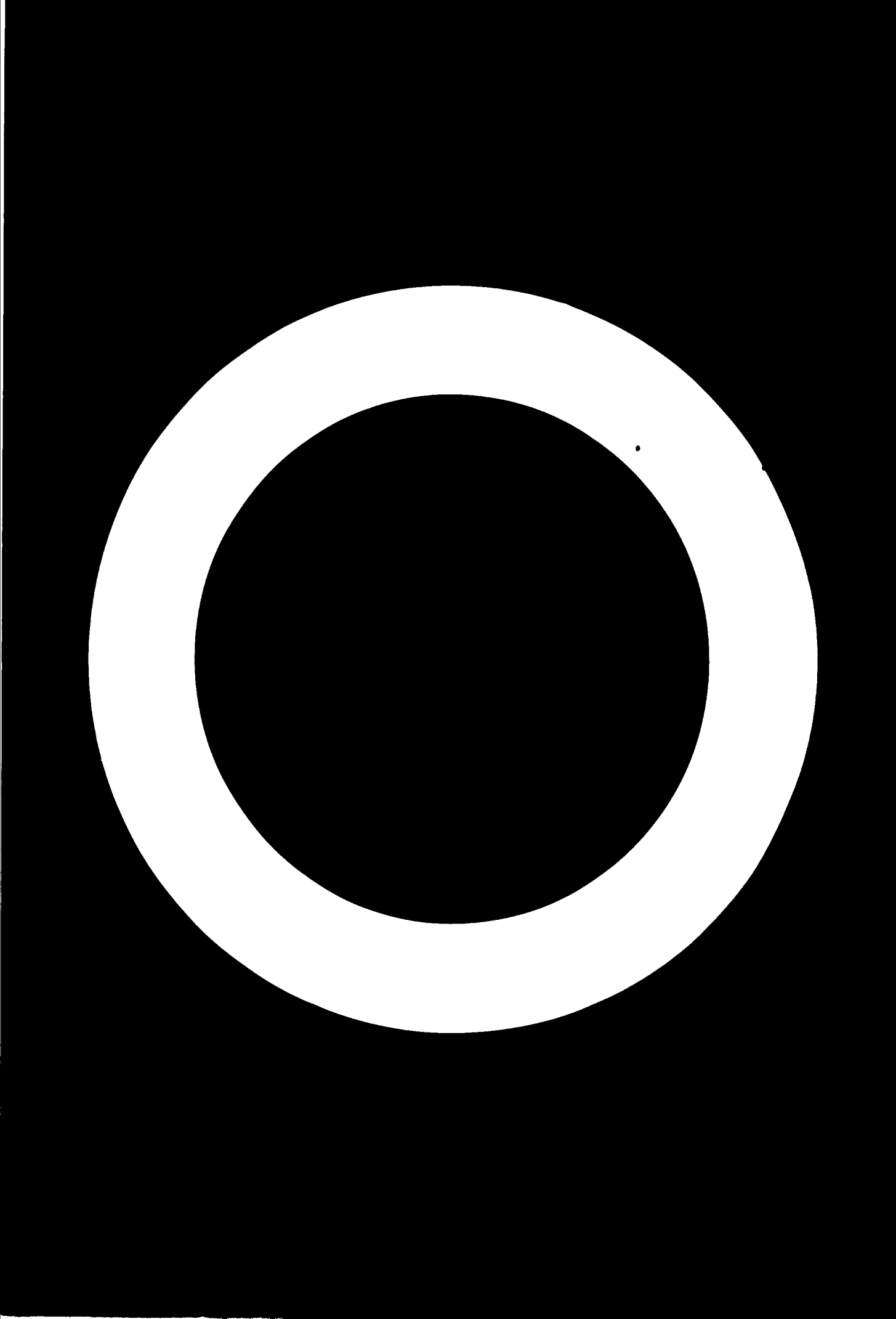
Regarding investment

More than 55 per cent of this was channelled to industry in the broad sense (as against only 45 per cent targeted).

Trends in added value during the First Four-Year Plan

(in millions of 1969 dinars)

	1969		1973		
	Actual (1969 prices)	Targeted growth rate	Targets (1969 prices)	Results (1973 prices)	(%)
Agriculture	2 400	3.0	2 700	2 050	7.6
Crude petroleum and condensate	2 100	15.6	3 300	5 500	
Refined products	400	19.0	800	130	
Natural gas	110	45.5	300	270	
Total hydrocarbons	2 610	16.6	4 600	6 000	22.2
Mining and quarrying	150	19.8	310	130	
Energy	320	4.9	400	410	
Total mining and energy	470		710	540	2.0
Iron and steel	300	25.5	745	100	
Mechanical and electrical eng.				750	
Chemical industry	300	19.4	610	410	
Miscellaneous industries				305	
Building materials	140	14.4	240	350	
Food industries	1 000	6.7	1 290	1 400	
Textiles and leather	300	15.8	540	800	
Total manufacturing ind.	2 040	13.7	3 425	4 115	15.2
Construction	1 020	22.5	2 300	3 420	12.6
Transport	600	5.8	750	1 290	
Services	1 800	3.8	2 100	3 350	
Trade	3 700	4.9	4 500	6 200	
Total services	6 100		7 350	10 840	40.4
TOTAL GDP	14 640	9.0	21 085	26 965	100.0
Excluding hydrocarbons	12 030			20 965	



III. THE 1970-1973 FOUR-YEAR PLAN: INDUSTRIAL SECTORS

A - STRATEGY AND TARGETS

1. As in the case of the Three-Year Plan, but perhaps even more explicitly, the Algerian industrial development strategy is based on the following principles:

As little reliance as possible on foreign capital, in order to achieve GREATER INDEPENDENCE;

Priority development of heavy industry, both to transfer and increase the value of natural resources (petrochemicals, iron and steel), and to provide all sectors of activity with modern equipment (mechanical and electrical engineering industries);

Simultaneous development of light industry, in order to manufacture the mass consumer goods needed to improve the living standards of the population;

Training of workers and citizens;

Lastly, development of SOCIALISM on two fronts:

Social groups (for example, relative or absolute reduction in the power of property owners),

Regional level (more balanced distribution of people and activities).

2. Accordingly, the industrial development policies chosen were the following:

Industry will be essentially financed by Algeria.

Heavy industry will be financed from public funds, since:

It requires substantial investments which the Algerian private sector is unable to supply;

It should not be in the hands of the private sector (socialist policy).

Light industry, on the other hand, can and should be largely financed from private sources.

Since heavy industry requires much more capital investment than light industry, the share of the public sector in development will be predominant and the share of the private sector in "industrial capital" (for example, net fixed assets) will gradually decline.

In the selection of the investment to be made, the long-term strategy of independence and socialism will take priority over purely economic or financial criteria of profitability.

For management in the public sector, the existing NATIONAL COMPANIES are to be strengthened and others established, in order to cover all branches of public industrial activity (including light industry). Each national company must be more or less responsible for all activities in its branch: consequently, the size of these companies is enormous. Moreover, to facilitate the development of production with the help of a satisfactory degree of PROTECTION, these national companies will be given monopoly power over foreign trade.

Lastly, training initiatives will be launched, in particular through a series of so-called institutes of technology responsible for training technical and middle-level personnel.

3. It is against this background that we should view the fundamental objectives:

For investment: the COMPLETE or PARTIAL CONSTRUCTION of a number of plants

For production: the MANUFACTURE of certain products in given quantities to

which should be added the employment targets, important also in the social field.

It should be noted here that Algerian industry can be broken down into:

The public sector

Including national companies (which sometimes carry on commercial activities linked with their monopolistic status);

The private sector

Traditional cottage industries.

The "Plan" basically concerns the public sector: the lack of statistics for traditional cottage industries (very limited in scope) makes it impossible to follow developments in this sector.

(a) Investment targets

The investment targets in the public sector (i.e. investment initiated by the State or in situations where its power of decision plays a determining role) totalled 12,400 thousand million*/ dinars.

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*/ Translator's note: Sic in original; perhaps "12,400 million" is meant.

Planned investment expenditure in industrial sectors

	Four-Year Plan 1970-1973 in thousands*/ of 1969 dinars	%	Three-Year Plan 1967-1969 %
Hydrocarbons	4 573	36.0	50.4
Mining and quarrying	700	6.0	3.6
Energy	735	6.0	4.8
Iron and steel and primary processing	1 900	15.0	22.0
Mechanical and electrical engineering	1 275	11.0	4.0
Chemical industry	512	4.0	1.7
Miscellaneous industries	580	5.0	2.2
Building materials	940	8.0	1.8
Agro-based and food industries	470	3.0	1.6
Textile industry	515	5.0	3.4
Leather industry	60	-	0.6
Cottage industry	140	1.0	0.9
	12 400	100.0	100.0

It will be noted in passing that the development of mineral resources continues to play an important role.

Nevertheless, there is a slight change in structure between the Three-Year and Four-Year Plans:

Hydrocarbons are reduced to 36 per cent (as against 50 per cent)

Iron and steel is reduced to 15 per cent (as against 22 per cent)

On the other hand:

The share of mechanical and electrical engineering is increased from 4.0 per cent to 11.0 per cent;

That of the building materials industries is increased from 1.8 per cent to 8.0 per cent.

Increases in investment expenditure in the other industrial sectors are relatively small.

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*/ Translator's note: Sic in original; perhaps "millions" is meant.

(b) Production targets

Added value in the industrial sectors was expected to increase at an annual rate of:

15.5 per cent for hydrocarbons

13.5 per cent for other sectors

14.5 per cent for all industries (including hydrocarbons).

In fact, anticipated growth rates vary considerably from one sector to another:

Added value for the industrial sectors

(in millions of 1969 dinars)

	Added value 1969	Added value 1973	Annual growth rate
Hydrocarbons	2 610	4 600	15.5%
Broken down into: - Crude petroleum	2 100	3 300	15.6%
- Refined petroleum	400	800	19.0%
- Gas (hydrocarbons)	110	500	45.5%
Mining and quarrying	150	310	19.8%
Energy	320	400	4.9%
Manufacturing industries	2 510	4 135	13.5%
Broken down into: - Iron and steel, metallurgy, mechanical and electrical engineering industries	300	745	25.5%
- Chemicals and miscellaneous	300	610	19.4%
Building materials	140	240	14.4%
Food industries	1 000	1 290	6.7%
Textiles and leather	300	540	15.8%
All industries, including hydrocarbons	5 120	8 735	14.5%

Thus, for example, the annual growth rate set for food industries was only 6.7 per cent, while for engineering and electrical industries it was 25.5 per cent.

It is obvious that the internal structure of industrial production will be modified considerably. On this subject, the Plan has the following to say:

"Apart from the continued dynamism of the production of hydrocarbons, which will consolidate the solvency of the national economy, increasing its foreign currency resources, apart from increased construction as a result of the capital investment programme, the most significant factor in this change will be the expansion of capacities in the manufacturing industries, and specifically the emergence of more or less new branches which will be crucial to the future development of Algeria's industrialization.

"Production in the iron and steel, metallurgical and mechanical engineering sectors forms the basis for the development of manufacturing industry. The average growth rate of production in these sectors will be more than 25 per cent from one year to the next; this rate of output will be largely due to the impact of projects launched during the Three-Year Plan and in particular to the entry into operation of new projects at the end of the Four-Year Plan:

"430,000 tonnes of steel will produce a significant change in the structure of metallurgy and engineering;

"516,000 tonnes of rolled products, 65,000 tonnes of frames and 30,000 tonnes of hollow ware will permit the large-scale development of the mechanical engineering industries, which can satisfy the equipment requirements of the agricultural sector and the needs of the construction industry.

"The processing of hydrocarbons will find expression in the production of 180,000 tonnes of ammonia, 170,000 tonnes of nitrogenous fertilisers, 182,000 tonnes of phosphate fertilizers and 700,000 tonnes of multinutrient fertilizers which will facilitate intensified agricultural production and contribute to the objective of expanding the country's accumulation capacity.

"The programme for the production of building materials will increase the added value of the branch by 71 per cent during the period: this will, at the same time, make it possible by the end of the Plan to overcome the existing shortage of these products and to bring capacities to a level matching the accelerated development of construction after the four-year period.

"The production of cement will increase from the present 950,000 tonnes to more than 2 million tonnes by the end of the Plan, and the production of bricks from 480,000 to 700,000 tonnes.

"Electricity production capacity will more than double by 1973, representing, in addition to an adaptation to the needs resulting from economic growth and private consumption, a modernization of the electrical infrastructure in line with the anticipated rate of development beyond the period.

"The other consumer-oriented manufacturing industries, namely textile and leather industries and food industries, which in general increased their output substantially during the Three-Year Plan, should during the Four-Year Plan increase production to cover a wider range of needs and in particular respond adequately to the requirements of the rural population. Thus, the production of fabrics will be increased by 80 per cent from 60 million to 110 million square metres.

"The production of footwear will increase to 21 million pairs in 1973, as against 11 million pairs at present; efforts will have to be made to increase foreign sales considerably.

"Capacities for the processing of food products for mass consumption (cereal derivatives, oils and fats, canned fruit and vegetables) must be fully utilized in line with increased demand for these products. These major products of the processing industry, which play a determining role in the growth of this sector, should, during the Plan, be accorded particular attention by the various enterprises and senior economic planning officials.

As a rough guide, some production targets are given in the following table:

Major production targets - industrial products

Products	Unit	1969	1973
Crude petroleum	10^6 tonnes	45.6	65.0
Natural gas (including reinjection)	10^9 m3	3.7	7.8
Electricity	10^6 kWh	1 500	2 800
Steel production	10^3 tonnes	-	430
Frames	10^3 tonnes	23.2	65
Hollow ware	10^3 tonnes	11	34
Tractors (caterpillar)	units	-	2 500
Compound fertilizers	10^3 tonnes	120	1 200
Cement	10^3 tonnes	950	1 900
Bricks	10^3 tonnes	475	700
Paper and cardboard	10^3 tonnes	48	104
Fabrics	10^6 m^2	58.4	109
Leather footwear	10^6 pairs	9.0	19
Flours and semolina (industrial products)	10^3 tonnes	769.6	1 150
Refined oils	10^3 tonnes	72.4	86.9
Canned fruit and vegetables	10^3 tonnes	82	55

(c) Employment targets

On the basis of the corresponding table in chapter II, the employment targets for the industrial sectors can easily be obtained.

	1969 situation	1973 target	Average annual rate
Hydrocarbons	7 500	10 450	+ 9.8%
Mining and quarrying	10 500	14 000	+ 8.4%
Energy	5 500	7 300	+ 7.2%
Manufacturing industry	112 000	178 850	+12.6%
Total (including hydrocarbons)	135 500	210 600	+11.7%
Excluding hydrocarbons	128 000	200 150	+11.8%

Since the growth rate of employment was to be slightly lower than the desired growth rate of added value (11.8 per cent compared with 14.5 per cent), the average productivity of labour in industry would have to increase by around 2 to 3 per cent a year.

4. The Four-Year Plan also provides for the installation of industrial units throughout Algeria with a view to "decongesting" the Algiers region.

Examples:

For iron and steel: Annaba area

For the petrochemical industry: Skikda and Arzew areas

For mechanical engineering: Annaba-Constantine areas Oran-Sidi Bel Abbes areas

Establishment of "poles" in the interior of the country

B - COMPARISON OF TARGETS AND RESULTS

1. The structural modification of Algerian industry, with greater emphasis on nationalism and socialism, has been achieved almost entirely.

To illustrate this, we can follow the development of the share of the public sector in net fixed assets, production and employment for the industrial sectors as a whole:

Share of the public sector

	Net fixed assets		Production (added value)		Employment	
	1969	1973	1969	1973	1969	1973
Total, industry ..... (including hydrocarbons)	61	86	40	75	55	67
Hydrocarbons	40	81	29	79	42	87
Total, industry ..... (excluding hydrocarbons)	79	89	59	68	57	64

In all these cases, the share of the public sector has increased substantially and it can now be stated that:

In the case of fixed capital investment, the private sector (national and foreign) accounts for only about 10 per cent in industry proper (excluding hydrocarbons);

In the case of production, the private sector accounts for approximately 30 per cent within industry proper;

In the case of employment, the private sector accounts for approximately 35 per cent within industry proper.

Thus, the private sector (national and foreign) retains only limited "capital", since it is essentially concerned with light industry; on the other hand, its share in production and employment is somewhat higher.

This situation is due to two series of factors:

The nationalization of a number of existing enterprises and their automatic transfer from the private to the public sector;

The intensive development of activities in the public sector (particularly through the large investment programme provided for) and the stagnation of the private sector.

Algerian industry is thus essentially in the hands of the "Algerian State"

The national industrial companies account for the bulk of the Algerian public sector (systematic absorption of units still under workers' management). As a rough guide, their share of production was:

	1969	1973
All industry (including hydrocarbons)	39%	73%
	(Compared with 40 per cent public sector total)	(Compared with 75 per cent public sector total)

The form of management of these companies was set forth in the "Charter of Socialist Enterprises" (1971) which has become the basic code for the socialist sector as a whole, industrial and otherwise.

2. Investment expenditure in the industrial sectors during the period 1970-1973 can be estimated at some 22,000 million dinars at current prices, broken down as follows:

	Millions of dinars
Public sector: net fixed assets	20,000
renewal	500
Private sector: gross	1,500
	22,000

Net investment in the public industrial sector during the first Four-Year Plan

(in millions of dinars at current prices)

	Results (1970-73) (1)	%	Target set (1970-73) (2)	%	Rate of fulfilment (1/2) %
1. Hydrocarbons	9 052	45.0	4 573	36.0	198
2. Mining and quarrying	708	3.6	700	6	101
3. Energy	1 380	6.8	735	6	187
4. Manufacturing industry	8 860	44.0	6 252	51	141
Iron and steel	3 118	15.4	1 900	15	164
Mechanical and electrical eng.	1 821	9.1	1 275	11	142
Chemical industry	937	4.6	512	4	183
Wood, paper, miscellaneous	741	3.8	580	5	127
Building materials	1 175	5.9	940	8	125
Food industry	651	3.2	470	3	138
Textiles	352	1.7	515	5	68
Leather	65	0.3	60	-	108
5. Cottage industry and miscellaneous light industries	100	0.5	140	1	71
6. General studies, ME	24	0.1	-	-	
7. Total	20 124	100.0	12 400	100.0	162.3

In the private sector, of the 1,500 million dinars of gross investment 1,000 million went to petroleum and 500 million to the industrial sectors proper. The figure for the latter sectors is below the target set (800 million) and also below the figure reached by the private sector during the period of the 1967-1969 Three-Year Plan.

In the public sectors, the index for net investment expenditure in dinars at current prices in relation to the targets is 162. Expenditure is therefore much higher than anticipated. Even allowing for price increases during the Plan (the targets having been set in 1969 dinars), investment expenditure is at least 20 per cent higher than the targets.

Expenditure in the public sector is financed basically by "temporary aid", i.e. reimbursable loans (as against grants).

This gives the following:

Financing of public industrial investment

(net in dinars at current prices)

Grants		950
"Temporary" credit		18 845
Domestic credit	18 815	
Foreign credit	6 030	
Other		343
		20 138

The following table shows by industrial sector the investment made, the objectives set and the corresponding rate of fulfilment. These figures vary very widely, since we have:

198 per cent for hydrocarbons
187 per cent for energy
183 per cent for the chemical industry
164 per cent for iron and steel

and only:

68 per cent for textiles
108 per cent for leather.

As a rough indication, and without vouching for its accuracy, below is given an estimate in constant 1969 dinars of average annual investment expenditure, planned and actual, during the Four-Year Plan: results are approximately 20 per cent higher than objectives. It can be seen very clearly that in the manufacturing industries heavy industry (total 1) spent 1.23 times the objectives, while light industry (total 2) spent only 0.78 of objectives.

The results of the Three-Year Plan (still in 1969 dinars) have been placed in the right-hand column: actual expenditure during the Four-Year Plan was thus 2.7 times expenditure under the Three-Year Plan.

It should none the less be noted that "investment expenditure" is not synonymous with actual physical installation.

Investment expenditure for the planning periods

(average annual)

(in millions of 1969 dinars)

	Four-Year Plan (1970-73)			Three-Year Plan (1967-69)
	Result (1)	Target (2)	Fulfilment rate (1/2)	
1. Mining and quarrying	146	175	0.83	58
2. Energy	323	184	1.76	58
3. Manufacturing industries	1 811	1 578	1.15	738
Iron and steel, metallurgical and mechanical and electrical engineering industries (ISMMEE)	1 028	776	1.32	499
Chemicals and miscellaneous	333	271	1.23	128
Building materials	220	235	0.94	11
Total 1	1 581	1 282	1.23	638
Food industry	137	118	1.17	40
Textiles and leathers	81	144	0.56	58
Total 2	230	296	0.78	98
All industry	2 379	1 937	1.18	852

3. The investment expenditure increased Algerian "productive capital".

In the documentation available, this concept of "productive capital" is presented in the form of "net fixed assets". In current prices, these "net fixed assets" increased very substantially - by a factor of approximately 2.5 - between 1969 and 1973 (all industries, including hydrocarbons).

The following table shows for indicative purposes, the movements in net fixed assets in the various sectors.

Net fixed assets during the Four-Year Plan 1970-1973
All industrial activities: public sector + private sector
(in millions of dinars at current prices)

	1969			1973		
	Public	Private	Total	Public	Private	Total
1. Hydrocarbons	2 263	3 350	5 613	9 092	2 000	11 092
2. Mining and quarrying	192	-	192	1 030	-	1 030
3. Energy	1 958	-	1 958	3 119	-	3 119
4. Total manufacturing industries	1 720	1 077	2 797	8 445	1 504	9 949
Iron and steel	337	-	337	2 548	-	2 548
Mechanical and electrical */ engineering	170	110	280	1 500	200	1 700
Chemicals	455	82	537	1 140	140	1 280
Wood, paper, etc.	37	75	112	619	94	713
Building materials	170	110	280	1 195	200	1 395
Food industry	207	240	447	814	270	1 084
Textiles	275	240	515	436	340	776
Leather	69	220	289	193	260	453
5. All industry (excluding hydrocarbons)	6 132	4 427	10 559	21 685	3 505	25 190
6. All industry (excluding hydrocarbons)	3 869	1 077	4 946	12 593	1 505	14 098
7. Percentages of the total including hydrocarbons	61.0	39.0	100.0	86.0	14.0	100.0
Percentages of the total excluding hydrocarbons	78.7	21.3	100.0	89.0	11.0	100.0

*/ Translator's note: The original gives the abbreviation "metal". instead of "mechanical", but this is probably an error.

4. While the comparison between actual and targeted capital investment expenditure gives very satisfactory results, this is much less true of the comparison between actual and targeted production (added value).

To summarise - and in constant prices - the results would be, according to internal, unpublished documents:

For hydrocarbons, a rate of growth of production equal to roughly 8 per cent, or approximately half the planned growth rate.

Value added dinars (at current prices) increasing by 115 per cent, with a price increase of approximately 60 per cent between 1969 and 1973.

Excluding hydrocarbons, a production growth rate equal to roughly 6 per cent, i.e. also half the planned growth rate.

The following table (source: IBRD) gives actual and planned growth rates sector by sector; the results of the Three-Year Plan are given in the right-hand column.

For the sector excluding hydrocarbons, the growth rates achieved during the First Four-Year Plan fell short, in practically all cases, of the targets set, and even of the results of the Three-Year Plan.

Average annual growth rate of industrial added value

(constant 1969 prices)

	Four-Year Plan (1970-73)		Three-Year Plan (1967-69)
	Result	Target	Result
1. Mining and quarrying	10.3	19.4	23.7
2. Energy 1/	9.1	4.9	6.6
3. Manufacturing industry	7.2	15.6	13.5
[illegible]	6.6	25.5	27.8
Chemicals and miscellaneous	12.3	19.5	15.2
Building materials	4.4	14.0	8.2
Total 1	8.8	23.2	16.3
Food industry	7.2	6.5	6.7
Textiles and leather	1.0	15.8	15.1
Total 2	5.8	7.6	9.2

1/ Except hydrocarbons.

The growth of added value in the various industrial sectors between 1969 and 1973 in dinars at current prices is shown in the following table.

Trends in physical production for the major industrial products are shown in annex A.

Added value during the Four-Year Plan 1970-1973

All industrial activities: Public sector excluding monopoly trade 1/ + private sector

(in millions of dinars at current prices)

Sector	1969			1973		
	Public	Private	Sum	Public	Private	Sum
1. Hydrocarbons	1 215	3 016	4 231	6 860	1 896	8 756
2. Mining and quarrying	93	-	93	127	-	127
3. Energy	236	-	236	385	-	385
4. Total man. industries	1 313	1 132	2 445	2 647	1 454	4 131
Iron and steel	80	-	80	280	-	280
Mech. and el. eng.	140	170	310	595	200	795
Chemicals	84	160	244	217	200	417
Wood, paper, misc.	48	85	133	149	100	249
Building materials	164	60	224	190	95	285
Food industry	624	300	924	958	350	1 308
Textiles	136	281	417	209	430	639
Leather	37	76	113	49	109	158
5. All industry (including hydrocarbons)	2 859	4 147	7 006	10 018	3 380	13 399
6. All industry (excluding hydrocarbons)	1 644	1 130	2 774	3 158	1 484	4 643
7. Percentages of the total:						
Including hydrocarbons	40.2	59.8	100.0	75.0	25.0	100.0
Excluding hydrocarbons	59.3	40.7	100.0	68.3	31.7	100.0

1/ That is to say, production activities only.

5. Employment increased sharply during the Four-Year Plan 1970-1973:

Employment in hydrocarbons	+ 23,500
Employment in other sectors	+ 53,500
Total employment	+ 77,000

Some of these additional jobs (approximately 12,000) were created by the commercial activities of the national companies (monopolies); industrial employment proper generated during the plan would therefore be approximately 65,000, consisting of 20,000 for hydrocarbons and 45,000 for industry in the strict sense.

It would appear that the results achieved fell slightly short of the targets set (75,000 jobs, including 10,000 in cottage industries and 65,000 in industrial sectors proper).

The following table shows actual and targeted employment figures (average annual).

The comparison with the Three-Year Plan (last column) shows that, over a period of more than seven years, Algerian industry (excluding hydrocarbons) provided an average of 10,000-15,000 new jobs each year.

Average annual increase in employment during the planning periods

	Four-Year Plan (1970-73)			Three-Year Plan (1967-69)
	Result	Target	Fulfilment rate	Result
1. Mining and quarrying	1 200	1 000	1.20	989
2. Energy	267	280	0.95	367
3. Manufacturing industry	11 283	14 341	0.79	12 406
[illegible]	3 939	4 933	0.80	2 278
Chemicals and miscellaneous	329	3 250	0.10	1 333
Building materials	1 669	957	1.75	179
Total 1	5 936	9 134	0.65	3 790
Food industry	1 473	1 334	1.08	2 486
Textiles and leather	3 359	3 872	0.87	5 684
Total 2	5 347	5 206	1.03	8 616
All industry	12 750	15 698	0.81	13 762
	x 4 years			x 3 years
	51 000	62 792		41 286

As a result of the regional planning policy pursued, most of the new industrial jobs created were outside the Algiers area: by 1973, only 40 per cent of industrial employment was in the Algiers wilaya.

It would appear therefore that from the employment point of view - and bearing in mind the development strategy adopted - the results obtained were satisfactory.

Nevertheless, the shortage*/ of qualified supervisory personnel led to a substantial influx of foreigners: in 1973, there were more than 3,000 foreigners employed in industry, half of them in SONATRACH (hydrocarbons, petrochemicals).

The following table shows the growth of industrial employment in the various sectors between 1969 and 1973.

---

*/ Translator's note: The original is obscure here; the word used in the original means "average", but this is probably a typing error.

Employment during the Three-Year Plan 1970-73

All industrial activities: public + private sector

(1 000 workers)

Sector	1969			1973		
	Public	Private	Total	Public	Private	Total
1. Hydrocarbons	7.0	9.5	16.5	34.8	5.0	39.8
2. Mining and quarrying	12.7	-	12.7	12.8	-	12.8
3. Energy	4.8	-	4.8	6.5	-	6.5
4. Manufacturing industry	56.9	55.8	112.7	96.5	67.8	164.3
Iron and steel	6.1	-	6.1	13.9	-	13.9
Mech. and el. eng.	8.7	10.3	19.0	22.3	12.0	34.3
Chemical industry	3.5	4.3	7.8	5.4	6.0	11.4
Wood, paper, misc.	5.0	11.8	16.8	7.6	11.5	19.1
Building materials	7.0	1.9	8.9	13.3	3.0	16.3
Food industry	14.6	9.5	24.1	19.2	10.8	30.0
Textiles	9.6	14.7	24.3	12.0	20.0	32.0
Leather	2.4	3.3	5.7	2.8	4.5	7.3
5. All industry (including hydrocarbons)	81.5	65.2	146.7	150.6	72.8	223.4
6. All industry (excluding hydrocarbons)	74.5	55.7	130.2	115.8	67.8	183.6
7. Percentages of the total:						
Including hydrocarbons	55.4	44.6	100.0	67.5	32.5	100.0
Excluding hydrocarbons	57.2	46.8	100.0	63.8	36.2	100.0

C - INTERPRETATION OF DIVERGENCIES

1. It is apparent that there are substantial discrepancies between results and targets, for both investment expenditure and production, throughout the Four-Year Plan:

Investment expenditure:	Results exceeding objectives (in dinars at current prices) (in 1969 dinars)
Production:	Results falling short of objectives

and in a negative sense:

More was spent on investment than planned
Less was produced than planned

Since, however, capital investment expenditure does not necessarily correspond to the completion of physical facilities, the first statement can well be replaced by a question: Whereas investment expenditure exceeded the forecasts, does the installation of physical facilities correspond to the objectives set?

The major causes of the relevant divergencies will be examined rapidly here.

As far as employment is concerned, results, while not fully corresponding to objectives, are satisfactory; this aspect will therefore be referred to only very briefly hereafter.

2. <u>The fact that, in unitary terms, investment expenditure exceeded original targets can be attributed in part to the fact that these targets were underestimated and subsequently had to be revised.</u>

In other words, at the outset of the Plan, which provided for investment expenditure totalling 12,400 million 1969 dinars for industry, there was an INVESTMENT PROGRAMME totalling 26,000 million 1969 dinars broken down as follows:

14,000 = projects carried over from the Three-Year Plan 1967-1969
6,400 = new "normal" projects
5,600 = new "conditional" projects
26,000

The "conditional" (as opposed to "normal") projects were projects whose implementation was subject to further consideration by the Government, having regard to developments with respect to the availability of resources and other relevant factors.

During the Plan, there was an upward revision of the expenditure estimates for these programmes, as follows (in thousands of millions of dinars):

	Cost revisions	Cost at end of 1973
Projects carried over from the Three-Year Plan	+ 4.5	18.5
"Normal" projects	+ 7.1	13.5
"Conditional" projects	+ 8.4	14.0
	+20.0	46.0

or an increase of 77 per cent over the original forecasts.

The reasons for these cost revisions can be sought in several areas:

Firstly, price increases for imports (equipment) and within the country itself (construction):

Example: because of the shortage of building materials, construction costs rose very sharply from 800-900 dinars/m^2 in 1969 to 1,800-2,000 dinars/m^2 in 1973.

Also, errors at the stage of project design or execution.

Examples of errors in design:

Initial under estimation of investment, whether intentional or otherwise;

Neglect of certain cost components (technical assistance, etc.);

Introduction of additional infrastructure investment (water supply, schools, housing);

Modification of the project itself (extension, technological revision);

Examples of errors in execution:

No cost monitoring;

Recurring delays in most projects, on average 16-20 months, but in some cases more than three years, meaning wasted funds.

These mistakes are common knowledge and many examples of them can be provided.

3. The increases in investment expenditure over original estimates can also be attributed to the introduction of new public investment PROGRAMMES during the period.

Thus, two new series of projects were introduced:

The special wilaya programmes (intended to develop certain wilayas which had been largely unaffected by the original projects).

Projects added during the annual plans (and not originally envisaged).

In all, therefore, taking the cost revisions into account, the total investment programme continued or initiated by the Four-Year Plan totalled, for the industrial sector, 54,000 million dinars, or more than double the original programme.

Development of industrial investment programmes during the First Four-Year Plan

(in thousands of millions of dinars at current prices)

	Anticipated cost (1969 dinars)	Cost at end of 1973	Increase in expenditure
Projects carried over from the Three-Year Plan	14	18.5	+ 4.5
Normal projects	6.4	13.5	+ 7.1
Conditional projects	5.6	14.0	+ 8.4
Special wilaya programmes	-	4.4	+ 4.4
Projects added during annual plans	-	3.6	+ 3.6
Total	26.0	54.0	+ 28.0

4. But there is a French proverb which says that "he who embraces too much has difficulty in holding all".

Doubtless too much was taken on in the investment field, and in practice not all the projects planned were started up, and not all the projects started up were completed.

It was not possible to "start up"[1/] all the projects planned due to inadequate study, resources and organization;

1/ To "start up" means to begin work on a project (even very modestly): for example, to sign a contract, or *a fortiori* to set out a site.

In the case of some of the projects "started up", actual construction work was not begun (fortunately these are few in number);

A number of projects on which construction work was begun were not completed during the Plan and their implementation was deferred until after 1973;

Only the projects completed during the Plan contributed to increased production, which was therefore smaller than provided for.

An optimistic note, however: because of the large number of projects on which construction work was started, and despite delays in their implementation, the gap between actual achievements and objectives does not after all appear to be substantial: in reality, many sites, although not completed, were well advanced.

It is these various considerations which will be examined here.

5. It was not possible to "start up" all the "projects" provided for in the investment programme

The total number of projects "started up" at the end of 1973 was 448 (278 for large-scale industry and 170 for small-scale and medium-scale industry and cottage industries)

A large-scale industry project requires an average of from 100 million to 200 million dinars of capital investment

A project for small or medium-scale industry (local expenditure) or cottage industry requires from one million to 2 million dinars of capital investment

In other words, only the large-scale industry projects are of economic and financial significance:

	Total	Large-scale industry	Cottage industry and small-scale and medium-scale industry
Projects contained in the revised programme	578	380	198
Projects already started up at the beginning of 1970	20	80	50
Projects started up from 1970 to 1973	318	198	120
Total projects started up by the end of 1973	448	278	170
Projects not started up by the end of 1973	130	102	28

[illegible] projects to be "started up" (out of which [illegible], representing approximately 15,000 million dinars, amounting an average investment of 150 million dinars for a [illegible] project).

The value of the projects "started up" by the end of 1970 will thus be [illegible].

At the beginning of the Plan, practically all the "projects" carried over from [illegible] "started up"; later, other projects belonging to [illegible] gradually "started up". The situation at the [illegible]:

	(as % of the total number of projects started up)	
Projects [illegible]	1.1	
Projects [illegible]	26.0	
Total projects [illegible]	58.9	100
Outstanding projects	14.0	
Programme total	54.0	100

6. The [illegible] certainly scholarly although they correspond approximately to the projects "started up". But - [illegible] - the rules of the construction industry [illegible], for the most part, the starting of [illegible].

The table below contains, broken by sector, projects started up and projects completed.

Thus, of the projects "started up" (or under construction), only 120 were completed [illegible] (30 in large-scale industry and 30 others).

	Total	Large-scale industry	Cottage industry and small-scale and medium-scale industry
Construction sites in existence at the beginning of 1970	(314)	(80)	(43)
Sites where work was begun during 1970-1975	345	208	137
Projects on site on 31 December 1970	120	60	30
Projects under construction at the end of 1970	([illegible])	(208)	(130)

( ) [illegible]

7. Nevertheless, the fact that during the Plan construction was begun on almost as many plants as planned, even if they were not completed, automatically involved a penditure of almost the same order as that provided for.

Industrial projects "started up" and completed
Four-Year Plan 1974-77

	Total "started up" by the end of 1973		Completed	
	Number	Cost (in thousands of dinars)	Number	Cost (in thousands of dinars)
Hydrocarbons	29	16 512	15	6 850
Mining and quarrying	17	1 492	7	240
Electricity	14	1 466	11	1 000
Manufacturing industry				
Iron and steel	16	5 202	6	1 080
Mechanical and electrical engineering	42	4 124	14	1 080
Chemical industry	18	3 165	11	1 200
Wood, paper, miscellaneous	24	1 575	4	78
Building materials	46	2 657	11	298
Food industry	57	1 291	7	100
Textile industry	12	1 129	2	67
Leather industry	9	139	2	28
General studies	1	70	-	-
Total large-scale industry	278	38 821	90	11 861
Cottage industry and local expenditure	170	260	30	38
Grand total	448	39 081	120	11 899

In fact, outgoings are analysed as follows, on the basis of "authorizations" of 39,500 million dinars granted for all the projects started up by the end of 1973:

	(Thousands of millions of dinars)	
Total projects started up by the end of 1973	39.1	100%
Implemented as of 31 December 1969	3.6	
Implemented during the Plan 1970-73	20.1	51%
Outstanding	15.4	

It is this amount of 20,100 million dinars which constitutes actual investment expenditure during the 1970-1973 Four-Year Plan (cf. above).

This expenditure represents in value 51 per cent of the projects "started up", which themselves account for only 72 per cent of the programmes: this appears to be a low figure.

However, if one considers the expenditure of 12.4 thousand million provided for under the original programme and allows for cost revision (at the rate 46.0/26.0 = 1.77, 46.0 corresponding to expenditures of 26.0 after cost revision, cf. table below):*/

12.4 thousand million revised = 22.0 thousand million dinars

it becomes clear that - as a first approximation and assuming that the coefficient of cost revision over against the original programme is correct - results in value represent somewhat more than 90 per cent of the original programme as revised.

Clearly, such an affirmation would require detailed analysis. If it were true, the following (very approximate) table could be drawn up to explain the discrepancy between results and targets for industrial capital investment expenditure.

---

*/ Translator's note: Sic in the original; should perhaps read "table above".

Target	100%
"Physical" implementation	90 to 100%
Errors of design or implementation	20 to 30%
Price movements	30 to 40%
Implementation in value	160%

8. To conclude the question of investment, it can be said that a large number of projects were in fact "started up" during the Plan; this inevitably entailed certain difficulties (organizational problems; problems of supplying sites with, in particular, building materials; financial problems).

It may be added that a TURN-KEY procedure was recommended in order to facilitate the implementation of these projects.

But of the projects "started up", only 120, representing an investment of 11,900 million dinars, came into operation during the Plan; all the rest were to come into service after 1973.

It emerges from this time lag, which is a normal phenomenon, but was longer in Algeria owing to the delays encountered (see above), between the time of "starting up" projects and their entry into operation, that:

> The 1970-1973 Four-Year Plan was primarily characterized by investment expenditure, since the impact of investment on production did not yet make itself felt.
>
> It could thus be said that the growth in production during the First Four-Year Plan was predominantly (more than 80 per cent) due to industries already in existence at the beginning of the Plan, the role of plants brought into operation during the Plan being very small.
>
> On the other hand, plans after 1973 should see a significant increase in production generated by projects "started up" under the First Four-Year Plan and coming into operation after the end of 1973.

The delays in the implementation of capital investment are therefore largely responsible for the low rate of growth of production. The reasons for these delays are manifold but could easily be identified in the following areas:

Shortage of supervisory personnel and skilled staff;

Over-optimistic forecasting in the implementation time-table;

Difficulties of organization of every sort (administrative and customs problems, etc.);

Breakdowns in supplies (for example, in the case of cement);

Problems arising from technical interdependence among plants, meaning that delays in one project affected the implementation of others, etc.

These delays led to waste and, where material and equipment were purchased from abroad, to substantial rises in costs, under the twofold influence of world price increases and interest payable in the interim (commodity credits for 1972).

9. It would be impossible to examine here in detail the divergencies between production targets and results on a sector by sector basis (cf. annex A).

Nevertheless, attention can be drawn to the following:

(a) In the case of cement, a considerable divergence both in implementation (delay in putting plants into operation) and in production targets (incorrect consumption forecasting).

Cement - First Four-Year Plan (in thousands of tonnes)

	1970	1973
Production:		
Forecast	950	1 900
Actual	924	1 020
Consumption:		
Forecast	1 350	1 800
Actual	1 468	3 050
Imports:		
Forecast	400	-
Actual	540	2 030
Exports:		
Forecast	-	100
Actual	-	-

Imports for 1973 were expected to be nil, and indeed it was planned to export 100,000 tonnes; in fact imports totalled more than 2 million tonnes.

This erroneous forecasting of consumption, together with delays in the construction of cement plants, was not only very costly (in foreign currency), but led to delays in the construction of other plants.

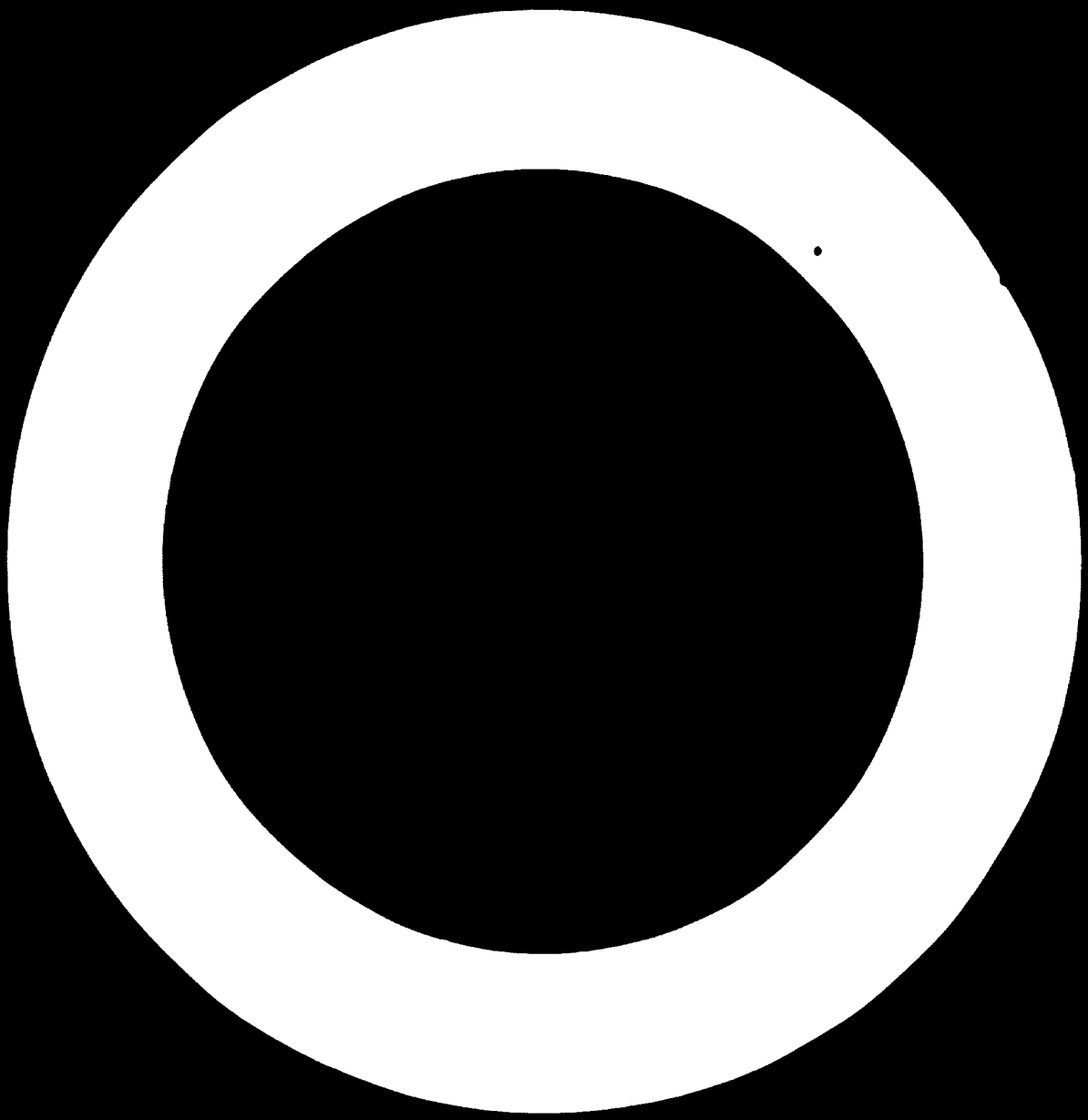
(b) In the case of textiles and leather, largely in the private sector, there was a real stagnation of production, for a variety of reasons.

10. The employment situation was as follows:

Development of industrial employment during the First Four-Year Plan

	1969	1973	1973-1969
Public sector			
National companies	75 000	146 000	+ 71 000
Other public enterprises	6 400	4 600	- 1 800
	81 400	150 600	+ 69 200
Private sector			
(including mixed enterprises)	65 300	73 100	+ 7 800
	146 700	223 700	+ 77 000

The sharp increase in the public sector is due, in the case of more than 10,000 workers, to transfers (nationalization, buying up from the private sector; the reduction in "other public enterprises" is due to the absorption of enterprises under workers' management by the national companies.



IV. THE 1974-1977 FOUR-YEAR PLAN

A - THE INITIAL LEAP FORWARD

1. The reference price for petroleum increased slightly during the period 1970-1973, but in October 1973 there was a considerable increase, and the price nearly trebled.

Reference price for petroleum:

January 1971:	$2.70/barrel
March 1971:	$3.60/barrel
Average 1972:	$3.80/barrel
October 1973:	$9.25/barrel

Value added derived from hydrocarbons increased automatically as a result of this increase (constant production) from some 6,000 million 1973 Algerian dinars to approximately 21,600 million 1973 Algerian dinars.

Admittedly, petroleum receipts did not increase overnight: contracts were still in effect with the old prices, "bullying" was to be avoided, etc. There was a time lag, so that repercussions became apparent, for the most part, as from 1974.

But from 1973 onwards, it could already be said that "potentially" hydrocarbons contributed value added of 21,600 million 1973 Algerian dinars.

2. Consequently, Algerian "potential" domestic production was no longer what it had been, namely 27,000 million Algerian dinars; as the result of the increase in petroleum prices alone, it rose as follows:

27.0 + (21.6 - 6.0) = 42,600 million 1973 Algerian dinars
(October 1973 petroleum prices).

In other words, it increased by nearly 60 per cent without any new capital investment, without additional labour, without a productivity drive: through a mere decision by a group of producer States.

If we take the actual growth rate of 6 per cent obtained during the First Four-Year Plan for 1970-1973 as a realistic average for Algerian development, it can be seen OPEC's decision put Algeria forward by eight years, i.e. by TWO FOUR-YEAR PLANS.

3. In these circumstances, it seemed essential to construct the 1974-1977 Four-Year Plan on a new basis.

In that context, the increases in petroleum prices was taken fully into account; a "fictitious" but "potential" situation in Algeria in 1973 was postulated, acting on the assumption that Algeria had sold all its petroleum at the prices prevailing at the end of 1973. Agricultural production was also slightly adjusted to take into account the fact that the agricultural campaign launched in 1972-1973 was not entirely successful. Otherwise nothing was changed.

Actual results in 1973 and those calculated on the new 1973 base are compared in the following table.

It can be seen that:

Hydrocarbons account for half of gross domestic production;
Agriculture now accounts for only 6.4 per cent of gross domestic production;
Industry (including mining and quarrying, plus energy) represents 10 per cent;
Construction represents 8 per cent;
Services represent 25 per cent.

This shows that hydrocarbons play a major role.

The leap forward in gross domestic production, 1973

(following the increase in petroleum prices)

Sectors	1973 actual (1973 prices)		1973 revised (prices at end 1973)	
		%		%
Agriculture	2 050	7.6	2 760	6.4
Crude petroleum and condensate . . .	5 500			
Refined products	130			
Natural gas	270			
Total hydrocarbons	6 000	22.2	21 600	50.0
Mining and quarrying	130		130	
Energy	410		410	
Total mining and quarrying, plus energy	540	2.0	540	1.2
Iron and steel	100		100	
Mechanical and electrical engineering	750		750	
Chemicals	410		410	
Miscellaneous industries	305		305	
Building materials	350		350	
Food industry	1 400		1 400	
Textiles and leather	800		800	
Total manufacturing industries . .	4 115	15.2	4 115	9.5
Construction	3 420	12.6	3 420	7.9
Transport	1 290		1 290	
Services	3 350		3 350	
Commerce	6 200		6 200	
Total services	10 840	40.4	10 840	25.0
Total GDP	26 965	100.0	43,265	100.0
Total, excluding hydrocarbons	20 965		21 665	

B.- ALL SECTORS

1. Following the leap forward of Algerian gross domestic production at the end of 1973, the 1974-1977 Four-Year Plan was bound to be much more ambitious than the 1970-1973 Four-Year Plan; it was possible to make considerable funds available, permitting investments inconceivable several years earlier.

Moreover, since the Plan had been prepared before the increase in petroleum prices, a substantial upward revision of targets was essential at the end of 1973 and the beginning of 1974 to take the new situation into account: the decree containing the Second Four-Year Plan for 1974-1977 is dated only 24 June 1974. Moreover, article 1 states:

"In the light of the long-term prospects of the national economy, the lessons learned from the implementation of earlier post-independence plans, and an analysis of the new conditions prevailing on the international scene, a plan for the economic and social development of the Democratic People's Republic of Algeria, the Second Four-Year Plan, is adopted for the years 1974-1977".

2. Article 2 of this decree explains very clearly the objectives pursued, which are unchanged:

"The Second Four-Year Plan aims to strengthen economic independence and to build a socialist economy through the rapid expansion of production and the intensive spread of development throughout the national territory".

National independence, socialism, the growth of production and also the desire for more balanced geographical distribution are reiterated here.

3. Specifically, capital investment expenditure planned for the four-year period totals 110,000 million 1973 Algerian dinars.

Capital investment expenditure provided for in the 1974-1977 Four-Year Plan

Sectors	Investment	
	millions 1973 Algerian dinars	%
Hydraulic engineering	4 600	4.2
Agriculture	12 005	10.9
Industry	48 000	43.5
Tourism	1 500	1.4
Fisheries	155	0.1
Economic infrastructure	15 521	14.0
Education and training	9 947	9.0
Social	14 610	13.?
Administrative infrastructure	1 399	1.3
Studies - miscellaneous - contingencies	2 520	2.3
Total	110 217	100.0

The respective priority assigned to productive sectors, i.e. industry + agriculture + hydraulic engineering + tourism + fisheries, which account for approximately 60 per cent of the total, and sectors considered to be non-productive (infrastructure, education, social, administration and others), which account for only 40 per cent, follows more or less the same pattern as in the Three-Year Plan and the 1970-1973 Four-Year Plan.

Industry continues to account for approximately three-quarters of productive capital investment, and the agricultural sector for a quarter.

Thus, there is no major change in the structure of capital investment in the 1974-1977 Four-Year Plan as compared with the previous Plan.

4. The expected growth in production is very high: the planned growth rate of the GDP is 11 per cent ("an annual growth rate of at least 10 per cent" says article 3 of the decree quoted above), which is still higher than in the preceding Four-Year Plan (9 per cent).

This target appears rather ambitious: since it is all the easier to achieve high growth rates if the base level is low, and the situation in Algeria in 1974 is much rosier than the situation in 1969, the result should be lower rates of growth.

The table of production targets (in revised end-of-1973 prices) shows that production would have to be increased by approximately 23,000 million Algerian dinars (8,000 million for hydrocarbons and 15,000 million for other sectors).

Setting hydrocarbons aside, it is mainly the industrial and construction sectors which are expected to provide the increase in production:

Manufacturing industries	+ 4,000 million Algerian dinars
Construction	+ 4,000 million Algerian dinars
Agriculture (only a very modest contribution)	+ 500 million Algerian dinars
Probable increase in Services	+ 6,000 million Algerian dinars

Clearly, the highest rates of growth are in the manufacturing industries (see below) and construction. In the construction sector, the housing targets of the 1974-1977 Four-Year Plan are more ambitious than the results of the 1970-1973 Four-Year Plan, providing (in the public sector) for:

The construction of 100,000 urban dwelling units in four years;

A programme of 100,000 rural dwelling units, also to be built within four years.

These, are, however, insufficient to cover the new requirements arising from population growth (3 per cent per annum on the basis of a population of 15 million, with five persons per family, giving 900,000 dwellings/year, i.e. 360,000 in four years, compared with 200,000 planned). The long-term target (1980) is therefore to construct 100,000 urban dwelling units per year.

Expected development of gross domestic production

1974-1977 Four-Year Plan

(million Algerian dinars, prices end 1973)

Sectors	1973 revised (end-1973 prices)		1977 Target (end-1973 prices)		Rate of increase 1973-77
		%		%	%
Agriculture	2 760	6.4	3 260	5.0	+ 4.2
Crude petroleum and condensate					
Refined products					
Natural gas					
Total hydrocarbons	21 600	50.0	30 000		+ 8.5
Mining and quarrying	130				
Energy	410				
Total mining and quarrying, plus energy	540	1.2	920		+ 14.3
Iron and steel	100		310		+ 33.0
Mechanical and electrical engineering	750		1 660		+ 22.0
Chemicals	410		920		+ 22.0
Miscellaneous industries	305		840		+ 29.0
Building materials	350		1 050		+ 32.0
Food industry	1 400		2 050		+ 10.0
Textiles and leather	800		1 360		+ 14.2
Total manufacturing industries	4 115	9.5	8 190		+ 18.8
Construction	3 420	7.9	7 100		+ 20.0
Transport	1 290		1 760		
Services	3 350		5 530		
Trade	6 200		9 300		
Total services	10 840	25.0	16 590		+ 11.2
Total GDP	43 265	100.0	66 060		+ 11.2
Total, excluding hydrocarbons	21 665		36 060		+ 13.6

5. Employment targets in the non-agricultural sectors are high - an additional 450,000 jobs should be created, while the total number of jobs in 1973 could be estimated at some 1,210,000. The expected increase in employment would therefore be 37 per cent and the rate of growth about 8 per cent.

Consequently, as in the case of the preceding plan, average labour productivity is expected to increase by about 3 per cent per annum (11 per cent GDP less 8 per cent employment).

The following table can be drawn up on a sector-by-sector basis:

Employment targets in non-agricultural sectors
1974-1977 Four-Year Plan 1/ (millions)

	1973	Increase 1973-1977	1977	Average annual growth rate
Industry	242	+ 85	327	7.7%
Construction	190	+ 138	328	14.6%
Transport	76	+ 19	95	5.8%
Services	180	+ 60	240	7.5%
Commerce	225	+ 50	275	5.2%
Administration	297	+ 106	403	7.9%
Total	1 210	+ 458	1 668	8.3%

1/ In some cases the figures for 1973 differ slightly from those given in Chapters II and III. Reason: different sources.

The construction sector should provide the greatest number of additional jobs.

Moreover, the number of persons "occupied" outside the economic sectors (students, national service) should reach 300,000 by 1977.

No major change is envisaged in agricultural employment: all efforts are to be concentrated on improving the quality of work by better organization of the sector.

6. Per Capita consumption in 1973 could be estimated at 1,160 1973 Algerian dinars and total consumption by households (14,700,000 inhabitants in 1973) at some 17,000 million 1973 Algerian dinars.

By 1977, per capita consumption should increase to 1,560 1973 Algerian dinars and total consumption by households (16,900,000 inhabitants in 1977) should be 26,000 million 1973 dinars.

Total consumption should thus increase at the rate of 11 per cent per annum, that is, at the same rate as production, and per capita consumption at around 8 per cent, which is a considerable figure.

But in fact, if we compare total consumption by households with gross domestic production, we can see that:

If the comparison is made between consumption and gross domestic production excluding hydrocarbons:

GDP excluding hydrocarbons: Consumption by households, of the order of 80 per cent of this GDP in 1973, would fall slightly to 72 per cent in 1977.

If the comparison is made between consumption and domestic production including hydrocarbons:

GDP including hydrocarbons: Consumption by households, of the order of 75 per cent in 1973 before the revision of petroleum prices, would fall to 40 per cent thereafter and remain at that level until 1977.

Comparison between consumption by households and gross domestic production
1970-1973 Four-Year Plan
(000 million Algerian 1973 dinars)

	1973, pre-revision	%	1973 revised	%	1977	%
GDP (excluding hydrocarbons)	21	100.0	22	100	36	100
Consumption by households	17	81	17	77	26	72
Not consumed	4	19	5	23	10	28
GDP (including hydrocarbons)	26	100.0	43	100	66	10
Consumption by households	17	75	17	40	26	40
Not consumed	9	35	26	60	40	60

The pattern is therefore entirely consistent with the hypothesis that consumption by households is linked only to production excluding hydrocarbons (with even a slight decrease in the propensity to consume from 80 to 72 per cent), the production of hydrocarbons being assigned en bloc to capital investment: this is one of the manifestations of the Government's AUSTERITY POLICY.

In particular, consumption by households did not increase at the end of 1973 with the boost resulting from petroleum price increases: all the extra income went to capital investment.

The Algerian Government therefore systematically distinguishes between production excluding hydrocarbons, due to household labour, most of which (75-80 per cent) may be consumed by households, and the production of hydrocarbons, a true "gift of nature" which is converted entirely into capital investment.

The table could be supplemented as follows: (in 000 million of 1973 Algerian dinars)

	1973 pre-revision	1973 revised	1977
Unconsumed GDP, excluding hydrocarbons	4	5	10
GDP hydrocarbons	5	21	30
Total	9	26	41

The total gives an indication of national savings available (excluding consumption by Government):

9,000 million Algerian dinars per annum in 1973 before the revision of petroleum prices;

An average of 33,000 million Algerian dinars per annum during the Second Four-Year Plan, or approximately 132 million Algerian dinars (as against 110 million of investment).

The expected capital investment expenditure for the 1974-1977 Four-Year Plan may, therefore, quite naturally be much higher than for the 1970-1973 Four-Year Plan.

7. Foreign trade, which was relatively unbalanced before the revision of petroleum prices and showed a surplus with the new prices, may regain some degree of equilibrium in about 1977.

Foreign trade by value - million Algerian dinars - prices at beginning 1974
(according to the 1973-1977 Four-Year Plan, pages 211 and 212)

	1973 post-revision	1977
Imports	15 500	31 250
Foodstuffs	3 000	4 620
Industrial consumer goods	1 500	2 750
Raw materials and semi-finished products	4 950	10 050
Capital goods	5 200	12 480
Services	1 900	3 300
Exports	23 050	34 000
Hydrocarbons	22 200	31 500
Mineral products	100	160
Industrial goods	250	550
Agricultural products	700	990
Services	800	1 800
Trade surplus	7 500	800

By 1977, hydrocarbons will account for more than 90 per cent of exports; on the other hand, foodstuffs will represent only 14 per cent of total imports, as against 20 per cent in 1973, and more at the time of writing.

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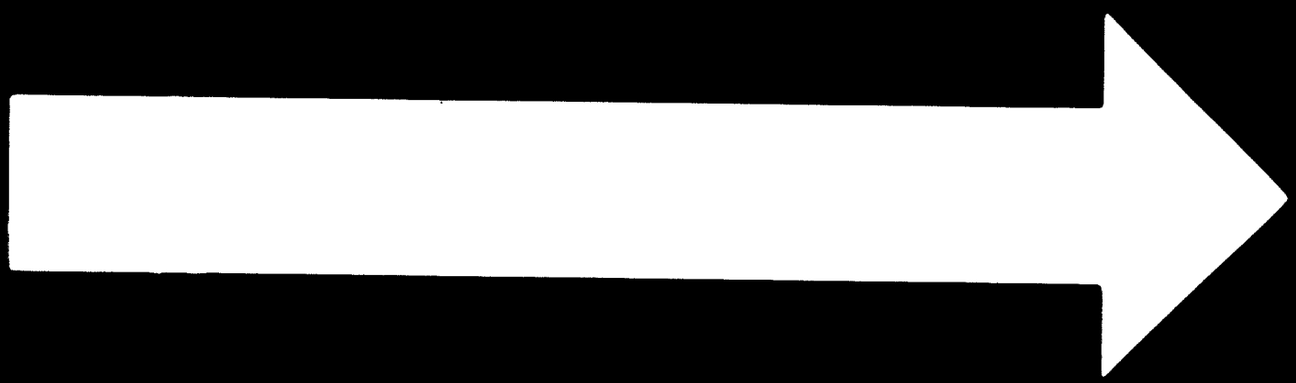

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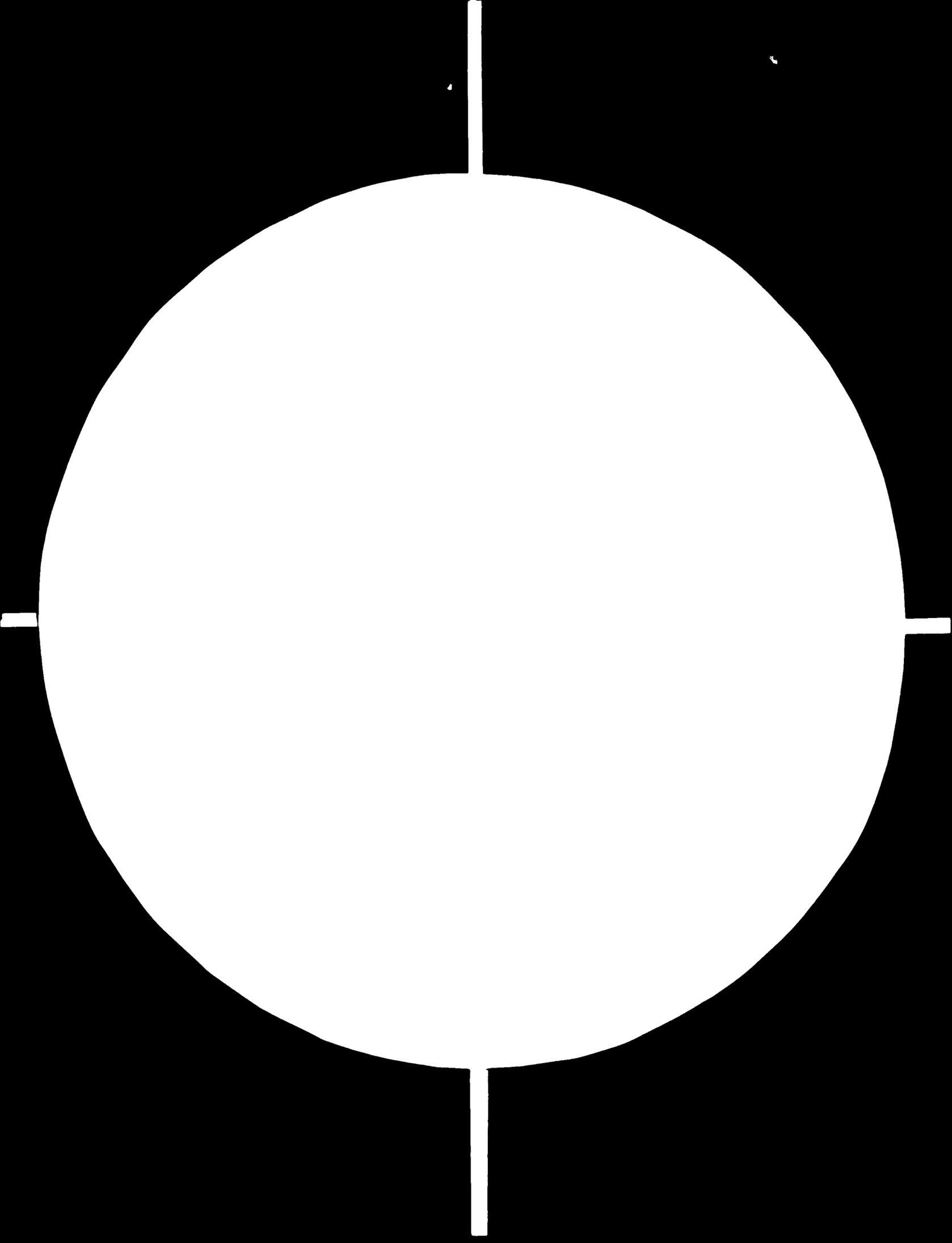

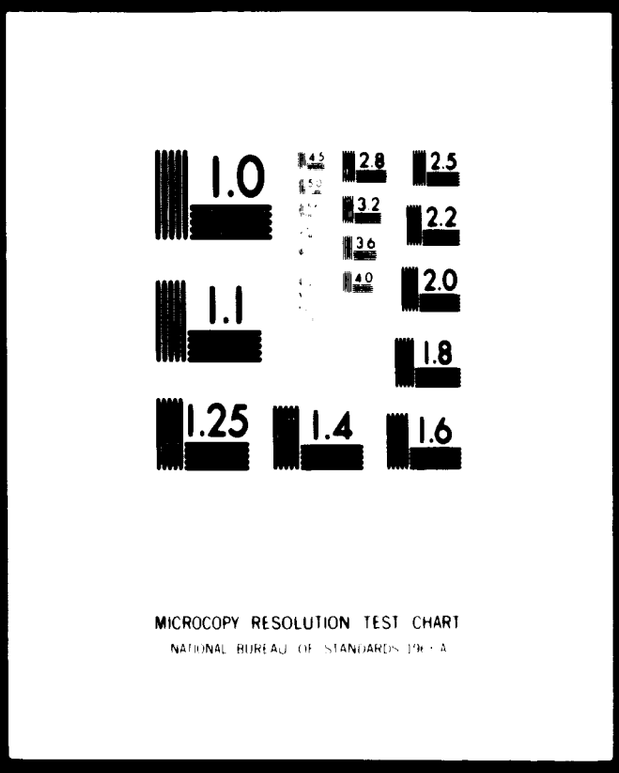

8. The "spread of development over the Algerian territory" will be ensured by a number of measures designed to give greater autonomy to the wilayates and the communes.

At present a number of measures, firstly political (creation of new wilayates, relinquishment by the Central Administration of certain responsibilities to the wilayates, etc.) and then economic (wilaya and commune plans) show that the Algerian Government is attempting to reach the targets it has set itself in this field.

C - INDUSTRIAL SECTOR

1. As in earlier plans, industry is the priority sector in the Four-Year Plan for 1974-1977: the industrial sectors are considered as key sectors par excellence.

They are expected to meet several objectives:

To continue to provide the bulk of funds for foreign payments

This "source of foreign currency" role is at the moment basically filled by hydrocarbons. It is essential that other industrial activities should prepare themselves gradually to take over part of the burden.

Strenuous efforts must therefore be made to promote production for export, though it must naturally be recognized that even by 1977 not many Algerian industrial products (apart from hydrocarbons and mineral products) will yet be exported.

To continue to build the foundations for a modern economy

Consequently, to continue the efforts already undertaken in "heavy" industries:

- Iron and steel and primary processing of metals;
- Certain branches of mechanical and electrical engineering;
- Heavy chemical production;
- Building materials;
- Energy.

To meet domestic requirements for both producer goods (equipment, intermediate products) and consumer goods, at least as far as the most useful products and those most in demand are concerned.

Lastly, to generate employment, the creation of jobs not having been considered as one of the major objectives of earlier plans, which concentrated more on the establishment of basic industries.

Employment generation could be considerably facilitated by the establishment of small-scale and medium-scale light industries, which are at present lacking in Algeria - because it has been difficult for the national companies to consider their establishment and the private sector has done very little - and which could be set up under the responsibility of local authorities (wilaya or commune).

2. The public industrial investment programme adopted for 1974-1977 takes these concerns fully into account. It is composed of:

- The balance of the programmes of the previous plan (basically projects of the Four-Year Plan for 1973-1977*), representing 14,000 million dinars of expenditure outstanding at the end of 1973;
- A specific new programme totalling 65,100 million 1973 dinars, 34,000 million of which is to be spent during the Four-Year Plan for 1974-1977.

Total investment expenditure over the period 1974-1977 will therefore consist of:

- Balance of previous programmes	14,000 million
- New programme	34,000 million
Total	48,000 million

While it is understood that the implementation of operations launched during earlier plans is imperative, it is on the other hand accepted that the projects under the new programme will be divided into two categories:

- First-priority projects: around 25,000 million dinars of expenditure. These should be initiated and started up during the early period of the Plan, 1974 and 1975.
- Second-priority projects: more than 9,000 million dinars. These are projects to be initiated during 1976 and 1977. For the most part, they are projects designed to meet demand projected up to 1980 and projects which will require further clarification (supplementary programme for the refining of hydrocarbons, petrochemical lines, certain consumer durables such as private cars ...).

The following table shows anticipated public investment expenditure sector by sector, broken down according to the categories referred to above:

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*/ Translator's note: Sic in the original.

PUBLIC INVESTMENT EXPENDITURE BY INDUSTRIAL SECTOR

FOUR-YEAR PLAN FOR 1974-1977

(in millions of 1973 dinars)

Sectors	Projects in hand	New 1st priority projects	New 2nd priority projects	Total
Hydrocarbons	4 275	9 655	5 570	19 500
Mining and quarrying	661	405	34	1 100
Electricity	352	1 102	71	1 525
Iron and steel	1 834	3 315	716	5 865
Mechanical and electrical engineering	1 869	2 599	1 770	6 238
Chemicals	1 371	2 116	513	4 000
Wood, paper, miscellaneous ..	729	769	162	1 660
Building materials	1 596	2 424	80	4 100
Food industry	437	979	54	1 470
Textile industry	600	724	96	1 420
Leather industry	33	102	35	170
Local industry	164	746	-	910
General studies	27	15	-	42
Total	13 948	24 951	9 101	48 000
As a percentage	29 %	52 %	19 %	100 %

The total number of projects is:

- More than 500 for large-scale industry, 198 of which were being implemented at the beginning of the Plan;
- More than 800 for local industry, including co-operatives and artisan-type units already launched (approximately 150).

Net public investment in the period 1974-1977 will be 2.3 times higher than during the First Four-Year Plan.

The foreseeable development of public investment over the four years of the Plan would be:

9,600 million dinars for 1974
10,700 million dinars for 1975
12,700 million dinars for 1976
15,000 million dinars for 1977

This investment will be financed by "temporary assistance", i.e. reimbursable credits, with the following exceptions:

- Mineral prospecting;
- Rural electrification;
- Technical and economic studies;
- Former programmes for artisan-type activities.

Non-reimbursable assistance to industry will thus total only 1,400 million dinars over the four-year period.

The bulk of the reimbursable credits will come from domestic resources. Nevertheless, certain goods and services (representing at least 25 per cent of the investment) may be obtained with financing from external (commercial and government) sources.

3. To this (net) public investment expenditure figure must be added, to obtain the total investment expenditure figure, public renewal expenditure (mainly by the national companies) and gross investment by the private sector:

- Renewal expenditure would total 1,200 million 1973 dinars (including 400 million dinars for hydrocarbons);
- Gross investment by the private sector would total 2,100 million 1973 dinars (including 400 million dinars for hydrocarbons).

These estimates for the private sector are based on the following:

- The initial commitments of the foreign partners of SONATRACH for hydrocarbon prospecting;

- Experience gained over more than seven years by the National Investment Commission which examines and approves private projects;
- A survey of the main enterprises in the private sector carried out in 1973.

In all, then, the Algerian industrial sectors will invest more than 51,000 million 1973 dinars in four years.

The following table shows how this total is broken down among the various branches of industry, giving investment proportions by branch.

NET AND GROSS PUBLIC INVESTMENT UNDER THE SECOND FOUR-YEAR PLAN, 1974-1977

Branches	Net investment	Structure %	Renewal	Gross investment
Hydrocarbons	19 500	40,7	400	19 900
Mining and quarrying	1 100	2,3	80	1 180
Electricity	1 525	3,1	170	1 695
Iron and steel	5 865	12,3	120	5 985
Mechanical and electrical engineering	6 238	13,0	50	6 288
Chemical industry	4 000	8,3	70	3 070
Wood, paper, miscellaneous ...	1 660	3,4	70	1 730
Building materials	4 100	8,6	75	4 175
Food industry	1 470	3,0	65	1 535
Textile industry	1 420	3,0	70	1 490
Leather industry	170	0,4	30	200
Local industries	910	1,9	-	910
General studies	42	-	-	42
Total, public	48 000	100, 0	1 200	49 200
Private sector				2 100
Grand total				51 300

As in earlier plans, and still to a very substantial extent, priority is given to hydrocarbons (41 per cent of the total) and to producer goods industries:

Iron and steel	12%
Mechanical and electrical engineering	13%
Chemical industry	8%
Wood, paper	3%
Building materials	9%
	45%

which account for 45 per cent of all public investment, consumer goods industries receiving only 6%, as follows:

Food industries	3%
Textile and leather industries	3%
	6%

It is to be hoped that the 1,700 million dinars expected to be invested in manufacturing industries by the private sector will complement the limited investment by the public sector in consumer industries.

4. Independently of new capital investment, but simultaneously with it, a series of "organisational" measures have been launched which are designed to increase the output of industrial enterprises and government agencies dealing with industrial development.

The purpose of these measures is to promote the establishment of small and medium-sized enterprises, to organize craft-type activities, to develop the industrial environment, to provide training in certain technical fields (a specialised institute of technology), to permit effective management control in public enterprises, etc.

5. Taken together, investment action and the measures referred to above should permit a substantial increase in industrial output.

The following table shows the anticipated development of production (gross value added) by industrial sector, attempting to assign the increases to a "cause": better utilization of production capacities and productivity, projects in hand, start-up of new projects, or action by the private sector.

INCREASES IN INDUSTRIAL ADDED VALUE - MILLIONS OF 1973 DINARS

(excluding hydrocarbons, with reference price as at the beginning of 1974)

	Value added, 1973	Better utilization of capacity and productivity	Projects in hand	New projects	Private sector	Total incr.	Value added 1977	Average annual growth rat
Hydrocarbons (excluding distribution and petroleum public works)	21 600					8 429	30 029	
Mining and quarrying	127	20	100	120	-	240	367	30.3
Electricity	364	68	100	-	-	168	530	10.0
Iron and steel and primary processing of metal	100	50	140	20	-	210	310	32.7
Mechanical and electrical engineering	750	65	725	90	30	910	1 660	21.5
Chemical industry	410	90	250	100	70	510	920	22.0
Wood, paper, miscellaneous	305	60	315	112	48	535	840	29.5
Building materials	350	20	530	120	30	700	1 050	37.5
Food	1 400	145	253	155	80	633	2 033	10.0
Textiles	630	85	221	8	120	434	1 064	13.9
Leather	165	26	60	10	30	126	291	15.0
Total excluding hydrocarbons	4 601	629	2 694	735	408	4 466	9 067	19.3
Total, industry, including hydrocarbons	26 201	-	-	-	-	12 895	39 096	

Excluding hydrocarbons, this gives (in thousands of millions of 1973 dinars)

Better utilisation of capacity and productivity	+ 0.6
Projects in hand	+ 2.7
New projects	+ 0.7
Private sector	+ 0.4
Total "causes"	+ 4.4

The total increase over the four-year period represents 95 per cent of 1973 value added (or an average annual production growth rate of 19.3 per cent).

As far as hydrocarbons are concerned, the increase during the period 1973-1977 represents 8,400 million dinars in value and a rate of increase of 39 per cent (or an 8.5 per cent average annual production growth rate).

Anticipated rate of growth of production

Period 1973-1977:

Excluding hydrocarbons	+ 19.3 per cent a year
Hydrocarbons	+ 8.5 per cent a year

The production targets and the rates of growth expected for the main industrial products planned for ars given in annex B.

6. The generation of employment in industrial branches during the Second Four-Year Plan will be:

- 79,000 jobs in industry excluding hydrocarbons;
- 6,000 jobs in the hydrocarbons branch;1/
- 5,000 jobs in craft-type activities.

As can be seen from the following table, branches which will contribute substantially to this process are:

- Mechanical and electrical engineering: more than 20,000 jobs;
- Building materials: more than 16,000 jobs;
- Chemicals and textiles: 9,000 jobs each.

Industrial employment (all industries including hydrocarbons) will increase at an average annual rate of 11 per cent.

1/ 30,000, if petroleum distribution and public works are included.

GENERATION OF EMPLOYMENT IN INDUSTRIAL BRANCHES

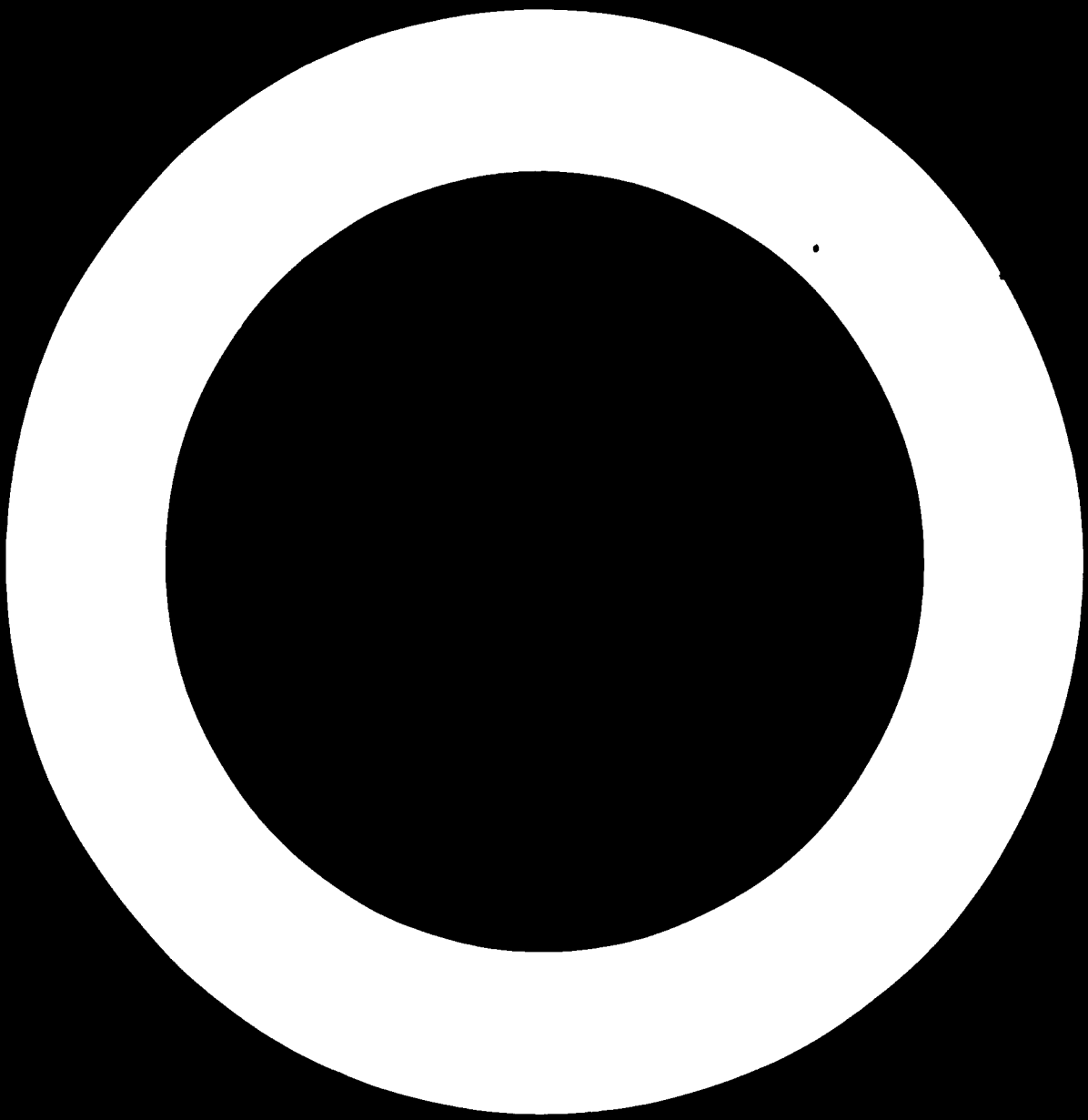
FOUR-YEAR PLAN, 1974-1977

Branches	Employment situation, 1973	Jobs created	Jobs, 1977	Growth rate 1973-1977
Hydrocarbons	35 700	6 000	41 700	16.7
Mining and quarrying	12 862	1 138	14 000	2.2
Electricity	6 450	1 044	7 494	3.9
Iron and steel and primary processing of metals.....	13 469	5 531	19 000	9.0
Mechanical and electrical engineering	34 100	19 700	53 800	12.1
Chemicals	11 500	9 000	20 500	15.6
Wood, paper, miscellaneous .	12 270	6 350	18 620	11.0
Building materials	16 206	16 544	32 750	20,0
Foodstuffs	26 645	6 005	32 650	4.7
Textiles	31 961	8 964	40 925	6.4
Leathers	7 075	4 607	11 682	12.4
Total, industry (including hydrocarbons)	208 238	84 883	293 121	11.0
Estimate, traditional craft activities and pre-industrial services	40 000	5 000	45 000	3.7

7. The creation of this large number of jobs will require a substantial force of trained personnel, which can be estimated as follows:

- More than 3,000 senior administrative professionals (economists, lawyers, etc.)
- More than 4,000 engineers
- More than 20,000 technicians
- More than 25,000 skilled workers
- More than 14,000 skilled office workers (accountants, secretaries, etc.)

Despite the education and training activities carried out elsewhere, IN-PLANT TRAINING will be required. Hence the desire of Algerian industrial officials no longer to receive from their suppliers merely turn-key plants (i.e. plants operating properly) but producing plants usines "produits en mains", (i.e. with equipment operating properly and trained manpower capable of operating it).



CONCLUSION

A SPECIFIC INDUSTRIALIZATION MODEL

A - OVER-ALL RATE OF INVESTMENT

B - PROPORTION OF INVESTMENT GOING TO INDUSTRIAL SECTORS

C - ROLE OF PRODUCTION IN INDUSTRY PROPER

The Algerian industrialisation model can be regarded very roughly as based on three major principles of policy:

- Priority of investment over consumption;
- Priority of industry over other sectors;
- Priority of capital goods industries over consumer goods industries.

We shall now examine briefly whether these principles are compatible with the situation in Algeria and whether the adoption of these policies has the effects desired by the Government, i.e. leads to:

- Increased independence
- Socialism
- Development

A - OVER-ALL RATE OF INVESTMENT

It is in fact the existence of hydrocarbons which permits a high rate of investment.

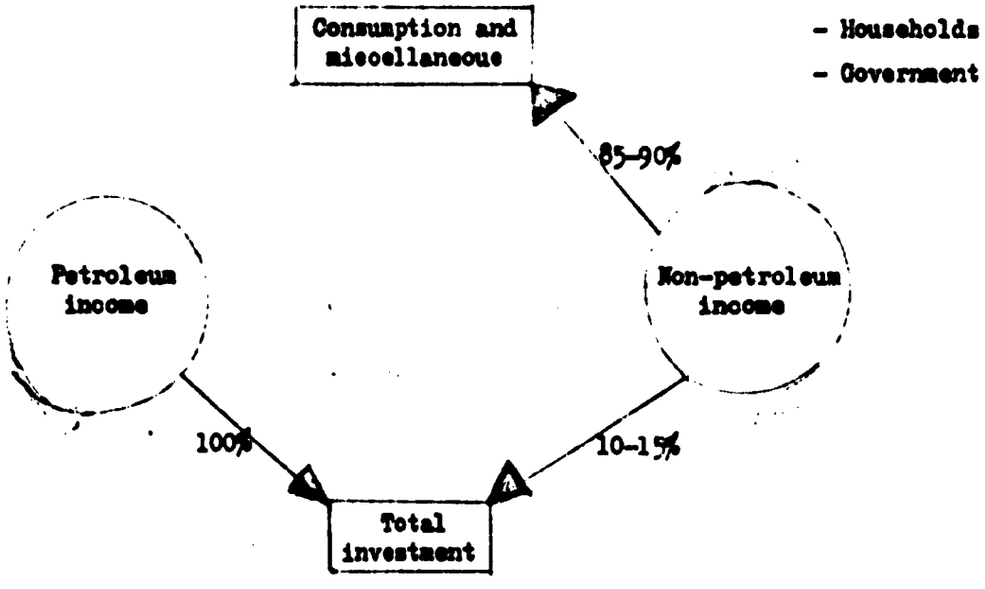
Algerian domestic income may be broken down into two categories (of petroleum or non-petroleum origin), this income corresponding to the total of consumption and investment.

In Algeria, a deliberate choice has been made concerning the allocation of these two categories of income.

- All (or almost all) income from petroleum production is allocated to investment;
- Only a part of non-petroleum income is allocated to consumption.

This represents an austerity policy and a determination to convert all (or almost all) the wealth derived from mineral resources into various types of capital investment.

Origin of investment allocations



Therefore:

Investment = petroleum income + invested share of non-petroleum income.

By assuming a "normal" rate of investment for non-petroleum income (10-15 per cent), we arrive - by adding the investment financed from petroleum income - at a high rate of investment where income from petroleum is high in relation to non-petroleum income.

It is thus the combination of hydrocarbons and austerity policy which produces a high rate of investment in Algeria.

B - PROPORTION OF INVESTMENT GOING TO INDUSTRIAL SECTORS

1. Priority accorded to productive investment and the existence of substantial infrastructure

The absolute priority given to investment in productive sectors should be viewed in the context of Algeria in the 1960s.

When it became independent, Algeria had:

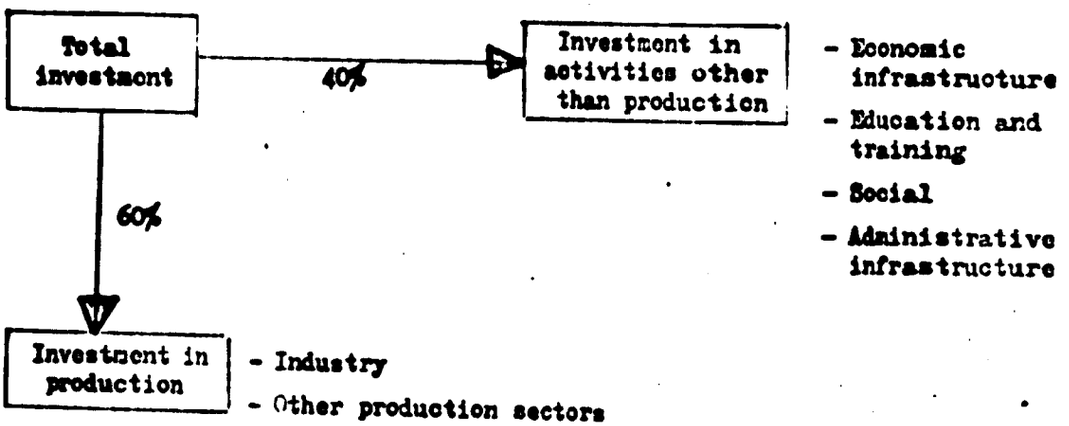
- A considerable reserve of dwellings (200,000-300,000) in good condition abandoned by Europeans when they left in 1962, which became "vacant property";
- A social and cultural infrastructure admittedly inferior to that existing at the time in Europe, but far superior to the average in the developing countries;
- A transport (roads, railways, harbours, airports) and communications infrastructure which was fairly satisfactory from the economic point of view since it served adequately most of the "economically interesting" regions of the country.

Of course, not everything was in perfect condition, but it was usable.

There was therefore no urgent need to invest in these sectors - efforts could be concentrated on the productive sectors.

It is the existence of this infrastructure which has enabled Algeria to give absolute priority until now to investment in production

Breakdown of total investment into "productive" and "non-productive" investment



It seems likely, however, that from now on new infrastructures will be essential, from the point of view both of popular demand (housing, social and cultural facilities) and of economic development (transport). Future plans will have to take this factor increasingly into account.

2. Priority accorded to industry in relation to agriculture

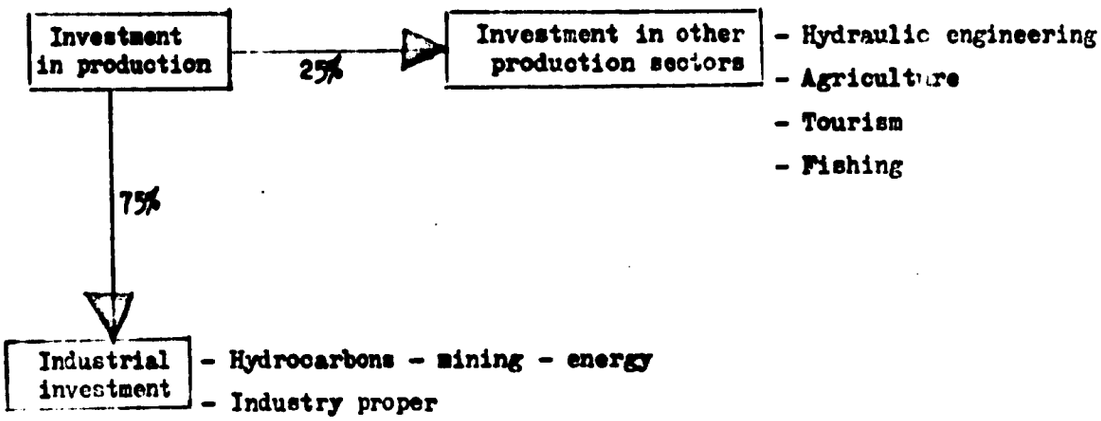
The deliberate choice of industry as the key sector for development was due to various considerations, the main ones - aside from questions related to structure and the dynamism of the ministries concerned - being perhaps symbolism, ease and rapidity:

- Industry is necessary to any economic, social or cultural development. Specifically, agriculture is a more or less traditional activity while industry is a modern activity; the change from the traditional to the modern is a symbol;
- The rapid development of industry is easier than in the case of agriculture. Agriculture is too widely diffused over the land and among people and the decision-making centres are too numerous to make it easy to take action.

  On the other hand, industry is highly concentrated, a small number of high-calibre managers can be placed in charge of enterprises, and there are modern methods of organization and management;
- In the particular case of Algeria, natural resources (hydrocarbons, various ores, ...) are waiting to be developed, and imports (textiles, ...) to be replaced: partly as a result of the Constantine Plan, projects are ready, and rapid action can be taken. On the other hand, no solution is seen to the problems raised by agriculture at the technical and human levels.

In specific terms, approximately three-quarters of investment in production goes to the industrial sectors and only a quarter to the other sectors.

Distribution of "productive" investment between industry and other sectors



The immediate consequences of the choice made are important: Algeria's agricultural development is lagging behind at the present time, and as a result there are serious shortages of five categories of agricultural products which are essential for everyday life:

- Cereals (imports equal one-third of consumption)
- Sugar (almost all imported)
- Oils and fats (substantial imports)
- Milk
- Meat (imports still small)

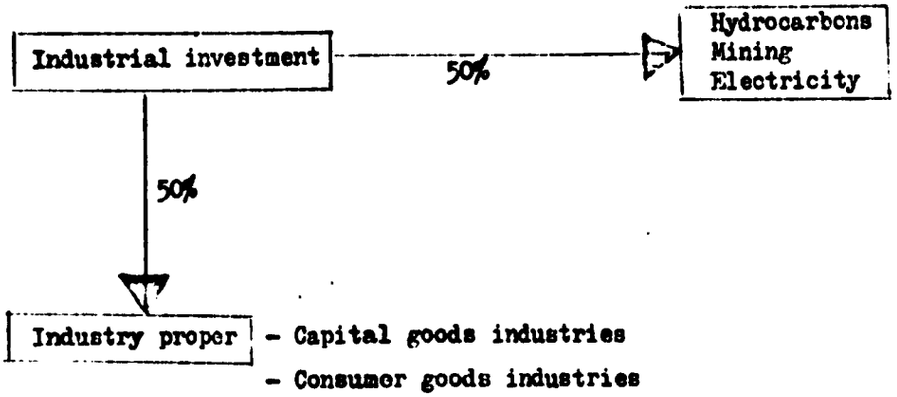
If priority continues to be given (explicitly or not) to industry, agriculture will develop only slowly or may indeed regress, and the food shortage will increase: ultimately, Algerians may all have transfer machines and tape recorders manufactured in the country but be eating imported bread and sugar.

Unless, in the next Plan, considerable attention is concentrated on the agricultural sector, there is a danger that Algeria's economic independence will suffer as a result of the shortage of agricultural and food products.

3. Equal shares for mineral prospecting and development and industry proper.

Algeria appears to be dividing its "industrial" investment fifty-fifty between the hydrocarbon and mining sectors (including for these purposes energy) and industrial sectors in the strict sense (heavy and light manufacturing industries).

Breakdown of industrial investment by major sectors

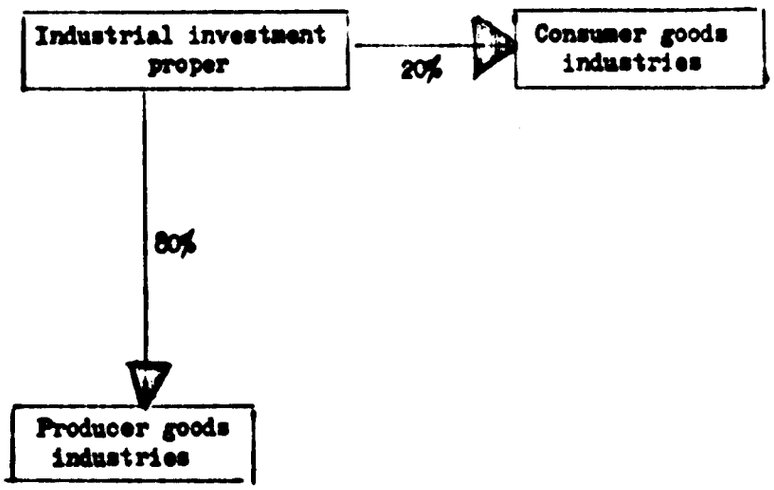


4. Priority accorded to producer goods industries in relation to other industries in the industrial sector proper.

During the period 1976-1973, priority in industrial development was given to the Société nationale de sidérurgie (SNS) and SONATRACH (petrochemicals), i.e. to the development of natural resources (iron and steel); later, although some priority continued to be given to these two activities, a major effort was made in the field of mechanical and electrical engineering and building materials (cf. annexes C and D).

The priority given to producer goods industries is shown in the following diagram:

Breakdown of industrial investment proper by major sectors



The producer goods enterprises established belong almost exclusively to the public sector, in other words they satisfy the two goals of NATIONALISM and SOCIALISM. In the case of certain large-scale units, however, the Algerian market is still too small to absorb all products, with the result that goods are either already being exported or soon will be. If the quantities exported remain substantial or become substantial in the future, there may be the danger of a certain amount of COMMERCIAL DEPENDENCE on foreign markets.

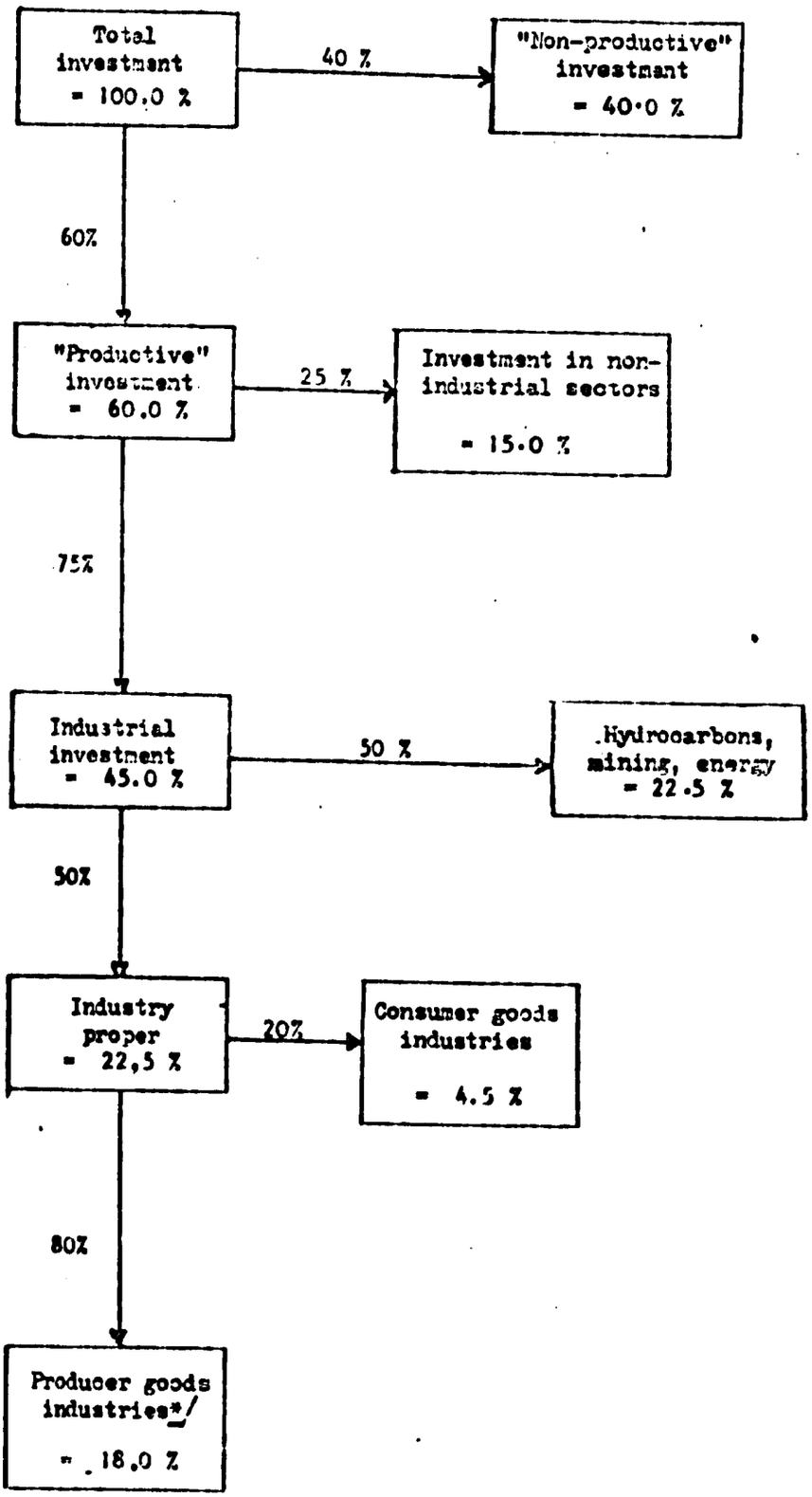
Fortunately, circumstances have somewhat modified the above pattern: there was a fairly considerable, albeit unco-ordinated and unprogrammed development of consumer goods industries, during the period of the early plans by the private sector. The domestic market for industrial consumer goods is at present mainly supplied by Algerian products.

5. A simple model of investment allocation, leading to an original industrialization pattern

By taking the different findings reached, a sort of "allocation model" regarding the distribution of investment among the various economic sectors can easily be constructed.

Without of course claiming to be the most representative possible, this "model" has the merit - as can be seen from the following table - of being simple and readily understandable.

Investment allocation model
(1967-1977)



*/ Translator's note: The original reads 'consumer goods industries', but this must be an error.

When the allocations provided for in the various plans are compared with the results of the model, it is found that the model indicates the orders of magnitude fairly accurately. It can thus be retained on a preliminary basis as a rough guide.

Comparison between investment provided for in plans from 1967 to 1977 and investment distribution according to the allocation model

Sectors	Three-Year Plan 1967-69	Four-Year Plan 1970-73	Four-Year Plan 1974-77	Simplified model
Activities other than production	31.8	37.5	39.9	40.0
Economic infrastructure	10.1	11.0	14.0	
Education and training	9.4	12.0	9.0	
Social	6.4	11.5	13.3	
Administrative infrastructure	4.0	3.0	1.3	
Miscellaneous	1.9	-	2.3	
Non-industrial production	19.5	17.5	16.6	15.0
Hydraulic engineering			4.2	
Agriculture	16.9	15.0	10.9	
Fishing			0.1	
Tourism	2.6	2.5	1.4	
Industrial	48.7	45.0	43.5	45.0
Hydrocarbons-Mining-Energy	24.6	21.7	20.1	22.5
Producer goods industries	19.7	19.3	19.8	18.0
Consumer goods industries	4.4	4.0	3.6	4.5
				100.0

C - ROLE OF PRODUCTION IN INDUSTRY PROPER (excluding hydrocarbons)

The relationship in Algeria between production, capital investment and employment in the industrial sectors (excluding hydrocarbons) may be illustrated on the basis of the changes in these variables over time (cf. annex E).

Before 1969-1970, as a result of the utilization of idle capacities and the implementation of a number of light industry projects, industries coming into production had a low employment "cost" (capital investment/employment) and capital coefficient (capital investment/added value).

On the other hand, it seems that from 1969-1970 onward for all industrial sectors except hydrocarbons:

- Each new job created required approximately 250,000 current Algerian dinars of investment;
- Each new job created resulted in a production (added value) of 30,000 current Algerian dinars.

In other words, the additional employment required high inputs and yielded a low output.

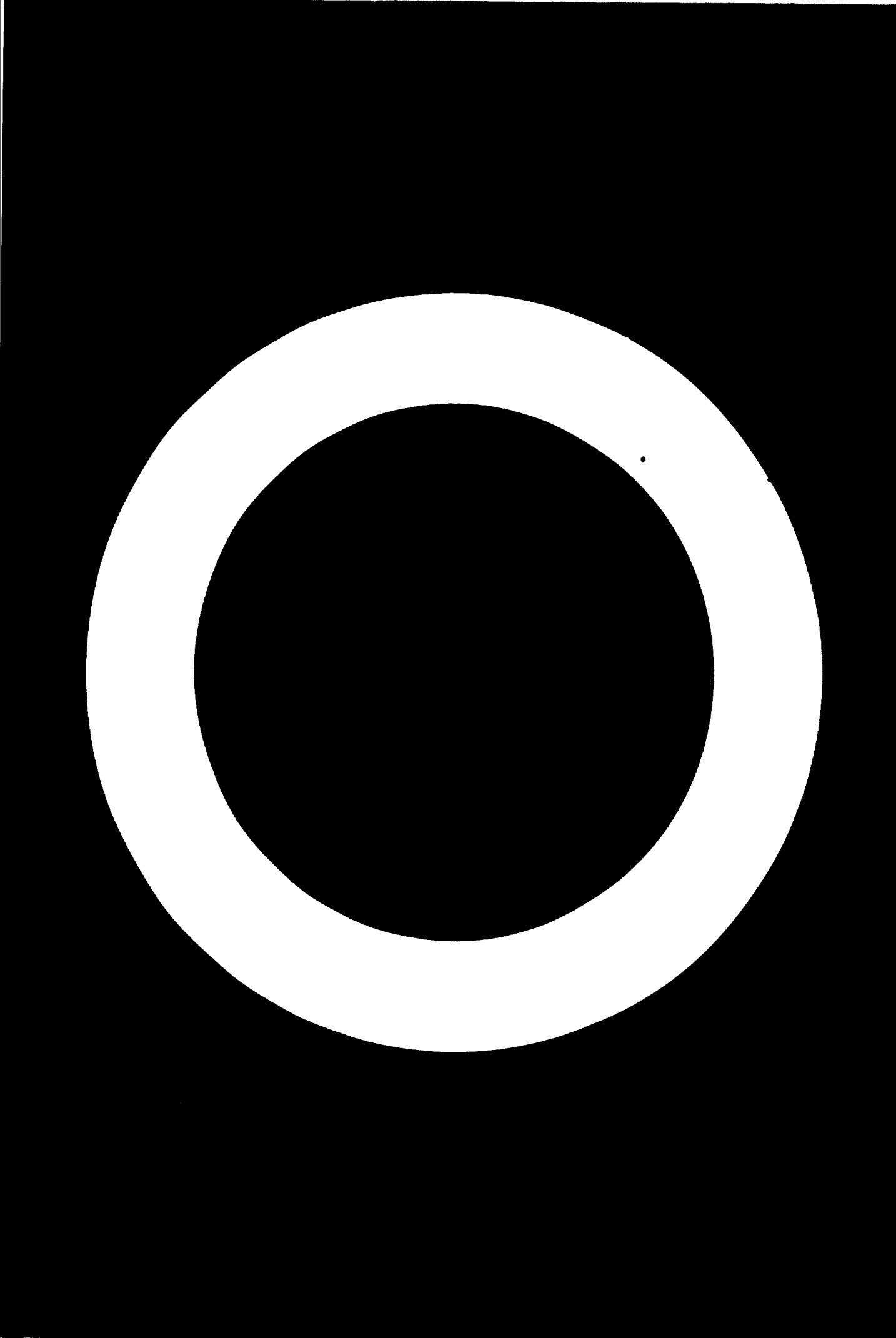
The resultant (marginal) productivity of capital investment would be approximately 0.12 and the capital coefficient its reciprocal, 8.

Industry established since 1969-1970 is, therefore, an industry which consumes substantial investment and yields little employment or output.

As noted earlier, in some cases investment expenditure does not correspond to the starting up of plants within the planned schedules: if these plants were started up, production and employment would normally increase in relation to capital investment, permitting a reduction in both the "cost" of employment and the capital coefficient.

Nevertheless, close attention must be given to the evolution of these ratios in the coming years.

An effort directed at the ORGANIZATION and MANAGEMENT of existing units would also help to improve these ratios.



ANNEX A

COMPARISON BETWEEN CUMULATIVE TARGETS AND RESULTS
(FOUR-YEAR PLAN, 1970-1973)
FOR THE MAIN INDUSTRIAL PRODUCTS COVERED BY THE PLAN

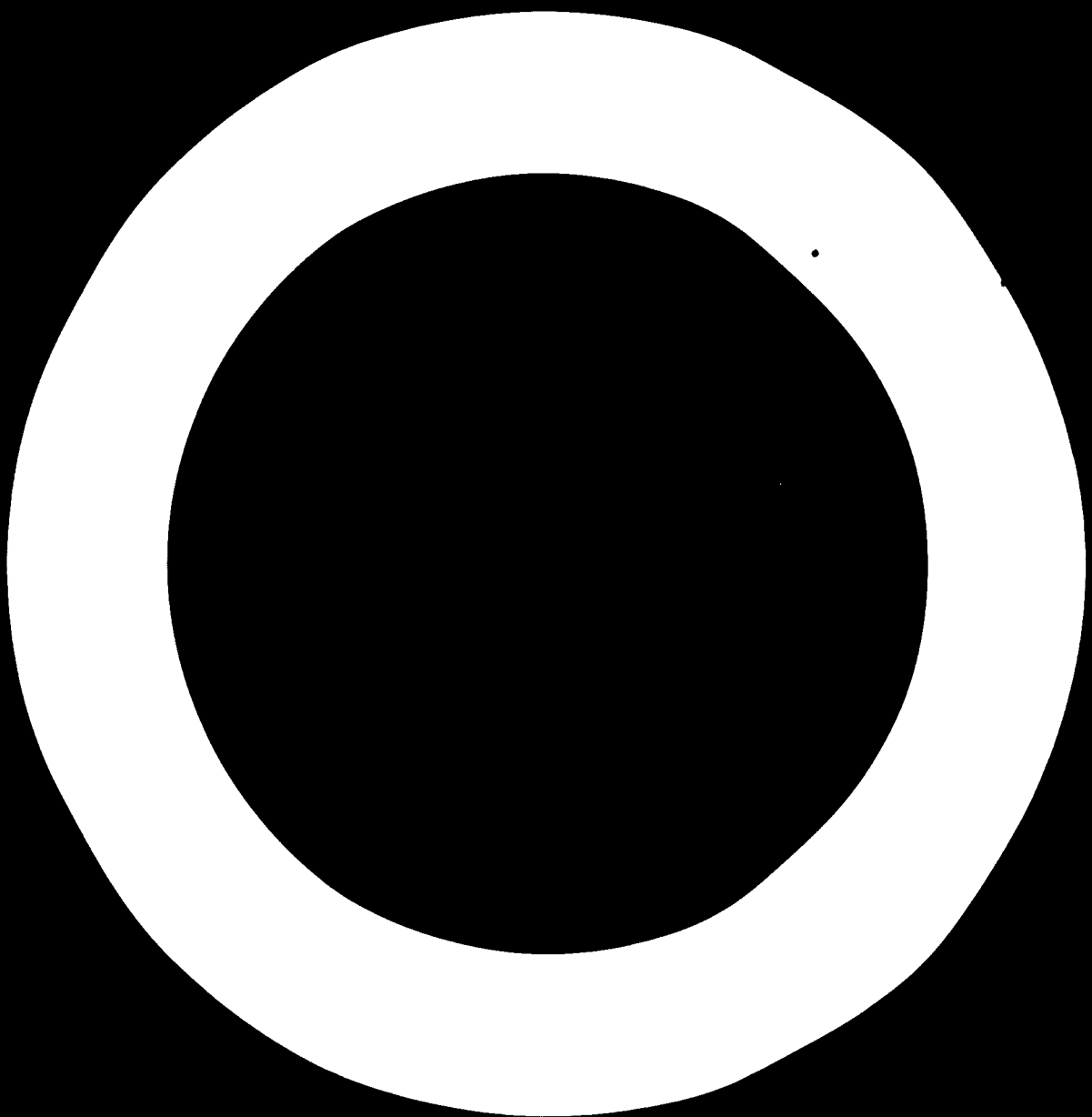
1. HYDROCARBONS
2. MINES
3. ENERGY
4. IRON AND STEEL
5. MECHANICAL AND ELECTRICAL ENGINEERING
6. CHEMICALS
7. WOOD, PAPER, ETC.,
8. BUILDING MATERIALS
9. FOODSTUFFS
10. TEXTILES AND LEATHER

	Results 1970-1973 (1)	Targets 1970-1973 (2)	Ratio results/ targets (1/2)
1. HYDROCARBONS			
Crude and condensate (million tonnes)	186.2	220.5	84 %
Refined products (million tonnes)	11.9	15.8	86 %
Natural gas (thousand million m^3)	13.5	22.0	63 %
Liquefied gas (LNG) (thousand million m^3)	7.0	14.5	58 %
2. MINES			
Iron ore	13 067	14 800	88 %
Zinc ore concentrate	120	384	31 %
Lead ore concentrate	30	88	34 %
Phosphates	2 131	4 470	48 %
Baryta	207	300	69 %
Kaolin	12	11	110 %
3. ENERGY			
Electricity (million kWh)	9 106	9 170	99 %
Gas (million thermal units)	25 767	39 700	64 %
4. IRON AND STEEL (thousand tonnes)			
Pig iron	1 500	1 460	103 %
Crude steel	341	860	40 %
Hot-rolled products	129	771	17 %
Cold-rolled products	None	140	-

	Results 1970-1973 (1)	Targets 1970-1973 (2)	Ratio results/ targets (1/2)
Large-diameter tubes	365	280	130 %
Small-diameter and medium-diameter tubes	98	90	107 %
Metal packaging	54	71	79 %
Lacquered sheets	19	40	48
Reinforcement bars	160	180	89 %
5. MECHANICAL AND ELECTRICAL ENGINEERING			
Industrial vehicles (units)	18 877	28 000	67 %
Bicycles and mopeds (units)	144	7 500	2 %
Tractors (units)	389	2 610	15 %
Diesel engines (units)	None	5 000	-
Valves (units)	None	5 000	-
Machine tools (units)	None	600	-
Bolts and screws (tonnes)	3 505	5 000	70 %
Frames (tonnes)	126 400	191 000	66 %
Boilers and hollow ware (tonnes)	35 900	100 000	35 %
Forged products (tonnes)	1 170	7 200	16 %
Wagons (units)	1 261	1 870	67 %
Cranes (units)	26	48	54 %
Travelling cranes (units)	181	125	145 %
Wires and cables (tonnes)	52 600	81 600	65 %
Storage batteries (units)	606 000	750 000	81 %
Refrigerators (units)	None	4 000	-
Transformers (units)	None	150	-
Electric motors (units)	None	3 000	-
Bulbs (millions)	None	1 000	-

	Results 1970-1973 (1)	Targets 1970-1973 (2)	Ratio results/ targets (1/2)
6. CHEMICAL INDUSTRY (thousand tonnes)			
Ammonia	218	180	Not significant
Ammonium nitrate	212	365	-
Urea	5	268	-
Phosphate fertilizers	222	1 050	22 %
Detergents	84	85	100 %
Paints	121	120	100 %
7. WOOD, PAPER, ETC.,			
Paper pulp (thousand tonnes)	72	109	65 %
Printing and writing paper (thousand tonnes)	72	90	80 %
Wrapping paper and cartons (thousand tonnes)	75	145	51 %
General joinery (thousand m^2)	4 280	5 800	73 %
Wooden packaging (millions of units)	39	38	103 %
Agglomerated cork (thousand m^3)	155	160	90 %
Cork sheets (thousand tonnes)	4	12	32 %
8. BUILDING MATERIALS			
Cement (thousand tonnes)	3 823	4 900	77 %
Plaster (thousand tonnes)	270	300	90 %
Bricks (thousand tonnes)	1 866	2 270	82 %
Roof tiles (thousand tonnes)	507	740	68 %
Ceramic floor tiles (thousand m^2)	1 453	2 480	58 %
Ceramic sanitary ware (thousand tonnes)	None	3	-
Glass hollow ware (thousand tonnes)	60	140	43 %
Flat glass products (thousand tonnes)	None	7.3	-
Crockery (thousand tonnes)	2.7	3	90 %

	Results 1970-1973 (1)	Targets 1970-1973 (2)	Ratio results/ targets (1/2)
9. FOODSTUFFS (thousand tonnes)			
Flours and semolina	4 052	4 070	99 %
Macaroni, spaghetti, etc. and couscous	1 668	1 889	87 %
Refined oils	339	329	102 %
Refined sugar	141	390	44 %
Tinned fruits and vegetables	86.7	97	89 %
Processed tobacco	44.7	37.5	117 %
Mineral water	110.8	117.9	93 %
10. TEXTILES AND LEATHER			
Cotton yarn (thousand tonnes)	30.7	55.0	55 %
Spun rayon yarn (thousand tonnes)	16.4	12.4	132 %
Woollen yarn (thousand tonnes)	2.2	17.2	12 %
Industrial coverings (thousands of m^2)	22.7	26.4	85 %
Shoe vamp leathers (million sq. ft.)	72.9	109.1	66 %
Leather shoes (uppers or bottoms) (million pairs)	23.1	65.0	36 %



ANNEX B

PRODUCTION TARGET FOR 1977 AND GROWTH RATE FOR 1973-1977
(FOUR-YEAR PLAN, 1974-1977)
FOR THE MAIN INDUSTRIAL PRODUCTS COVERED BY THE PLAN

Product	1973		1977		Average annual growth rate, 1973/1977
	Total	Of this, government-owned	Total	Of this, government-owned	
1. HYDROCARBONS					
Crude petroleum (million tonnes)	49.2	37	59.5	45	5.1
Condensate (million tonnes)	1	1	4.8	4.8	46
Natural gas (thousand million m^3)	5.6	5.6	24	24	42
Liquefied natural gas (thousand million m^3)	3.5	3.5	14	14	41.5
Liquefied petroleum gas (million tonnes)	0.4	0.4	1.6	1.6	39
Refined products (million tonnes)	5	5	5.5	5.5	2.5
2. MINES					
Iron ore (thousand tonnes)	3 160	3 160	3 900	3 900	5.3
Zinc ore concentrate (thousand tonnes)	18.7	18.7	40	40	20.6
Phosphate (thousand tonnes)	683	683	2 100	2 100	32.3
Mercury (thousand bottles)	14	14	26	26	16.6
Baryta (thousand tonnes)	80	80	120	120	10.6
Marble (thousand m^2)	75	75	250	250	35.1
3. ELECTRICITY (SONELGAZ only)					
Generation of electricity (million kWh)	2 380	2 380	4 936	4 936	20.0
Distribution of gas (thousand million thermal units)	9.5	9.5	24.6	24.6	26.5

Product	1973		1977		Average annual growth rate, 1973/1977
	Total	Of this, government-owned	Total	Of this, government-owned	
4. IRON AND STEEL AND PRIMARY METALLURGICAL PROCESSING					
Pig iron (thousand tonnes)	390	390	500	500	6.4
Hot-rolled flat products (thousand tonnes)	72	72	660	660	84.0
Cold-rolled flat products (thousand tonnes)	-	-	130	130	-
Reinforcement irons (thousand tonnes)	45	45	40	40	-
Cold-rolled shapes (thousand tonnes)	-	-	80	80	-
Large-diameter welded tubes (thousand tonnes)	54	54	120	120	22.0
Small- and medium-diameter welded tubes (thousand tonnes)	38	38	50	50	7.0
Seamless tubes (thousand tonnes)	-	-	60	60	-
Metal packaging (thousand tonnes)	12.4	12.4	28	28	22.0
Gas cylinders (thousand cylinders)	235	235	735	735	33.5
5. MECHANICAL AND ELECTRICAL ENGINEERING					
Frames (thousand tonnes)	40.5	30	96	80	23.1
Boilers and hollow ware (thousand tonnes)	9.5	8	35	30	37.7
Wagons (units)	600	600	850	850	8.7
Electrical cables (thousand tonnes)	6.1	6.1	17.0	17.0	28.2
Telephone cables (tonnes)	2.2	2.2	3.5	3.5	10.7

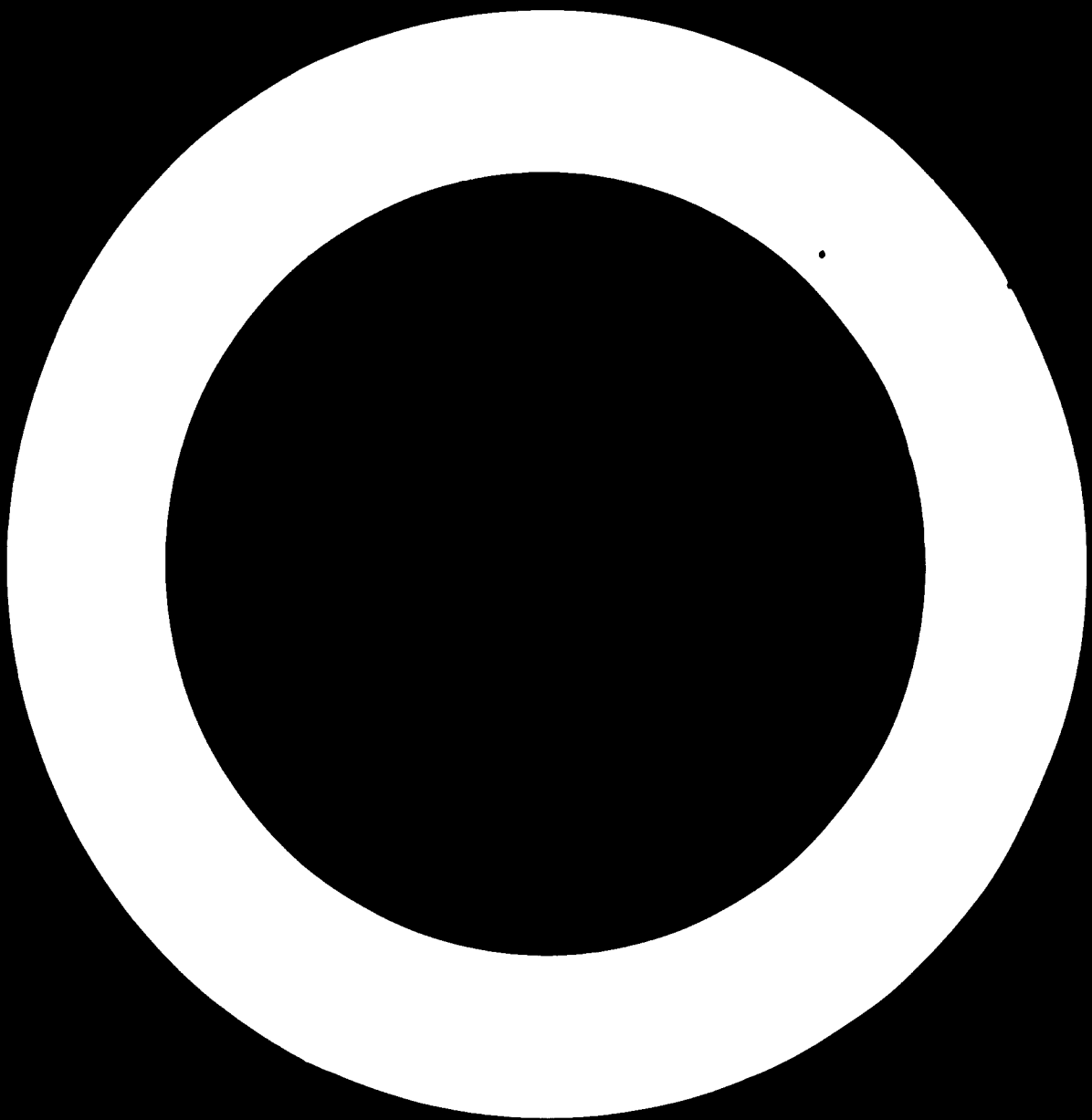
Product	1973		1977		Average annual growth rate, 1973/1977
	Total	Of this, government-owned	Total	Of this, government-owned	
Refrigerators (thousand units)	-	-	60	60	-
Cooking stoves and small portable stoves (thousand units)			75	75	-
Industrial vehicles (thousand units)	7	7	7	7	-
Wheeled tractors (thousand units)	-	-	4	4	-
Caterpillar tractors (thousand units)	-	-	1	1	-
Machine tools (thousand units)	-	-	1.1	1.1	-
Diesel engines (thousand units)	-	-	9.5	9.5	-
Motorized bicycles (thousand units)	1.2	1.2	27.0	27.0	-
Bicycles (thousand units)	-	-	15	15	-
Valves (thousand tonnes)	-	-	4	4	-
Bolts and screws (thousand tonnes)	1.3	1.3	3.5	3.5	27
Electric motors (thousand units)	-	-	20	20	-
Transformers (thousand units)	-	-	1	1	-
Washing machines (thousand units)	-	-	5.5	5.5	-
Bulbs (million units)	-	-	9	9	-
Storage batteries (thousand units)	180		300	300	13.6
Dry cells (million units)	-	-	39	39	-

Product	1973		1977		Average annual growth rate, 1973/1977
	Total	Of this, government-owned	Total	Of this, government-owned	
Hand tools (thousand tonnes)	3.5	3.5	6,0	6.0	14.5
Cranes (units)	20	20	250	250	-
Agricultural machinery other than combine harvesters (thousand units)	4	4	13	13	31
Combine harvesters (units)	-	-	150	150	-
6. CHEMICALS					
Ammonia (thousand tonnes)	120	120	148	148	5.5
Ammonium nitrate (thousand tonnes)	180	180	510	510	29
Urea (thousand tonnes)	-	-	129	129	-
Phosphate and mixed fertilisers (thousand tonnes)	330	330	523	523	12.2
Ethylene (thousand tonnes)	-	-	30	30	-
Polyethylene (thousand tonnes)	-	-	28	28	-
PVC (thousand tonnes)	-	-	21	21	-
Methanol (thousand tonnes)	-	-	85	85	-
Synthetic resins (thousand tonnes)	-	-	15	15	-
Paints (thousand tonnes)	35	23	55	35	12.1
Detergents (thousand tonnes)	28	28	30	30	1.8

Product	1973		1977		Average annual growth rate, 1973/1977
	Total	Of this, government-owned	Total	Of this, government-owned	
WOOD, PAPER, ETC.					
Paper pulp (thousand tonnes)	26	26	135	135	50.3
Printing and writing paper (thousand tonnes)	32	22	56	56	25
Wrapping paper and paper board (thousand tonnes)	47	15	140	100	20
Special papers (thousand tonnes)	-	-	9	9	-
General joinery (thousand m^2)	1 330	490	2 800	1 940	21.2
Furniture (million Algerian dinars)	70	26	265	200	37
School furniture (million Algerian dinars)	29	24	56	53	17.9
Board (primary processing of wood) (thousand m^3)	31	23	148	140	41.8
Agglomerated cork discs (million units)	1 000	1 000	4 500	4 500	42.3
Black agglomerated cork (million m^3)	48	48	88	88	16.4
White agglomerated cork (million m^3)	-	-	3.5	3.5	-
8. BUILDING MATERIALS					
Cement (thousand tonnes)	1 026	1 026	3 500	3 500	36
Plaster (thousand tonnes)	84	62	350	325	40
Lime (thousand tonnes)	38	30	200	190	52

Product	1973		1977		Average annual growth rate, 1973/1977
	Total	Of this, government-owned	Total	Of this, government-owned	
Bricks and tiles (thousand tonnes)	618	503	2 000	1 900	35
Ceramic floor tiles (thousand m^2)	600	600	2 200	2 200	37
Ceramic sanitary ware (thousand tonnes)	-	-	9.3	9.3	-
Cement and terrazzo floor tiles (thousand m^2)	1 520	370	5 000	3 700	35
Asbestos cement (thousand tonnes)	34	34	100	100	31
Aggregates (thousand tonnes)	9 000	6 300	13 000	15 000	19
Crockery (thousand tonnes)	2.5	2.5	4.4	4.4	15 3
Hollow glass products (thousand tonnes)	15.5	15.5	68	68	40
Flat glass products (thousand tonnes)	-	-	9.3	9.3	-
9. FOODSTUFFS					
Flours and semolina (thousand tonnes)	1 207	1 207	1 700	1 700	8 8
Macaroni, spaghetti, etc. and couscous (thousand tonnes)	43	43	80	80	15.9
Refined oils (thousand tonnes)	111	98.6	174	160	10.7
Soaps and cakes of soap (thousand tonnes)	38 5	36	58	55	10.7
Tinned fruits and vegetables (thousand tonnes)	30	18	72	57	25
Refined and caked sugar (thousand tonnes)	75.6	75.6	240	240	33

Product	1973		1977		Average annual growth rate, 1973/1977
	Total	Of this, government-owned	Total	Of this, government-owned	
Margarine and vegetable fat (thousand tonnes)	5	5	9	9	15.9
Processed tobacco (thousand tonnes)	13	13	17.5	17.5	6.8
Mineral water (thousand hectolitres)	334	334	600	600	14.2
Aerated beverages (thousand hectolitres)	1 100	70	1 300	230	2.5
O. TEXTILES AND LEATHER					
Cotton yarn (thousand tonnes)	12	10	17	15	9
Woollen yarn (thousand tonnes)	6	2	11.8	5	18.4
Fabrics of all types for clothing and interior decoration (million linear metres)	104	43.8	145	72	8.7
Jute fabric (million linear metres)	2.7	-	5.5	2 8	19.5
Shirts (thousand units)	4 200	2 370	6 000	3 500	9.2
Work clothing (thousand units)	2 400	1 300	4 800	2 800	19
Suits (thousand units)	380	-	520	150	8.2
Industrial coverings (million m^2)	4.8	36	6	4.7	5.8
Shoe vamp leather (million units)	27.5	20	52.5	45	17.5
Leather shoes (uppers and bottoms) (thousand pairs)	10 500	2 000	15 000	3 800	8.8



ANNEX C

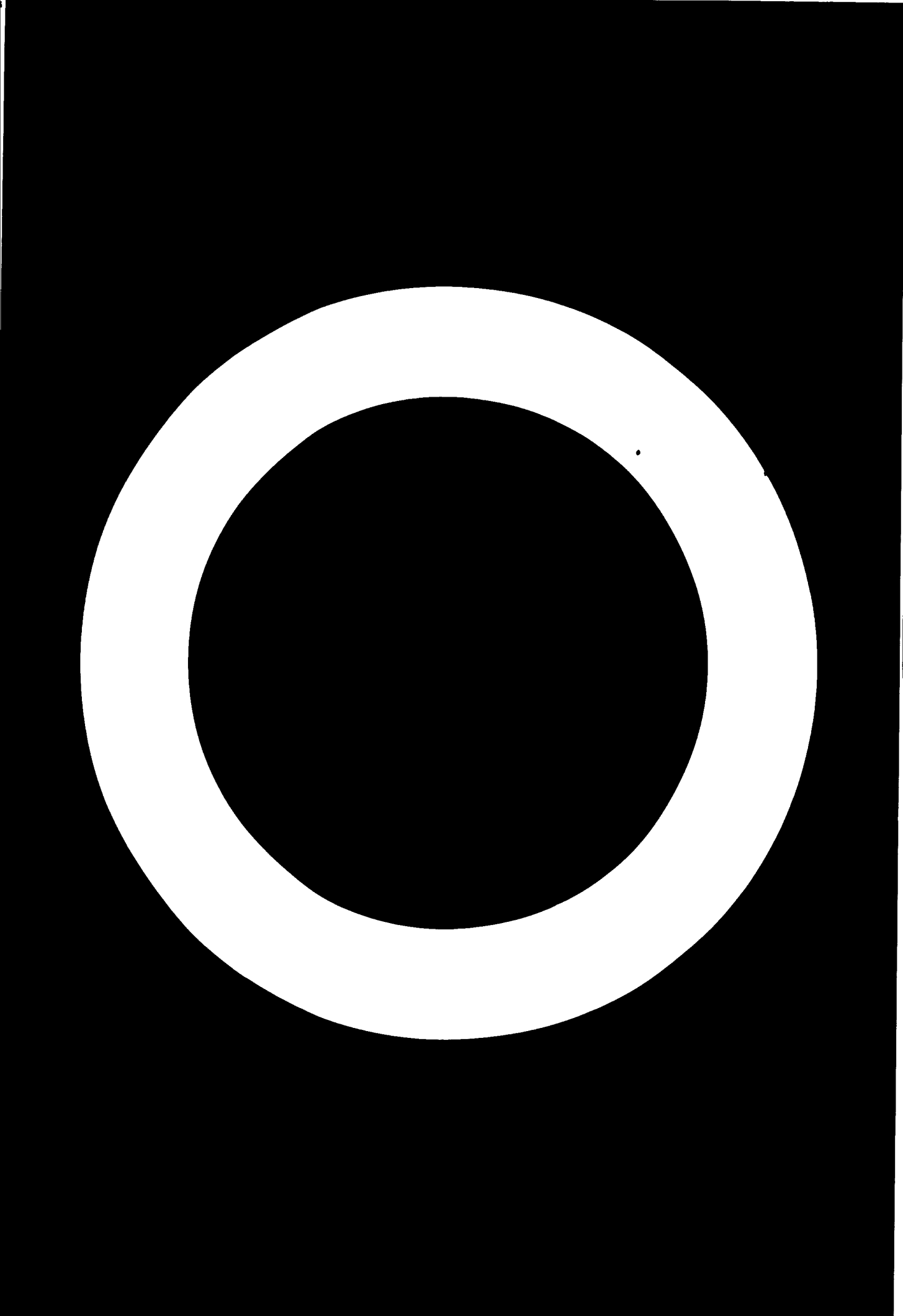
TRENDS IN THE PRODUCTION AND EXPORT OF HYDROCARBONS ACHIEVED (1967-1973) AND PLANNED (1974-1977)

PRODUCTION AND EXPORT OF HYDROCARBONS

	Three-Year Plan			First Four-Year Plan				Second Four-Year Plan			
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Crude petroleum (millions of tonnes)											
Production	39.0	42.9	44.8	48.2	37.1	50.1	50.8	53.9	56.4	57.9	59.5
Exports	36.3	41.1	42.0	45.5	34.9	46.3	45.9	48.4	50.9	52.4	50.5
Refined products (millions of tonnes)											
Production	2.0	2.1	2.0			2.6	5.1	5.5	5.5	5.5	5.5
Exports			0.5	0.3	0.3	0.5	2.4	2.6	2.3	2.0	4.8
Natural gas (thousands of millions of m3)											
Production	2.1	2.3	2.8	2.7	3.8	3.3	4.7				
Exports (LNG)		1.6	1.6	1.4	1.6	2.4					

FORECAST FOR 1980: By 1980, exports of hydrocarbons should account for 90 per cent of all exports, (in terms of value), and should be distributed as follows:

Crude petroleum: 43 million tonnes
Refined petroleum: 15 million tonnes
Gas: 42 million tonnes



ANNEX D

DEVELOPMENT OF INDUSTRIAL SECTORS (EXCLUDING HYDROCARBONS)
ACHIEVED (1967-1973) AND PLANNED (1974-1977)

(From an internal document)

1. VALUE ADDED
2. FIXED CAPITAL INVESTMENT
3. LABOUR

For the Three-Year Plan (1967-1969) and the First Four-Year Plan (1970-1973), the figures given below reflect actual results. For the Second Four-Year Plan (1974-1977), projections have been made on the basis of the targets of the plan and certain observed trends.

The projections up to 1977 should be fairly realistic. However, there might be discussion concerning two branches, namely:

- Chemicals, as a result of the starting up of the Arzew and Skikda petrochemical complexes, and
- Cement, as a result of the starting up of two large production units.

<u>This annex does not cover hydrocarbons</u>.

1. ADDED VALUE

The added value for all industries will increase by a factor of 2.5 in ten years.

The annual growth rate of industrial added value slightly declined in the period covered by the First Four-Year Plan, by comparison with that covered by the Three-Year Plan (8.2 per cent as against 9.6 per cent), but should increase in the period covered by the Second Four-Year Plan (11.2 per cent).

It will be noted that there was a slow-down in building materials during the First Four-Year Plan (growth rate = 1.8 per cent), and a rapid recovery during the Second Four-Year Plan (growth rate = 29.2 per cent).

The share accounted for by processing industries has remained stable during the ten-year period, but the share of light industries is declining:

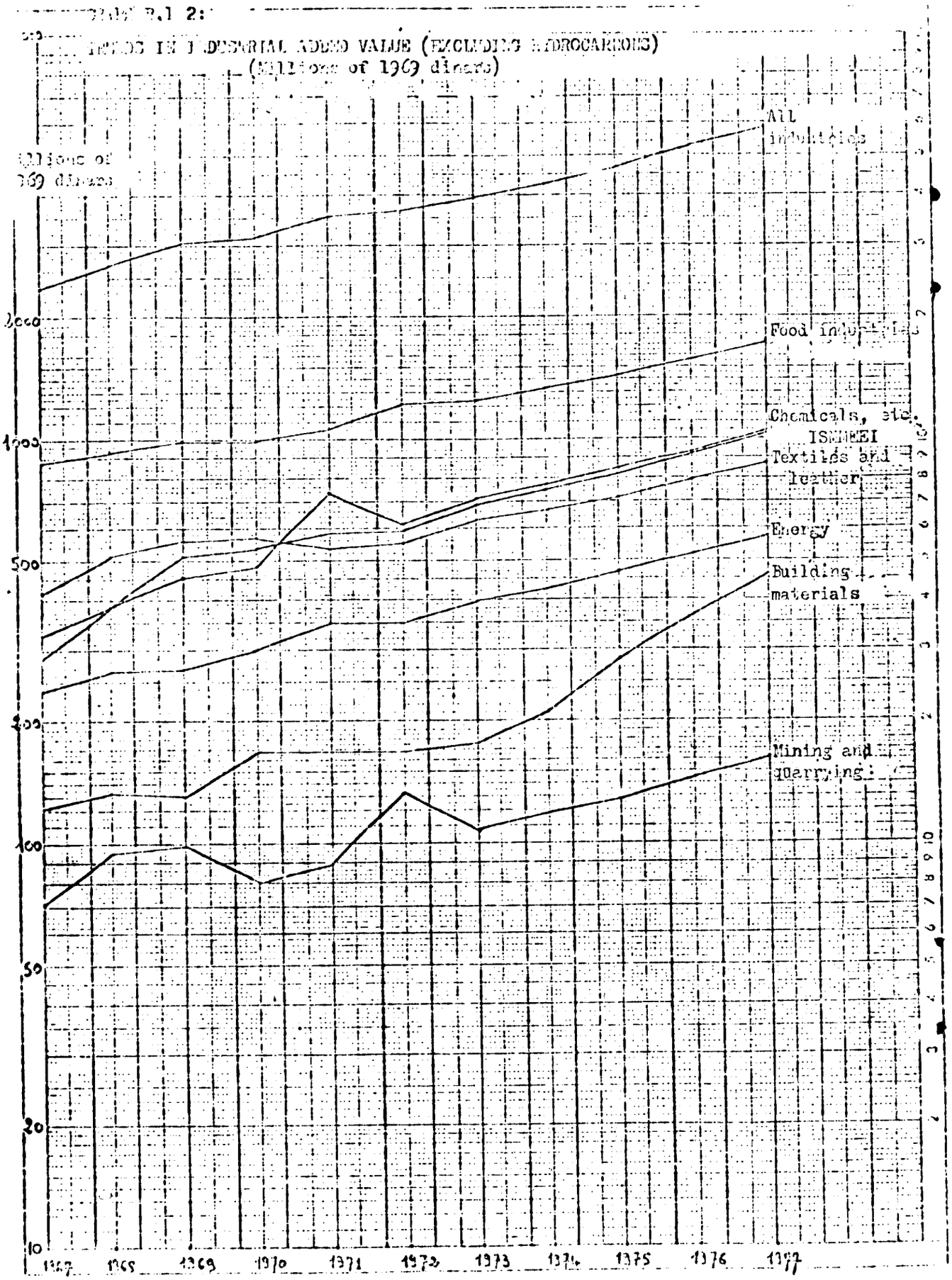
	1967-69	1970-72	1974-75
- Food industries	34.8	31.8	30.6
- Textiles and leather	18.5	16.2	15.3
	53.3	48.0	45.9

while that of heavy industries is increasing:

	1967-69	1970-72	1974-76
- Iron and steel, metallurgical, mechanical and electrical engineering industries (ISMMEE)	14.7	16.7	17.5
- Chemicals and miscellaneous	14.5	17.9	17.9
- Building materials	4.5	4.9	6.0
	33.7	39.5	41.4

B.1-1: Trends in industrial value added (excluding hydrocarbons) (Millions of 1969 dinars)

Sectors	Three-Year Plan			First Four-Year Plan				Second Four-Year Plan			
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
1. Mining and quarrying	71	95	99	80	89	132	107	118	129	143	163
2. Energy	239	263	269	300	350	349	394	421	467	518	576
3. Manufacturing industries	2 028	2 335	2 659	2 782	3 084	3 140	3 453	3 722	4 087	4 559	5 109
ISMMSEI	288	382	516	536	584	593	682	743	819	918	1 027
Chemicals and miscellaneous	325	385	457	484	739	616	710	768	842	929	1 036
Building materials	121	132	140	167	167	167	176	210	282	362	460
Food industries	875	928	996	996	1 056	1 212	1 247	1 338	1 427	1 559	1 717
Textiles and leather	419	508	560	569	538	552	638	663	717	791	869
4. All industries	2 338	2 693	3 027	3 162	3 523	3 621	3 954	4 261	4 683	5 222	5 848


(Millions of 1969 dinars)
All industries
Food industries
Chemicals, etc. ISMEEI
Textiles and leather
Energy
Building materials
Mining and quarrying
2000
1000
500
200
100
50
20
10
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977

B.1-3: Annual growth rate of added value (constant prices)
(average value over a three-year period) (percentages)

	1967-1969	1970-1972	1974-1976
1. Mining and quarrying	3.4	9.0	11.4
2. Energy[1/]	7.8	9.3	11.0
3. Manufacturing industries			
ISMEEI	21.0	8.6	11.5
Chemicals and miscellaneous	13.6	12.2	10.5
Building materials	11.7	1.8	29.2
Food industries	4.3	7.7	8.7
Textiles and leather	10.1	6.7	9.5
3. All industries[1/]	9.6	8.2	11.2

B.1-4: Breakdown of industrial added value
(average value over a three-year period)

	1967-1969	1970-1972	1974-1976
1. Mining and quarrying	3.4	2.9	2.8
2. Energy[1/]	9.6	9.6	9.9
3. Manufacturing industries	87.0	87.5	87.3
ISMEEI	14.7	16.7	17.5
Chemicals and miscellaneous	14.5	17.9	17.9
Building materials	4.5	4.9	6.0
Food industries	34.8	31.8	30.6
Textiles and leather	18.5	16.2	15.3
4. All industries[1/]	100.0	100.0	100.0

1/ Excluding hydrocarbons.

2. FIXED CAPITAL INVESTMENT

The fixed capital (equipment, buildings, etc. - exoluding stocks) should increase very substantially, by a factor of around 6, in ten years.

Expressed in more concrete terms, it is planned that in ten years six times as many factories will be established as existed in 1966.

Hence, the annual growth rate in respect of fixed capital is very high, with, however, a slight decline for the Second Four-Year Plan. (Starting from a higher level, it is natural that the growth rate should fall.)

The share accounted for by energy (electricity and gas - exoluding hydrocarbons), which was nearly one half in 1968 (48.6 per cent), has declined to one-fifth in 1975 (21.4 per cent). At the same time, the share acoounted for by manufacturing industries has increased from 42.9 per cent to 71.9 per cent, with the same phenomenon as observed for added value:

	67-69	70-72	74-76
- Reduction in the share accounted for by light industries	22.3	16.7	13.4
- Increase in the share accounted for by heavy industries	20.6	42.0	58.5
including ISMUEI	7.7	26.7	37.2

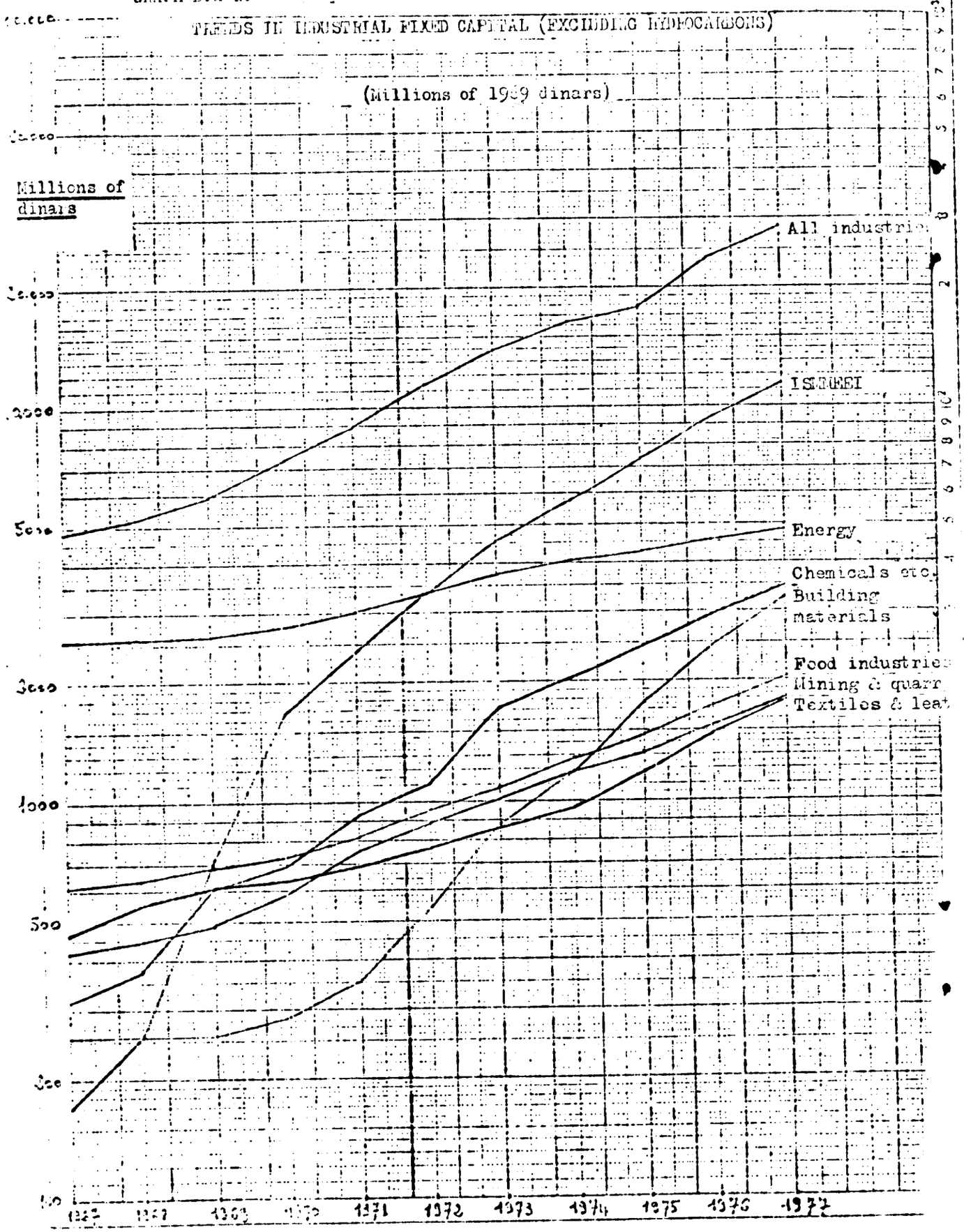
B.2-1: Trends in industrial fixed capital (excluding hydrocarbons) (Millions of 1969 dinars)

Sector	Three-Year Plan			First Four-Year Plan				Second Four-Year Plan			
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
1. Mining and quarrying	418	446	491	591	748	889	1 009	1 173	1 322	1 545	1 805
2. Energy	2 579	2 582	2 608	2 753	3 028	3 389	3 746	4 044	4 267	4 527	4 825
3. Manufacturing industries	1 809	2 172	2 883	4 017	5 191	7 005	9 094	11 214	14 141	17 826	21 991
ISMMEEI	170	354	718	1 667	2 393	3 338	4 549	5 777	7 302	9 274	11 432
Chemicals and miscellaneous	312	373	607	697	934	1 404	1 710	2 030	2 440	2 924	3 483
Building materials	256	258	260	288	354	541	879	1 169	1 764	2 434	3 254
Food industries	609	634	689	729	820	961	1 096	1 278	1 457	1 721	2 037
Textiles and leather	462	553	609	636	690	761	860	960	1 178	1 473	1 785
4. All industries	4 806	5 200	5 982	7 361	8 967	11 283	13 849	16 431	19 730	23 898	28 621
							+7 867				+14 772

GRAPH B.2 2:

TRENDS IN INDUSTRIAL FIXED CAPITAL (EXCLUDING HYDROCARBONS)

(Millions of 1969 dinars)



B.2-3: Annual growth rate of fixed capital (constant prices)
(Average value over a three-year period) (percentages)

	1962-1969	1970-1972	1974-1976
1. Mining and quarrying	12.8	18.7	15.6
2. Energy 1/	2.2	10.8	6.1
3. Manufacturing industries			
ISMMEEI	121.0	39.0	25.3
Chemicals and miscellaneous	29.8	33.4	19.8
Building materials	4.3	50.0	38.8
Food industries	6.2	14.6	17.0
Textiles and leather	10.7	10.8	22.9
4. All industries 1/	16.0	23.5	20.2

B.2-4: Breakdown of fixed capital
(Average value over a three-year period)

	1967-1969	1970-1972	1974-1976
1. Mining and quarrying	8.5	8.1	6.7
2. Energy 1/	48.6	33.2	21.4
3. Manufacturing industries	42.9	58.7	71.9
ISMMEEI	7.7	26.7	37.2
Chemicals and miscellaneous	8.1	11.0	12.4
Building materials	4.8	4.3	8.9
Food industries	12.1	9.1	7.4
Textiles and leather	10.2	7.6	6.0
4. All industries 1/	100.0	100.0	100.0

1/ Excluding hydrocarbons.

3. JOBS -

The number of jobs, like added value, will be increased by a factor of 2.5.

→ The productivity of labour (value added per job) can thus be expected to remain constant. (See below.)

The growth rates vary considerably from sector to sector, e.g.:

- 3.5 per cent a year for chemicals and miscellaneous,
- 19.0 per cent a year for building materials.

The share accounted for by jobs in manufacturing industries seems to be increasing very slightly (87.4 per cent in 1975, as compared with 84.4 per cent in 1968), with:

	1967-1969	1970-1972	1974-1976
- For light industry:	40.6	41.8	42.0
- For heavy industry:	43.8	43.6	45.2

In other words, the relative shares of these two groups remains the same.

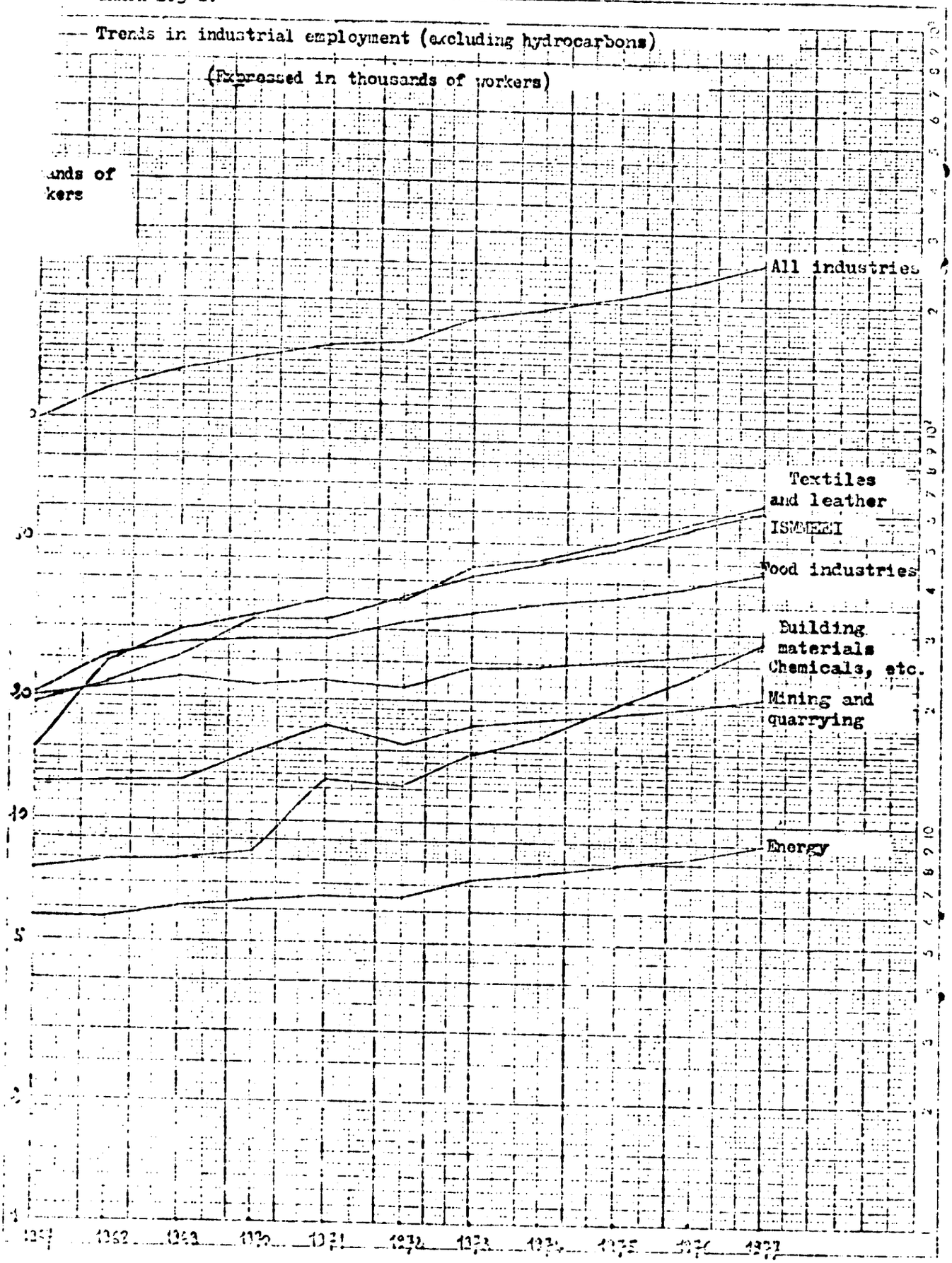
B.3-1: Trends in industrial employment (excluding hydrocarbons) (Thousands of workers)

Sector	Three-year Plan			First Four-Year Plan				Second Four-Year Plan			
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
1. Mining and quarrying	12.13	12.34	12.50	14.76	17.25	15.51	17.30	18.01	18.64	19.61	20.74
2. Energy	5.76	5.73	6.13	6.34	6.48	6.52	7.20	7.51	7.89	8.31	9.00
3. Manufacturing industries	81.93	101.47	113.23	121.94	130.84	136.91	156.30	166.08	181.17	200.75	222.76
ISMMEI	19.28	21.94	25.25	31.62	31.83	36.33	41.00	44.50	48.85	54.48	60.64
Chemicals and miscellaneous	20.00	21.48	22.78	21.82	22.41	21.87	24.10	24.68	25.43	26.31	27.39
Building materials	7.47	7.97	8.02	8.40	12.61	12.19	14.70	16.36	19.76	23.59	28.27
Food industries	20.18	25.38	27.31	28.03	28.13	31.28	33.20	35.02	36.81	39.45	42.61
Textiles and leather	15.00	24.70	29.87	32.07	35.86	35.24	43.30	45.52	50.32	56.92	63.85
4. All industries	101.02	120.95	133.70	148.17	156.60	162.46	184.70	191.60	207.70	228.67	252.50

GRAPH B.3-2:

Trends in industrial employment (excluding hydrocarbons)

(Expressed in thousands of workers)



B.3-3: Growth rate of employment

(Average value over a three-year period) (percentages)

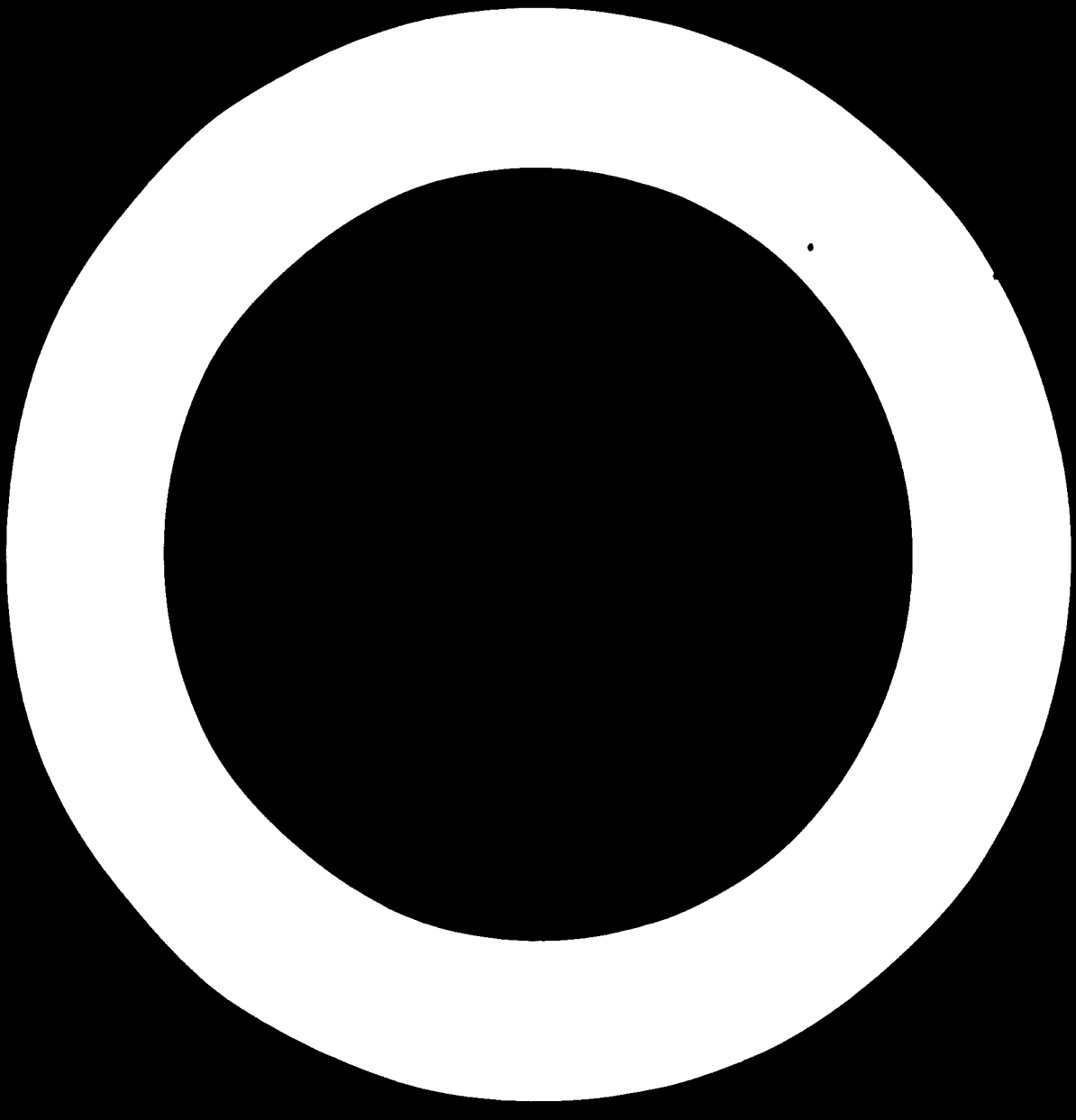
	1967-1969	1970-1972	1974-1976
1. Mining and quarrying	7.1	5.3	4.8
2. Energy 1/	3.2	4.5	6.3
3. Manufacturing industries			
ISMMEEI	18.6	9.4	10.8
Chemicals and miscellaneous	2.8	3.5	3.5
Building materials	4.0	19.0	19.9
Food industries	10.8	5.9	6.8
Textiles and leather	24.5	10.9	11.9
4. All industries 1/	13.2	7.8	9.7

B.3-4: Breakdown of employment

(Average value over a three-year period)

	1967-1969	1970-1972	1974-1976
1. Mining and quarrying	10,6	10.4	9.0
2. Energy 1/	5.0	4.2	3.8
3. Manufacturing industries	84.4	85.4	87.4
ISMMEEI	18.9	21.9	23.5
Chemicals and miscellaneous	18.3	14.4	12.2
Building materials	6.6	7.3	9.3
Food industries	20.8	19.1	17.7
Textiles and leather	19.8	22.7	24.3
4. All industries 1/	100.0	100.0	100.0

1/ Excluding hydrocarbons.



ANNEX E

ANALYSIS OF TRENDS IN INDUSTRIAL SECTORS (EXCLUDING HYDROCARBONS)

Analysis of the figures given in annex D gives a fairly good idea of trends in Algerian industry in the decade from 1967 to 1977.

1. RELATIONSHIPS AMONG GLOBAL QUANTITIES

The following three graphs make it possible to visualise the relationships existing among the three basic global quantities, namely:

- Industrial value added, P,
- Existing fixed capital, K,
- Labour employed, E.

(a) Since 1969-1970, these relationships have been more or less linear.

We obtain (without guaranteeing the absolute accuracy of these formulae)

$$P = 2\,100 + 0.128\,K$$

$$K = 194\,(E - 105)$$

$$P = 23\,E$$

where: P and K are expressed in millions of 1969 dinars, and
E is expressed in thousands of workers.

Of course, the absence of (relative) contradiction has been checked in these approximate formulae, i.e.:

Between the first two:

$$\left.\begin{array}{l} \Delta P = 0.128\,\Delta K \\ \Delta K = 194\,\Delta E \end{array}\right\} \longrightarrow \Delta P = 24\,\Delta E$$

and the last one:

$$\Delta P = 23\,\Delta E$$

The approximate formulae shown in the frame are assumed to be valid as from 1970. Consequently, beginning in 1970, it is as though:[1]

- All investment in fixed capital had taken place in projects with a marginal productivity of fixed capital equal to 0.128, in other words a very high marginal capital coefficient of around 8.
- Each new job created involved a substantial investment in fixed capital of 194,000 1969 dinars.
- All jobs resulted in the same additional production - namely, 23,000 1969 dinars.

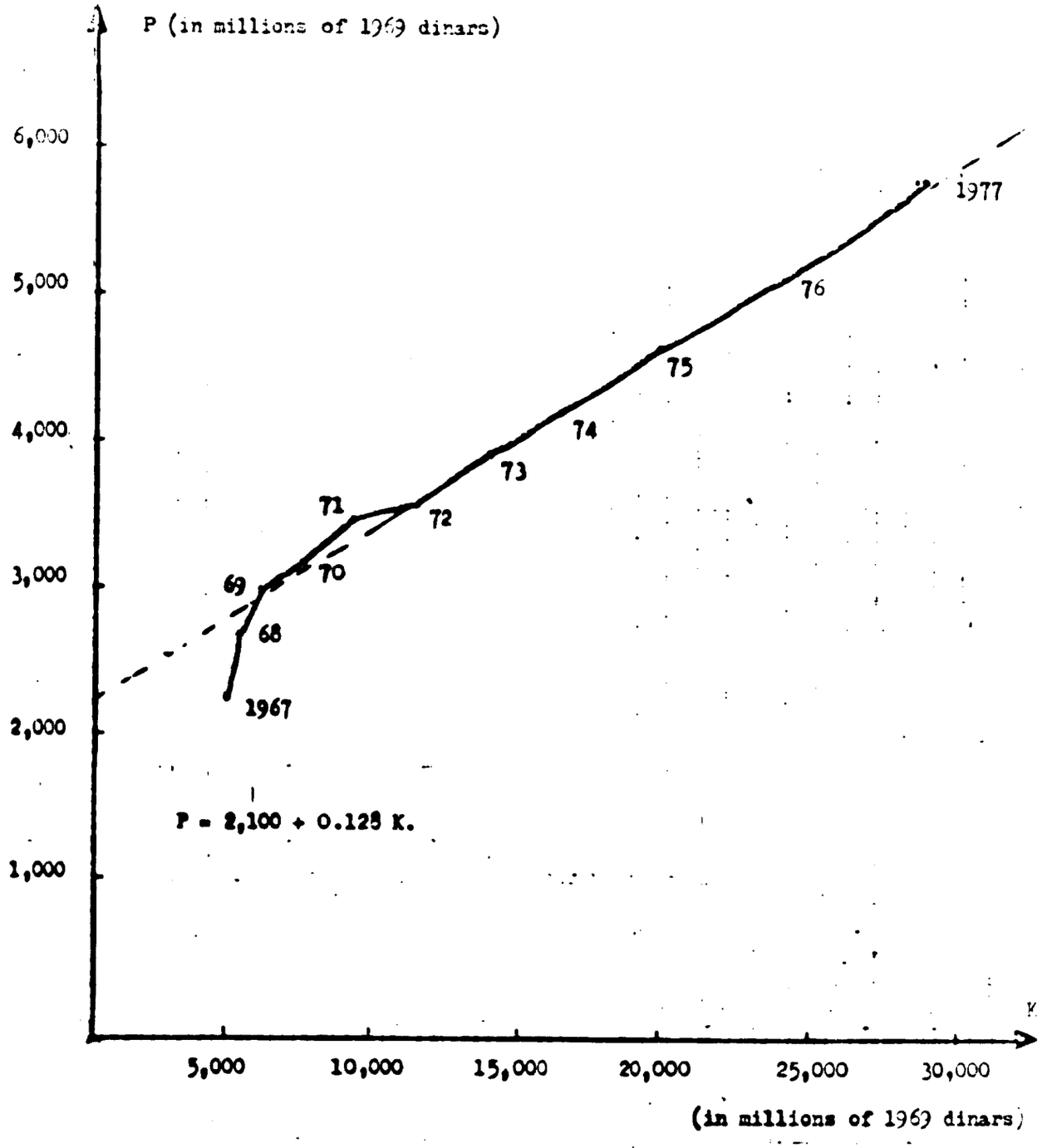
After 1970	One job costs 194,000 1969 dinars One job results in 23,000 1969 dinars of additional added value The marginal capital coefficient = $\frac{194,000}{23,000}$ ≠ 8

(b) On the other hand, before 1969, the relationships among global quantities were very different. This is indicated by the graphs:

- The marginal productivity of fixed capital was much higher, around 0.58, and the marginal capital coefficient was much lower, around 1.7.
- Investment in fixed capital per worker was relatively small, since a new job cost an average of only 37,000 1969 dinars.
- The marginal productivity of labour has always been 23,000 1969 dinars.

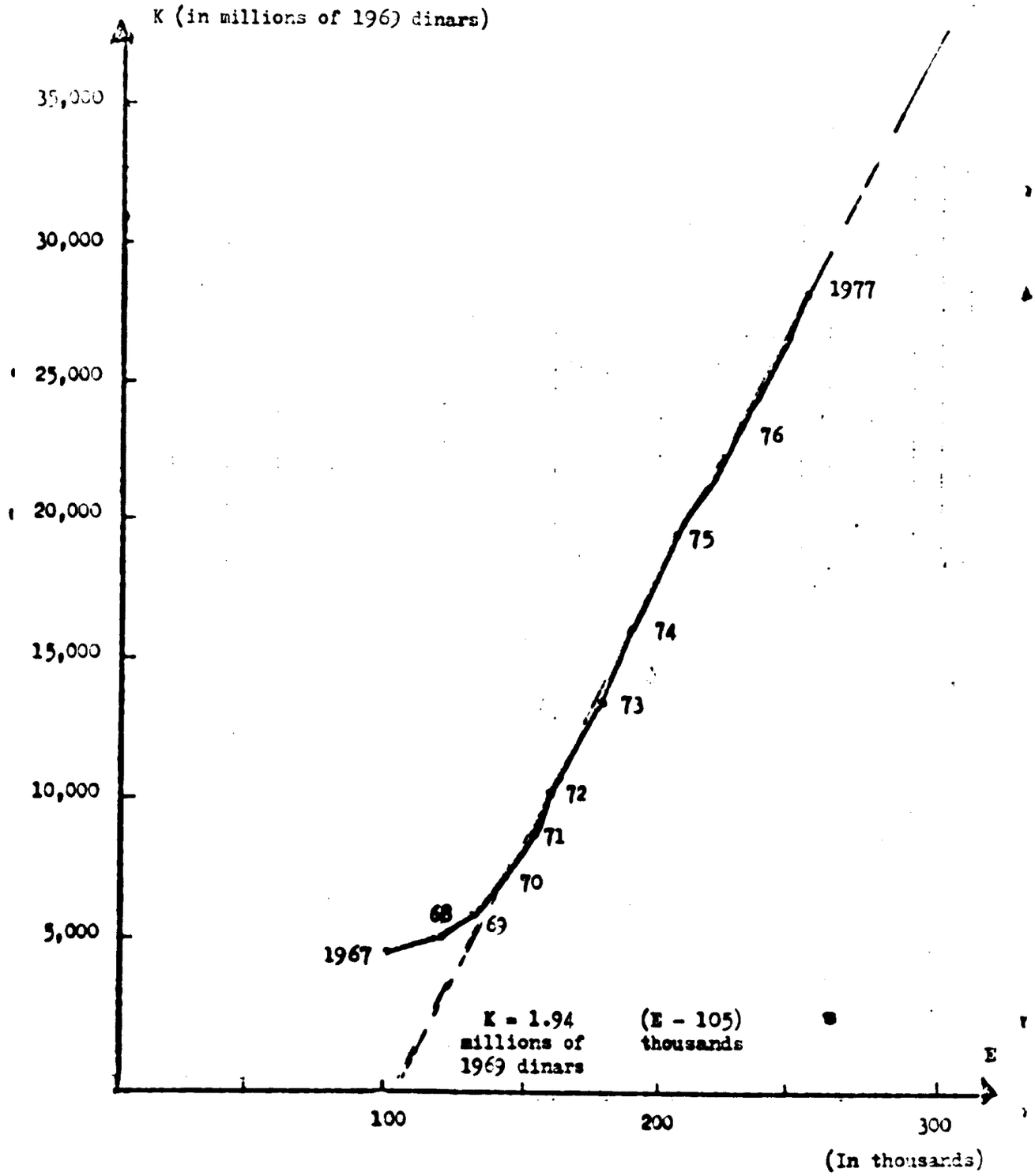
Before 1969	One job cost 37,000 1969 dinars One job resulted in 23,000 1969 dinars of additional added value The marginal capital coefficient = $\frac{37,000}{23,000}$ ≠ 1.65.

1/ The considerable magnitude of the fixed capital figure by comparison with production (capital coefficient) or jobs (fixed capital per person employed) might be explained by the fact that the fixed capital in question is greater than the fixed capital in service alone, which constitutes only part of the total (taking into account unfinished plants, for example).

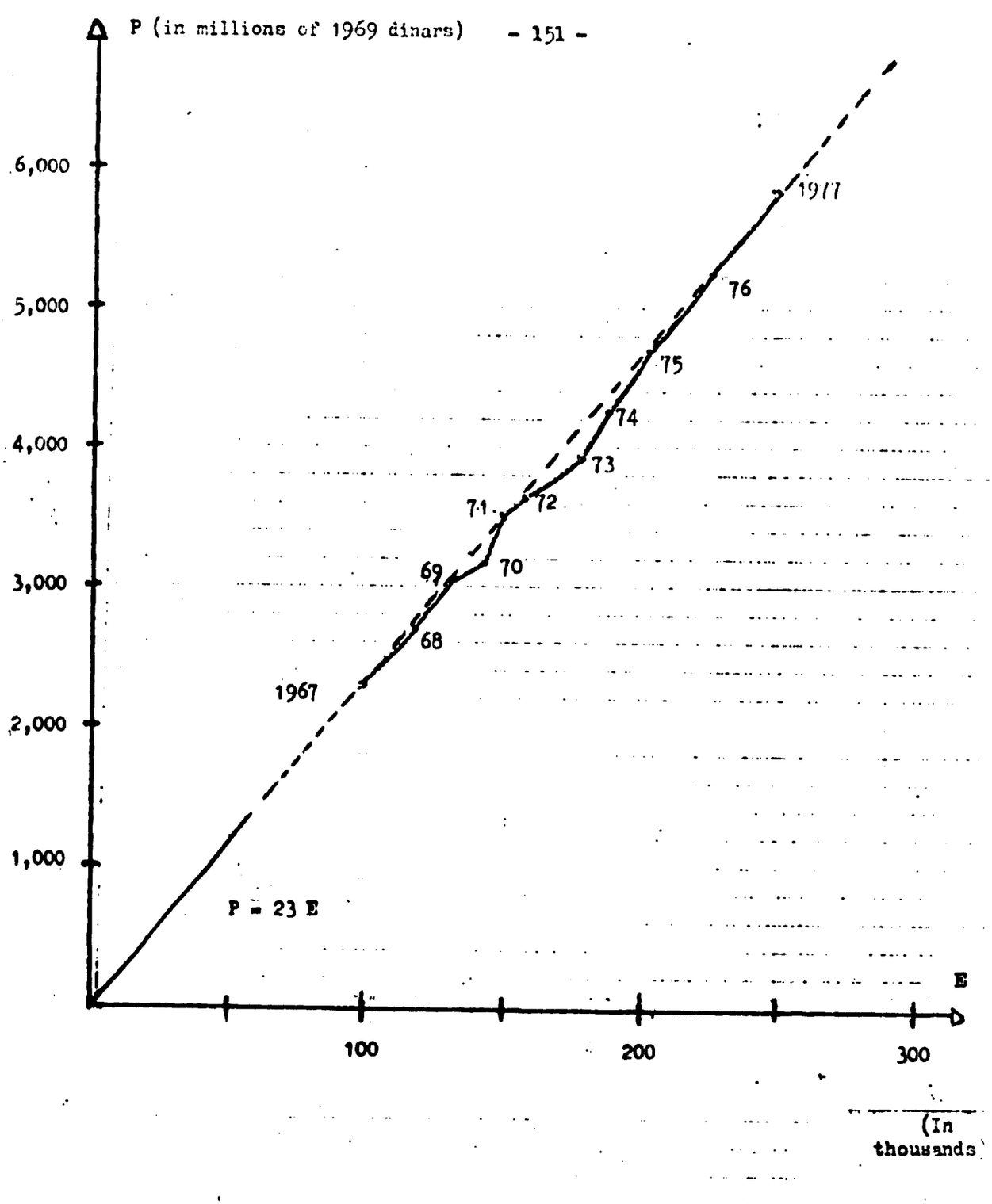


I. Relationship between production and fixed capital

(added value)



II. Relationship between fixed capital and employment



III. Relationship between production and employment
(added value)

2. AN ATTEMPTED EXPLANATION: THE TURNING-POINT, 1969-1970

From the preceding graphs, it appears that the years 1969-1970 were a true turning-point. The Three-Year Plan ended in 1969, and the First Four-Year Plan began in 1970.

In considering developments from a more qualitative point of view, we can see that:

- The Three-Year Plan was above all:

  A plan for revitalizing the economy and

  A plan for reorganizing structures in the industrial sector.

- The First Four-Year Plan (like the second one) was:

  A plan for the establishment of heavy industry.

It is true that, both plans included development of hydrocarbons. However, the Three-Year Plan enjoyed two important advantages with regard to fixed capital, namely:

- It was possible to achieve substantial additional production without new fixed capital simply by starting up idle production capacity again;
- The private sector participated in industrial development to a fairly substantial degree, but primarily in light industry - in other words, in sectors using relatively little fixed capital.

This would explain, at least in part, the low figures for the marginal capital coefficient and for marginal fixed capital per worker up to 1969.

Furthermore, as has already been pointed out in the foot-note to the preceding section, the fixed assets purchased in the course of the Four-Year Plans were not necessarily all put into service (construction work being still under way), and this would explain the size of the figures for the marginal capital coefficient and for marginal fixed capital per worker since 1970.

On the other hand, the stability of labour productivity (#23,000 1969 dinars) during the decade from 1967-1977 would still remain to be explained.

3. RATIOS BY SECTOR

The three ratios considered below relate to productivity of fixed capital, fixed capital per worker and productivity of labour employed. Their numerical value is an average value (i.e. it reflects relationships of magnitude) and not marginal (i.e. reflecting growth relationships). The figures for industry as a whole can be found in the foregoing graphs.

(a) Average productivity of fixed capital

or | Value added/fixed capital |

The average productivity of fixed capital (E.1) declines sharply in the course of time. This is true for all sectors (except perhaps energy):

- In the ISMMEEI - primarily because of iron and steel - average productivity declines virtually in the proportion 9:1;
- In chemicals and miscellaneous - mainly because of petrochemicals - average productivity declines in the proportion 3:1;
- Even in light industries, such as textiles and leather, average productivity declines in the proportion 1.5:1.

Over all, it declines in the proportion 2:1.

E.1.: Average productivity of fixed capital
(Value added/fixed capital)

		1967-1969	1970-1972	1974-1976
1.	Mining and quarrying	0.19	0.13	0.10
2.	Energy 1/	0.10	0.11	0.11
3.	Manufacturing industries			
	ISMMEEI	0.96	0.23	0.11
	Chemicals and miscellaneous	0.90	0.61	0.35
	Building materials	0.50	0.42	0.13
	Food industries	1.45	1.30	0.95
	Textiles and leather	0.92	0.79	0.60
4.	All industries 1/	0.50	0.37	0.23

1/ Excluding hydrocarbons.

(b) Average fixed capital per worker

or Fixed capital/job

Average fixed capital per worker (E.2) increases by a factor of 2.15, from less than 50,000 dinars/job to nearly 100,000 dinars/job.

This is due primarily to mining and quarrying and the heavy industries. For the latter, we have:

ISMMEEI	Multiplication by 8	(150,000 dinars/job around 1975)
Chemicals and miscellaneous	Multiplication by 5	(96,000 dinars/job around 1975)
Building materials	Multiplication by 3	(90,000 dinars/job around 1975)

On the other hand, there is no change for textiles and leather (23,000 dinars/job around 1975).

E.2.: Average fixed capital investment per worker (Fixed capital/job) (in thousands of 1969 dinars)

		1967-1969	1970-1972	1974-1976
1.	Mining and quarrying	37	47	72
2.	Energy 1/	4.4	4.7	5.4
3.	Manufacturing industries	19	74	150
	ISMMEEI	19	74	150
	Chemicals and miscellaneous	20	46	96
	Building materials	33	36	90
	Food industries	26	29	40
	Textiles and leather	23.3	20.2	23.6
4.	All industries 1/	44.9	59.2	96.3

1/ Excluding hydrocarbons.

(c) Average productivity of labour

or Value added/job

As has already been pointed out, the average productivity of labour (E.3) has not substantially changed during the whole course of the various plans.

At most, there has been an increase in the "chemicals and miscellaneous" sector, offset by a reduction in building materials and textiles and leather.

E.3.: Productivity of labour
(Value added/job) (in thousands of 1969 dinars)

		1967-1969	1970-1972	1974-1976
1.	Mining and quarrying	7.1	6.3	7.0
2.	Energy 1/	0.44	0.52	0.59
3.	Manufacturing industries			
	ISMOEEI	17.8	17.2	16.8
	Chemicals and miscellaneous	18	28	33
	Building materials	16.4	15	12
	Food industries	38.4	37.3	38.9
	Textiles and leather	21.4	16.1	14.2
4.	All industries 1/	22.6	22.0	22.6

1/ Excluding hydrocarbons.

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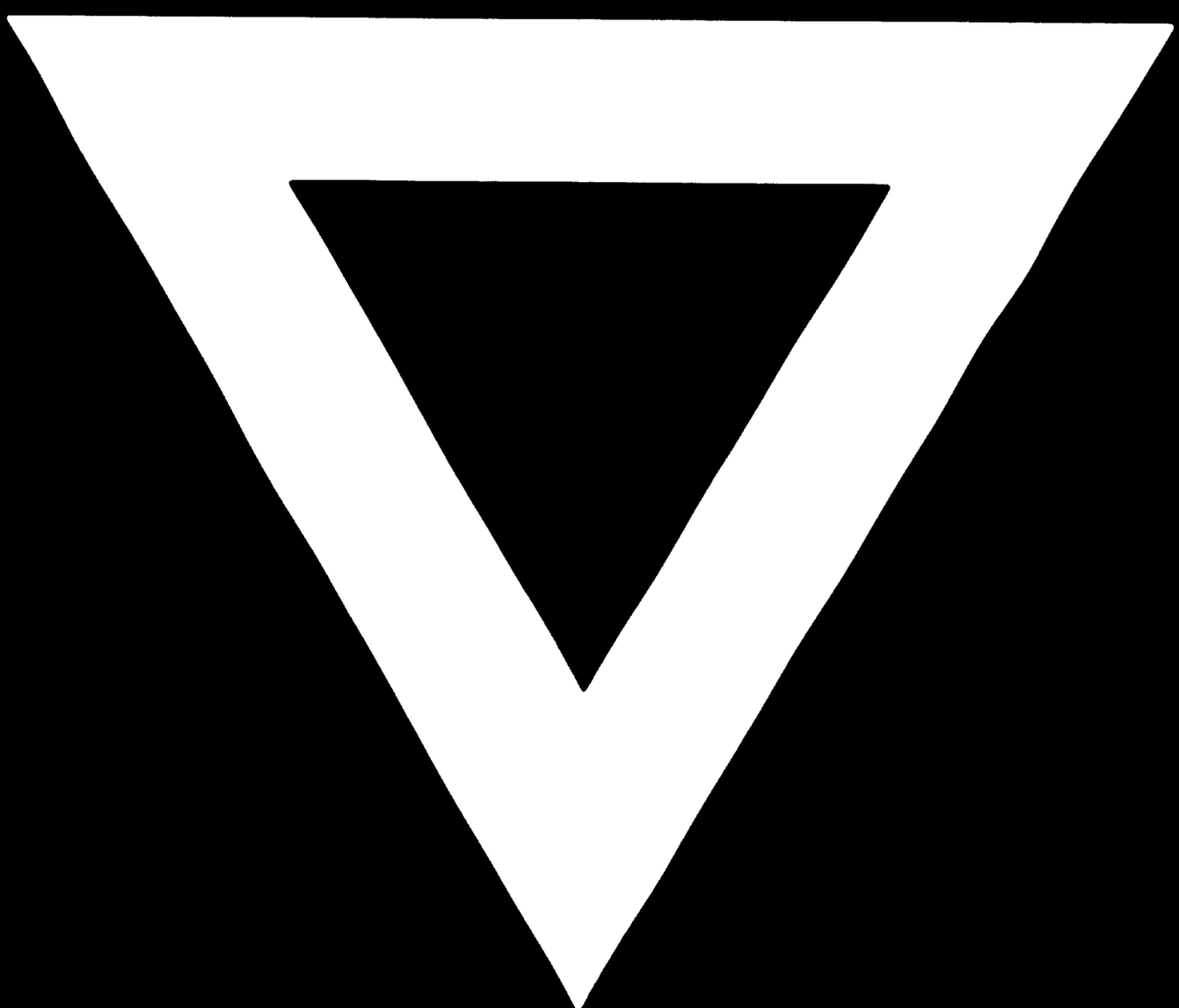

77.10.10