

OIL AND DEVELOPMENT: THE EXPERIENCE OF THE PETROLEUM PRODUCING COUNTRIES OF THE THIRD WORLD

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I. Introduction

Ten years after the 1973-74 oil price readjustments, the dramatic impact of the erosion of the price of the barrel in 1982-83 on a certain number of countries underlines that the post-petroleum path remains, to say the least, strewn with obstacles. For the time being, the rising flow of oil revenues seems to lead largely to an inflation of imports and a discouragement of exports and all productive efforts. The considerable devaluation of the Mexican peso at the beginning of 1982, in an economy having human and technical resources unequalled in other petroleum economies, is a good example that there is a logic of oil revenue which can go against the logic of production. Development on this level cannot be measured by the number of miles of roads and electric cables put down. Development involves much more; it involves the building of an economy oriented towards creativity, productive effort and domestic savings. Income and productive capability, here we find the puzzle of the classical economists. The wish to consider accumulation of a capital through oil revenues as being the same as accumulation through productive capability leads to a disregard of the major structural characteristic of the functioning of « rentier » economies. This is particularly true for revenues from mining since they play a major role in financing the national economy. Especially in the petrochemical industry, even if physical achievements are particularly important, it seems that they come up against a certain number of obstacles, including that of access to markets. In addition, valorization of natural resources, or again, industrialization through valorization of natural resources, is not a panacea. In the absence of a realistic strategy of balanced development, valorization is only a new form of dependence, the cost and consequences of which can easily be measured for the countries concerned.

In the absence — in many cases — of a serious industrial, technological and educational graft, given the amplitude of the brain drain for example, one must speak of an accelerated process of technical modernization.

Growth involves the existence of relatively integrated productive systems, with a progressive productivity. In oil-producing countries the productive sector of the economy is extremely limited, while services tend to predominate. In a petroleum economy, the Government plays a major role, as it is the redistributor of the oil revenues. Consumption and investments thus depend on the State Budget.

The well-being — the level of which depends on the size of the income — which characterizes petroleum economies and the nature of which is to totally isolate distri-

bution from production, has transformed a certain number of these economies into assisted or even pensioned economies. From this point of view, these economies present all the signs of development (increase in absolute standard of living, free medical care, free education, subsidy of all commodity products (travelling abroad, granting of housing, electrification, better administrative cover, motorization, etc.), in this sense, one can speak for these economies of « development without growth », where development means that a sometimes slowly sophisticated consumption parallels a rudimentary productive structure, more rudimentary especially as in some cases industrialization can be related to an ostentatious form of consumption.

Much effort remains to be made to achieve the post-petroleum objective. Giving up hard-headed policies which do not care for what economic realities and constraints are, and an often anachronistic institutional framework which is powerless to mobilize the creativity and energy of the agents are *inter alia* indispensable prerequisites for the adoption of development policies which would mitigate the effects and overcome the obstacles of a rentier economy.

In the first part of this article we will analyze the macroeconomy of the petroleum economies and development objectives. In the second part, we will try to draw up a balance of the efforts which have been made by the Third World petroleum economies.

II. The Macroeconomy of the petroleum economies and development policy

1. Macroeconomy of oil-exporting economies

This is characterized by the following elements — the absence of any link between production and distribution; receipts from oil do not originate in the country's productive systems¹: local production factors play a negligible role as is witnessed by the considerable gap between the cost of production and the price of the barrel in most of the countries.

1 Ruth First: *Libya: The elusive Revolution*, Baltimore Md., 1974, p. 140.

Yusif A. Sayiah: Problems and Prospects of Development in the Arabian Peninsula, *International Journal of Middle East Studies*, 2 January 1971, p. 50.

Table 1

ROLE OF THE OIL INDUSTRY AND OIL REVENUES IN A CERTAIN NUMBER OF
OIL-EXPORTING COUNTRIES - VARIOUS YEARS

		Added value oil-industry in % GNP	Oil revenues % total State income	Share of oil exports in % of total exports
Iran	1948	10	11	65
	1950	15,4	41	59
	1981	—	—	91,3
Saudi Arabia	1948	20	65	64
	1958	50	—	87
	1981	62,6	91,7	99,9
Iraq	1948	10	12,1	59
	1960	34,7	61	78
	1981	—	—	98,0
Algeria	1963	6,3	—	61,3
	1973	19,2	37,2	77,9
	1981	32,0	63,4	91,6
Nigeria	1972	18,7	—	73,9
	1981	24,3	76,6	92,7
Venezuela	1961	27,0	21,9	91,4
	1972	19,2	40,3	91,4
	1981	30,0	76,5	94,8
Jordan	1961	24,5	36,4	75,0
	1972	60,8	78,2	99,8
	1981	57,2	—	99,9
Kuwait	1961	n.d.	92,3	97,8
	1972	59,9	85,1	92,7
	1981	63,1	69,2	85,2
Indonesia	1961	—	—	33,2
	1972	11,1	38,8	38,7
	1981	24,1	60,4	62,1

Sources: various *Yearbook of National Accounts Statistics*, United Nations, various *Annual Reports of Central Banks* of Iran, Saudi Arabia (SAMA), Venezuela, Libya and Indonesia.

— *Quarterly Statistical Bulletin* of the Kuwait Central Bank; Algeria Statistical Yearbooks - various years.

In this context, the price-cost difference can be regarded as an income of the Ricardian type²; the best placed procedures take over the « fertility differential ». In addition, the gap between price and cost is even lower on gas, and particularly natural gas whose transport necessitates considerable investments.

— The oil-industry value added is a major component of GNP (it varied from 19% for Nigeria³ in 1981 to 62.8% for Saudi Arabia that same year⁴). Oil revenues as percentage of total Government receipts and of total currency receipts make up a high proportion of these latter.

The preceding table shows that these two indicators have soared in the OJEC countries under consideration in the last decades. The increase was particularly spectacular during the last decade with the two petroleum price readjustments: only Kuwait has experienced an inverse tendency because of a relatively large diversification in the economy mainly based on services and financial investment.

— The existence of substantial oil revenues is at the root of high public spending whilst traditional fiscal, balance of payments, and inflation constraints which other developing countries suffer from do not operate.

— Quicker increase in oil revenues as compared to GNP⁵ growth is translated into an unprecedented development of the public sector.

Some have mistaken this simple process of State control resulting from the special role played by the Government in collecting and redistributing oil revenues for a special kind of socialism⁶. In oil exporting economies, hierarchies, value systems and class struggles tend to group around the distribution of oil-revenues. Traditional Marx-

2 This remark does not mean that the petroleum price should reflect the cost of each producer's own production. In Ricardian logic, the price is the reflection of the most unfavourable production conditions. In the present case, the production costs of the North Sea (\$ 28) or again, those of alternative energy sources, are the criteria which apply.

3 Central Bank of Nigeria, *Annual Report*, 1981, p. 5.

4 SAMA, *Annual Report*, 1981, p. 171.

5 In some countries where the petroleum sector constitutes the major and unrivalled source of GNP, the increase in the two indicators tends to a certain parallelism. This is the case in Qatar.

6 See amongst others on this point: Tarek Y. Ismael: « Socialism in Iraq », pp. 77-84; Valerie Plave Bennett: « Libyan Socialism », pp. 99-119; and Jean Lecas: « Algerian socialism, nationalism, industrialization and State building », pp. 121 to 152, in *Socialism in the Third World*, edited by Helen Desfosses and Jacques Levesque, Praeger, 1975.

ist analysis based on the struggle for distribution of the productive surplus among social groups is here totally invalid.

Global growth performances of oil-exporting economies are generally mediocre considering the special investment effort made by these countries. Table 2 gives the evolution of growth of GDP and investment between 1960 and 1980 in two categories of country, the oil exporting countries and other developing countries. In order to warp the analysis, we have excluded dynamic semi-industrialized economies from the analysis (Korea, Taiwan, Singapore, etc.); a certain number of less advanced countries have also been excluded from the sample of twelve countries. The absence of data for a few countries does not alter the observable general tendency. The rate of investment grew by 5.1 and 13.3% for each of the decades considered in oil-exporting countries, whilst GDP grew on average respectively by 6.6 and 4.1% per annum during the same periods.

The rate of growth of investment was 7.5 and 5.8% per annum on average for the second category of countries, whilst the GDP grew at respective rates of 4.7 and 5.2 during the same period.

It can be seen that growth performances of the oil-exporting countries are better between 1960 and 1970, whereas the investment effort bore no resemblance to that of the following decade (51% as against 13.3%). Even more, the rate of growth of the GDP was lower (4.1 % as against 6.6%).

Conversely, the second category of countries — despite the massive presence of poor countries in the sample — shows better growth performances with a lower investment rate (5.2% and 5.8%). These results underline the inability of oil economies to pass from the extensive investment to the intensive investment phase; the absorptive capacity of these economies remains limited and the productive graft is systematically adjourned.

Extensive public investment proves unable to generate structural changes which make socioeconomic development possible. Therefore, the considerable amounts allotted by oil-producing countries to imports of consumer goods do not encourage development of local production.

It seems then that large public investments in the oil-exporting countries do stimulate demand but are powerless to generate rapid economic growth⁷. The second perverse

⁷ This point was already underlined nearly 15 years ago by H. Mahdavy: « The Patterns and problems of

effect in oil-producing countries is the demonstration effect of relatively high wages in the hydrocarbons sector upon the wages in the rest of the economy. Dudley Seers has thus been able to show⁸ that in these States, industrialization encounters more difficulties and unemployment is greater than in the other LDC's. In fact, the tensions generated in the latter by restrictions on import capacity compelled LDC's Governments to employment-generating measures. Petroleum economies on the other hand operate differently; rises in wages or failures of local enterprises do not lead to balance of payments crises but to growing under-employment. Whilst the level of employment actually depends on exports, it also depends upon wage level. In a petroleum economy, the rate of growth of employment depends in fact on the export-wage rate differential, i.e. on a veritable « wage fund ».

Seers was able to show, taking Venezuela in the fifties as an example, that in any analysis of a petroleum economy the significant concept is not the national product but total employment, as the basic problem of these economies does not stem from insufficient income, but from unemployment of a structural nature.

In addition, investment is not related to national saving, but is a function of exports and therefore of an induced nature. Any change in the economic scene leading to a reduction in oil demand entails a fall in investment and flight of capital. The recent examples of Nigeria and the Gulf countries illustrate this mechanism.

In fact a petroleum economy has a « potentially explosive nature », a nature which explains the dramatic Nigerian decision to expel millions of African workers.

The danger which faces « rentier » States is that, whilst certain natural resources in these countries are fully developed in accordance with external objectives and high Government expenditure, this exploitation creates an impression of prosperity and growth (generally in the towns) whilst the largest part of the population is imprisoned in under-development, and at the same time crucial long-term development factors are neglected. The daily state of regression in other developing countries, pushes the latter, on the other hand, to pay more attention to these factors in order to avoid inevitable political explosion. The increase in the gap between developing countries and the « rentier developing countries » can then be explained: rising well-being and prosperity

economic development in rentier states », the case of Iran, in *Studies in Economic History of the Middle East*, edited by Ma A. Cook, Oxford, 1970.

8 « The Mechanism of an Open Petroleum Economy », *Social and Economic Studies*, Vol. XIII, No. 2, June 1964, p. 236.

Table 2

OIL-EXPORTING COUNTRIES AND OTHER DEVELOPING COUNTRIES:
 RATES OF GROWTH OF GDP AND INVESTMENTS RATE COMPARISON
 1960 - 1970 - 1980

	GDP		Internal Investment	
	1960-70	1970-80	1960-70	1970-80
<i>Oil-exporting countries</i>				
Libya	24,4	2,2	16,3	10,6
Saudi Arabia	—	10,6	—	42,6
Kuwait	5,7	2,5	—	26,1
Algeria	4,3	7,0	-0,1	13,2
Mexico	7,2	5,2	9,6	7,4
Iran	11,2	2,5	12,2	—
Irak	6,1	12,1	3,0	27,2
Venezuela	6,0	5,0	7,6	—
Trinity and Tobago	4,0	5,1	-2,3	—
Indonesia	3,9	7,6	4,6	14,4
Congo	2,7	3,1	2,9	2,7
Nigeria	4,4	-1,1	7,4	15,8
Average growth rate	6,6	4,1	5,1	13,3
<i>Other Developing Countries</i>				
Bangladesh	3,7	3,9	11,2	1,8
Ethiopia	4,4	2,0	5,7	1,2
Upper Volta	3,0	3,5	—	4,8
India	3,4	3,6	5,3	4,8
Tanzania	6,0	4,9	9,8	3,0
Pakistan	6,7	4,7	6,9	2,4
Kenya	6,0	6,5	7,0	1,2
Lesotho	5,2	7,9	20,7	22,0
Guatemala	5,6	5,7	7,9	7,9
Colombia	5,1	5,9	4,5	5,4
Paraguay	4,2	8,6	6,8	18,7
Mali	3,3	4,9	4,9	3,3
Rate of growth	4,7	5,2	7,5	5,8

Source: *Report on World Development 1982*: World Bank 1982, pp. 130-132.

(of at least part of the population) resulting from high public spending and substantial imports put off the urgency of rapid development, an urgency which is felt strongly in other developing countries. Inequalities in income and wealth, frustrating though they may be, are borne more easily than in the latter countries, as they stem from exploitation of natural resources and not from direct exploitation of the population. As a consequence, the economic and technological backwardness of « rentier » economies can coincide with a very high level of inertia and socio-political stagnation. The state of « development » without growth is accompanied by almost complete immobility of the political system.

— *Weakness of absorptive capacity*

In the years 1948 and 1949, on the occasion of studies on development aid for developing countries undertaken by the World Bank, a strong impetus was given to the concept of « absorptive capacity » which is still commonly used today⁹.

However, this concept dates back to the work of Marx, Keynes and Schumpeter, who in turn examined possible situations of « over-accumulation » of capital, « full investment » and « decrease in investment opportunities »¹⁰.

Although definitions of this concept vary today in their details, the same fundamental question is still asked¹¹: up to what point can one invest usefully? Most authors reply that optimum investment can be at least theoretically determined by:

1. demand and size of domestic and foreign markets;
2. obstacles arising from inadequate infrastructure and shortage of productive factors, and
3. institutional political and socio-cultural constraints.

From this point of view and over a given period, any country has a limited absorptive capacity, and its own investment optimum.

We can therefore see that it is not easy to make serious applied studies on the oft-repeated idea of a « low absorptive capacity » of « some Arab producers ». Actually if

9 « International Bank for Reconstruction and Development », *Fourth Annual Report*, Washington, 1948, p. 8.

10 A. Ayoub and N. The Riep, *Les incidences économiques et financières des revenus pétroliers, aspects national, régional et international*, Roneo, Laval, Quebec.

11 See the papers presented at the Second International conference on « Energy, Surplus Funds and Absorptive Capacity », Boulder, Colorado, 6-7 November 1975.

the objective is to determine the path of optimum economic growth, it must then be seen that a country's absorptive capacity could become dynamic if one or another of the three above-mentioned obstacles is eliminated. If, on the other hand, the objective is to quantify « financial » absorptive capacity, herein defined as the import capacity for all products and services coming from abroad¹², a certain number of events can modify the perspective: a conflict situation in the Middle East could lead to large armaments buying without there being for all that any growth¹³. The near bankruptcy of Irak is an example. Under these conditions, it is evident that a country's level of absorption can greatly depend on internal political factors in these countries and on the evolution of the conflict in the Middle East; all of which — apart from the nature of each country's internal development policy — are factors which considerably limit the pertinence and realism of projections of each country's « absorptive capacity ».

If by absorptive capacity, however, we mean transformation of financial resources into physical capital and their subsequent productive use, it is clear that in the *short-term*, limits are imposed on any optimum use. When the hypothetical time limit is removed and the implementation horizon extended, wider perspectives open up, whilst options of a different nature can be envisaged which were not originally imagined.

As noted by Ganagé: « Problems of absorptive capacity (then) become less pressing, disappear to leave room for structural mutations of an economic, social or political kind, within which an adequate choice of projects fits into a scheme of long-term phenomenon. Constraints imposed by infrastructures, such as electricity, water, telephone and transport, which are rightly considered as a short-term limitation, will then appear to be surmountable »¹⁴.

Considering the relativity of constraints deriving from infrastructure and human resources — this means that the problem of the absorption of surpluses stemming from petroleum exploitation, is in fact on a different level, i.e. on the level of the specific structure of each country; in the rentier logic for example and in developing countries generally

12 Amongst others, this is one approach worked out by Christopher A. Gibellini: « Forecasting absorptive capacity for oil revenues: Practical techniques for policy analysis », report presented to the annual conference of the Western Economic Association, San-Diego, California, 25-28 June 1975, p. 8.

13 As in the case of the tens of billion dollars Saudi Arabia spent on armaments in these latest years to protect the Gulf from the « Iranian Contagion ».

14 Elisa Ganagé: « Capitaux et développement: rôle de la firme multinationale dans les pays arabes », *Mondes en développement*, No. 21, 1978, p. 10.

— corruption, nepotism, power instability, administrative inertia, fiscal fraud, socio-cultural environment, etc.

Taking environmental characteristics and problems into account limits the scope of the analysis in terms of absorptive capacity. Herein the concept of absorptive capacity will therefore be limited to the bottlenecks arising in connection with economic phenomena and which are likely to be surmounted in the long-term¹⁵. But it is clear that capital absorption cannot be boiled down to a series of internal measures aiming at maximizing the rate of investment or stimulating global demand.

The concept of absorption is too limited and far too narrow to reflect the structural transformations which the post-petroleum era calls for and above all, this concept (finances) the perverse effects of oil revenues on the genesis of self-sustaining development.

2. Development philosophy in petroleum economies

In the early days oil-producing countries acted as if there was perfect substitution between internal development factors (non commercial goods for example) and imported inputs. An analysis of the investment programmes and plans of oil-exporting countries of OPEC alone for the 1974-1982 period reveals a major fact: i.e. the huge volume of anticipated investments, viz. nearly \$ 900 billion, of which nearly \$ 600 billion for the following five countries: Saudi Arabia, Iran, Libya, Irak and Algeria — astronomical figures even when compared to those of the European Marshall Plan.

The second outstanding fact is the very low level of job creation anticipated in this investment: barely seven million. Industrialization and the building of indispensable infrastructures (roads, railways, ports, airports, dams, schools and universities, hospitals, etc.) are among the major elements of this development effort. In more concrete terms, this concerns promotion of diversified industries based upon valorization of hydrocarbon resources (refining, petrochemicals, steel, etc.) and promoting or modernizing of non-existent or outdated agriculture.

The common feature of all oil-exporting countries' development programmes is the emphasis that is laid on valorization of hydrocarbons: oil and gas. This emphasis is

15 W. Stevens, The capital absorptive capacity in developing countries, A. W. Sijhoff Leiden, 1971.

even more marked in the Gulf countries where hydrocarbons often are the only substantial resources.

The idea underlying the objective of hydrocarbon valorization is that economic development can be based on a virtually unlimited supply of capital, according to Ragai and Mallakh's formula¹⁶. This formula seemed to suit the characteristics of high income economies as well as those of the Gulf. For the latter, modernization occurs through diversification beyond pure export of the raw material. Thanks to their highly competitive exports, these economies should be able to meet their future import needs¹⁷. The typical example of a capital and energy-intensive industry — it was affirmed — is the petrochemical industry. Petroleum is traditionally used as a source of energy, but it is also increasingly more used as « feedstock » in the petrochemical industries¹⁸. The products of this industry include first generation products, intermediary products and finished second generation products.

Some of the characteristics of this industry make it interesting for the Arab countries of the Gulf; i.e.:

a) *Capital intensity*

This industry has one of the highest capital/labour ratios in the world. In fact, investment for each newly-created job was estimated at between 20,000 and 100,000 dollars in 1973¹⁹. In addition, intermediary and basic products need increasingly larger investments as one goes up in levels of processing towards finished products and on to consumer goods.

Investments required to process finished products into consumer goods or into industrial goods (third phase) are twice or three times as high as those necessary to produce intermediary products (second phase), and five times the amount necessary to produce basic products (first phase).

16 Ragai and Mallakh: « Planning in a capital surplus economy », *Land Economics*, November 1966, pp. 425-440.

17 See hereon the argument of Delbert A. Snider: *Introduction to international Economics*, 4th Edition, Homewood, Illinois, 1961, p. 34.

18 Claude Mercier: *Petrochemical Industry and the Possibilities of its Establishment in the Developing countries*, Paris, 1966, ch. IV and V. The first generation products are: Olefins, acetylene, Butadiene, aromatics, ammonia and methanol. The finished and second generation products are plastics, vinyls, synthetic fibres, synthetic rubber, detergents and nitrogenous fertilizers.

19 United Nations: *The Petrochemical Industry*, New York, United Nations, 1973, p. 3.

b) *Availability of factors: oil and natural gas*

Total reserves of the Arab States of the Gulf represent 89% of total Arab reserves and 55% of world reserves (excluding socialist countries). The corresponding figures for petroleum production are 85% and 35%²⁰ respectively. The existence of petroleum associated gas which cannot be reinjected and is therefore burnt off is *prima facie* evidence that not establishing industries using natural gas and associated gas is an economic wastage of these resources²¹.

c) *Existence of scale economies*

Investment does not vary in proportion to capacity, but according to a power factor situated between 0.6 and 0.85. This is why it is advantageous to build large units which, proportionally, cost less than small and medium size units²².

d) *High degree of vertical industrial integration*

Petrochemicals imply production of a certain number of joint products or by-products and it is often economically difficult to build a factory before the market for the by-products has been ensured²³. In addition, when a petrochemical complex is built near a refinery it can make use of the by-products of the latter thus increasing the profitability of the whole.

All these are the arguments which led the oil-exporting countries — including Mexico — to emphasize development of petrochemical and refining industries.

3. *Development objectives: development of petrochemicals and refining in the Arab countries*

In the beginning the situation was hardly favourable to the oil-exporting countries. Thus, in the field of refining, total world production of petroleum products in 1976 was 2,636 million tonnes, of which 61% were produced by developed countries and 19% by developing countries. OPEC participation in world production of petroleum products

20 The countries considered here are the following: Bahrain, Iraq, Oman, Qatar, Saudi Arabia, United Arab Emirates and Kuwait: percentages calculated from data in *Oil and Gas Journal*, 30 December 1974, pp. 108-109.

21 Mihssen Kadhim and Berry Polson: « Absorptive capacity, regional cooperation and industrialization in the Arab States of the Gulf », *The Journal of Energy and Development*, 1976, Vol. I and II, pp. 249-261.

22 Claude Mercier: *op. cit.*, pp. 17-20.

23 Arthur D. Little, Inc.: *A Plan for Industrial Development in Iraq*, 1976, Cambridge, Mass. 1956.

only amounted to 5.6% that same year²⁴, petrol and fuel oils alone amounted to 78.7% of total production of petroleum products.

Exports of products only amounted to about 7% of exports of crude oil.

In fact, most of the countries under consideration were reduced, for lack of sufficient treatment capacity for crude, to re-import their own petroleum in the form of processed products.

To integrate the effects on income and employment resulting from refining, the petroleum exporting countries of OPEC launched a vast development programme for the refining industry.

If in 1980 the refining capacity of these countries only amounted to 8% of world total capacity²⁵ (that is 6.62 million barrels per day for a world total capacity of 82.8 million barrels per day) it should rise to 9.27 million barrels per day in 1990²⁶, over 6 million barrels per day refining capacity which will therefore add to the refining capacity of OPEC between 1975-1990.

If we estimate the minimum cost in 1983 dollars of a refinery of 5 million tons at 1.7 billion dollars, investment in refining must be valued at 121.5 billion dollars (dollars 1983) for these countries during the period under consideration.

Similarly the petrochemical industry was mostly situated in the industrialized countries in 1973. In a world production of 200 million tons per annum, the share of the OPEC member countries only amounted to four million tons, that is 2% of the latter and was restricted to only three countries (Venezuela, Iran and Kuwait)²⁷.

From 1974, the petroleum exporting countries announced the launching of a first investment phase of 15.2 billion dollars to produce ethylene (4.7 million tons), ammonia (10.7 million tons), polyethylene (7.73 million tons), aromatics (2.7 million tons), PVC (0.6 million tons), and methanol (15.8 million tons)²⁸.

24 OPEC Seminar on « Downstream Operations in OPEC Member Countries - Prospects and Problems », *OPEC Bulletin Supplement*, Vol. IX, No. 43, 23 Oct. 1978, table 6.

25 OPEC: *Annual Reports 1980*, Vienna, 1981.

26 « Future demand for refined products in OPEC member countries and possible exports outlets », *OPEC Papers*, Vol. 1, No. 3, Dec. 1980.

27 For more details see our work: Abdelkader Sid Ahmed, *Développement sans Croissance: l'expérience des économies pétrolières du Tiers Monde*, Paris, 1983, chap. VII.

28 « L'OPEP se lance dans la pétrochimie », *Petroleum Economist*, March 1975, p. 102.

The following years saw the appearance of other petrochemical programmes, valued at several billions of dollars²⁹. Considerable delays however occurred in implementation of these programmes which mean that we shall have to wait until 1985 before these new capacities really start working.

III. The problems of the « petrolization » of Third World Economies

The decline of Spain in the 16th Century following the inflows of newly discovered wealth from the New World³⁰, and recent controversy concerning the significance of hydrocarbons for the British economy³¹ already showed what sort of obstacles development faces in the presence of a substantial income. On the other hand, the spectacular development of Japan in the 19th Century and its brilliant dynamism today emphasize the crucial role of factors other than natural resources in development.

In fact, the boundless optimism of the years before the 1973-74 oil-price readjustment has been replaced by a deep pessimism concerning the very viability of the development taking place in petroleum exporting economies.

More concretely:

— The income spread between the wealthiest and the poorest has grown so much that the wealthy have daily become wealthier and the poor have daily become poorer. This tendency was accompanied by a growing gap between the skills and remunerations of the higher income groups, the social and economic positions of some of them granting them a wealth disproportionate to their skill, which has jeopardized social stability — and sown the seeds of dislocation in societies which are already destructured for other reasons.

— The obsession of foreign exchange financial returns has often led to a race to increase the production of hydrocarbons, thus reversing the slow tendency observed before 1973 towards a less close dependence of OPEC economies upon the hydrocar-

29 *Petroleum Economist*, April 1977, p. 113.

30 Anthony Peaker: « New found wealth and economic decline in sixteenth century Spain », *National Westminster Bank Quarterly Reviews*, Feb. 1983, pp. 46-54.

31 Walter Eltis: « The failure of the Keynesian Conventional Wisdom », *Lloyds Bank Review*, Oct. 1976, No. 122, pp. 1-19; and Lord Kahn: « Mr. Eltis and the Keynesians », *Lloyds Bank Review*, April 1977, No. 124, pp. 1-14.

bon sector. This tendency has materialized into a sometimes dramatic reduction of traditional fiscality in overall State resources.

— Building up of colossal fortunes has led to a worsening of work ethic and the sense of discipline, thus discouraging efforts in any activity which is not speculative. The concrete manifestations of these phenomena are the slowing down of development rate, inflation, external imbalance, distortion of social structures, discouragement of exports, which are all seeds of instability.

— The external vulnerability of the petroleum economies has been reinforced everywhere, and compromised any possibility of national balanced development, whilst an assisted mentality, going against the spirit of enterprise and acceptance of risks, developed throughout the whole social fabric (a) through the agricultural crisis and increasing food dependence, and (b) the acceleration of the brain drain.

1. *Slowing down in growth rate since 1976*

The notable fact following the investment take-off on the morrow of the 1973-1974 oil price readjustments was the strong increase in the average and marginal capital coefficients. If one part of this increase resulted from the nature of the projects being implemented (infrastructure works and heavy industries), another part of it was the consequence of the oversize of some projects, of a collection of overruns resulting from the local shortage of production factors, of the practices of foreign suppliers of capital goods and techniques and of an overinvestment considering local limited absorptive capacity. Everything occurred as if the petroleum exporting economies had the opposite of the profile in Bicanic's formula³² which was confirmed by Horvat³³ on the basis of the Yugoslav experience. According to Bicanic, countries would go through three successive development phases: an initial phase of slow and stable growth, a phase when the growth rate would accelerate and finally a phase of growth deceleration.

For Bicanic, when income per head is lower than \$ 100 (\$ 1961), the capital coefficient rapidly increases in such a manner that this growth absorbs most of the investment:

32 A. Bicanic R.: « The threshold of economic growth », *Kyklos*, 1962.

33 H. Borvat: « Towards a theory of the planned economy », Belgrade, 1964, and above all, « The relation between rate of growth and level of development », *The journal of development studies*, vol. 10, april/july 1974, No. 3 and 4, pp. 383 to 395.

Horvat confirms this hypothesis. Therefore, Yugoslavia saw its average capital coefficient go down from 7.5 to 5 during the two decades following the second World War.

Acceleration of growth occurs with the decline of traditional agriculture in GDP and the strengthening of the manufacturing sectors participation and particularly non-complex industries. Increase in marginal efficiency of capital reduces the average capital coefficient³⁴. No such thing characterises the recent evolution of the petroleum economies, where the inverse tendency seems rather to hold true.

Faced with falling financial inflows from 1975 — because of the deterioration in terms of trade for crude — whilst capital needs were increasing, bottlenecks multiplying and inflation accelerating, the petroleum economies entered into a phase of dynamic slow down. In some cases — Venezuela, Iran, Nigeria — the reduction in the rates of global growth were dramatic. In the case of Nigeria, an agricultural sector undergoing a crisis and a young ineffective industrial sector combined to plunge the country into veritable stagnation³⁵. In Kuwait³⁶ a quasi-stagnation of the manufacturing sector was also noted between 1976 and 1978.

There were some exceptions like Algeria where severe budgetary restrictions were translated into a better use of the recently installed productive potential. But even in this country the industrial sectors in some cases showed very weak levels of use of the productive capacities. If the price readjustments in 1979-1980 very much relieved the burden of a certain number of petroleum States, they did not lead to a notable improvement in productive sector performances, their only impact seemingly being on the traditional aggregates which showed a new leap after that of 1973-1974.

The bad market for petroleum from 1981 once again created a situation similar to that of the years between 1975-1978, bringing some countries, like Nigeria and Mexico, to bankruptcy³⁷.

Development objectives were out down everywhere when they were not purely and simply adjourned. Faced with the gravity of the financial crisis affecting certain petro-

34 Phenomenon also shown up by: Hagen E. and Hawrylyshyn: « Analysis of world income and growth: 19...-19... », *Economic Development and cultural change*, 1-3, 1969.

35 Central Bank of Nigeria: *Developments in the Nigerian economy during the first half of 1980*, Lagos, 1981, p. 4 and 9.

36 Central Bank of Kuwait: *Economic Report 1980*, p. 23.

37 William Chislaft: « Oil price confrontation aggravates Mexico's economic headaches », *Financial Times*, 7 July 1981; and Quentin Peel: « Output cuts hit spending plans », *Financial Times*, March 18, 1982, p. 4.

leum States, the IMF — at Venezuela's request — had to accept to extend to oil producing countries the compensatory financing facility benefit.

2. *The Arab Brain Drain and exodus of skilled labour*

Although migration of qualified workers is relatively ancient in the Arab world, the exodus of university graduates and management is more recent.

In the absence of exhaustive data on the magnitude of the problem, it is possible, from statistics of the immigration services in Western countries, to have a fairly precise idea of the phenomenon. Thus, between 1962 and 1977, the United States, which is one of the preferred destinations for Arab technicians, absorbed 18,200 professional technical workers and management of whom 2,500 were engineers and 3,700 were doctors³⁸. What is most serious is that the phenomenon worsened in the 70's, whereas the petroleum boom was creating considerable needs for skilled labour. The « brain drain » upward trend is confirmed by an examination of Arab immigrants admitted to the United States by country of origin. It can be noted that there is a large number of administrative technicians and professionals among the Libyan and Algerian immigrants.

With tens of thousands of Arab students being sent to developed countries in all fields in the course of the last decade, the Arab brain drain seems to be accelerating. In 1978, the United Nations Commission for Western Asia³⁹ estimated it at 4,000 per annum for the Middle East alone. At the beginning of the 1980s, the annual exodus for the whole of the Arab world can be estimated at between 12,000 and 15,000. This dramatic phenomenon throws some doubt on the long-term viability of policies of transfer of technology which are being undertaken with great capital outlay in the Arab region.

3. *The food crisis and the agricultural challenge*

Agriculture remains the major source of employment in the petroleum economies with nearly 54% of the population, that is to say that it is in the front line of economic and

38 Department of Immigration and Naturalization, U.S. Government Microfiche, 1970-1979, quoted by Paul Shaw, op. cit., p. 645.

39 E.C.W.A.L.: *The Brain drain problem in the ECWA Countries*, Beirut, United Nations: ECWA, E/ECWA/57.add. 2, 1978.

Table 3
**PROFESSIONAL IMMIGRATION AND OVERALL ARAB IMMIGRATION
TO THE UNITED STATES BY COUNTRY OF ORIGIN**

Country	Total No. (1)	Immigrants to USA, 1972-1976		
		% in professional, technical and kindred category		
		1972-1976 (2)	1975-1976 (3)	1977 (4)
Arab world	70,698	12.6	11.4	11.9
Oil-rich	11,740	14.0	12.1	15.7
Oil-poor	58,958	12.3	11.3	11.4
Oil-rich				
Bahrain	116	62.5	31.7	28.6
Iraq	6848	7.3	5.1	7.5
Kuwait	2342	16.9	18.6	14.3
Libya	667	40.4	34.8	34.5
Oman	60	42.9	26.6	18.2
Qatar	79	35.7	45.2	13.5
Saudi Arabia	1424	25.1	25.4	26.3
UAE	204	33.3	8.8	22.2
Oil-poor				
Algeria	238	35.3	18.9	33.3
Egypt	10,763	28.6	29.4	18.7
Jordan	14,771	6.8	5.6	6.8
Lebanon	23,066	10.1	8.7	9.7
Mauritania	14	44.4	66.6	20.0
Morocco	1133	14.3	16.1	11.3
Somalia	80	12.5	9.7	18.8
Sudan	197	17.7	21.4	5.1
Syria	4823	16.3	17.2	11.7
Tunisia	201	28.0	26.9	15.4
Yemen AR	3279	0.6	0.7	1.4
Yemen PDR	393	0.3	0.0	7.7

Source: Department of Immigration and Naturalization, US Government Microfiche, ASI 1979.

social evolution for these countries, but agricultural characteristics differ greatly according to the country. In the Arab world, the distinctive characteristic of agriculture is the small amount of land that can be irrigated, and because of this a predominance of very small plots cultivated with archaic methods and techniques such as the hoe. This si-

tuation is different in the OPEC tropical economies. Though small property units are also characteristic of the Island of Java or some regions of Nigeria and Equador, the availability of fertile watered land is much bigger.

The very hard working conditions in the tropical regions (jungles) make it difficult to exploit these lands in countries like Gabon, Venezuela, Equatorial America or the Islands of Sumatra and Kalimantan in Indonesia. Contrary to the OPEC Arab countries, here water is not always the limiting factor.

Though agriculture plays an important role in these countries in the field of employment and income, its share in national income in the petroleum producing countries is generally limited, thus reflecting the very low productivity of this sector. Therefore, in 1980 the share of agriculture in GDP in Equador was only 13% in 1980, 2% in Libya, 20% in Nigeria, 1% in Saudi Arabia, 6% in Venezuela⁴⁰, 6% in Algeria, 10% in Mexico, 23% in Egypt and 12% in the Congo.

Table 4

AVERAGE ANNUAL RATE OF GROWTH OF AGRICULTURAL PRODUCTION IN %
1960 - 1970 - 1979 - 1980

Country	1960-1970	1970-1980
Indonesia	2.7	3.8
Egypt	2.9	2.7
Congo	1.0	1.7
Nigeria	0.4	0.8
Ecuador	—	2.4
Algeria	0.1	3.1
Mexico	3.8	2.3
Venezuela	5.8	3.8
Libya	—	11.1
Saudi Arabia	—	5.3

Source: World Bank.

40 World Bank: Report on World Development in 1982.

Performances are mediocre as compared to the investments in this field and to those of other Third World Economies⁴¹.

From 1960 to 1970 the best agricultural performance was achieved in Venezuela and the worst in Algeria. From 1970 to 1975, it was unquestionably Libya which recorded the best results; the country's aim to achieve nutritional self-sufficiency by the end of the century is given much publicity.

The worst results were recorded in Nigeria and Irak. A slight improvement was however noted from 1973 onwards in total and per head food production which, however, conceals big growth rate fluctuations by country, reflecting the high dependence of some of them on climatic conditions.

These hidden fluctuations bear witness to the insufficient effort made in the strategic sector of agriculture in countries where the population curve tends to overlap the biological curve.

This quasi-stagnation of agricultural and food production has led to a veritable boom in food imports favoured by the increase in petroleum income, urbanization, the increase in revenues and industrialization. Imports of food products soared to approximately fourteen billion dollars in 1979. And, if the present trend remains unchanced, the food deficit may reasonably be expected to reach unbearable proportions.

All engrossed in their urban and industrial worries, the OPEC countries' economists seem to have underestimated the rapid degradation of the agricultural sector. In 1970, Iran was exporting wheat, secondary cereals, rice, tea, sugar and cotton. The rural exodus, a clumsy and bureaucratic agricultural reform, and the emphasis put on agro-business prevented production from meeting the strong rise in demand⁴². The Iranian agricultural strategy from 1968 to 1978, the crowning glory of which was the law of 9 June 1975, consisted in fact in setting up agro-businesses with an aim to creating « development poles ». Priority was then given to twenty poles which covered a potential area of 1.8 million hectares. Thus, according to Hushang Saedloo, the former Minister of Agriculture of Rowhain, the law envisaged: « positive discouragement outside the limits of the poles (outside development poles). The agricultural bank must not give

41 Thus, for 1970-1980, the corresponding figures are 43% for Birma, 4.9% for Tanzania, 5.4% for Kenya, 4.7% for Thailand, 4.9% for the Philippines, 4.6% for Guatemala, 4.9% for Colombia, 6.9% for Paraguay, 5.1% for Malaysia, 8.2% for Syria, etc.

42 For more details, see M. G. Weimbaum, « Agricultural policy and development politics in Iran », *The Middle East Journal*, pp. 435 to 450, autumn, 1977.

credits, the national petroleum company must not sell cheap fuel, the Minister of Agricultural must not ensure protection of crops, rural extension, lease-sales of agricultural machinery. No rural schools, nor dispensaries or roads should be built, no electricity should be supplied. Thus populations living outside the poles will be encouraged to migrate towards them »⁴³.

Table 5

OIL-EXPORTING COUNTRIES:
IMPORTS OF FOOD PRODUCTS IN 1960 AND 1979
(in millions of \$ US)

Country	Total imports		% imports food products		Value imports food products	
	1960	1979	1960	1979	1960	1979
Indonesia		7.225	23	16		1.156,1
Congo		242	18	27		65,3
Egypt		3.837	23	26		997,6
Nigeria		12.399	14	14		1.735,5
Algeria		1.996	13	8		159,6
Ecuador		8.360	26	18		1.504,8
Mexico		11.829	4	8		946,3
Irak		7.028	—	12		843,3
Iran		9.738	14	13		1.265,9
Venezuela		9.618	18	12		1.154,1
Trinidad and Tobago		2.086	16	13		271,1
Libya		8.214	13	17		1.396,3
Kuwait		5.204	—	16		832,6
Saudi Arabia		24.254	—	13		3.153,0
TOTAL		112.030				13.745,9

Source: Calculations made on data from the World Bank, 1981 to 1982.

43 Hushang Saedloo: *A Critique of policy for agricultural development at the poles of Soil and Water ...* critique of the Rowhain Report entitled: *Développement économique des pôles de ressources en sols et en eau*. Quoted by Thierry A. Brun and René Dumont, « Des prétensions impériales à la dépendance alimentaire: le développement du secteur agro-alimentaire en Iran », *Peuples Méditerranéens*, Jan/mar 1978. The controversies on the financing of small private farmers in Algeria gives a good example that Iran is not the only isolated example, as far as the « agro-business » approach is concerned.

In a country where dispersed settlement corresponds to water resources — and many of the latter are situated outside the poles — such a policy lead to the pure and simple disappearance of the areas « outside the poles », arbitrarily qualified by « technicians », as marginal areas. It also meant growing under-employment and gradual desertification of vast areas of Iran.

In 1978, after ten years' effort, when gigantic operations were carried out and most of the credits concentrated on agro-business and infrastructures in these « pilot zones », more than half the total value of agricultural production in Iran still came from farms of less than ten hectares⁴⁴.

Seven giant agro-industrial complexes which were designed to become the core of future Iranian agriculture set up in partnership with foreign groups, were located in Khuzestan. Only one of these complexes i.e. the International Agribusiness Corporation of Iran (IACI) was still working in 1978.

The others including Iran-America, Iran-Shellcot and Iran-California were bought by the State following bankruptcy because of soaring production costs. The Dez dam which was finished in 1962 was to irrigate 95,000 hectares in this region. In 1975, only 25,000 were irrigated. The World Bank could then write on the subject of this programme that it was not to be taken for granted that the huge investments made to develop agriculture in Khuzistan were a success on an economic and social level. The increase in agricultural production had been achieved at the expense of capital investment of a colossal size, financial losses by the « agro-business corporations », major income losses for the government because of concessions made in rentals terms of customs duties, water prices, interest rates on loans and other forms of subsidies to « agro-business ». The fact that, ten years after the dam was finished, only one fifth of the area it dominates is actually valorized had highly significant implications for the economic viability of investments made in the dam area. From a social point of view, the mass of the rural population has benefited little by the agricultural development of the region⁴⁵.

In the case of Iran, it was a question of buying agricultural development at a high price, priority being given to gigantic setups, involving greater use of highly sophisticated material and a variety of highly qualified technicians.

44 Michael Tingay: « Iran-agricultural Depression », *Financial Times*, 12 Sept. 1978, p. 12.

45 IBIRD Study on Agricultural economy of Iran made for the Iranian Agricultural development bank, 1974.

Nothing was too expensive for the Imperial ambitions and everything was ordered at a frantic rate: dams, irrigation networks, earthwork equipment, freezing and plants, dairy, slaughterhouse agricultural machinery, selected livestock imported directly by plane. All this was encouraged by the multinationals and numerous foreign study bureaux. Iran wanted to imitate 19th century Great Britain and Iranian leaders were⁴⁶ heard to state that it was better for Iran to import wheat and export machines. The turn of events was to show the vanity of such dreams.

In Nigeria one figure enables us to measure the disaster in a country where, before the exploitation of oil, exports of agricultural products made up the better part of the State exchange inflows. From 1.8 million tons in 1966, the production of groundnuts fell to 2,000 tons in 1976. From being the biggest producer of palm oil Nigeria has now become an importer. In addition, since 1977, Nigeria has joined Egypt, Algeria and Morocco amongst the African countries which import more than one million tons of cereals, because of the stagnation of cereal production.

With the delays occurring in manioc and yam production, the average food ration has gone down since 1960, and the urban population has increased at a rate of 11 to 13% per annum and is more and more difficult to feed⁴⁷.

Inflation of oil revenues is responsible for most of the problems encountered by Nigerian agriculture. The best paid jobs in the urban centres attract a large number of mainly young people who have given up agriculture. On the other hand the people who do not give it up will no longer work on family farms without monetary remuneration.

The increasing labour shortage has triggered off a real wage spiral. To put a curb on inflation and increasing labour costs, farmers give up export crops and go back to subsistence farming⁴⁸.

The most tragic thing is that 70% of the Nigerian population depends upon agriculture for subsistence. Apart from the above mentioned immediate problems, Nigerian agriculture is suffering from division of land in small holdings, low soil fertility, under-utilization of fertilizers, and diseases⁴⁹.

46 M. G. Weinbaum: *Agricultural policy and development politics in Iran*, op. cit., p. 447.

47 Johnny Egg: « Urbanisation, bouleversement des habitudes alimentaires, importations de céréales: un effet de la rente pétrolière au Nigéria », *Le Monde Diplomatique*, mai 1980, p. 17.

« Nigeria: rising demand, falling out put », *Financial Times*, 30 août 1978, p. 20.

48 Nigéria, p. 8.

49 Richard Joseph: « Affluence and underdevelopment. The Nigerian Experience », *The Journal of Modern african Studies*, vol. XVI, n. 2, 1978, p. 232.

As in Iran and in many other OPEC countries, the credits allocated to agriculture in the last few years have been insufficient, but even available credit remains ineffectual (machines, fertilizers, etc.) because of the limited absorptive capacity of a backward and impoverishing agricultural sector.

The result is that Nigerian agriculture is contributing to an increasingly smaller extent to both the country's foreign exchange inflows and food supply. It is significant that it is imports of food products which in these latest years have known the biggest growth rate⁵⁰, while the country's potentialities remain quite substantial. The IIIrd Plan estimated that of 98.3 million hectares, only one third was cultivated, but a second third could be rapidly put to cultivation, bringing the cultivated area up to 71.2 million hectares. Here again, like in Iran, there is a great temptation to have recourse to agro-business to feed a rapidly growing population.

But in the last resort, agricultural development cannot be separated from the basic structural problems: that is the search for quick and easy money instead of the hardship of farming, and the lack of interest of private entrepreneurs in productive long-term investments.

Moreover, the change in food habits following the accelerated development of the internal market, itself stimulated by the increase and diffusion of oil revenues, have no doubt precipitated the Nigerian agricultural crisis. Difficulties in supplying the towns have forced the Government since 1975 to increase imports of cereals (and to liberalize them).

Thus, bread, which was a luxury food in Nigeria in the sixties, has in the latest few years taken an increasingly important place in the diet of the population of the southern big towns, to the detriment of yam, manios flour and traditional cereals.

This is how in a few years Nigeria became more and more dependent on the world cereal market; the policy of supplying the big towns having become the competence of multinational firms like Flour Mills, which have the only stocking installations in the country.

50 Les exportations américaines de produits agricoles vers le Nigéria sont passées de 839 millions en 1973 à 8.500 millions en 1981.

Michael Holman: « Trying to encourage a new emphasis on food output », *Financial Times*, novembre 3, 1981, p. 34.

Today, Nigeria imports 2 million dollars worth of food products: American wheat, Far Eastern rice, meat from the United States, Brazil and Argentina, maize and above all groundnuts.

This policy can also be partially observed in Algeria. The State has kept a monopoly on imports of agricultural commodities since Independence and has allowed products in with a customs franchise since 1974. These imports have reflected the increasing diversification of food habits, which are determined as much by the level of income as by geographical location: urban populations consume more on average than rural populations and are more sensitive to Western consumer standards. Hélène Delorme argues « that in making cereal imports one of the main instruments for managing agromutritional production consumption, the Algerian State has finally been able to share out the part of oil revenues which is allocated to it ». In so doing, the Algerian Government has, according to her, « ensured the predominance of the politico-administrative superstructure over the socio-economic infrastructure »⁵¹.

Countries which have newly been promoted to the status of oil exporters do not escape this dilemma. Thus, in Mexico, the agricultural sector is in regression. In 1981, Mexico imported over 15 million tons of food products, as against 3.7 million in 1979, which cost it at the very least 2 billion dollars, viz. a minimum of one fifth of its oil revenues. The major share of these food products comes from the United States⁵², and a gradual complementarity between energy products and food products is being set up between the two countries, therefore exposing Mexico to food blackmail if it refuses the status of an « American Saudi Arabia ». The food Government Plan, called SAM (Mexican food system), hardly seems likely to wipe out this tendency and Mexico is discovering in its turn that, in practice, it is very difficult to turn oil into a real development tool⁵³, contrary to the hopes that some may nurse.

These criticisms in practice can be applied to almost all the OPEC countries⁵⁴. In

51 Hélène Delorme: « L'Algérie: importations de céréales, blocage de la production et développement de l'Etat miméo », Paris, 1981.

52 On all these points see: « Mexico: where milk costs four times more than petrol », *Financial Times*, 10 décembre 1980, p. 4; Jorge G. Castaneda: « Rente pétrolière et austérité sociale: le Mexique en quête d'une nouvelle forme de stabilité », *Le Monde Diplomatique*, octobre 1980, p. 13.

53 Comme René Villarreal: « El petróleo como instrumento de desarrollo y de negociación internacional, México en los ochentas », *El Trimestre Económico*, vol. XLVIII (1), n. 189 1981, pp. 3-45.

54 J.-P. Langelier: « Nigeria: l'économie se met à l'heure de l'austérité », *Le Monde*, 18-19 octobre 1981, p. 10.

Algeria, the food deficit is considerable and risks soon to become unbearable. The debate today is public, and a big attempt is being made at an autocritique.

These experiences explain why in the OPEC countries the agricultural sector has most often been incapable in these latest years of taking advantage of a certain number of industries which have been built at great expense to serve it. The complexity of the agricultural sector and its imposing human dimension do not allow us to expect it to develop through the supply of modern inputs alone, whatever their price may be.

In countries where agriculture is nearly inexistent, as in some of the Gulf countries, the absence of peasant classes and cultivated land, combined with an inhospitable climate, can legitimize the creation from scratch and without any cost consideration of agricultural perimeters aimed at supplying a strategic minimum⁵⁵. On the other hand, in countries where the agriculture is the dominant sector in terms of food production and employment, the human dimensions of the agricultural sector call for a veritable transformation of living conditions and agrarian structures, a transformation for which agrobusiness cannot be an alternative.

The implicit generalization of the law of comparative advantage in the petroleum economies, in this case that agricultural products cheaper than those produced locally should be imported as recommended in 1974 by the IBRD in Iran, is very dangerous. A country's economic independence requires a certain degree of food self-reliance which, without being complete autarchy, should be capable of feeding the country in case of international difficulties preventing world exchanges.

4. *Aggravation of social disparities*

A certain number of development studies, amongst others those by S. Kuznets, show that income distribution tends to widen in the initial development stages, to stabilize with the development of the economy, and finally become more equal with the diffusion of the industrialization process to the whole of the economy⁵⁶. Developing petro-

55 The example of Qatar is significant in this respect, see M. F. Hassan, « Agricultural Development in a Petroleum based Economy: Qatar », *Economic Development and Cultural Change*, vol. XXVII, No. 1, Oct. 1978, pp. 145-169, and « Qatar: agriculture: Blooming desert will feed the Nation », *International Herald Tribune*, Dec. 1978, p. 45.

56 Simon Kuznets: « Economics Growth and income inequality », *American Economic Review*, mars 1955, pp. 1 - 28.

leum exporting economies have an identical evolution profile. Thus, in Iran, total expenditure by 20% of the wealthiest members of the population (urban) went up from 51.79% in 1959 to 55.56% in 1973. In other words, with the increase in total national income, individual spending in the two upper decillions increased at a faster rate. In all the other decillions, with the exception of the 7th, 9th and 10th, the relative share in total monetary spending was lower in 1973 than it was in 1959. However, if the wealthy have become richer, the poor also profit by higher incomes, but their progress is slower. Urban incomes increased more rapidly than rural, and those of people with university training went up more than those of people with more modest training. Inequality in distribution of expenditures — measured by the Gini coefficient — increased in Iran between 1969 and 1972, mostly because of the increasing gap observed between urban and rural incomes⁵⁷. Between 1955 and 1971, the inequality of income distribution increased in Iran, with a more marked effect in the rural areas, whilst on a territorial level, inequalities in income distribution were more marked in the wealthier regions (the Provinces of Fars and the Centre).

The same situation occurred in Nigeria, where the income inequality was such that one of the Nigerian leaders declared at the 13th Congress of the Nigerian Economic Society⁵⁸ that the next threat to the existence of Nigeria would not come from the East (Biafra), the next crisis would probably be rooted in basic economic problems and social conflicts — equitable allocation and appropriate management of increased available income of the Federation and the traditional class struggle between haves and havenots. The statistics concerning income distribution and wealth in Nigeria are insufficient, but an impressive idea of the real situation is given by the following abstract:

« ... An impressionist analysis of contemporary Nigerian society suggests that distribution of privileges is pyramid-shaped. The small number in the highly privileged élitist groups is the upper class at the top of the pyramid whilst the rest of the pyramid includes the large mass of employees, artisans and peasants. A large number of the élitist group lives in very residential areas with subsidized rents.

57 For more details see, Robert E. Loney: *A development strategy for Iran through the 1980's*, Praeger, pp. 47 et s.; Farhad Kazemi: *Poverty and revolution in Iran: the migrant poor, urban marginality and politics*, New York University Press et Homa Katouzian: *The political economy of modern Iran: despotism and pseudo modernism: 1926-1979*, New York.

58 A. A. Ayida: *The Nigerian Revolution 1966-1976*, Ibadan Nigerian Economic Society, Lagos, 1975.

On the other hand, a high percentage of the Nigerian population lives in overpopulated areas and rural communities in a state of abject poverty. They have little future in the Nigerian society and there is hardly any chance that their living standards will improve substantially for a long time »⁵⁹.

These prophecies were not long in being fulfilled with the 1982-1983 drastic reduction in oil revenues and the massive expulsion of foreign labour.

A similar tendency to increase the degree of income distribution inequality was noticeable from 1966 in Indonesia, even if statistics in this respect are almost inexistent. Arndt takes it for granted that the wealthy have become wealthier, amongst other thanks to corruption.

The have-nots have seen the gap between themselves and the small owners in the countryside get worse⁶⁰.

According to available data, urban incomes were 43% higher than rural incomes in 1970. But in 1976 the gap was 84% (109% in Java as against 67% in 1970). Price disparities played a large role in these gaps.

The Pérera-Budianti Report⁶¹ shows that income distribution in rural areas has become more equalitarian, whilst the opposite is true for urban incomes. This relatively optimistic conclusion (as it affirmed that the distributional average had hardly varied) was contested by Mr. Dapice: foreign aid and petroleum revenues have gone to highly capitalistic projects which have not increased employment and which have even in some sectors reduced existing employment⁶².

Other examples could be given in the same direction: Equador, Gabon, Venezuela, Irak, etc.

59 Okediji F. O.: « Social implications of the second national development. Plan 1970-1974 », *Quarterly Journal of Administration*, vol. V, n. 3, avril 1971.

60 M. H. Arndt: « Development and equality: the Indonesian case », *World Development*, vol. III, n. 2-3, février-mars 1975, pp. 79-90, et Gustav Papanek, « The poor of Jakarta », *Economic Development and Cultural Change*, vol. XXIV, n. 1, octobre 1975, pp. 1 - 29.

Et Sukauto Reksohadipodjo: « Oil and other energy resources for development: the Indonesian Case », *The Journal of Energy and Development*, vol. V, spring 1980, n. 2, pp. 289 - 326.

61 R. M. Sundrum: « Income distribution 1970-77: a comment », *Bulletin of Indonesian economic studies*, vol. XV, n. 1, mars 1979, pp. 137 - 142.

62 David Dapice: « Income distribution 1970-77: a comment », *Bulletin of Indonesian economic studies*, vol. XVI, n. 1, mars 1980, pp. 86 - 92.

These conclusions should, however, take into account the fact that income disparities can be corrected by many subsidies and this is particularly so in socialist countries like Irak. Education is in effect free at all levels, housing highly subsidized with numerous rent reductions by the authorities in the last few years, health services are granted at symbolic prices and the essential consumer products are available in State shops at prices which cannot be competed with. This picture is also valid for Algeria which has even perfected a free medical assistance scheme⁶³.

It is nonetheless true that the overall tendencies are towards worsening of economic and social disparities, and that the latter are only contained by an unprecedented budget effort which cannot be indefinitely maintained: if and when a decrease in revenues occurs, the situation will soon become explosive with the reduction of public subsidies. The petroleum exporting economies are also liable to such scaring phenomenon as « Polonization », i.e. a situation where sooner or later prices of subsidized products must go up for conjunctural reasons.

What is clear is that the experience of OPEC economies seems to conform to the empiric rule of Kuznets, even more so as the injection of large oil revenues worsens the tendencies to inequality observed by Kuznets in the first stages of development, as one can observe in Iran, where a close correlation between rapid growth of oil revenues and deterioration of the coefficient of the urban-rural gap can be noticed.

This suggests that the structure of spending for these revenues favours urban areas as against rural areas. It is a fact that the availability of financial resources encourages budgetary allocations in favour of capital-intensive industrial services and construction activities, without great profit for the rural sector.

In Nigeria, M. Dickinson notes that inflation has widened the gap in terms of rural/urban exchange to the detriment of farmers. The author even affirms that the income of many small farmers has decreased not only as compared to workers' income but even in absolute terms.

Nonetheless, 75% of the Nigerian population lives in the rural areas whilst agriculture supplies 65% of the productive employment in the country. This suggests that the majority of Nigerians have not yet benefited by the oil boom, and more so as, in the towns, the cost of living and the dramatic housing shortage have made the living conditions of a large number of citizens more and more precarious.

63 On this point and equally on others see our article: Abdelkader Sid Ahmed: « Pétrole et développement: le cas algérien », *Maghreb review*, pp. 49 to 67.

Table 6

IRAN: RATIO OF EXPENDITURE BY PRIVATE
 URBAN CONSUMERS PER CAPITA TO EXPENDITURE OF PRIVATE
 RURAL CONSUMERS PER CAPITA
 1959-1973
 (1972 constant prices in billions of riyals)

Year	Urban Cons. Expen. (1)	Urban Popu- lation (2)	Ratio 3 = 1/2 (3)	Rural Cons. Expen. (4)	Rural Popu- lation (5)	Ratio 6 = 4/5 (6)	Gap Ratio 7 = 3/6 (7)
1959	145.4	6,972	20,855	139.0	14,199	9,789	2.13
1960	153.1	7,330	20,887	148.0	14,446	10,245	2.04
1961	154.9	7,703	20,109	148.8	14,695	10,126	1.99
1962	167.1	8,091	20,652	150.2	14,947	10,049	2.06
1963	175.2	8,495	20,623	153.6	15,201	10,104	2.04
1964	187.9	8,915	21,077	168.8	15,458	10,920	1.93
1965	197.2	9,353	21,084	173.8	15,716	11,059	1.91
1966	233.2	9,808	23,776	183.3	15,977	11,473	2.07
1967	254.6	10,232	24,762	194.9	16,240	12,001	2.06
1968	295.5	10,775	27,424	207.9	16,505	12,596	2.18
1969	320.9	11,287	28,430	219.7	16,772	13,099	2.17
1970	370.0	11,820	31,303	225.2	17,041	13,215	2.37
1971	392.6	12,375	31,725	199.5	17,311	11,524	2.75
1972	455.7	12,951	35,186	192.9	17,583	10,971	3.21
1973	491.3	13,550	36,258	205.0	17,856	11,481	3.16

Source: Statistical Research Unit of the Planometrics and General Economy Bureau, Plan and Budget Organization, Teheran; and Bank of Markazi Iran, table 54.

Finally, nowhere in oil exporting countries do the problems of employment and income distribution together with those of demographic growth seem more dramatic than in Indonesia: in the year 2000, the island of Java will go back to the state of an insular town, with a population density of 700 inhabitants to the square kilometre. The labour force will rise by 14 million people between 1975 and 1985 to reach 63 million people, and 80 million in the year 2000. Rapalita II (2nd Plan) lays emphasis on economic stability — via increased food production, increased employment, an equitable distribution of income and the take off of the so-called « Transmigration » policy, i.e. migration towards almost empty islands.

IV. Conclusions

It can be seen that the process of industrialization of oil exporting countries — be they the Gulf labour-lacking countries or countries like Irak, Nigeria or Mexico, having non-negligible human resources — is characterized by a certain number of features which limit its chain effect.

Industrialization is rarely fitted into a coherent development plan, but too often mixed up with development itself. Programming of a few « industrialization » projects becomes the national Plan, like in Jubail, Yembo, El Ruweis, Oum Said, Arzew, Ras Lanouf, Abeokut, Puri, Warri, etc., like as many symbols of a development which, because of its excessive concentration further marginalizes a local economy already kept on the sidelines during the epoch of extraversion of the petroleum sector.

The gigantic size of the projects, often wrongly justified by supposed scale economies which are illusory in an environment which is not propitious to industrialization, even further reinforces the difficulties of implementation and management of these projects, and submits the exporting country to the technical and human monopoly of the industrialized economies.

In this context, the formula of transfer of technology « produce in hand » is only a reflection of the inability of the national economy to take charge of and master its own future. The myth of maximal productivity by worker and the fear of obsolete techniques have made certain OPEC economies into privileged test laboratories for the big Western companies.

Far from diversifying local economies and promoting a real national industrial web, the newly created industries tend to take their place in the multinational firms' chain of activities.

This is particularly clear in the case of Saudi Arabia, with the systematic joint venture scheme with the big petroleum Companies worked out by SABIC. The Franco-Qatar steam-cracker in Dunkerque and the Iranian petrochemical industry at the time of the Shah are other examples. Here partnership operations are frankly extraverted, oriented towards the outside, becoming « enclaves » without links with the so-called traditional economy in which they nonetheless live.

The picture is hardly any different in the case of economies where public investment predominates, as it is not the nature of investments (public or foreign) — or if one prefers, the property régime — which all things considered, determines the end pro-

duct and the behaviour of the new industries, but rather their size, the nature of the technologies they adopt and last but not least, the way these industries are grafted in the country's Plan. The risk is therefore great that large industrial achievements now underway will generate a new dualism whilst, at the same time, worsening the existing ones.

PETROL ET DEVELOPPEMENT: L'EXPERIENCE DES ECONOMIES PETROLIERES DU TIERS MONDE

RESUME

On constate que le processus d'industrialisation des pays exportateurs — qu'il s'agisse des pays du Golfe, démunis de main-d'oeuvre, ou de pays comme l'Irak, le Nigeria ou le Mexique, dotés de ressources humaines non négligeables — se caractérise par un certain nombre de traits qui limitent ses effets d'entraînement.

Rarement l'industrialisation s'insère dans un plan cohérent de développement; souvent l'industrialisation en vient à se confondre avec le développement tout court. La programmation de quelques grands projets « industrialisants » devient le Plan de la nation. Ces plans deviennent autant de symboles d'un développement qui, du fait même de leur excessive concentration, marginalise encore plus une économie locale déjà tenue à l'écart à l'époque de l'extraversion du secteur pétrolier. Le gigantisme des projets, justifié souvent à tort par de prétendues économies d'échelle illusoires dans un environnement peu propice à l'industrialisation, renforce encore les difficultés de réalisation et de gestion de ces projets. Dans ce contexte, la formule du transfert de technologie « produits en main » n'est que le reflet de l'incapacité de l'économie nationale de prendre en charge et de maîtriser son propre devenir.

Loin de diversifier les économies locales et de promouvoir un véritable tissu industriel national, les industries nouvellement créés tendent à s'insérer dans le réseau d'activités des firmes transnationales.

Le schéma n'est guère différent dans le cas des économies où l'investissement public prédomine, car ce n'est pas la nature des investissements (publics ou étrangers) —

ou, si l'on préfère, le régime de propriété — qui détermine en dernière instance la finalité et le comportement des industries nouvelles, mais plutôt leur dimension, la nature des technologies adoptées et « the last but not the least », le mode d'insertion de ces industries dans le Plan de la nation. Le risque est donc grand que les importantes réalisations industrielles en cours ne viennent provoquer de nouveaux dualismes tout en aggravant par ailleurs les dualismes existants.

