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REGIONAL INDUSTRIAL INTEGRATION:
THE CASE OF THE ARAB MIDDLE EAST

By

Elias T. Ghantus

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ABBREVIATIONS AND EXCHANGE RATES

AAID	Arab Authority for Agricultural Investment and Development
AADO	Arab Agricultural Development Organisation
ACM	Arab Common Market
ADFAED	Abu Dhabi Fund for Arab Economic Development
ADNOC	Abu Dhabi National Oil Company
AFESD	Arab Fund for Economic and Social Development
AIC	Arab Investment Company
ALO	Arab Labour Organisation
AMF	Arab Monetary Fund
AMPTC	Arab Maritime Petroleum Transport Company
AnCM	Andean Common Market
AOAS	Arab Organisation for Administrative Sciences
APIC	Arab Petroleum Investment Company
APSC	Arab Petroleum Services Company
ARABSAT	Arab Satellite Communication Organisation
ARI	Accounting rate of interest
AS	Ammonium sulphate
ASEAN	Association of South East Asian Nations
ASMO	Arab Specifications and Metrology Organisation
ASRY	Arab Shipping and Repair Yard Company
CACM	Central American Common Market
CAEU	Council of Arab Economic Unity
DAP	Diammonium phosphate
EAC	East African Community
EACSO	East African Common Services Organisation
ECA	Economic Commission for Africa
ECOSOC	United Nations Economic and Social Council
ECLA	Economic Commission for Latin America
ECWA	Economic Commission for Western Asia
EEC	European Economic Community
EFTA	European Free Trade Area
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organisation of the United Nations
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GNP	Gross national product
GODE	Gulf Organisation for the Development of Egypt
HDPE	High density polyethylene
IAIGC	Inter-Arab Investment Guarantee Corporation
IDCAS	Industrial Development Centre for Arab States
IFED	Iraqi Fund for External Development
IRR	Internal rate of return
ILO	International Labour Organisation
KFAED	Kuwait Fund for Arab Economic Development
LAFTA	Latin American Free Trade Association
LDPE	Low density polyethylene
MAP	Mono-ammonium phosphate
MEED	Middle East Economic Digest

M.E.S.	Minimum=efficient-scale
NGL	Liquefied natural gas
OAPEC	Organisation for Arab Petroleum Exporting Countries
OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of Petroleum Exporting Countries
PETROMIN	General Petroleum and Minerals Organisation (Saudi Arabia)
RCD	Regional Cooperation for Development
SABIC	Saudi Basic Industries Corporation
SFD	Saudi Fund for Development
SITC	Standard International Trade Classification
SDR's	Special Drawing Rights
SSP	Single superphosphate
TSP	Triple superphosphate
UAE	United Arab Emirates
UASC	United Arab Shipping Company
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNESOB	United Nations Economic and Social Office in Beirut
UNIDO	United Nations Industrial Development Organisation
VCM	Vinyl chloride monomer

Exchange Rates of Arab Countries

	\$
Bahraini Dinar (BD)	0.3878
Egyptian Pound (£E)	0.6900
Iraqi Dinar (ID)	0.2935
Jordanian Dinar (JD)	0.2925
Kuwaiti Dinar (KD)	0.2673
Lebanese Pounds (£L)	3.4277
Libyan Dinar (LD)	0.2961
Omani Riyal (RO)	0.3457
Qatari Riyal (QR)	3.6400
Saudi Riyal (SRI)	3.3200
Sudanese Pound (£Sud)	0.8000*
Syrian Pound (£S)	3.9262
UAE Dirham (Dh)	3.6900
Dem. Yemeni Dinar (SYD)	0.3415
Yemeni Riyal (YR)	4.5615

* Parallel rate

SOURCE: MEED, 12 September 1980

ABSTRACT

The general theme of this thesis is that economic integration in the case of developing countries ought to be conceived as a strategy for economic development, rather than as a tariff issue. Considering that developing countries are still in the process of realising their economic potential, they can benefit from the dynamic effects of integration. It is argued that economic integration among such countries is marked with uncertainty. Its success hinges to a large extent on the ability of the integrating countries to adopt an "allocative" approach which simultaneously avoids the occurrence of crises in the distribution of benefits and costs of integration and ensures the coordination of investment and production programmes to take advantage of the enlarged market. The "allocative" approach aims initially at partial integration, as it concentrates on the sector or industry where integration can be most effective. After some gains are realised, integration could be extended gradually to include other sectors. This framework is discussed in the context of the Arab Middle East countries, and an approach and a strategy for industrial integration among these countries are suggested.

The study comprises two parts. In Part I, an attempt is made to develop a theoretical framework for the study of economic integration among developing countries. It starts by examining in Chapter One the theory of economic integration

and its relevance to developing countries, and then in Chapter Two develops an operational methodology for identifying and measuring integration effects of regional projects. Chapter Three reviews the alternative approaches to regional industrial integration experienced by various groupings in Latin America, Africa, and Asia, with a view to appraise the "package deal" approach as an innovative solution to the problem of distribution of benefits and costs, and its desirability for a regional grouping such as the Arab Middle East countries.

In Part II, the case for integration among the Arab Middle East countries (to include the Arab countries in Asia together with Egypt and the Sudan) is examined, with an attempt to devise a strategy for an integrated industrial development among these countries. As a starting point, Chapter Four gives a critical account of the attempts at regional economic cooperation and integration in the Arab Middle East region, and the emerging role of capital surpluses accruing to the oil countries in promoting the idea of integration. Chapter Five discusses the economic framework of the countries under consideration, in order to assess the role of economic integration as a desirable alternative to national development. Chapter Six discusses the developing industrial growth patterns in the above countries, and relates integration to future industrial growth. Chapter Seven explores some of the

possibilities for integration among the Arab Middle East countries in specific industries in a number of industrial sectors whose economic viability can be enhanced by the pooling of scarce resources, skills, and markets. This will be followed in Chapter Eight by a methodological study for the assessment of the integration potential in one of these industries which is fertilizers. Chapter Nine focuses on the elements which are deemed central in the framing of a strategy for an integrated industrial development based on the "package deal" approach in the region. Finally, Chapter Ten presents a concluding summary of the study.

PREFACE

This thesis is a result of almost two decades of personal involvement in regional economic cooperation and integration in the Arab Middle East. My work since 1961 with the General Union of Chambers of Commerce, Industry and Agriculture for Arab Countries, where I now serve as Assistant Secretary General, put me in direct contact with regional economic developments. It gave me the opportunity to do extensive research on the Arab economies, as well as the privilege of attending frequently the meetings of the Arab Economic Council of the League of Arab States and the Council of Arab Economic Unity. On another level, my association with the Department of Economics at the American University of Beirut since 1975, as a Lecturer on Middle East economics, has been very useful in developing my thinking about the areas and possibilities for economic integration in the region and I benefited immensely from class discussions with the students on the subject.

What always struck me at the inter-governmental Arab economic meetings is the emphasis on trade liberalisation as a means for economic integration. The Arab countries were treated as if they were in the same category, with no regard to the differences in their levels of economic development, economic size, or development strategy. My contention was and still is that a more practical and

piecemeal approach for integration is needed: an approach which would take into consideration the differing economic settings in the Arab countries. It is the purpose of this thesis to seek such an approach and frame a strategy for integrated industrial development among the Arab countries.

I wish to record my deep gratitude to my supervisor, Dr. Rodney J.A. Wilson, who helped greatly by his sharp criticism and comments to clarify my thoughts and remove some inconsistencies. He generously gave me much of his time and of his experience on the Middle East.

I am deeply grateful to Professor Denis P. O'Brien, Head of the Economics Department at the University of Durham, for kindly taking the time to read an earlier version of this thesis. I have greatly benefited from his sympathetic criticisms in re-writing some of the material.

My thanks are due to Burhan Dajani, Secretary General of the Union of Arab Chambers, who encouraged me to start this study and relieved me from work during the time needed for it. Thanks are also due to the British Council for awarding me a scholarship to complete my residence requirement in Durham.

Further thanks are due to the many officials and specialists in the League of Arab States and the Council of

Arab Economic Unity as well as in other Arab economic organisations, UNCTAD, UNIDO and OECD, who gave me much of their time and attention to discuss various aspects of this thesis and to obtain numerous useful documents on the subject.

Last, but not least, many thanks go to my wife, Leila, who enabled me to have the time and peace of mind to complete the writing of this thesis during the last few months, by shouldering the full burden of looking after our daughters, Maha, Mona, Najwa, and Nada.

Elias T. Ghanous

Durham, 1st October 1980

PART I

A Theoretical Framework

CHAPTER ONE

THE THEORY OF ECONOMIC INTEGRATION AND DEVELOPING COUNTRIES

Since the end of World War II, the idea of economic integration among regional groupings gained a growing importance in the realm of international economic relations. In an attempt to emulate the European Economic Community (EEC) various schemes for regional economic integration have been realised in the developing world, though with varying degrees of success. Apart from political considerations, the driving force behind the movement towards economic regionalism emanates from the potential economic gains made possible by the pooling of markets and use of resources.

It is amply evident from theory and application that economic integration in the context of developing countries exhibits growth re-inforcing effects and could act to reduce the cost of economic development in the integrating countries. As such it is usually conceived as a strategy or paradigm for economic development, rather than a tariff issue as it has been basically treated in the context of the developed countries. Indeed, the fact that the theory of economic integration was developed with the case of the industrialised countries in mind, renders this theory of limited relevance to developing countries. This makes it necessary to extend the basic theory of economic integration which is drawn in "static" terms, by



including in the analysis some "dynamic" elements that are inherent in the theory of economic development. Therefore, the main purpose of this chapter will be to develop an appropriate theoretical framework for studying the development implications of economic integration.

The chapter comprises five parts. In the introductory part, we will be concerned with the concept and forms of economic integration, and its definition for the purposes of this thesis. The second part will present a brief inquiry in the theory of customs unions and its extension, with a view to depict its usefulness as a guide to economic policy in developing countries. In the third part, an attempt will be made to relate economic integration to the process of economic development as generally perceived in contemporary developing countries. In the fourth part, a brief discussion of the importance of economies of scale in manufacturing industry is presented and how economic integration could be instrumental in realising them. In the fifth and concluding part, a conceptual approach for economic integration in a typical developing setting will be suggested.

Concept and Forms of Economic Integration

The term "economic integration" denotes either a process or a state of affairs.^{1/} But the fact that integration theorists

^{1/} See Bela Balassa, The Theory of Economic Integration (London: George Allen & Unwin Ltd., 1961), p. 1; and, F. Kahnert, P. Richard, E. Stoutjesdijk, and P. Thomopoulos, Economic Integration Among Developing Countries (Paris: OECD, 1969), p. 11.

have varying conceptions as to what the process of economic integration must entail and to what constitutes a state of integration does not help to coin a standard definition of this concept.

As a process, economic integration involves essentially the gradual removal of discriminatory barriers between two or more national economies (or alternatively between units of the same economy) with the purpose of optimising economic performance. Myrdal considers that

"The economy is not integrated unless all avenues are open to everybody and the remuneration paid for productive services are equal". 2/

But some theorists contend that the process of economic integration is a dual-pronged one; it amounts not only to the removal of discriminatory barriers, but as well the introduction of coordination and harmonisation which ensure the optimal functioning and development of the economy as a whole. Thus, Tinbergen defines integration as

"the creation of the most desirable structure of international economy, removing artificial hindrances to the optimal operation and introducing deliberately all desirable elements of coordination or unification". 3/

This view is based primarily on the general presumption that the release of market forces through "negative" economic integration is not likely to bring about the desired effect

2/ Gunnar Myrdal, An International Economy: Problems and Prospects (London: Routledge and Kegan Paul Ltd., 1956), p. 11.

3/ J. Tinbergen, International Economic Integration (Amsterdam: Elsevier, 1954), p. 95.

and that "positive" economic integration must be instituted through appropriate policy means.^{4/}

The foregoing suggests that when viewed as a state of affairs the term "economic integration" refers to a situation characterised by increased economic interdependence and the absence of discrimination between national economies which carries with it optimising effects.

It is important to recognise, however, that the concept of economic integration is distinct from the broader concept of economic cooperation. According to Balassa,

"Whereas cooperation includes various measures designed to harmonize economic policies and to lessen discrimination, the process of economic integration comprises those measures which entail the suppression of some forms of discrimination".^{5/}

But there are some forms of international cooperation which may be regarded as pre-integration stages. For instance, trade consultations or sharing of experiences in planning economic development between two or more countries could be a first step towards some form of economic integration.

It seems that the general approach to economic integration has been inspired by the theoretical writings on the formation of customs unions, within the broader field of international

^{4/} See John Pinder, "Positive and Negative Integration: Some Problems of Economic Union in the EEC", in M. Hodges (ed.), European Integration (Harmondsworth, England: Penguin Books Ltd., 1972), p. 126-127.

^{5/} Bela Balassa, "Towards A Theory of Economic Integration", in M.S. Wionczek (ed.), Latin American Economic Integration: Experiences and Prospects (New York: Praeger, 1966), p. 24.

economic relations. This approach focuses on integrating the markets of the participating countries as a means for achieving an optimum reallocation of resources in the integrated area. In this context, several forms of economic integration can be perceived.

The simplest form is the free trade area which involves the elimination of tariffs and quantitative restrictions between the member-countries, but each country is allowed to fix its own separate tariff rates on imports from the non-member countries. A higher level of economic integration is the customs union which involves aside from the elimination of tariffs among the member-countries the unification of tariffs against the outside world. The common market is still a higher level of integration, adding to the customs union situation the removal of restrictions on the movement of factors of production among the member-countries. The highest level of integration is the economic union which fuses the national economies into a single unit (i.e. a transnational economy), adding to the common market situation the harmonisation or unification of the economic and social policies of the member-countries, and this usually calls for the setting up of a supra-national decision-making body.

As will be revealed later in this chapter, economic integration need not embrace from the beginning all sectors of the economies concerned. Partial integration, limited to

one sector or even one industry, has proved to be a more promising form of initial integration among developing countries. Such schemes are often referred to as partial customs union with investment planning. It is useful to look at such integration as a joint action to solve common development problems, in the sense that it focuses on production activities which cannot be carried out with relative efficiency by the individual countries concerned. This applies specifically to manufacturing industries whose minimum-efficient-scale of production is larger than could be absorbed by any of the domestic markets. In this respect, partial integration seems to be more fundamental than market integration which is attained through mere trade liberalisation, since it involves from the beginning both policy coordination and trade liberalisation. However, it ought to be conceived as a supplement to national development efforts in the participating countries, rather than a substitute for them.

Obviously, all forms of economic integration have in common two basic features: first, they facilitate trade exchange and specialisation in production in an enlarged market area; and, second, they discriminate against the outside world. The form that economic integration takes depends on the aim and degree of integration desired by the countries concerned. In practice, the higher the level of integration, the greater the limitations on sovereignty of the member-countries in carrying out their trade and development policies. This explains to a large extent why the progress in the integration process tends

to lead to the "pooling of sovereignty". Actual experience shows that this is not specially appealing to developing countries, since their national consciousness is high and economic development to them is a post-independence endeavour.^{6/}

To reconcile this with the desire to reap the benefits of integration, most developing countries have not gone in their integrative efforts beyond the formation of customs-unions. Indeed, most developing countries tend to be sensitive to factor mobility (both capital and labour), but they would allow under certain conditions free mobility of goods.^{7/}

For the purposes of this study, the term "economic integration" will be used in a restricted sense to denote either an integrative system of the customs union type or the process leading to the creation of such a system. This is justified further by the fact that the theory of economic

6/ For example, the East African integration experience indicates how after independence the integrating countries started to pursue national economic policies, thus creating much difficulty in maintaining the degree of success in economic integration attained during colonial rule. See J.S. Nye, "Patterns and Catalysts in Regional Integration", International Organization, Vol. 19, 1965, pp. 870-884.

7/ In most cases, developing countries designate their preferential trading arrangements as free trade areas or common markets, either because they aim at more integration or because they wish to conform to the General Agreement on Tariffs and Trade (GATT) which allows for exception to most-favoured-nation clauses for customs unions and free trade areas but not for preferential arrangements. See Constantine Michalopoulos, "Expanding Trade Among Developing Countries", Journal of Common Market Studies, Vol. 13, No. 3, March 1975, pp. 312; and, F.A. Haight, "Customs Unions and Free-Trade Areas Under GATT", Journal of World Trade Law, Vol. 6, 1972, pp. 391-404.

integration, as will be indicated below, is framed in terms of customs unions, and its general analysis is applicable to all forms of integration. No attempt will be made throughout this study to analyse the political motives and implications of economic integration. The analysis will be drawn in purely economic terms. It will be assumed, however, that economic integration is supported by a basic political understanding among the integrating countries, and conversely the increase in interdependence through economic integration can help to diminish the propensity for political conflict. It should be clear that the need to distribute the benefits and costs of integration equitably among the integrating countries, which will be discussed at a later stage, means implicitly that the integrating countries would remain as sovereign states.

The Theory of Customs Unions

The theory of customs unions was mostly developed in the post World War II period and is characterised by its slim foundation. It is defined as

"that branch of tariff theory which deals with the effects of geographically discriminatory changes in trade barriers". 8/

Its general proposition is that when two or more countries form a customs union the set of relative prices facing producers and consumers are apt to change and the change may be to the "benefit" or "detriment" of the union-members and the world at large.

8/ R.G. Lipsey, "The Theory of Customs Unions: A General Survey", Economic Journal, Vol. 70, No. 279, September 1960, p. 497.

In point of fact, Viner was the first to challenge the view held by liberal economists that since the formation of a customs union leads to the reduction of tariffs it represents a movement in the direction of universal free trade and thus it enhances economic welfare.^{9/} His contention was that any customs union contains elements of both freer trade and greater protection, and therefore it is impossible to draw a priori conclusions as to the net gain or loss it entails. Focusing on inter-country substitution in production (under conditions of zero-elasticity of demand and constant cost of production), Viner argued that a customs union increases welfare to the extent that free trade among the union-members causes a reduction of inefficient production, or to the extent that it leads to "trade creation". Simultaneously, a customs union decreases welfare to the extent that it allows, by discriminating against low-cost producers outside the union, the less efficient union-producers to take up the trade flows cancelled by the formation of the union, or to the extent that it leads to "trade diversion". Thus, he concluded that a

9/ It is useful to recall here that in accordance with the pure theory of international trade a free trade situation leads to a higher level of welfare than a no trade situation. This is based on the assumption that free trade, under conditions of perfect competition and full employment of factors of production, leads to optimal allocation of resources, with each country specialising in accordance with its comparative advantage. The optimality of this situation arises from the fact that it permits the equalisation of domestic prices with foreign prices (allowing for transport costs), and the equalisation of domestic prices with the marginal rate of transformation in production and the marginal rate of substitution in consumption. In this state of affairs the production economy of the world would be in equilibrium and the free-trade policy would be the first-best optimal policy.

predominantly trade-creating customs union benefits at least one member and the world at large, whereas a trade-diverting customs union is harmful to at least one member and the world at large.

A major shortcoming of Viner's analysis is the omission of inter-commodity substitution which arises from the response of consumers to the change in relative prices associated with customs unions. Lipsey and others^{10/} extended the analysis to include consumption effect and by doing so they demonstrated that a trade-diverting customs union does not necessarily reduce welfare. The reasoning was that a customs union results in an unambiguous welfare gain to consumers with respect to intra-union trade, since the removal of tariffs leads to the equalisation of the marginal rate of substitution between the goods in consumption with their marginal rate of transformation in production, and this welfare gain could be enough to offset the welfare loss arising from trade diversion. Thus Lipsey concluded that in general "the consumption effect, like the production effect, can work either to raise or to lower welfare", and added that "if one wishes to predict the welfare effects of a customs union it is necessary to predict the relative strengths of the forces causing trade creation and trade diversion".^{11/}

^{10/} R.G. Lipsey, "The Theory of Customs Unions: Trade Diversion and Welfare", Economica, Vol. 24, No. 93, 1957, pp. 40-46; F. Gehrels, "Customs Unions from a Single Country Viewpoint", Review of Economic Studies, Vol. 24, 1956-57, pp. 61-64; and, J. Meade, The Theory of Customs Unions (Amsterdam: North-Holland, 1956).

^{11/} Lipsey, "The Theory of Customs Unions: A General Survey", op. cit., p. 498.

In conjunction with these effects, a customs union may lead to an improvement in the terms of trade of the member-countries. This is likely to happen when the elasticity of demand for divertible imports in the union is high and the elasticity of supply of these imports outside the union is low. In such a case, outside suppliers will tend to reduce their supply prices to recapture their share in the union market. This must be viewed together with the increase in the bargaining power of the union-members vis-à-vis other countries, especially when they happen to be important suppliers or consumers of particular goods. But the bargaining power can be checked through retaliatory measures which can be taken by non-members against the union as a whole.

The implication of the static analysis is that a customs union represents a second-best situation after universal free trade, and as such it is an application of the general theory of the second-best and its welfare implications depend on the precise circumstances of each case.^{12/} Thus, if a country is interested in maximising its welfare through manipulating its tariff policy, the formation of a customs union with other countries is not the ideal option for realising this objective. Indeed, it is possible for a country to enjoy the

^{12/} This theory states that if any economy is prevented (by the existence of some distortions) from satisfying all the optimum conditions necessary for maximising welfare simultaneously, the satisfaction of one of these conditions will not necessarily make the country concerned better off than would its non-satisfaction. R. G. Lipsey and K. Lancaster, "The General Theory of Second-Best", Review of Economic Studies, Vol. 24, No. 63, 1956, pp. 11-32.

benefits of trade creation without incurring any loss from trade diversion, merely by following a unilateral non-preferential tariff policy (i.e. applying optimum tariff). On this basis Cooper-Massell questioned the usefulness of the static analysis in evaluating customs unions. They argued that

"It fails to show why a customs union may be acceptable when a tariff reduction is not, and it fails to analyse how a customs union may more efficiently serve the ends previously served by non-preferential protection". 13/

This insight called for the extension of customs union analysis with a major change in theoretical orientation. The analysis needed is to evaluate non-preferential tariff policy and customs union as alternative devices for protectionism, rather than for trade liberalisation. In other words, since from a resource allocation point of view, a customs union is inferior to a policy of non-preferential tariff reduction, the rationale for customs unions ought to be based on a dynamic analysis which justifies preferential protection and subsequently trade diversion. This theoretical development had a great significance in the evaluation of economic integration schemes among developing countries.

As a matter of fact, much skepticism has been expressed in economic integration literature with respect to the relevance

13/ C.A. Cooper and M.F. Massell, "A New Look at Customs Union Theory", Economic Journal, Vol. 75, No. 300, 1965, p. 746.

of the static analysis in the evaluation of the desirability of customs unions among developing countries. Lipsey depicted two basic criteria by which the magnitude of a country's potential gain from increased specialisation in a customs union can be determined. He proposed that a customs union is more likely to raise welfare: (a) the higher the proportion of trade with the country's union partner(s) and the lower the proportion with the outside world; and, (b) the lower the total volume of foreign trade is relative to domestic purchases prior to the formation of the union.^{14/}

Obviously, in terms of these criteria the case for customs unions among developing countries seems to be a weak one. Developing countries are characterised by having a large external trade in relation to domestic production, and they generally trade with developed (industrialised) countries rather than with each other. On this count, a customs union among typical developing countries is likely to be a trade-diverting one with a limited scope for welfare gain.

It is only when the dynamic arguments are considered that economic integration among developing countries can be justified reasonably. By definition, the developing countries are in the process of realising their economic potential, and trade diversion among a regional grouping of them may be consistent with the economic development efforts. The changed

^{14/} Lipsey, "The Theory of Customs Unions: A General Survey", op. cit., pp. 496-513.

environment of international trade since the end of World War II entailed a general deterioration in the terms of trade of most developing countries. The trade in primary (excluding oil) and agricultural commodities has been increasing at a relatively much lower rate than trade in manufactures and this affected adversely the developing countries.^{15/} This has led to a growing tendency on the part of most developing countries to reduce their dependence on the world economy and to internalise economic growth with a view to strengthen the movement towards self-reliance. For that purpose, protectionism has acquired legitimacy on the assumption that it could produce greater growth effects than free trade. Given this, it can be argued that if import-substitution on a national level (or trade destruction) is inevitable, then import-substitution on a regional level (or trade diversion) tends to be more desirable inasfar as it makes possible specialisation and economies of scale and increases the scope for mobilising idle resources. Hence, trade diversion can be regarded as an essential ingredient of economic integration among developing countries and ought to be viewed as a positive factor. This idea lies at the heart of the theoretical framework developed below.

It is important to recognise that integration theorists did not repudiate totally the basic theory of economic integration

^{15/} The most celebrated argument supporting this phenomenon is that of Prebisch who concluded that the sluggish expansion in exports and the deterioration of the terms of trade would limit the capacity of the developing countries to increase their export earnings which are vital in covering imports. See Raul Prebisch, "Commercial Policy in Under-Developed Countries", American Economic Review, May 1959, pp. 251-273.

as a policy guide in developing countries. They emphasised, however, that there may be forms of economic integration and criteria for judging their success other than the traditional ones which may be useful in the analysis and policy of these countries. The focus of interest in the "dynamic" analysis developed by various theorists is the impact of trade diversion on industrialisation and on foreign exchange saving as a result of import-substitution.

The starting point in the dynamic analysis is that a government may impose protective tariffs despite the "welfare costs" entailed. This may be motivated by economic reasons such as the desire to shelter comparatively high-cost domestic industries such as defence. In an attempt to formulate an "economic" theory of protectionism, Johnson^{16/} conceptualised the objective of protection as being the maximisation of community welfare expressed in terms of public and private goods. He proposed that if in a certain community there is a collective or public preference for certain types of economic activity (such as industry), the electorate may be willing to spend real resources through government action in order to make the volume of industrial production and employment larger than would be under international free competition.^{17/}

^{16/} H.G. Johnson, "An Economic Theory of Protectionism, Tariff Bargaining, and the Formation of Customs Unions", Journal of Political Economy, Vol. 73, No. 3, June 1965, pp. 256-283.

^{17/} Government action may take the form of a direct production subsidy, indirect subsidy through tax concession, or indirect subsidy through a tariff. The tariff is politically most attractive though it is least efficient insofar as it entails greater sacrifice of real resources by including more units of public good than would a direct subsidy which avoids the tariff's consumption cost component.

By including public goods in the community's welfare function, Johnson demonstrated that a customs union could be superior to a unilateral protective tariff policy on the following grounds. Assume that two countries have public preference for domestic industrial production, and that the industrial sector of each of them consists of industries of varying efficiency, with some industries producing for export and others requiring protection to enable production to be expanded efficiently for minimum cost levels to be attained. A unilateral tariff reduction leads to the reduction of domestic industrial production below its optimal level, thus resulting in an unambiguous loss for the country concerned. If, however, there are reciprocal tariff reductions so that the increase in industrial production for export compensates for the decrease in production of import-competing industries, the same amount of collective consumption good can be produced but at a lower cost in terms of foregone private consumption. Hence, it can be concluded that countries join a customs union in view of its potential for satisfying public consumption demand at lower cost through re-allocating domestic resources from the less efficient import-competing to the more efficient export industries.

In a similar vein, Cooper and Massell^{18/} argued that in the presence of a social preference for particular types of economic activity (e.g. industry) economic planners in a developing country may be willing to accept a reduction in

^{18/} C.A. Cooper and B.F. Massell, "Towards A General Theory of Customs Unions for Developing Countries", Journal of Political Economy, Vol. 73, No. 5, October 1965, pp. 461-476.

national income for the sake of achieving a higher industrial production. In other words, the cost of industrialisation is measured in terms of the loss in national income. They suggested that decisions relating to industries to be established must be based on the supply and demand curves for industrialisation. While the supply curve is a function of national income foregone, the demand curve is assumed to express the wishes of the national economic planners whose choice is supposed to reflect social preference. Since it is assumed that diversification within the industrial sector is not an objective, the ranking of different industries will be made according to their cost differentials only. It is up to the economic planners to trade off between industrial activities and national income such that the "excess cost" of the n^{th} industry is equal to the "excess utility" which is derived from the fact that the output of the industry in question is produced at home instead of being imported.

Linder^{19/} argued that the loss in national income through trade diversion could be counter-balanced by foreign exchange savings through import-substitution. He argued that the question is whether it is not more advantageous to buy a commodity from a new producer than to waste foreign exchange on importation from an advanced country. In his opinion, it is not enough to compare the efficiency of two alternative producers, since the producer who in a partial

^{19/} S.B. Linder, "Customs Unions and Economic Development", in M. Wionczek (ed.), Latin American Economic Integration: Experiences and Prospects (New York: Praeger, 1966), pp. 32-41.

analysis is shown to be the less efficient of the two proves to be the most economic in a more general analysis.

The central point which could be derived from the above analysis is that the desirable dynamic effects of trade diversion may be more than the initial cost it entails. What makes the dynamic benefits of relatively considerable potential is that they are not limited to existing industries in the countries forming the integration scheme, but also arise from future industries created on the basis of the enlarged market. Hence the dynamic effects of integration could be distinguished from the static effects. Whereas the former are cumulative and realised in the long-run from a series of shifts of the production frontier to the right, the latter are once-and-for-all benefits and result in the short-run from a changed price relationship along a fixed production frontier or a movement towards the frontier.

This means that economic integration among developing countries involves essentially a choice between two alternative long-run economic environments: one is national and the other is regional. Therefore, it ought to be evaluated primarily on the basis of its prospective effects on the productivity of the national economic resources of the participants, with a view to indicate the grounds on which economic integration could be desirable, given available factor supplies. To understand the nature of these effects it is imperative to analyse them in the context of the process of economic develop-

ment, as generally perceived in contemporary developing countries.

Development, Capital Accumulation and Industrialisation

A major pre-requisite for the process of economic development is the availability of an indigenous resource base which could be mobilised to achieve certain social objectives. Generally, resources in developing countries are unutilised, underutilised, or misutilised, and the purpose of the development process is primarily to attain a fuller utilisation of these resources.

The perfection of the domestic market, mainly through increasing the mobility of the factors of production from less productive to more productive forms of employment and the spreading of knowledge about market opportunities, could be instrumental in moving a developing economy to a state in which a more efficient use of resources is achieved. It is evident that in the context of a broader regional market, the productivity of factors of production is apt to be enhanced further not only from an allocative point of view, but also as a result of economies of scale, longer production runs and increased specialisation. It can be argued on this basis that the optimisation of the use of domestic resources, which is at the centre of the development process, is directly related to the size of the market and renders integration as a desirable development approach. Furthermore, since the essence of

under-development is the paucity of some factors of production (usually those complementary to labour), the constraints to development on the supply side are likely to be more crucial than the deficiency in aggregate demand. In a regional context the relative factor supplies are likely to be less disproportionate than in a national context, and this in itself broadens the scope for growth and development. A striking example is the Arab region, where some countries have labour abundance while others have capital abundance and there is now more than ever before a growing recognition of the importance of pooling resources in order to accelerate the development process.

A basic aspect of the development process is certainly the accumulation of real capital, in order to enhance the productivity of the factors of production operating within the economy. This aspect involves an increase in the volume of real savings, through a sacrifice in current consumption, and orienting these savings towards productive investments. What is more important than capital accumulation is the use of capital itself in the most productive way. Therefore, our interest here relates to how economic integration can ensure a more efficient use of available capital supply.

It is known that despite capital deficiency in most developing countries, capital absorption capacity tends to be limited by the shortages in the supply of other factors of production coöperant with it. The lack of managerial and

labour skills, and technology could act to reduce the marginal productivity of capital if its accumulation proceeds rapidly. It can be argued that policies encouraging a continuing massive investment effort could in the long-run affect adversely the level of consumption. The underlying reasoning is that excessive investments will increase the capital-output ratio to such an extent that the prospective rise in income will be less than the increase in savings required to maintain the rate of growth in production. A low capital-output ratio, therefore, is as important as capital accumulation. Once economic development reaches a certain level, technical progress would replace capital accumulation as a major factor stimulating the increase in per capita income. The diversity which a regional market could provide allows for a more efficient combination of capital with other factors of production, in addition to the fact that such a market is conducive to the development of skills and technology.

The extent to which a country gains from capital formation depends on how the additional investment expenditures are allocated with respect to both the selection of projects and the choice of production techniques. This suggests that in the development process one must attach importance not only to the savings ratio, but also and perhaps more to the factors which determine the form in which capital is invested (i.e. investment criteria). It should be a basic concern for planners to allocate a given volume of investment in such a

way as to optimise the use of available resources. As Higgins points out,

"... for every 'factor endowment', there is an optimal combination of factors of production. One of the purposes of development planning is to find this combination and see to it that it is maintained." 20/

It can be observed that the disproportion in factor endowment which characterises most of the developing countries is reflected in an imbalance of the economic structure, and this usually leads to the unemployment of a major factor of production. Since the process of economic development aims at increasing the productivity of the factors of production currently employed and at bringing into productive use the idle factor(s) of production, it necessarily entails some fundamental restructuring in the economy. The argument that needs to be put forward here is that economic integration provides a more efficient means for this restructuring, especially when it comes to industrial development which is directly related to the size of the market.

From a functional point of view, the development process is considered to involve both growth and change. It aims simultaneously at expanding economic activity and changing its sectoral composition through the allocation of factors of production. In Kindleberger's words,

20/ Benjamin Higgins, Economic Development (London: Constable & Co., 1968), p. 150.

"... economic growth means more output, and economic development implies both more output and changes in the technical and institutional arrangements by which it is produced. Growth may well imply not only more output, but also more inputs and more efficiency, i.e., an increase in output per unit of input. Development goes beyond these to imply changes in the structure of outputs and in the allocation of inputs by sectors." 21/

There is a general presumption that the improvement of the productivity of factors of production in developing countries is achieved primarily by transferring gradually a part of the labour force from agricultural pursuits where labour productivity is low, to urban occupations where labour productivity is much higher.^{22/} This process is a complex one, and is normally carried out in accordance with a long-term development strategy that takes into consideration the inter-sectoral relationships within the economy. Many economists have tended to perceive the course of development as taking place in different stages, namely proceeding from a hunting stage through an agricultural stage to an industrial-commercial stage.^{23/} But none of the classifications of growth stages

21/ Charles Kindleberger, Economic Development (New York: McGraw-Hill, Inc., 1965), p. 3.

22/ See Ian Little, Tibor Scitovsky and Maurice Scott, Industry and Trade in Some Developing Countries: A Comparative Study (London: Oxford University Press, 1970), p. 30.

23/ The most recent attempt is that of W.W. Rostow whose thesis is that economic growth comes in the following stages: the traditional society (establishing the preconditions for take-off), the take-off, the drive to maturity, and the state of high mass consumption. See W.W. Rostow, The Stages of Economic Growth (Cambridge, Mass.: Cambridge University Press, 1962).

devised so far can be considered as a theory,

"for none explains the mechanism linking the various stages and conditions governing the move from one stage to the next one." 24/

In fact, these stages tend to exist side by side in many of the developing countries.

Still it is expedient to presume that economic development in most cases must be accompanied by structural changes which transform the country concerned gradually from a predominantly agricultural society to one having a bias for manufacturing activity. A supporting argument is Engel's Law which provides that the composition of demand changes as income increases, with the share of food declining in overall demand. Hence, the effective demand for goods other than food would remain low until the basic food requirements of the society are ensured. When this stage is reached the productivity of the industrial sector (as well as the service sectors which develop along with the expansion of the exchange system within the economy) would start to improve as a result of the increase in demand for industrial goods. This is enhanced by the transfer of labour from agriculture to industry. It can be suggested, therefore, that the productivity of the agricultural sector, in the absence of a growing demand in foreign markets for agricultural goods, tends to stagnate or even be pulled down further as a result of the mounting pressure of population

24/ R. Helfgott and S. Schiavo-Campo, "An Introduction to Industrial Planning", Industrialization and Productivity, Bulletin No. 16, United Nations, 1971, p. 7.

on land, by the mere functioning of the law of diminishing returns. In other words, international trade and investment could act as an "escape valve" for the developing countries, bringing about the transition from stagnation to expansion. As Cairncross remarks,

"... agriculture itself is rarely the dynamic centre from which economic growth radiates throughout the economy ... it is the dependent variable responding to development in other sectors of the economy or to the growth of demand in foreign markets." 25/

The above simple analysis indicates clearly that industrialisation provides usually a focal point in development strategy of developing countries.^{26/} Aside from transforming domestic natural resources into useful products to meet basic needs of the population, it brings into productive employment factors of production which would otherwise have been idle or under-employed, or consumed (in the case of capital). Thus, it is apt to bring about a better allocation of resources and save and/or generate foreign exchange by replacing imports and increasing exports.

It is rather paradoxical to mention, as an extension to the above analysis, that the priority accorded to industrial projects does not seem to have a significant influence on the

25/ A.K. Cairncross, Factors in Economic Development (London: George Allen and Unwin Ltd., 1962), p. 23.

26/ Although some economists are inclined to consider industrialisation and economic development as completely inter-changeable, the fact remains that the former is a means for achieving the latter. On this point, see G. M. Meier, Leading Issues in Economic Development (USA: Oxford University Press, Inc., 1970), pp. 5-6.

structure of employment in developing countries. Modern manufacturing industry tends to create less employment per unit of investment than most sectors of the economy, in view of the bias for capital-intensive techniques of production. This can be attributed largely to the fact that developing countries have limited or no choice in the techniques of production, as capital equipment are imported mainly from advanced industrial countries where capital is abundant and labour is scarce. Although factor substitutability allows for some scope for increasing the degree of labour intensity (defined as the quantity of labour per unit of investment) in industrial projects, the choice of technique in developing countries is unlikely to reflect factor endowment. On this basis, the priority given to the industrial sector could act to reduce the "employment potential" of the economic structure as a whole. Since the agricultural sector in developing settings can rarely be made more labour-intensive than already is, the service sectors, which are by definition more labour-intensive than the industrial sector, would be potentially more important as far as employment-creation is concerned.^{27/}

In determining the sectoral priorities for investment, therefore, it is important to incorporate in the analysis criteria other than employment. Industrial activity is particularly conducive to the creation of inter-industry and inter-sectoral linkages, and hence it provides "growing points" in

^{27/} On this specific point, see the study of A.S. Oberai, Changes in the Structure of Employment With Economic Development (Geneva; International Labour Office, 1979), especially pp. 34-36.

the economy. Through this it does not only help to expand the size of the domestic market, but also to create "external economies" so that investment in one sector or industry may make investments in others more profitable.^{28/} Hence, it is more consistent with the concept of development to group investments as a means for increasing factor productivity. This idea merges with the broader concept of "balanced growth", which advocates the allocation of investments on a broad front in order to allow the various parts of the economy to move forward in balance and be mutually supporting.

The point that needs to be highlighted here is that industrialisation as a means for economic development and growth does not only improve the sectoral allocation of resources (especially capital) but also the efficiency with which these resources are used. It is conducive to "agglomeration economies". Indeed, it seems more realistic to consider with respect to manufacturing industrial projects the optimality of total factor intensity, as may be determined by the state of available technology and relative factor prices. What concerns an entrepreneur operating in a market economy

^{28/} Scitovsky makes a distinction between "pecuniary" external economies and the more traditional "technological" external economies. The former occurs when an investment in industry leads to an expansion of its capacity and may consequently lower the prices of its products and raise the prices of the inputs used by it. The lowering of product prices benefits the users of these products, and when these benefits accrue to firms they are pecuniary external economies. On the other hand, if, as a peculiarity of the production function, the output of a firm depends on the factors utilised by the firm and also on the output of another firm, then the external economies are technological. Tibor Scitovsky, "Two Concepts of External Economies", Journal of Political Economy, Vol. 62, No. 2, April 1954, pp. 143-151.

is in fact the optimisation of total factor productivity, rather than the labour or capital intensities. The minimisation of production costs in any productive operation (which is the overriding concern of the entrepreneur) depends on the total productivity of the factors utilised. But when considering the inter-relationship between cost of production and its scale, the size of the market emerges as a major determinant of the efficiency of factors of production. This makes it inevitably important to shift the focus in our analysis from aggregative- to micro-economic issues.

Micro Economics of Integration

As pointed out earlier, a major rationale for economic integration among developing countries is the economies of scale which could be reaped in a larger market. A well-known characteristic of many industries is that production costs tend to decrease with the increase in capacity of the plant, as a result of the notion of "internal economies of scale". These economies can be realised from the division of labour, the integration of the production processes, and the mechanical advantage of operating large-size equipment and machinery. Although the inverse relationship between the average cost of production and the scale of operation applies in principle to the various components of production cost (including raw materials, power, labour and capital), it is likely to be more pronounced with respect to capital and, to a lesser extent, labour. It is always useful to make a distinction between two

types of costs. One is the fixed cost which comprises the initial investment made, and the other is the variable cost which pertains to the operation of the plant.

In a pioneering study, Haldi and Whitcomb^{29/} make revealing conclusions on the question of economies of scale which could be summarised as follows:

- a) economies of scale can generally be expected in initial investment costs in most types of plants and equipment, and that particularly in the more capital-intensive industries, savings in capital cost are an important source of scale economies;
- b) in process plants, operating expenses for labour, supervision, and maintenance also show significant economies of scale; and,
- c) consumption of utility services shows slight economies of scale, and consumption of raw materials generally shows none.

Empirical evidence of economies of scale is scanty. But several attempts have been made to compile engineering data on how capital (and other costs) vary with capacity. It can be observed that within a certain range, the variation in capital cost is governed by a power function of capacity whose exponent varies from one industry to another (or even from one process to another). This basic relationship can be expressed in a formula as follows:

^{29/} J. Haldi and D. Whitcomb, "Economies of Scale in Industrial Plants", Journal of Political Economy, Vol. 75, 1967, pp. 373-385.

$$\frac{I_1}{I_0} = \left(\frac{C_1}{C_0} \right)^a$$

where I_0 is the capital cost of an initial plant with capacity C_0 , I_1 is the capital cost of installing a plant with capacity C_1 , and "a" is an empirical exponential coefficient (or the scale-up coefficient) which has to be between zero and one.

Table 1.1 presents some of the available estimates of the scale-up coefficient, computed from the above formula. It is important to point out that the different sources from which the data were obtained for computing these estimates did not always use the same procedures or apply the same definitions of cost or capacity, or still the same range of capacity. However, these estimates are useful in providing sufficient evidence of the existence of sizeable economies of scale in industries that are highly relevant in an early stage of industrial development. This was made more evident by compiling the industries in the above table in ascending order of the scale-up coefficient. For example, it can be assumed that the doubling of capacity in food industries raises costs by only 40 to 50 per cent. It follows that the smaller the scale-up coefficient, the greater the potential cost saving from concentrating production to serve a wider market.

Considering that the primary aim of any developing country is to derive the largest increase in income (total

Table 1.1

Estimates of Economies of Scale With
Respect to Capital

Industry- Process	Scale-up coefficient	Industry- Process	Scale-up Coefficient
Gases -industrial	.30	Glass containers	.75
Beer	.38	Petroleum refining	
Sugar	.38	(general)	.75
Urea	.40	Caustic Soda	.77
Vegetable oil	.44	Methanol	.78
Dyes	.47	Rubber	.80
Sugar refining	.50	Sulphuric acid	.80
Newspapers	.51	Steel	.80
Petroleum refining		Ammonia	.81
(gasoline)	.51	Computers	.82
Canning of fruits and		Plastics	.82
vegetables	.54	Steel rolling	.82
Polyvinyl chloride	.55	Automobiles	.82
Calcium oxide	.58	Jute manufactures	.83
Oxygen gas	.59	Desalination	.83
Carbon black	.60	Refrigerators	.84
Ethylene	.62	Machine tools	.86
Magnesium (ferrosili-		Generators (turbine)	.86
cone process)	.62	Engineering castings	.86
Bread	.62	Diesel engines	.86
Acetylene	.67	Polyethelene	.87
Aircraft	.68	Petroleum refining	
Bricks	.68	(aviation fuel)	.88
Soap	.69	Aluminum rolling	.88
Cement	.70	Alumina	.90
Soda ash	.70	Alumium ingot	.90
Polymer	.70	Pulp and paper	.90
Ammonium nitrate	.71	Footwear	.93
Fertilisers (chemical)	.72		
Detergents	.74		
Motors (electric)	.74		

Source: Adapted and compiled from UNESOB, Regional Cooperation and Coordination in the Field of Industrial Development, Appendix (E) - Empirical Estimation of Economies of Scale, ESOB/PP/72/39/Rev. 1, April 1973 (mimeo.).

or per capita) from its available resources, the desirability of scale economies becomes amply evident. Economies of scale render production cheaper and investment more productive, and in this sense it "releases" some of the scarce resources for other uses. However, the existence of economies of scale means that if production is lower than a certain minimum-efficient-scale diseconomies would arise in two major respects. First, with a lower production the capital-output ratio becomes higher (i.e. higher investment per unit of output), and this would make the investment less justified on the basis of its rate of return. In this case, it would be more reasonable to shift the investment to another sector which can make a more efficient use of the scarce capital resource. Second, if the investment takes place anyway since the cost of capital enters into the cost of production in terms of depreciation and the rate of return (including interest), then a high capital-output ratio would increase production cost. This would have serious effects on the international competitiveness of production, or, if production is oriented towards the domestic market, it would claim higher protective tariffs or subsidies.

To realise fully economies of scale, a plant must operate at a large production level. Under conditions of full utilisation of capacity, the optimum scale would be reached when the long-run average cost of production is lowest. Put differently, it is attained at the point

"where the discounted value of production over time exceeds the discounted costs (including depreciation) by the greatest amount." ^{30/}

Several factors interact to determine the actual size of the plant, the two most critical being the technology used and the size of the market. In general the more capital-intensive the production process is, the higher the scale of output. The fact that labour is the abundant factor in developing countries makes the more labour-intensive techniques of production yield the least unit-cost. Hence, to the extent that factor substitution is technologically possible, the adjustment of the factor mix in the production process to the relative costs of labour and capital could help to lower the size of the plant in developing countries.

Nevertheless, the size of the market can still be a limiting factor for the scale of production. Most developing countries are characterised by a small domestic market, but with potential for growth. Under such conditions, it is difficult to determine the optimum scale of production. In order to avoid additional costs in expanding productive capacity as demand increases, there is a tendency in many developing countries to anticipate demand expansion by building plants with excess capacity despite the low return on investment in the early years.^{31/}

^{30/} United Nations, "Plant Size and Economies of Scale", Industrialization and Productivity, Bulletin No. 8, New York, 1964, p. 58.

^{31/} Ibid.

The usual case in developing countries is that, in the absence of reasonable export possibilities, the domestic market is incapable of absorbing the minimum-efficient-scale output of a wide range of industries. Or, if it is capable, it is not of a dimension to allow for an optimum scale of operation for minimum cost. This is coupled with the fact that techniques of production embodied in capital goods, designed for industrialised countries and imported by developing countries, are geared for large-scale production, and these techniques are usually rigidly determined to allow for any substantial modification in capital-output ratio.

In this context, it is possible to visualise how the size of the market could be instrumental not only in optimising the performance of the factors of production, but also accelerating the rate of economic growth and enhancing the productive capability of the country concerned. What promotes the influence of the market size in this direction is that economic development usually entails the adoption of protective policies which give rise to higher costs of production. The operation within a captive domestic market reduces the scope for competition and leads to negative implications on the overall cost of development and the allocation of resources.

But it needs to be stressed here that the modern arguments favouring "growth in leaps" in order to take advantage of economies of scale, are in conflict with the

limited domestic market and the relative scarcity of capital supply which constrain this type of growth. It is not likely for any one developing country (of small or medium size) to be able to finance and provide a market domestically for the output of at least one optimum-sized plant in every industrial branch.^{32/} This is further aggravated by the understandably limited competitive strength of developing countries in external markets, as well as by their limited capacity to borrow both medium- and long-term from international capital markets at competitive rates of interest. What emerges from this is a clear conflict in developmental objectives which cannot be resolved in a purely national context.

A developing country of a small or medium size can pursue economic development on the basis of either one of the following two strategies. One is a broadly-based strategy which aims at increasing self-reliance by narrowing the gap between the structures of domestic demand and output. This strategy has a special appeal to developing countries in view of its importance in reducing the dependence on the outside world. But this self-contained development would entail a high resource cost (in terms of both misallocation of resources and foregoing the advantage of scale economies) and this is not likely to be offset by the gains from external economies inherent in such a strategy. The other strategy aims at concentrating development in one sector which has considerable

^{32/} See on this point Tibor Scitovsky, "Growth -- Balanced or Unbalanced", in M. Abramovitz (ed.), The Allocation of Economic Resources (Stanford: Stanford University Press, 1959), pp. 212-213.

growth potential (e.g. industry) and could act as a "leading sector" in the overall development process. Although this strategy could have undeniable effects on the dynamic efficiency in the utilisation of national resources, it is apt to perpetuate the overdependence on external markets.

The above analysis brings into focus how economic integration among a group of small developing countries could provide a more favourable long-run economic environment for developing their national resources. It emerges as a means for achieving more economically (through economies of scale) the ends served by protection, and for promoting (through country specialisation in production) a more balanced growth for the integrating countries as a whole. In other words, regional economic integration could be looked upon as a strategy for rationalising the use of resources and achieving greater self-reliance on a collective basis.

As pointed out at the beginning of this part of the chapter, the dynamic effects of integration are far more important than the static effects with respect to the developing countries. But the former must not overshadow the latter. Competitive pressures are likely to emerge with market integration, thus increasing the efficiency of existing factor inputs through re-allocating resources and/or re-organising the work process and providing motivations to increase labour productivity.^{33/} Therefore, the gains arising from scale economies

^{33/} Leibenstein termed motivational or non-allocative efficiency as "x-efficiency". See H. Leibenstein, "Allocative Efficiency vs. X-Efficiency", American Economic Review, Vol. 56, 1966, pp. 392-413.

ought to be super-imposed upon the gains from the reallocation of resources made possible by the enlargement of the market. In this respect, Corden proposes that the introduction of economies of scale into the theory of customs unions gives rise to "cost-reduction effect" and "trade-suppression effect" and these effects ought to be added to the Vinerian concepts of trade creation and trade diversion. He argues further that the cost-reduction effect differs from trade creation effect in that "it is the result not of a movement to a cheaper source of supply but rather to the cheapening of an existing source of supply". On the other hand, the trade-suppression effect is akin to trade diversion since it involves the replacement of cheaper imports of one of the union-members from outside the union by more expensive production established in it after the formation of the union.^{34/}

It must be recognised, however, that the increase in competition within the integrated market is not always desirable with respect to existing industries, as it is politically difficult for governments to accept the "creative destruction" of existing industries.^{35/} With respect to new investments, it must be assumed that the enlarged market is of optimum size economically, in order to allow competition to take effect, and as such it is a multiple of the technological optimum. When considering, therefore, that

^{34/} W. M. Corden, "Economies of Scale and Customs Union Theory", Journal of Political Economy, Vol. 80, 1972, pp. 465-475.

^{35/} Kahnert (et. al.), op. cit., p. 18.

a major purpose of market integration is to reach the technological optimum for a number of industrial branches, it is difficult to see how benefits from competition could arise. However, it might be possible to achieve some of the benefits of competition by keeping the level of protection against the outside world at a low level. Otherwise, the benefits derived from economies of scale might be partly offset by the inefficiencies which characterise a monopoly position.

In addition, the creation of an enlarged protected market provides a greater scope for investment and trade. Private domestic savings as well as foreign capital may find it profitable to invest in large-scale industries which cannot operate economically in a smaller market. Foreign investments may be accompanied by technological and managerial skills not available domestically. But of course one must realise that if the industry is foreign owned, the profits accrue to the outside. With higher income in the integrating countries resulting from the dynamic effects, trade is likely to expand and financial flows increase not only among these countries but also between them and the rest of the world.

To summarise, we can say that regional economic integration among developing countries offers the best possibility for overcoming the limitations imposed on the development process by the smallness of the domestic market. Though under "trade diverting" conditions, it is apt to provide a broader opportunity for optimising the productivity of national resources of the

integrating countries, and for creating a more positive structural dependence among them with a view to enhance collectively their self-reliance and bargaining power. It can be said, therefore, that the dynamic analysis in the theory of economic integration tends to be inward-looking as it defends the growth and development interests of the integrating countries. In contrast, the static analysis of the theory tends to be outward-looking as it defends the welfare interests of the world as a whole.

A Conceptual Approach for Integration

Any country would participate in an integration scheme if there is a prospect for economic gain,^{36/} and it would only retain its participation as long as it considers itself, at least in the longer run, better off in the scheme than outside it. At the same time, any integration scheme would not endure unless a reasonably equitable distribution of benefits and costs is maintained among the participants.

There is a clear tendency on the part of developing countries to emulate the West European integration model which is based merely on trade liberalisation. It has become amply evident from past experiences that this approach is not compatible with the principle of reciprocity of benefits and

^{36/} Of course, there may be political gains from integration, but as pointed out earlier our analysis considers only the economic aspects.

costs.^{37/} This can be explained in terms of two sets of contrasting effects which accompany the process of economic integration: one is the "spread effects" and the other is the "backwash effects".^{38/} The spread effects are those that work towards minimising income disparities within the enlarged market area. They include factors such as increased demand in the more developed centres for the products of the less developed areas and the transmission from the former to the latter improved skills, capital and technology. On the other hand, the backwash effects are those which exacerbate the disparities in the levels of economic development between the various regions within the enlarged market area. They comprise the movement of skills and capital to the more developed centres as well as the concentration of new industries in these centres.

The economic environment in developing countries or areas is susceptible to backwash effects, especially when these areas are at diverse levels of development. To this effect Balassa states:

^{37/} For example, in the East African Common Market, Uganda and Tanganyika have continuously argued that all the gains were going to Kenya. Also in the Central American Common Market, Honduras and Nicaragua had the same argument against the other members, namely, Guatemala, El Salvador and Costa Rica. See R.D. Hansen, "Political Theory and Regional Integration: The First Ten Years", in R. Hilton (ed.), The Movement Toward Latin American Unity (New York: Frederick A. Praeger, 1969), pp. 22-23.

^{38/} These terms were coined by Myrdal. Hirschman referred to the same effects as "polarization effects" and "trickling-down effects", respectively. See Gunnar Myrdal, Economic Theory and Under-Developed Regions (London: Methuen & Co. Ltd., 1972), pp. 23-38; and, Albert Hirschman, The Strategy of Economic Development (New Haven: Yale University Press, 1958), pp. 187-190.

"With an imperfect price system, primitive transportation facilities, and uneven distribution of social and economic overhead in these areas, agglomerative tendencies assume importance. These are related to the availability of overhead capital, skilled labor and linked industrial processes, when the latter not only provide ready markets and low-cost inputs but also contribute to future improvements through the exchange of technological information and induced technical change." 39/

Hence, less developed countries often find themselves at a disadvantage when joining a market integration scheme, and the least developed countries are always at a disadvantage. This finds expression in several respects. First, the less developed country (or countries) would no longer be in a position to protect its industries against imports from the more developed countries in the union. Even if the cost structures of the integrating countries are the same, economic activity may concentrate in the more developed country to make use of economies of scale and benefits from externalities.^{40/} Furthermore, the more developed country may establish industries which provide little or no benefit to the integrating region as a whole.^{41/} Secondly, through trade diversion the less

39/ Bela Balassa, Economic Development and Integration (Mexico: Centro de Estudios Monetarios Latinoamericanos, 1965), p. 123.

40/ B.F. Massell, East African Economic Union: An Evaluation and Some Implications for Policy (Santa Monica, Calif.: Rand Corporation, 1963), p. 40.

41/ Peter Robson, Regional Industrial Cooperation: An Appreciation of the Major Problem Areas and Scope for UNIDO Action, Expert Group Meeting on Regional Industrial Cooperation, Vienna, 6-10 December 1971, ID/WG.111/3, UNIDO, December 1971, p. 3.

developed country would "subsidise" expanded employment and income generation in the more developed producing country, and this strains the balance of payments of the former country and decreases its real income. Thirdly, the less developed country tends to suffer more from the loss of tariff revenue as a result of the elimination of duties among the integrating countries as well as the decline of imports from the outside world. This is due to the fact that customs duties form a significant source of revenue in most developing countries, and it might be difficult to offset the loss of tariff revenue by increasing direct taxation.^{42/}

The problem of distribution of benefits and costs could arise even when the integrating countries are at the same level of development. One country may be, in terms of economic size and resources, more capable than the others in exploiting the opportunities for development and progress opened by their economic integration. Naturally, this works to strain the relations between the integrating countries and could have a disruptive effect. Also even when the benefits are distributed equitably, the resulting distribution of economic activities may be unacceptable to some of the member-countries. This could happen, for instance, when industrial activity concentrates in one country and agricultural activity in another.

^{42/} The loss of tariff revenues increases in the longer run as the process of import-substitution within the integrated region accelerates. On this point see J.C. Leith, "The Customs Revenues Loss in A Southeast Asian Customs Union", Journal of Development Studies, Vol. 5, No. 2, 1969, pp. 142-145.

It can be suggested that economic integration is likely to proceed smoothly between countries which are at about the same level of development and the same economic size. But as can be seen from existing regional groupings among developing countries, such countries may display market asymmetry in size and level of development. In order that regional trade liberalisation be acceptable to all countries, a reasonably equitable distribution of benefits and costs must be attained at the start and throughout the integration process. Otherwise, a feeling of uncertainty or of potential inferiority might prevail between the participants, and

"the merging of the markets may then appear to be like a leap into the unknown". 43/

Since trade liberalisation affects only the demand side of the picture, it ought to be supplemented in the case of the developing countries with other policies to affect the supply side in a way which would be desirable to all countries concerned.

The implication of the above analysis is that economic integration among developing countries is marked with great uncertainty and has proved to be an arduous transition. Its success seems to hinge much on the ability of the integrating countries to adopt an allocative approach which would simultaneously avoid the occurrence of "distribution crises" and

43/ UNCTAD, Trade Expansion and Economic Integration Among Developing Countries, Report by the Secretariat of UNCTAD, United Nations publications, Sales No.: 67.II.D.20, New York, TD/B/85/Rev. 1, 1967, p. 21.

ensure the harmonisation of their investment and production programmes, so as to take advantage of scale and complementarity in an enlarged market. Intrinsically, such an approach aims at partial rather than comprehensive integration, as it tends to concentrate initially on the activities or sectors in which the concept of integration can display itself most successfully. Once tangible gains are realised it would be possible to extend gradually the scope of integration to include other sectors.^{44/}

As can be noticed from the preceding analytical discussion of the existing theory of economic integration, this theory focuses on industrial activity and gives no consideration to agriculture. This could be explained by a number of reasons. One reason is the importance which industrialisation assumes in the overall process of economic development. Since economic integration among developing countries is usually conceived as a strategy for economic development, industrial integration is apt to lie at the centre of the integration process. Another reason is the high correlation between the size of the market and the productivity variations in industry. This correlation is dictated mainly by the technological progress which finds expression in sophisticated large-size equipment and machinery. Turning to agricultural activity, it can be noticed that it could be performed on a relatively small scale. Generally,

^{44/} Sector-by-sector integration is more appropriate in cases where the countries concerned are ready to make limited sacrifices in national economic sovereignty, as implications can be assessed with relative accuracy. But a major theoretical objection to it is that it does not provide a wide scope for trade-offs in benefits and costs across all sectors.

the factors of production in agricultural activity are highly divisible, and this renders the production function of farms more flexible. It is possible, therefore, to organise agricultural farms so as the minimum level of production does not require the pooling of markets. The major exception to this would be large plantations that are highly mechanised and whose production is primarily destined to export markets.

Yet, this should not mean that agricultural activity cannot be organised or managed so as to attain economies of scale and thus make a more rational use of scarce resources. It is possible to reduce the unit-cost of capital expenditures (e.g. land reclamation, irrigation facilities, road network, etc...) by increasing the area put under cultivation, provided that this could be justified by the existing markets, domestically and abroad. In conjunction with this, variations in climate, soil and other national conditions among a regional grouping could allow agricultural specialisation and complementarity. The creation of a regional market would not only avoid duplication in production, but also promote confidence and stability of expectations for producers. Furthermore, economies of scale could be derived from pooling agricultural research and innovation efforts.

There is no doubt that the twinning of industrial and agricultural specialisation in a protected regional market would strengthen the foundation for integration. Agricultural

specialisation would provide a wider market for some industries which benefit from scale economies such as fertilisers and agricultural machinery. Also it would provide some import-substitution industries with important inputs, especially food industries which are vital in meeting the increasing food requirements in developing countries. When recognising that carrying out production policies in a regional context reduces, in comparison with a national context, the cost of development and import-substitution, we can presume that the investments (whether industrial or agricultural) which would be influenced most are those geared to production for the (small) domestic market. Indeed, it is the enlarged market which induces the investments causing the desired growth and development.

Thus, it is possible to single out the economic areas which form a fertile terrain for integration. They would comprise primarily the productive units which support national development objectives and whose minimum-efficient-scale requires a larger market. After identifying these units, a selection of them would be allocated on an "equitable basis" among the integrating countries. But this requires first the development of a proper methodology for measuring the benefits and costs of integration projects, and then devising an approach by which these benefits and costs could be distributed among the participating countries. These two aspects will be dealt with in the next two chapters.

CHAPTER TWO

EVALUATION OF ECONOMIC INTEGRATION PROJECTS

To have a reasonable prospect for success and durability, any economic integration scheme must ensure from the beginning "equity" in the distribution of benefits and costs among the participating countries. This makes it important to distinguish between the benefits and costs for the regional grouping as a whole and those for the participants individually. To facilitate the solution of this distributional problem, it is necessary to develop an operational methodology for identifying and measuring the integration effects from the standpoint of each of the participants as well as from that of the integration scheme per se.

The purpose of the present chapter is to develop such a methodology, with the case of the Arab Middle East countries in mind. While the methodology must be reasonably simple to match the limited availability of data in the Arab region, it must provide a framework where as many benefit-cost factors as possible can be considered. This is stressed further by the complexity of measuring the benefits and costs from the point of view of each country in the region, in view of the heterogeneity of their levels of economic development, socio-economic systems, resource endowment, and economic objectives and priorities.

It is evident from the preceding chapter that the required methodology relates to the evaluation of individual "integration projects", which may be contemplated by the integrating countries as a means for accelerating development and growth and strengthening their economic interdependence. Considering that this approach renders economic integration as a supplement to national development efforts in the integrating countries rather than a substitute for them, the relevant question which the methodology needs to answer is what will be the impact "with" or "without" the project, the difference between the two situations, in general, being the net additional benefit arising from the project. It should be possible by applying this methodology to determine whether the "integration project" in question is acceptable, and if so whether it is a better alternative to a similar national project from the standpoint of resource use.

The substance of this chapter falls into three parts. In the first part an attempt will be made to set a definition for an "integration project" and to depict the basic characteristics which make it distinct from a national project. The second part will be concerned with setting guidelines for the identification of benefits and costs of integration and for selecting the proper variables for measuring them. In the third part, the methodology will be spelled out through a formal treatment of integration project evaluation.

Definition of an "Integration Project"

A project may be defined as a proposal for an investment to create, expand and/or develop certain facilities so as to increase the production of goods and/or services in a specified community during a certain period of time. As a unit of investment that needs to be evaluated, any project ought to be distinguished technically, commercially, and economically from other investments in the same setting.^{1/}

Generally, a project could be of economic interest to one or more countries other than that in which it is located. In one respect, a project may be totally national, but of importance to some neighbouring countries. For example, a national seaport could be vital to the economies of other countries in the same region which are land-locked. In addition, a project may be multinational and has to be conceived by two or more countries in the framework of a regional agreement, in view of its region-wide effects. It is possible to have a project with multinational financing, but its effects are confined to the country in which it is located. In this case the project would be a national one despite the multinational character of its financing. This can be taken to suggest that what distinguishes a multinational project from a national one is that the former generates economic effects for two or more countries and is

^{1/} This definition is based on UNIDO-IDCAS, Manual for Evaluation of Industrial Projects in Arab Countries, UNIDO/ICIS.1 Rev. 1, 13 July 1976, pp. 16-17 (mimeo.).

governed by an institutional arrangement concluded among these countries.

Evidently, an "integration project" can be classified as a multinational project. The main factors distinguishing it are its multinational character, its contribution to the integration process, and the necessity of a multinational institutional framework for its implementation.^{2/} Although it is up to the countries concerned to agree among themselves on the projects which are to be considered as integration projects, it is possible to depict the major characteristics distinguishing them as far as their contribution to the integration process is concerned.

An integration project could be looked upon as an essential instrument for the realisation of the objectives of integration which have direct developmental implications for the participating countries. There is a general recognition that economies of scale and the need to have access to a regional market from both the output and input standpoints are major distinguishing features of an integration project. The presence of scale economies implies that long-run marginal cost is less than long-run average cost, and that the latter declines throughout the conceivable range of plant capacities. But a definite lower limit may exist on the achievement of scale economies due to the concept of "minimum-efficient-scale".

^{2/} United Nations, Current Problems of Economic Integration: The Role of Multilateral Financial Institutions in Promoting Integration Among Developing Countries, UNCTAD, TD/B/531, New York, 1975, p. 16.

It is specifically in this case that market integration becomes the most desirable alternative for a country having a small domestic market and limited export possibilities. Hence, an integration project is one which is not only characterised by scale economies, but also by the fact that a significant proportion of its output is destined to meet demand in other member-countries. Simultaneously, the production function of an integration project tends to be dependent on the supply of some inputs (including labour and capital) from other countries in the same region. In other words, an integration project is one that has economic efficiency effects for a regional grouping and its member-countries, and generates a greater degree of economic interdependence among these countries.

A corollary of the above characteristics is that integration projects are likely to be instrumental in accelerating the rate of economic growth in the integrating countries, in bringing about a greater degree of self-reliance for the region, and in restructuring the integrating economies to attain self-sustained growth. In fact, given these advantages integration projects ought to be dovetailed into the national development plans of the integrating countries, as they are apt to be conducive to further integration and bring about the formation of a regional economic structure.

The identification of an integration project, therefore, involves the detection of a relationship between the integration

objectives and the characteristics of the investment project. But the eventual selection of an integration project from amongst a number of candidate projects rests basically on the measurement of its profitability. An integration project would be attractive to a regional grouping either if it ensures for a member-country the profitable production of a commodity, or if it enables it to import cheaply a product from another member-country. The usual case is that an integration project is not profitable when producing for a national market only, but could become profitable when combining the markets of the prospective partners.

Using cost minimisation as a criterion for project selection, it would be possible to identify alternative investment programmes which meet given requirements at a cost below a specified cutoff point.^{3/} This exposes the ultimate purpose of project evaluation, which is to identify the investment projects that are desirable on social grounds, to rank these projects, and to consider how to modify projects that are socially desirable but not privately profitable under prevailing circumstances. The development of a methodology for the evaluation of integration projects requires, therefore, a clear conception of what to count as integration effects and how these effects ought to be measured.

^{3/} On this point see David A. Kendrick and Ardy J. Stoutjesdijk, The Planning of Industrial Investment Programs: A Methodology (Baltimore: The Johns Hopkins University Press, 1978), pp. 9-11.

Measurement of Benefits and Costs

The complexity of the problem of measuring benefits and costs of integration arises from two major facts. First, there are certain benefits and costs which defy quantification, or their quantification is strictly subjective, such as the political prestige derived from industrialisation. This is in addition to the fact that some of the benefits and costs are only potential and it would be difficult to quantify them with some degree of accuracy before their realisation through appropriate measures taken by the participating countries. Second, the benefits and costs of integration comprise not only the direct but also the indirect consequences, and this makes it necessary to calculate the multiplier effect on the major macro-economic variables (including employment, income, balance of payments, fiscal revenues, etc...).

It is useful to remark here that the previous attempts made to measure the benefits and costs of integration and their distribution among the participants focused only a specific area, such as income and employment, intra-regional trade, the geographical distribution of industrial activities, the functioning of common services, or the pattern of tax revenues.^{4/} As compared with the "traditional" method for the evaluation of integration effects, the methodology that we are seeking in this chapter entails a major theoretical reorientation. While the former is concerned with the effects

^{4/} See United Nations, Current Problems of Economic Integration: The Distribution of Benefits and Costs of Integration Among Developing Countries, UNCTAD, TD/B/394, New York, 1973, pp. 41-45.

of integration on the allocation of resources among the participants, the latter is concerned with the effects of integration on the allocation of resources within specific projects.

Yet, it is deemed instructive for our purposes to sketch a traditional measurement scheme that draws together as many measurable elements as possible and provides a basis for identifying the effects of integration projects.

From a country's point of view, the benefits and costs resulting from the formation of a customs union with one or more countries can be depicted on both the production and consumption sides: the production side reflecting the amount of resources needed to produce the good at home rather than importing it, and the consumption side reflecting the loss in consumers' surplus when a commodity is sold for a high price rather than a low one.^{5/} On the production side, the benefits (costs) arise from the increase (decrease) of output either from the creation of new industries or the expansion (contraction) of existing industries. The measure of benefits would then be the social value-added of the increase in output (for exports and local consumption) less the social opportunity cost of the factors of production employed. On the consumption side, the benefits (costs) arise from the increase (decrease) of consumers' surplus due to the substitution of goods previously produced locally or imported by lower- (higher-) cost imports

^{5/} Donald C. Mead, "The Distribution of Gains in Customs Unions Between Developing Countries", Kyklos, Vol. 21, No. 4, p. 713.

from the other members or from outside the Union. These have to be measured in conjunction with the loss of government tariff revenue, which could entail a gain in consumers' surplus with respect to goods which continue to be exchanged among the members after setting up the integration scheme.

As an extension of the above scheme, one can say that the benefits and costs of integration find expression in the intra-regional trade that ensues. Although broadly speaking a member-country benefits (at least from the production and employment points of view) if it has a surplus in its intra-regional balance of trade and loses if it has a deficit,^{6/} such statements are rather simplistic and ignore other factors that should be taken into account. For instance, a certain proportion of intra-regional trade would take place in the absence of integration, and it is necessary to make a proper assessment of the actual impact of integration on trade expansion. Another problem is that even if a member-country could attain a balance in its intra-regional trade, its benefit might be relatively unimportant in cases where its exports have a low value-added on account of their high import content from outside the integration region. By the same reasoning, it is conceivable that a surplus country benefits less than a deficit country from intra-regional trade. Still another problem is that a

^{6/} This has been suggested by D. Ghai in his article "Territorial Distribution of Benefits and Costs of the East African Common Market", East African Economic Review, June 1964, pp. 29-40. The article analyses the discriminatory effect of the external tariff in the East African Common Market, and concludes that the greater the protection is the greater will be the benefit that the member-country concerned can obtain from its intra-regional trade.

member-country may benefit by ceasing to produce an item which it is cheaper to import from another member; but this benefit could be offset by the cost involved in the shift of the factors of production to a less competitive activity.

The foregoing discussion illustrates the point that the evaluation of integration effects needs to be based on the social value-added of the output induced by integration on the one hand, and the social opportunity cost of the factors of production employed to produce that output on the other. Considering that the ultimate objective of an integration project is to contribute as much as possible to income (which is the only source for increasing consumption and savings), the problem of evaluation amounts to the assessment of the value-added expected to be generated by it on the basis of the real social value of inputs and output.

In view of the importance of scale economies and linkages on both the input and output sides in any integration project, the evaluation cannot be carried out without placing the project in its sectoral and regional context. To make a proper assessment of the overall impact of the project (on immediate suppliers and customers) but also the indirect effects (on all other industries).^{7/} This can only be made in the framework of a general-equilibrium analysis which requires

^{7/} For a discussion on this point, see United Nations, Economic Commission for Asia and the Far East, Asian Industrial Survey for Regional Cooperation, Vol. I, AIDC (9)/1, New York, 1973, pp. 114-118.

detailed input-output tables for each of the integrating countries. But the lack of such information which is characteristic of most developing countries, including the Arab countries, puts a major limitation on the systematic analysis of the indirect effects of integration projects. The alternative would be to concentrate on the direct effects within the framework of a partial-equilibrium analysis. Under this alternative, and when excluding transport and distribution costs, the optimal investment would be that which minimises the cost of producing total output needed by the integrating region.

Using a partial-equilibrium analysis, the benefits and costs of integration can be felt through the market by tracing the output supplied by the project and the inputs supplied to it. The benefits of an integration project arise either from an increase in value of output or from a reduction in production costs. However, market prices may conceal some of the increase in the volume of output if that increase triggers a decrease in the level of prices. This depends on the share of the project's output in the proposed market and on how rapidly the increase in output takes place. Moreover, market prices do not reflect benefits arising from a reduction in production costs. Aside from the imperfection of the markets, this could be due, inter alia, to economies of scale or the use of excess capacity in existing industries. Accordingly, the gain in consumers' surplus will not figure

out in these prices.

The costs of an integration project relate to its inputs. Although inputs are usually easy to identify, they need to be carefully considered. On one count, some inputs may have their own inputs which are imported, wholly or partly, and it would be necessary in this case to deduct that part of the value of inputs which does not represent domestic value-added. On another count, inputs differ in nature, with some non-tradable (e.g. land) and other tradable. A non-tradable good is that which cannot be exported because its domestic cost of production is higher than the export (f.o.b.) price but lower than the import (c.i.f.) price, whereas a tradable good is that which could be traded internationally in the absence of restrictive trade policies.^{8/} It is unlikely for tradable inputs to have the same domestic importance to the integrating countries. A certain input may represent a significant part of production for one country, but form only a minor component of production in another.

To circumvent these problems, it is possible to trace the integration effects in terms of the value-added accruing to the factors of production operating within the integrating region as a whole and in each of the member-countries. Project evaluation could then proceed on the basis of the present discounted value of the present and

^{8/} UNIDO, Guide to Practical Project Appraisal: Social Benefit-Cost Analysis in Developing Countries, United Nations, New York, 1978, pp. 109 and 113.

future stream of payments made to the factors of production in each member-country and the region.

It is likely that some consensus would eventually emerge among the integrating countries with respect to the integration benefits and costs which ought to be counted. Once benefits and costs have been identified, they have to be valued to allow for their comparison. There is a general presumption that prices reflect appropriate values and if not they could be adjusted in order to do so. The best approximation of a value of a traded good or service is its market price.

In private project analysis which concentrates on profitability from the investor's point of view, market prices or the best estimate of them could be used to value inputs and output. But these prices cannot be used in social project analysis which focuses on the profitability from the country's point of view. Usually market prices, due to institutional rigidities, price controls, and monopoly elements, do not reflect the real value of factors of production. For example, overvalued exchange rates and incentives to capital investment would underprice capital, whereas minimum wage legislation and labour union pressure would overprice labour. The usual case is that the market price of the relatively abundant factor tends to be higher and that of the scarce factor lower than their real values. In a typical developing country where labour is

abundant, it is likely that the basing of production cost on market prices of inputs would produce a bias against the use of labour-intensive techniques of production. Therefore, it is not possible on the basis of market prices to determine whether the project in question contributes significantly to the development of the economy as a whole and thus justifies the use of the scarce resource.

To make a proper economic analysis of the project, it is necessary to value inputs and output at "accounting" or "shadow" prices which reflect the real economic cost of inputs and the real economic value of output. Such prices would prevail in a state of equilibrium, and using them for project selection on the basis of cost minimisation criterion would lead to the selection of the project (or rather the production technique) which complies most with the factor endowment of the country concerned. Yet, the problem remains to determine the proper accounting prices. This could be achieved by working out an econometric model of the economy. But in view of the computational and informational constraints present in most developing countries, it suffices to deduce the accounting prices relating to some areas covered in project evaluation, such as the exchange rate, the discount rate for obtaining the present value of future flows, and labour wages.

What needs to be pointed out at this juncture is that integration projects could be easily evaluated from the private profitability viewpoint, given the market prices of

the integrating countries. From the social profitability viewpoint, the evaluation of an integration project is apt to be more difficult, especially with respect to the integrating region as a whole. The complexity of the matter arises mainly from the fact that within the integrating region we have several markets with different prices and rates of interest. It would be a difficult task to establish the relevant accounting prices on the basis of which the evaluation of the integration project per se could be carried out. We will focus on this question in the remaining part of this chapter.

Integration Project Evaluation

The techniques of evaluating an integration project are not different basically from those of evaluating a national project. In both cases, they involve the valuing of the streams of future benefits and costs and then discounting these streams to their present worth. This makes it possible to determine the social (or private) profitability of a project and thus assess its desirability in comparison with alternative projects. Indeed, the evaluation of a single country's participation in an integration project is practically the same as the evaluation of a national project located in that country, though the former is apt to be of a larger size and characterised by scale economies and this would have a direct bearing on the choice of the selection criterion (i.e. present social value or internal rate of return). Only when it comes

to the evaluation of an integration project per se that we need to adapt the evaluation techniques in such a way as to take into account the inter-regional effects of the integration project.

It is deemed legitimate, therefore, to develop the benefit-cost methodology required for the present study on the basis of the concepts and principles embodied in an already established approach for evaluating national projects. It is thought that the OECD and the UNIDO approaches^{9/} are well-suited for this purpose, especially that they bring into the analysis of investment criteria some of the most typical realities of developing countries. Both approaches envisage that market imperfections and distortions arising from government action (or inaction) are widespread and of a measure to require almost general substitution of market prices by accounting prices for project evaluation. However, it is envisaged that the choice of numéraire^{10/} renders the OECD (now better known as Little/Mirrlees) approach more compatible with the techniques needed to evaluate the performance of the integration project as a whole.

9/ See UNIDO, Guidelines for Project Evaluation, United Nations, New York, 1972, Sales No. E.72.II.B.11; and, I.M.D. Little and J.A. Mirrlees, Manual of Industrial Project Analysis for Developing Countries, Vol. II, Social Cost-Benefit Analysis, OECD Development Centre, Paris, 1968. The latter work was revised by the two authors and appeared under the title Project Appraisal and Planning for Developing Countries (London: Heinemann Educational Books, 1974).

10/ The numéraire is defined as the unit of account that makes possible to add and subtract unlike items, and it must be specified before the values of the items can be added up. In project analysis, monetary units are used as numéraire.

The UNIDO approach uses consumption (or rather consumers' surplus) as the numéraire whose present value is to be maximised. The calculation of benefits and costs (or inputs and output) is done in domestic accounting prices. In order to evaluate the integration project per se by this approach, it is necessary to translate the net social benefit streams of the participating countries into a single currency. Although this should be possible through the designation of accounting exchange rates for these countries, it tends to be intricate and its results could be questionable. On the other hand, the Little/Mirrlees approach (LM) uses savings (or investment) expressed in terms of foreign exchange in the hands of the government as a numéraire whose present value is to be maximised.^{11/} The calculation of benefits and costs in this approach is done in "world prices" which could act as a common yardstick for the integrating countries. Obviously, the use of LM is easier and more direct than the UNIDO approach in evaluating integration projects. On this count, the attempt to develop a methodology for the present study will be based on LM, but this should not mean that other approaches must be precluded. It is necessary, therefore, to present first in a nutshell the basic elements of LM, as a prelude to the spelling out of the methodology.

^{11/} Foreign exchange assumes critical importance in developing countries as it is needed increasingly to pay for imports. This should not mean, however, that the government aims only at maximising its reserves of foreign exchange since its ultimate objective is to improve the standard of living of the population. But the fact remains that projects ought to be selected and designed so that their values in terms of foreign exchange are maximised.

The central idea of LM is to use the so-called "border prices"^{12/} as accounting prices for valuing all inputs (including non-tradables) and output of the project evaluated. The rationale behind this is to avoid the distortions which could arise when calculations are partially based on border prices. It is presumed that the unrealistic official exchange rates in many of the developing countries as well as the difficulty of establishing an accounting exchange rate could hinder the calculation of benefits and costs in a single currency. On this basis, LM could be singled out as the only method of project appraisal which combines the use of a common currency and a common source for all values used.^{13/}

It ought to be recognised, however, that the use of border prices acquires a special significance in project evaluation since these prices represent a country's actual trading opportunities. In this respect Little and Mirrlees point out that

"Border prices are used, not because it is thought that they are, in any sense, necessarily more 'rational' than domestic prices, but simply because they represent a set of opportunities open to a country, and the actual terms on which it can trade." ^{14/}

^{12/} The border price is the price of a tradable good at a country's border or port of entry, i.e., the f.o.b. price for exports, and the c.i.f. price for imports. It provides a measure of economic opportunity cost and may be expressed in dollars or any other convertible currency.

^{13/} George B. Baldwin, "A Layman's Guide to Little/Mirrlees", Finance and Development, International Monetary Fund and International Bank for Reconstruction and Development, Washington, D.C., Vol. 9, No. 1, March 1972, p. 18.

^{14/} Little and Mirrlees, Project Appraisal and Planning for Developing Countries, op. cit., p. 161.

The essence of this argument springs from the fact that trading opportunities have a direct bearing on domestic investment decisions, and this applies specifically to developing countries which are characterised by the openness of their economies. It is crucial for such a developing country to take advantage of the trading opportunities open to it by deploying its abundant resources (usually land and labour) in projects which maximise its return for capital invested, and this return would be measured in terms of foreign exchange saved. According to LM, this requires the tracing of all the inputs used by the project and valuing them in border prices. With respect to tradable inputs this could be done directly and easily. But with respect to non-tradable inputs (e.g. land, labour, construction, transport, and electricity) they have to be valued indirectly by decomposing them into their ultimate tradable elements which could be valued in border prices. This requires detailed input-output tables which are rarely found in satisfactory form in developing countries, and hence the calculation is likely to involve approximations to world values.

It is known that any project generates future savings and consumption, and it is more reasonable to discount them to their present values at different rates.^{15/} In order to make possible the use of a single discount rate, LM adjusts

^{15/} With consumption as the numéraire, the discount rate used in the UNIDO approach is the consumption rate of interest. This rate is considered a national parameter set by the central planning authorities in an order that reflects social values.

the social income stream (i.e. savings plus consumption) for commitment to consumption, by extracting the consumption element of labour income and returns to capital. The result would be the "uncommitted social income" stream which could be discounted at the conventional accounting rate of interest (ARI) to determine whether the project in question has a positive present social value (PSV) or not.

It needs to be mentioned that there has been some controversy over LM, and this centred mainly on the valuing of a project's non-tradable inputs in border prices. Baldwin considers this valuing a weak point, as input-output data is difficult to obtain in most developing countries. He considers it

"a lot of trouble for a doubtful advantage",

and adds that

"when one looks at the relative unimportance of all the nontraded inputs, except labor, [emphasis added] in a majority of industrial projects, refinements in these values begin to look relatively unimportant." 16/

Yet it is believed that LM could be desirable in the context of integration project evaluation.^{17/} It can be argued that commitments towards economic integration among

16/ Baldwin, op. cit., p. 21.

17/ One methodology based on LM, which proved to be instructive in developing the methodology in the present chapter, is that of Arie Kuyvenhoven and L.B.M. Mennes, "Projects for Regional Co-operation: Identification, Selection, Evaluation and Location", in Industry and Development, No. 1, UNIDO, United Nations, New York, 1978, pp. 13-25.

a regional grouping would dictate that new industries established on the basis of the regional market should be evaluated in the light of world prices. What makes this more relevant is that economic integration schemes, despite their protectionist character, ought to be outward-looking as the need to promote extra-regional exports is likely to remain an overriding concern for the integrating countries.^{18/}

Having explored the necessary tools, we can now turn to the spelling out of an operational methodology which could be used in evaluating integration projects in a developing regional grouping such as the Arab Middle Eastern countries. It was pointed out at the outset that the relevant question which the methodology needs to answer is what will be the impact "with" or "without" the integration project. To simplify the analysis, it is assumed that the methodology will be concerned with the determination of the social profitability of a potential integration project which for reasons of scale economies is not profitable when producing for any one of the domestic markets of the prospective partners, but becomes profitable when producing for these markets combined. In other words, the project would not be established in a no-cooperation situation and the resources needed for it would be used in alternative investments. Hence, there is an opportunity cost for the resources used in the integration project and this must be accounted for in project evaluation.

^{18/} See, for example, David Morawetz, "Extra-Union Exports of Industrial Goods from Customs Unions Among Developing Countries", Journal of Development Studies, Vol. I, No. 3, December 1974, pp. 247-259.

As a first step, the social net benefits matrix relating to the integration project must be formulated. It will comprise the streams of net benefits (i.e. benefits less costs) of each of the participating countries over the life time of the project.^{19/} The measurement of benefits and costs will be based essentially on border prices as suggested in LM, and by subtracting costs from benefits we will get the value of uncommitted social income of the project expressed in a (convertible) foreign exchange numéraire. A helpful way to overcome the complexity of the calculations of net social benefits and avoid double counting is suggested in a UNCTAD Manual for multi-country project identification and evaluation.^{20/} It entails the treatment of the project as a separate entity engaged in trade with the participating countries (including that in which the project is located) and the rest of the world. This makes it possible for each of the participants to treat the transactions attributable to the project in exactly the same way as they would treat trade with other participants and the rest of the world in national project analysis. The treatment of transactions for calculating social net benefits in each time period could be as follows:

^{19/} Any project has a technical as well as an economic life. The former represents the period by the end of which the project will have to be replaced, whereas the latter represents the period by the end of which the project will become obsolete. As a general rule, a time horizon of 10-12 years including the running-in period will be sufficient to define whether a project is acceptable or not. See UNIDO-IDCAS, Manual for Evaluation of Industrial Projects in Arab Countries, op. cit., pp. 67-68.

^{20/} UNCTAD, Manual for Multicountry Project Identification, Preparation and Evaluation in the Arab Countries, no date, (mimeo.), pp. 176-181.

(1) Inputs sold to the project (directly or through another country) are valued by the supplying country at the f.o.b. sale price as benefits and at their accounting price as costs.

(2) Outputs purchased from the project (directly or through another country) are valued by the receiving country at their c.i.f. price as costs and at their accounting price as benefits.

(3) To account for profits from transshipment a country importing inputs for resale to the project values them at the c.i.f. import price as costs and at the f.o.b. sale price to the project as benefits. By the same reasoning, a country which buys outputs from the project for resale as exports values them at their c.i.f. purchase price as costs and their f.o.b. sale export price as benefits.

(4) All transport services, insurance and credit facilities and the like provided by any of the participating countries in conjunction with any of the above transactions are valued at accounting prices as costs.

It is to be noticed that for countries which have equity participation in the integration project, the stream of net benefits attributable to the project must include the initial equity cost as well as any claims against the terminal (scrap) value of the project.

The interesting aspect in the UNCTAD method is the use of border prices as a "bench mark" against which the real economic cost of inputs and the real economic value of output could be measured (in accounting prices) to determine the social net benefits of each of the participants. Evidently this method is a variant of LM, but it should be possible to establish the necessary accounting prices along the lines suggested in that method. This will be outlined briefly below.

The cost involved in supplying inputs to the integration project arise from foregoing the use of these inputs in another acceptable project. For traded goods, the accounting price to measure the real cost would be the marginal import cost, whereas for non-traded goods (which concern principally the country in which the project is located) the accounting prices would be equal to the marginal social cost.^{21/} As pointed out earlier, the cost of providing a non-traded good must be decomposed in the costs of traded elements and labour. Having dealt with the accounting prices of traded goods, only the cost of labour needs to be considered.

It can be assumed that labour used in industrial projects has to be supplied primarily from the labour-surplus sector in rural areas, and as such its opportunity costs in terms of marginal productivity would be low. At the same time, industrial wages tend to be much higher than agricultural

^{21/} Little and Mirrlees, Project Appraisal and Planning for Developing Countries, op. cit., pp. 211-212.

subsistence wages, in view of various distortions arising from minimum wage legislations and trade union pressures. This could be taken to suggest that the shadow wage rate (SWR) lies somewhere between the actual market rate and agricultural subsistence wage. But this reflects only the relative scarcity of labour in the domestic economy, and therefore we need to convert it into a world price by decomposing the consumption of labour into traded elements. On this basis, SWR would equal the output foregone elsewhere (i.e. the marginal product of labour in the rural sector) plus the additional consumption in the economy generated by the employment of one extra worker on the project, minus the value of this extra consumption in terms of the overall numéraire (i.e. in terms of foreign exchange in the hands of the government).^{22/}

This can be expressed in the following equation:

$$SWR = m + (c - m) - \frac{1}{s} (c - m)$$

where m the marginal productivity of labour in agriculture
 c the consumption of the wage earner in accounting prices
 s the social value of investment relative to consumption

The above equation can be simplified to:

$$SWR = c - \frac{1}{s} (c - m)$$

On the other hand, the benefits involved in purchasing from the integration project arise from the assumption that

^{22/} The value of extra consumption is a benefit and not a cost of employment, and hence it is deducted from the shadow wage figure.

the project enables the participants to buy more cheaply a certain product, thus saving the foreign exchange spent previously on importing that product from international markets. The relevant accounting price for valuing foreign exchange saved would be the import price from the rest of the world multiplied by the volume of imports of each of the participants.

Along these lines, it should be possible for each of the participating countries to formulate the stream of net social benefits derived from the integration project. For example, the net social benefit stream of a country with equity participation in the integration project could be expressed as follows:

$$(C_{q0}, B_{q1} - C_{q1}, \dots, B_{qn} - C_{qn}, + S_{qn})$$

where C_{q0} country q's share of the initial cost of the integration project

B_{q1} benefits accruing to country q in period 1

C_{q1} costs to country q in period 1

S_{qn} country q's share of the scrap value of the project in nth period.

Once the net social benefits stream is estimated, each participant can use investment criteria to determine the extent to which it is justified in investing today in the integration project.^{23/} The most comprehensive and general criterion for analysing investment decisions is that of present value. It

^{23/} Investment criteria must be distinguished from decision rules. Whereas the former help to compare and rank alternative investment opportunities or packages, the latter set specific conditions with respect to the investment criterion such as to invest in a project if the benefit-cost ratio is more than one. Hence, investment criteria and decision rules provide an analytical apparatus for testing the optimality of investment decisions.

entails the discounting of the net social benefits stream to its present worth, using a discount rate which represents the opportunity cost of capital (i.e. the marginal return to capital in alternative uses). The decision rule would be to invest in the project if present value is greater than zero. Another way of using discounted net social benefits stream for measuring the worth of a project is to depict the discount rate which makes the net present worth of this stream equal to zero. This discount rate is called the internal rate of return (IRR) and represents the average earning power of the capital used in the project over its life span. The selection criterion would be to accept all projects having an IRR above the opportunity cost of capital.

Using IRR as a criterion, the integration project must be located in the country in which it attains the highest social IRR. But to justify this from the standpoint of the "host" country, the IRR must be higher than that of a similar national project in that same country. Since a basic pre-requisite for an integration project is that it generates net social benefits to the host country as well as to the integrating countries as a whole, the social IRR must be higher than the accounting rate of interest (ARI) of both the host country and the region as a whole. The ARI of each of the participating countries can be estimated as the rate of interest for which the number of national projects just exhausts national investment resources. Similarly, the ARI of the integrating region as a whole can be estimated at the rate of interest for which the total number

of integration projects just exhausts the combined investment resources of the countries concerned. As such the ARI of the region is the IRR of the marginal project in a state of integration.^{24/}

The use of the ARI of the region would be needed to evaluate the integration project per se. It is necessary that projects be ranked in accordance with their relative effectiveness in utilising the resources of the integrating countries. As the case is in the Arab region, the ARI tends to differ markedly from one country to another. It would be more convenient to use a unified ARI for the region to discount the net benefits stream of the integration project, rather than discounting each country's net benefits stream at its own ARI and then aggregating them. It is possible to estimate the ARI of the region as the average of the ARIs of the countries concerned, weighted with the shares of these countries' national investment resources in the total regional investment.^{25/}

It must be recognised that the IRR is only the primary test for the project's profitability. A complete analysis of a project is usually a joint endeavour of engineers, financial analysts, economists, and even lawyers. Aside from the fact that the measurement of benefits and costs is often beset by the lack of relevant data on costs and prices, project decisions in developing countries are frequently made on the

^{24/} See Kuyvenhoven and Mennes, op. cit., p. 15.

^{25/} Ibid.

basis of non-measurable factors which are beyond the reach of numbers. What adds to the complexity of the matter with respect to integration projects is that the costs inherent in trade-diversion are usually felt in the short-run and lend themselves to measurement, whereas the benefits of trade-creation are of a long-run nature and more difficult to measure. As Robson rightly points out, the measurement of benefits and costs tends

"... to be qualitative in nature, and will rest on the exercise of judgement rather than econometric analyses." 26/

If this view is accepted, then much of the success of integration schemes depends on the ability of the integrating countries to devise an approach which is conducive to an equitable distribution of benefits and costs among them, and creating the proper institutional set-up to deal with any "distribution crisis" which may arise. This will be the focal point of the next chapter.

26/ Peter Robson, Current Problems of Economic Integration: Fiscal Compensation and the Distribution of Benefits in Economic Groupings of Developing Countries, UNCTAD, United Nations publications Sales No.: E.71.II.D.6, New York, 1971, p. 14.

CHAPTER THREE

ALTERNATIVE APPROACHES TO INDUSTRIAL INTEGRATION

In the preceding two chapters an attempt was made to establish the case for regional economic integration among developing countries and to develop a methodology for evaluating integration projects. Having done that, our interest in the present chapter shifts to the development of an approach which is conducive to an equitable distribution of benefits and costs of integration among the participating countries. This approach will be geared to the implementation of projects in a priority integration area, which is the industrial field.

The chapter starts with a brief discussion of the factors which give rise to locational advantages, as well as of the concept of "equity" in the distribution of integration benefits and costs and the criteria by which it could be established. In the second part, a critical survey of the alternative approaches to industrial integration devised by various developing regional groupings will be presented. This survey will be made with a view to identify the problems faced by these groupings and the elements which need to be present in a more pragmatic approach. On these grounds, the third part of the chapter will appraise the "package deal" approach as an innovative solution to the problem of distribution of benefits and costs, and its desirability for a regional grouping such as the Arab Middle East countries.

Equity Versus Efficiency

The real concern in integration schemes seems to be for the equitable distribution of benefits and costs among the participants, and the means for ensuring such distribution. From an economic point of view, any country would not consider joining an integration scheme unless it has within it a better alternative growth prospect. Thus an important aspect of the problem of distribution of benefits and costs is that each participant ought to attain the minimum requirements of equity in order to remain in the scheme. That part of net benefits (i.e. benefits less costs) is essentially "non-redistributive".^{1/} Once this condition is satisfied, the relevant question becomes how to distribute the remaining net benefits among the participating countries.

It is conceivable that if the integration benefits are large enough, all member-countries would be better off than they were before integration. But it is important to recognise that the existing patterns of production and trade in developing countries are not such that the mere lifting of trade barriers would realise immediate benefits. Historical factors, inter alia, have conditioned the developing economies to specialise in the production of agricultural and primary commodities with the purpose of supplying the industrialised countries. It is only in the long-run, when the integrating countries create a new complementary pattern of production, that benefits become important. This has been recognised by Mytelka:

^{1/} Robson, op. cit., p. 6.

"When integration is conceived, as it most often has been, as the liberalization of trade by the creation of customs unions or common markets, gains from integration under existing conditions will be forthcoming only slowly and in the long run, though sacrifice must often be made immediately." 2/

This brings to the fore not only the question of setting up integration projects, but also the need to allocate them "equitably" among the integrating countries. The decisive locational criterion is the minimisation of cost of the individual projects. According to the traditional theory of industrial location, an industrial plant within a country or region must be located in the least-cost area. This is usually determined in terms of unit-cost of production inclusive of transport cost per unit from the production to the consumption points.^{3/} From the point of view of location, all industries fall into one of three categories: supply-oriented, market-oriented, or footloose. Industries of the first category will be located near the supply of the material or fuel used as inputs, in order to reduce procurement costs. This is particularly the case of industries involving heavy inputs like iron and steel or petrochemicals. The market-oriented industries

2/ Lynn K. Mytelka, "The Saliency of Gains in Third-World Integrative Systems", World Politics, Vol. 25, No. 2, 1973, p. 243.

3/ For readings on the theory of industrial location and its applications, see Edgar Hoover, The Location of Economic Activity (New York: McGraw-Hill, 1963); David Smith, Industrial Location: An Economic Geographical Analysis (New York: John Wiley & Sons, Inc., 1971); UNIDO, Proceedings and Report of the Interregional Seminar on Industrial Location and Regional Development, held in Minsk during 14-26 August 1968, United Nations, New York, 1971; and, Economic Commission for Europe, Criteria for Location of Industrial Plants, United Nations, New York, 1967.

are those which need to be located near the market, either because their products are perishable in nature or there is a necessity to reduce the costs of distribution to the advantage of the consumer. On the other hand, the footloose industries have no strong locational requirements, and thus processing costs rather than transport costs are the determining factor in locating them.

It is important to recognise that the cost on the basis of which the choice of location is determined, results from the interaction of not only the cost of labour, resources and transportation, but also the agglomeration advantages available. In line with the principle of static comparative advantage, the location of an integration project ought to be in the country which provides the best combination of resources, labour, as well as transport and infrastructural facilities. By reason of externalities or agglomeration economies, the larger and more industrially developed a country is, the greater will be its potential to support efficiently new industries. This means that industrial expansion and concentration may lead to the creation of enterprises and services which would be uneconomic with a small industrial output. Also the development of human resources as a result of industrialisation contributes in lowering industrial costs. It is largely in this regard that industrial development is often regarded as feeding upon itself. In this context, Egypt could be cited as a case in point with respect to the other Arab countries. Its economic size and past achievements provide ample opportunities for attracting Arab and foreign investments and further development.

The following passage is impressively revealing:

"Twenty years of intensive economic and social development has endowed the country with a solid industrial base of more than a thousand modern plants producing a variety of industrial goods which can provide new projects with both backward and forward linkages, i.e. as a source of inputs and as a market. A large industrial labour force of more than a million skilled and semi-skilled workers at relatively low wages represents a valuable source of cheap labour. Egypt has also developed over the past century a complex and sophisticated infrastructure of roads, ports, airports and system of communication which reduces the cost of new projects. Moreover, the country's 36 million population represents one of the largest markets in the Middle East. Finally, Egypt as the most economically developed of the Arab countries and as a member of the Arab common market, is in a unique position to become the workshop of the region." 4/

It is usual that "equity" in the distribution of integration projects among the member-countries of an integration scheme has to be attained at the cost of some efficiency. This is particularly the case when the integration scheme comprises countries which display marked differences in economic size and level of development. What adds emphasis to this is that scale economies and capital costs tend to vary widely from one industry to another, and for the same industry from one location to another. In point of fact, the realisation of economies of scale hinges much on the supply conditions of the factors of production. If these factors are limited, the expansion of output will be associated with increasing unit-cost as the

4/ Samir Radwan, "Egypt: Open-Door Policy and Foreign Investment", Euromoney, May 1975, p. 39.

price of the intensive factor used in production rises.^{5/}

To shift within an integration area a certain project or economic activity to a less developed member-country incurs an efficiency cost which has to be borne by the grouping. This cost would arise from the unfavourable setting, in terms of the lack of industry and infrastructure, in which the project would be established. The problem would be to find an appropriate trade-off between efficiency (in economic terms) and equity (in terms of distribution of net benefits). But this must be ensured in a way which is agreeable and entails the least cost to all members. Generally, the more industrialised members of a regional scheme would stress efficiency, whereas the less developed members would emphasise equity. This suggests that the solution to the problem could be formulated as one which aims at not only increasing demand through market integration, but also organising supply in such a way as to observe the principle of reciprocity of benefits and costs among the members without departing much from the principle of efficiency in production.

^{5/} One must not overlook, however, the possibility of reducing an industry's unit cost through achieving a more efficient combination of factors, thus causing a downward shift in the entire cost curve rather than moving along a falling cost curve as output increases. This may offer more of an increase in productivity than would result from the possibility of producing for a wider market. See, for example, Gerald M. Meier, "Effects of A Customs Union on Economic Development", Social and Economic Studies (West Indies), Vol. 9, 1960, p. 33.

The integrating countries usually differ in the perception of benefits and costs of integration, in view of their differing economic objectives and conditions. This adds up to the complexity of determining the net benefits on which the equal distribution criterion ought to be based. For instance, a member-country may be ready to set up an industry independently even at a lower efficiency than would have been the case if that industry is created under a regional scheme involving reciprocity in the foregoing of some production possibilities. That country may give more weight to the political prestige and other indirect economic benefits emerging from having the industry in its territories than to the efficiency cost measured in terms of market values. In the same context, the member-countries may not be in a position to attach the same social values to each of the benefits arising from the integration project. For instance, it is not likely that employment benefits would be equally valued by each of these countries. In addition to this, the same industry could affect differently the industrial development potential and prospects of the member-countries, depending on the economic setting in each of them.

It would be ideal to promote a balance in the distribution of net benefits by resorting to some criteria. A major criterion which has a high degree of practicality, is to distribute these benefits in accordance with the contribution of each member-country in producing them. This means implicitly that equity is distinct from equality in the distribution of

net benefits, and hence it must be measured by the use of an index. One such index could be the share of each of the member-countries in the regional market for the products of the integration projects considered. But of course this would require the monitoring of changes in the shares of these countries in the market over time and as the integration process gathers momentum. Another criterion which admittedly is very difficult to conceive, is to distribute the benefits in accordance with a certain objective of balance. Such an objective could be the equalising of the rates of industrial growth or the size of the industrial sector, with a view to reduce the disparities among the member-countries. Jealousies could arise among countries having great disparities in their economic performances, despite the benefits which they could realise through integration. The elimination or reduction of these disparities could make the integration process more viable both economically and politically in the longer-run. This could be attained primarily by allocating to the less developed countries industries which have high growth potential and exploit available resources. It should be possible for the more developed countries to help in the financing of these industries. But this would definitely require some degree of "generosity" on the side of the richer countries towards the poorer ones.

It follows that no one objective criterion can be set to determine the equity of the net benefits of integration. What

complicates the matter further is that benefits (e.g. value-added, employment, intra-regional exports, etc...) cannot be reduced to a single factor. Furthermore, it is usually difficult to determine the value of the total benefits for the member-countries as a whole, if there is no one single set of prices.^{6/} In the case of partial industrial integration as envisaged in this study, it is likely that the relative factor supplies and prices in the member-countries would remain different until complete integration is achieved.

The optimal distribution of industries in an integration scheme amounts to that which offers for the member-countries an acceptable compromise between efficiency and equity. It is important not to sacrifice much efficiency to attain equity, in order to minimise the cost arising from trade diversion and retain a reasonable degree of international competitiveness for the industries included in the scheme. From this standpoint, the problem seems to be not so much of establishing and applying theoretical criteria, but of creating the proper machinery for taking the necessary decisions and measures on the regional level when the need arises. This is stressed by the fact that any measurement of benefits and costs is intrinsically partial, insofar as it concentrates mainly on the measurable elements, and hence has limited practical utility for decision-making purposes. It is useful to bear these conditions in mind when discussing the alternative approaches to regional industrial integration in the following section.

^{6/} UNCTAD, Some Issues of Planning of Industrial Integration Among Developing Countries, TAD/EI/SEM.3/2, 11 April 1974, p. 26.

Alternative Approaches to Integration

Approaches to industrial integration may be considered as "alternative", either because they are different from the classical approach which takes the form of across-the-board trade liberalisation on a regional basis, or because they are radically different from those that are being followed at present. It has been already emphasised that integration schemes among developing countries, including the Arab countries, started on the basis of trade liberalisation arrangement. But soon these arrangements became undesirable for being prone to polarisation of economic activity in the more developed countries, and the breadth of product coverage makes it difficult to assess the benefits and costs arising from integrating the markets of the participants. As the following passage reveals, the economic integration movements among developing countries had on the whole a dismal record of attainment by mid-1960s:

"The Arab League and the Arab Common Market has led a tenuous existence, the Latin American Free Trade Area (LAFTA) shows increasing signs of being snarled in a fundamental impasse, and regional economic cooperation in Asia is still at the project stage. Colonial administrative and economic arrangements in former French West and Equatorial Africa and between Rwanda and Burundi have been shattered as has been the unlamented former Central African Federation." 7/

In this part of the chapter the alternative approaches actually used by regional groupings in Central and Latin America,

7/ Aaron Segal, "The Integration of Developing Countries: Some Thoughts on East Africa and Central America", Journal of Common Market Studies, Vol. V, No. 3, 1966, p. 252.

Africa, and Asia will be highlighted, with a view to propose in the next part an alternative approach which suits the special setting in the Arab region.

Basically, alternative approaches have been conceived in the form of "agreed specialisation" to develop existing and/or new industries, with the support of a preferential trading arrangement. Such specialisation could be of two types: horizontal or vertical. The first is when the production of a product is confined to a single country in order to make possible on the basis of an enlarged market the use of the lowest-cost method of production offered by available technology. Aside from economies of large-scale production, this would allow the utilisation of modern technologies which are increasingly embodied in large production units. Vertical specialisation, on the other hand, allocates the production of the various components of an industrial product among the countries involved in the integration scheme. This is particularly significant when the production of one or more of these components is of a scale that requires a larger market than any of the national markets.

Amongst the principal approaches used is the "complementarity agreements" approach which was introduced within the framework of the Latin American Free-Trade Association (LAFTA).^{8/} The essence of this approach is to organise "sectoral meetings"

^{8/} LAFTA was created in 1960 under the Montevideo Treaty, and comprises Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela.

of representatives of the private sector in a specific industry in each of the member-countries, in order to provide a platform for exchanging information and experiences on production conditions and to enable these representatives to voice their demands and proposals to the governments before the formulation of the complementarity agreements. As such, these meetings are a basic instrument for bringing the private sector into the integration process.

The complementarity agreements are designed so as to reap the benefits of specialisation and economies of scale, to utilise excess capacity, and to extend the scope for import-substitution. Although several agreements have been successfully concluded among the LAFTA members, it is thought that the system has not been as effective as desired.^{9/} One reason is that the system is administratively and operationally complex, and does not guarantee the participation of all the member-countries in the agreements. It is natural that only the countries having production units of the industry being considered would attend the sectoral meeting. Another reason is that there is no clear system of priorities in the selection of industries, thus affecting inter-industry linkages haphazardly. Still another reason is that the system does not have any feature which would compensate the less advantageous member-countries, especially in terms of economic size and the differences in the level of industrial and infrastructural development.

^{9/} See Havelock Brewster, "Industrial Integration Systems", in UNCTAD, Current Problems of Economic Integration: Agricultural and Industrial Cooperation Among Developing Countries, United Nations, New York, 1971, pp. 71-77.

Commenting on the system as a whole, Behrman says

"... these arrangements have not been easy to negotiate, for the removal of barriers gives an advantage to the already advanced countries; the location of future industry tends to be set in the pattern of existing industry, and since the duty reductions are supposed to be irrevocable (in contrast to those under the national lists) and immediate (rather than delayed as under the common list), countries are wary of entering into such an arrangement unless the distribution of industrial growth is also provided for in advance.

Finally, governments have delayed signing complementation agreements in order to gain the time to build up their own industry in preparation for future negotiations." 10/

Another approach to industrial integration is that of the "integration industries" which was introduced by the Central American Common Market (CACM). 11/ This approach rests on the idea that the member-countries encourage and promote the establishment of new industries and the specialisation and expansion of existing industries. The "integration industries" are defined as those which comprise one or more plants and require for their efficient operation access to the CACM. The applications for the creation of such industries could come directly from private individuals or from corporations to the Central American Industrial Integration Commission which is entrusted with the task of designating the integration industries. The procedure is that integration industries must be approved

10/ Jack N. Behrman, The Role of International Companies in Latin American Integration (Lexington, Massachusetts: D.C. Heath and Company, 1972), p. 4.

11/ CACM was created in 1960 and comprises Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. But the régime for the integration industries was adopted by the member countries in 1958.

unanimously, then an inter-governmental protocol must be negotiated for each industry which would become effective once ratified by three member-countries. This protocol specifies the country or countries in which the industrial plants are to be situated, the minimum capacity of these plants, and the conditions under which additional plants are to be subsequently admitted into the same or other countries. Also it specifies the quality standards for the products, and any other requirements which may be deemed convenient for the protection of the consumer. The integration industries enjoy for their products complete freedom of movement in all the member-countries as well as protection from imports and preference in government procurement.

As to the distribution of the integration industries, it has been agreed by the member-countries not to allocate a second plant within the same branch of industry to any of them until each has been allocated one plant. To help this process, The Central American Bank for Economic Integration facilitates the financing of integration industries, but without undermining its basic function in the promotion of the overall process of economic integration and balanced economic development among the member-countries. Another instrument is the Agreement on Fiscal Incentives to Industrial Development which was concluded in 1962 by the member-countries to introduce some uniformity into the incentives offered separately by each of them to attract industry. Thus, the integration industries are meant to solve the problem of balanced development, and this approach differs

greatly from the solution within the framework of LAFTA which permits the less developed member-countries to proceed according to a lower schedule of trade liberalisation and in some cases protect national production.^{12/}

Several factors have acted to limit the effectiveness of the integration industries régime.^{13/} Aside from the political factors which loomed large and which precipitated a war between Honduras and El Salvador, the régime suffered from a number of weaknesses. First and foremost, the system for distributing integration industries proved to be slow and retarded the process of integration. By creating a climate of uncertainty for investors, it acted to depress industrial investments. Second, the designation of integration industries tended to be arbitrary, thus raising the chances of conflict between the member-countries. Third, the régime was thought to have monopolistic implications, inasfar as it limits competition. On this ground, the United States opposed this

^{12/} On this point, see Carlos M. Castillo, Growth and Integration in Central America (New York: Praeger, 1966), p. 83.

^{13/} For a detailed account of the experience of CACM, see David Ramsett, Regional Industrial Development in Central America: A Case Study of the Integration Industries Scheme (New York: Praeger, 1969); Roger Hansen, Central America: Regional Integration and Economic Development (Washington, D.C.: National Planning Association, 1967); Stuart Fagan, Central American Economic Integration: The Politics of Unequal Benefits, Research Series No. 15, Institute of International Studies, University of California, Berkely, 1970; James Cochrane, "Central American Economic Integration: The 'Integrated Industries' Scheme", Inter-American Economic Affairs, Vol. 19, No. 2, 1965, pp. 63-74; and, Philippe C. Schmitter, "Central American Integration: Spill-Over, Spill-Around or Encapsulation?", Journal of Common Market Studies, Vol. IX, No. 1, 1970, pp. 1-48.

régime and did not permit public funds extended to the Central American Bank for Economic Development to be invested in integration industries.^{14/}

In the economic cooperation scheme in East Africa^{15/} several approaches have been utilised to achieve industrial integration. One of these approaches is the Industrial Licensing Ordinance which was introduced in 1948, some fifteen years before the end of the British rule in the three colonies. The purpose of this Ordinance was to promote the orderly establishment of new industries, by giving the country that obtains a licence a monopoly concession. This system did not have the desired effect of accelerating industrial development, nor did it favour the less developed countries (i.e. Tanzania and Uganda). One of the major reasons behind this failure was that the initiative in applying for licences was left with private entrepreneurs, and since Kenya had the most developed body of entrepreneurs its position was more advantageous. Also the system instead of concentrating on the harmonious development of industry in the three countries, sought, without success, to attract foreign capital by offering monopoly position.^{16/}

^{14/} See James Cochrane, "U.S. Attitudes Toward Central American Economic Integration", Inter-American Economic Affairs, Vol. 18, No. 2, 1964, pp. 73-91.

^{15/} The East African Community (EAC) is composed of Kenya, Uganda, and Tanzania. It was established in 1967 under the Treaty for East African Cooperation, to give legal effect and reorganise the economic cooperation which started among these countries in the early 1920s during colonial administration, See Peter Robson, "The Reshaping of East Africa Cooperation", East African Economic Review, Vol. 3, No. 2, 1967, p. 1-11.

^{16/} UNCTAD, Current Problems of Economic Integration: The Distribution of Benefits and Costs in Integration Among Developing Countries, op. cit., p. 61.

Finally, the system tended to focus on the legal aspects of industrial investment, rather than on the economic problems associated with the distribution and complementarity of industries.^{17/}

After independence, the three East African countries made another attempt to regulate the regional distribution of industrial activity. The Kampala-Mbale Agreement which was negotiated during 1964 and 1965 contained a number of different points in connection with the distribution of industries and the regulation of intra-regional trade. It provides for the allocation of a number of new industrial projects among the member-countries, in accordance with the Industrial Licensing Ordinance which gives exclusivity in producing for the region. Also it provides for the creation of an Industrial Experts Committee which would be entrusted with drawing up lists of "East African Industries". These industries are to be identified by applying one of two alternative criteria: (a) industries which are economically feasible only if they have access to the entire regional market, or (b) industries which are economically feasible only if they have access to a market larger than that of any one country in East Africa. The Committee would give due consideration to the need for an equitable distribution of industries when considering their geographical allocation. Another feature of the above Agreement is that certain industrial

^{17/} See Yash Ghai, "East African Industrial Licensing System: A Device for the Regional Allocation of Industry", Journal of Common Market Studies, Vol. XII, No. 3, 1974, pp. 265-295.

enterprises which operate in Kenya (producing cement, beer, cigarettes and shoes) should be persuaded to "shift" a part of their production to the other member-countries in order to reduce imports from Kenya. Along with this a system of quotas and suspended quotas was provided by the Agreement, to reduce progressively the exports from surplus countries and increase production in the deficit countries. These concessions were considered excessive by Kenya which refused to ratify the Agreement. But the other countries considered that they had the right to apply import quotas to Kenya products as provided in the Agreement. It has been concluded that

"... agreements such as the Kampala-Mbale Agreement, whose aim, on the one hand, was to allocate a few not very significant industrial activities, without sufficient prior study, and on the other hand, to impose the establishment of certain enterprises so that the same goods were produced in all the member countries, without also establishing the necessary procedures for carrying out the agreements reached, are not a satisfactory way of dealing with the problem of distributing the benefits of integration in favour of the less developed countries concerned." 18/

Another approach to deal with the problem of industrial integration was instituted in the 1967 Treaty for East African

18/ Op. cit., p. 65. The question of "shifting" industry in the EAC aroused much interest as to what extent it is economically desirable. See Arthur Hazlewood, "The 'Shiftibility' of Industry and the Measurement of Gains and Losses in the East African Common Market", Bulletin of the Oxford University Institute of Economics and Statistics, Vol. 28, No. 2, 1966, pp. 63-72. W. T. Newlyn replied to this article in the same number of the Bulletin (pp. 281-282), and Peter Robson made "some further considerations" in the same Bulletin, Vol. 30, 1968, pp. 153-155.

Cooperation.^{19/} The Treaty allows the less developed industrially to impose a "transfer tax", which is in fact an internal tariff, in order to attain a balanced industrial growth among the member-countries. The tax may be imposed under certain conditions and for a specified period of time, in countries which experience a deficit in their intra-regional trade in manufactures. However, this tax has been criticised, as it is not certain that it would increase manufacturing output. It is more likely that it would induce higher prices of protected manufactures and the proliferation of small production units, thus reducing the chances for specialisation. The above Agreement provided also for the creation of the East African Development Bank as an instrument for promoting industrial activity in the less developed countries of the region. It also provided for the setting up of four corporations to undertake the responsibilities of The East African Common Services Organisation (EACSO) in administering the basic services in the three countries for railways, posts and telecommunications, seaports, and airways.^{20/}

In the context of the Regional Cooperation for Development (RCD) scheme which was established in 1964 among Pakistan, Iran and Turkey, industrial integration has been

^{19/} For the full text of EAC Agreement, see UNCTAD, Economic Cooperation Among Developing Countries: Compilation of Principal Legal Instruments, Vol. IV, TD/B/609 Add. 1, 20 August 1976, pp. 139-196.

^{20/} For a critical account of the operations of EACSO, see J. Proctor and K. Krishna, "The East African Common Services Organization: An Assessment", The South Atlantic Quarterly, 1965, pp. 526-548.

approached by a system of "joint-purpose enterprises". This system would apply to industries which require a market larger than any one member-country can provide to ensure economic production. It consists of agreements under which two or three of the countries concerned may participate in establishing industrial enterprises. While there is no obligation to grant tariff preferences for the products of such enterprises, there is a commitment on the part of the participants to purchase these products at "internationally competitive prices and acceptable standards". The country in which the enterprise is located would be responsible for the larger part of the investment involved, with the other participants contributing only a very small share of the capital. There is no definite procedure for the distribution of such enterprises, which may be taken by the public and/or the private sectors. Once an enterprise is approved, the governments concerned will have to sign a "memorandum of understanding".

It seems that the system, before its collapse after the Iranian revolution in 1979, has functioned without any serious problems. A major reason underlying this is that the trade diversion which may be associated with the purchasing commitment does not incur a real economic cost to the importing country, to the extent that the prices of imports are equal to the prices of similar goods in international markets. However, it is reckoned that the scope for application of the system is narrowed by the comparatively high cost structure

in the member-countries and by the difficulty of establishing an "internationally competitive price" especially with respect to industrial products that are heterogeneous.^{21/} In addition, this system is not useful in an integration scheme which aims at rapid industrialisation through an enlarged protected market.

A new approach to industrial integration has been introduced recently by the Andean Group. It is to be recalled that in 1969 five of the LAFTA countries set up the so-called Andean Common Market, under the sub-regional integration agreement known as the Cartagena Agreement.^{22/} A distinguishing feature of this Agreement is that it considers joint industrial programming as a basic mechanism for advancing rapidly towards economic integration. This programming can take two forms: (a) sectoral programming of industrial development, designed to take advantage of combined resources and markets and under which individual countries are given regional monopolies in the production of certain products; and, (b) rationalisation programming which applies to existing industries through the general liberalisation machinery. In any event, all products

^{21/} Brewster, op. cit., pp. 94-95.

^{22/} The Agreement was signed in May 1969 by Bolivia, Chile, Colombia, Ecuador and Peru. Venezuela joined the Agreement in February 1973. Economic integration is sought by the agreement as a means for (a) accelerating economic and social development of the sub-region in a way which will reduce the existing disparities among the member-countries, and (b) improving the abilities of the sub-region to compete within the LAFTA integration programme, and thus enhance the prospects for the realisation of the Latin American Common Market. In a way, the creation of the Andean Group reflects the desire of its members to protect themselves from the more developed countries of LAFTA (i.e. Mexico, Brazil, and Argentina). For the full text of the Cartagena Agreement in English, see UNIDO, The Cartagena Agreement, ID/WG.111/4, 22 February 1972.

must be completely liberalised and covered by a common external tariff by 1980 and 1985, depending on the country concerned, and thus bringing the common market into existence.

A basic advantage of the Andean Group is that it has a comprehensive and formally structured joint planning system. According to the Cartagena Agreement, there are two principal organs: the Commission, and the Board. The Commission is the highest decision-making body and composed of one plenipotentiary representative from each member government. It is concerned with the formulation of the general policy of the Agreement and the adoption of the necessary measures for the accomplishment of its objectives. More specifically, the Commission decides on the allocation of the industries among the member-countries. The Board is the permanent technical body of the Agreement. It is responsible for appointing technical experts to conduct feasibility studies on industries to be included in the sectoral programmes, and makes recommendations on the way the industries should be allocated among the member-countries.

In 1972, the first sectoral programme was approved in the area of metal processing.^{23/} This programme is structured so as to allow each of the member-countries to develop the basic technologies related to the metal-processing industries. The basis of this programme is that each project must be viewed as only a part of the whole effort, for in the case of the less developed member-countries (Bolivia and Ecuador) it would not be possible to have projects utilising highly complex

^{23/} For the full text in English, see UNIDO, Text of the Sectoral Programme of Industrial Development for the Metal-Transforming Sector as Adopted by the Commission of the Cartagena Agreement, ID/WG.111/6, 23 November 1972.

technologies if these were not linked to other projects.^{24/} It was agreed to distribute the manufacturing of 180 metal products among the member-countries, on condition that production starts within a period of five years; otherwise the product reverts to the automatic tariff reduction programme. However, it is possible to allocate the production of some products to two or three countries, either because significant production of these products already takes place, or because the demand in the sub-region justifies the existence of more than one production unit. It is thought that the planning of the above programme was made much easier by excluding from it the automotive industry which is to be planned under a separate programme.^{25/}

To channel domestic and external financial resources and promote the development of the sub-region, The Andean Development Corporation was established in 1968, with a capital of about \$100 million. Although this Corporation has a separate

^{24/} Board of the Cartagena Agreement, Andean Group: Sectoral Development Program for the Metalworking Industries, Peru, no date, p. 2.

^{25/} The essence of the difficulty in planning the automotive industry arises from the objection of Colombia and Venezuela as to the allocation of the assembly plants among the member-countries. Negotiations on the petrochemicals programme proved to be much more easier as there is little existing production in any of the six countries. The Financial Times, 8 July 1975. Other sectoral programmes considered by the Board (the Junta) include steel, glass, pulp and paper, chemicals, pharmaceuticals, and electronics. For a study of the effects of integration on the nitrogenous fertilizer, see G. Baanante and R. Simmons, "Effects of A Customs Union of the Nitrogenous Fertilizer Industry in the Andean Zone", Journal of Common Market Studies, Vol. XIV, No. 3, March 1976, pp. 255-275.

existence from the Cartagena Agreement it has to work in close collaboration with the Board, especially in identifying and distributing projects. Specifically, the tasks of the Corporation are to identify new investment opportunities; to mobilise domestic resources; to promote the organisation of enterprises, their expansion, modernisation or conversion; and, to give the necessary technical and financial assistance to prepare and execute multinational or complementary projects. It can subscribe to the capital of the enterprises promoted by it.

The sectoral programmes can be looked upon as an instrument to direct investments within the Andean Group. Through planning industrial location, these programmes can secure balanced development among the member-countries. This feature is regarded as a major improvement over the "complementarity agreements" used in LAFTA. Moreover, these agreements do not encompass a wide range of products, are not tied up to a schedule or a timetable, and do not guarantee that all members will yield a benefit from integration.^{26/}

The foregoing synoptic survey of the alternative approaches to industrial integration which have been devised by various regional groupings shows the usefulness of approaching integration from a planning point of view, rather than

^{26/} William Avery and James Cochrane, "Innovation In Latin American Regionalism: The Andean Common Market", International Organization, Vol. 27, No. 2, 1973, pp. 193-195. For a detailed study of the Andean experience, see David Morawetz, The Andean Group: A Case Study in Economic Integration Among Developing Countries (Cambridge, Massachusetts: The MIT Press, 1974).

leaving it to market forces and private arrangements (as specifically the case is in LAFTA). This can be substantiated by the fact that developing countries generally pursue planned development and economic integration in their case should be directed mainly to future investments. It is possible through joint planning to give opportunities to all member-countries to participate in the development of regional industries, and thus attain at least what has been termed earlier as the "non-redistributive" share of the integration benefits. But such planning is apt to be a very intricate, if not impossible, process, due to the absence of detailed statistical information and data. On the one hand, it is necessary to make comparative cost studies to determine economically optimum locations for the various industries contemplated in the integration scheme. This requires sufficient data to make proper projections and to trace the likely changes in relative prices and production, in both an integration and a no-integration situation. On the other hand, selected industries will be involved in the planning process and this allows only a partial equilibrium analysis. In a study prepared on some industries which have a regional potential in Latin America, Carnoy cautiously notes,

"... that the study has identified locations that can more properly be labeled 'minimum cost' rather than 'optimum'. Obtaining the optimum requires a general equilibrium analysis that considers all the interrelations in an economy, including limitations on total resources available in each area and in the region as a whole. To do

this in a comprehensive fashion is not yet feasible because of computational problems, not to speak of the impossibility of acquiring all the necessary data." 27/

However, joint planning raises the question of whether this planning is to be carried out by a regional body or by the national planning bodies. It might be more plausible to leave the planning process in the hands of the national bodies. This could reduce the prospects for conflict, but at the same time it may expose the process directly to national political considerations which may endanger the whole integration process.

It seems that the search for an alternative approach to industrial integration can be likened in the same way as Hazlewood has likened the search for a measure of the gains and losses of the East African Common Market to the search for the philosophers' stone.^{28/} Yet, in the final part of this chapter we will appraise on the basis of previous experiences the "package deal" approach as an innovative solution which could be applied in the case of the Arab Middle East countries.

The "Package Deal" Approach

It is reckoned that the application of any of the above approaches in the context of an industrial integration

27/ Martin Carnoy, Industrialization in a Latin American Common Market (Washington, D.C.: The Brookings Institution, 1972), pp. 36-37.

28/ Hazlewood, op. cit. p. 63.



scheme for the Arab countries will not produce better results. Aside from the fact that the Arab countries are at different levels of economic development, the process of industrialisation is falling increasingly within the domain of the public sector. Thus, an alternative approach which could attain a certain measure of success is that which is "allocative" and guarantees from the beginning for all the participants what each of them considers as an acceptable share of the net benefits of integration.

These criteria can be found in what has been termed as the "industrial package deal", which is a cooperative scheme that concerns industrial sectors in different countries contemplating economic integration.^{29/} Under this approach industrial projects having potential for integration are identified, and then a selection of them are allocated simultaneously to the integrating countries on a "fair and equitable" basis. This is usually conceived in the framework of an inter-governmental agreement which provides also for the creation of a partial customs union to ensure free movement for the products of the allocated projects.

The "package deal" approach offers several advantages over other practical approaches, and is deemed more appropriate for lessening the imbalances among the participants in the rate and structure of industrial development. To start with, it allocates large-scale industrial projects which are conducive

^{29/} See, for example, L.B.M. Mennes, Planning Economic Integration Among Developing Countries (Rotterdam: Rotterdam University Press, 1973), p. 93.

to growth among the participants, in order to attain a reasonable balance in the distribution of productive capacities as well as in the exchange of industrial products. Integration schemes that are based on profit-sharing are not likely to satisfy equitably all participants, since gross profit forms only a minor part of the total domestic value-added as well as the multiplier effect of the integration project. In other words, the benefits of the project are bound to its location, and it is unlikely for a developing country to agree to participate in the equity of an integration project located in another country unless it is accorded a reciprocal right for another project. On this count, the package deal approach is far more superior than an approach involving fiscal compensation for the less developed countries within the integration scheme, or one that allocates separately and over time integration projects among the participants as in the CACM.

Another advantage is that the package deal approach provides a broader framework for the participants to assess the benefits and costs of their participation. The fact that the package involves a number of industries (depending on the number of participants and their levels of industrial development), it allows for the trade-off in costs and benefits among the products it covers. Yet, this approach is considered to have limited and to a large extent identifiable integration implications. This makes it appealing to a larger number of countries which are ready to undertake only limited integration

commitments, and facilitates the measurement of the benefits and costs from the vantage point of each participant.

It is of interest to note that the package deal approach has not yet been experimented in any regional grouping.^{30/} However, it is believed that its application is not as easy as it would first appear. The fact that the integrating countries display usually marked differences in economic size and level of industrial development makes the attainment of an acceptable division of the "package" of industries an intricate task. The equity in the distribution of benefits cannot be achieved simply by an equal distribution of the "package" industries (as for instance in the CACM scheme). It ought to be in accordance with a distribution criterion which reflects the differing interests of the participants. But as pointed out in the first section of this chapter, it is very difficult to establish such a criterion. The optimum solution would usually have to be reached by a series of negotiations among the participants.

It is possible to formulate the problem posed by the package deal as the maximisation of the net benefits or the minimisation of costs to each of the participants and to

^{30/} This approach was suggested by a United Nations team for economic cooperation among the member-countries of the Association of South East Asian Nations (ASEAN). See ECAFE, Asian Industrial Survey for Regional Cooperation, Vols. I and II, AIDC (9)/1, New York, 1973. A full report of the team which is based on the above document appeared in United Nations Department of Economic and Social Affairs, Journal of Development Planning, No. 7, New York, 1974.

the region as a whole. To determine the optimal location of an integration project, it is necessary to undertake inter-country comparisons of production costs. The cost estimates must take into account the cost of transporting the outputs from the producing countries to the consuming countries. It may be useful to take account of economies of scale, to carry out these estimates on the basis of alternative levels of output. Several sophisticated techniques involving linear or mixed integer programming have been developed to determine the choice of plant location in a system of industries characterised by economies of scale.^{31/} But the use of such techniques in the case of most of the developing countries seems to be questionable, in view of the prevailing computational and informational constraints. Under these circumstances social benefit-cost analysis along the lines presented in the previous chapter could be more feasible and meaningful.^{32/}

^{31/} See, for example, David A. Kendrick, Programming Investment in the Process Industries: An Approach to Sectoral Planning (Cambridge, Mass: The MIT Press, 1967), and, "Investment Planning and Economic Integration", Economics of Planning, Vol. 7, No. 1, 1967, pp. 48-72; Martin Carnoy, "A Welfare Analysis of Latin American Economic Union: Six Industry Studies", Journal of Political Economy, Vol. 78, No. 4 (Part I), 1970, pp. 626-654; Thomas Vietorisz, "Industrial Development Planning Models with Economies of Scale and Indivisibilities", Regional Science Association Papers, Vol. 12, 1964, pp. 157-192; and, Thomas Vietorisz and Alan S. Manne, "Chemical Processes, Plant Location, and Economies of Scale", in Alan S. Manne and Harry M. Markowitz (eds.), Studies in Process Analysis: Economy-Wide Production Capabilities (New York: John Wiley & Sons, 1963), pp. 136-158.

^{32/} For a geometric treatment of the decisions affecting location and size of industry within an integration area, see Donald W. Baerresen, "A Method for Planning Economic Integration for Specified Industries", Journal of Common Market Studies, Vol. 6, No. 1, 1967, pp. 1-23.

Obviously, a major criterion by which the selection of industries to be included in the package could be made is their competitiveness, at least within the integration area. It is legitimate for the integrating countries to compare the cost of production in an integration project with international price levels. They would tend to resist the setting up of an integration project which requires more tariff protection than would have been necessary if that project is established on a national basis. This means that in determining the cost of developing integration industries, the point of reference should be national rather than international costs. As a UNCTAD report remarks,

"... since most developing countries pursue a policy of industrial development without attaching much importance to comparative costs, a relevant and valid comparison is not generally between 'international' and 'regional' costs, but between the more realistic alternatives of 'national' and 'regional' costs." 33/

It is important to stress the competitiveness criterion as it includes inherently other criteria such as foreign exchange saving, externalities and profitability. An industry which proves to be competitive is likely to generate profits and employment, provide externalities to other industries, and save foreign exchange by replacing imports. This should not mean, however, that uncompetitive industries, if sufficiently

33/ UNCTAD, Some Issues of Planning of Industrial Integration Among Developing Countries, op. cit., p. 13.

protected, do not generate externalities and foreign exchange. But obviously these effects in a competitive industry tend to be larger than in the other case.

In a United Nations study on regional industrial cooperation among ASEAN countries, the criteria for the selection of integration industries include: (a) competitiveness on the basis of comparative advantage, either internationally or regionally with temporary protection; (b) foreign exchange saving; (c) generation of externalities to existing industries; and, (d) commercial profitability to stimulate private enterprise or create much income and employment.^{34/} To maximise the net benefits of the integrating countries, therefore, the allocation of integration industries must fall in line with the comparative advantage of these countries. It is useful in interpreting this to make a distinction between two situations. One is when an industry, by reason of scale economies, becomes internationally competitive if producing for the combined markets of the integrating countries. In this case, the relevant criterion would be the comparative advantage in terms of international trade theory. The other situation is when an industry, also by reason of scale economies, can be operated profitably in a regional context but under trade-diverting conditions. In this case, the relevant criterion would be the comparative advantage in the regional rather than the international context, as well as the

^{34/} ECAFE, Asian Industrial Survey for Regional Cooperation, Vol. I, op. cit., p. 51-52.

potential trade creation or trade diversion in terms of customs unions theory. Obviously, the selection of industries depends on their being predominantly trade-creating.

By applying the benefit-cost analysis developed in the preceding chapter, it should be possible to measure the present value of net social benefits generated by the selected package industries to the countries concerned, individually and collectively. In line with that analysis, the net social benefits from a country's point of view could be measured by using accounting prices (border prices) which reflect the real economic cost of inputs and the real economic value of output, all expressed in foreign exchange. This could be carried out in three steps. The first step would be to measure benefits by finding out the net foreign exchange saved and/or earned (through exports) by setting up the integration industry. This must take into account the foreign exchange spent on the importation of inputs needed by the industry. Secondly, the costs will be measured by the opportunity cost of domestic factors utilised in production. This would be equal to the marginal import cost for traded inputs, and the marginal social cost for non-traded inputs. In the latter case the cost will have to be converted into foreign exchange at the social marginal utility of foreign exchange in the country concerned. The third step would be to compare costs with benefits, and derive the net social benefits stream which must be discounted to its present value.

Using this methodology, it is possible to allocate the "package" industries among the countries concerned in such a way as to maximise the social IRR of each of them. The resulting "package" would be one of efficient locations for all industries included. Although this allocation maximises the benefits for the region as a whole, it is not likely to ensure an equitable distribution of net benefits if the participants differ in size and level of development. Most of the industries would be concentrated in the larger and more developed participant(s).

To redress this imbalance in the distribution of net benefits and make the package acceptable to all participants, it would be necessary to re-assign some of the industries to the less fortunate participants. This would inevitably involve a cost equal to the difference in production costs between the efficient location and the less efficient one. Differences in production costs between countries arise basically from the differences in the marginal social cost of domestic inputs as well as the operating conditions of the industries concerned. Usually the cost of production is sensitive to the availability of an optimal combination of resources, labour and various forms of externalities. If the cost of production is affected greatly by the cost of raw materials entering into the output, the increase in production cost due to the shift from an optimal to a sub-optimal location tends to be noticeable. In contrast, footloose industries tend to retain a larger degree of flexibility

in shifting their location, although they are affected considerably by the availability of skills.

It was mentioned earlier that there is a part of net benefits which can be labelled as "non-redistributive" and it represents the minimum requirements of equity to keep the participants in the scheme. Accordingly, the over-riding concern in the re-assignment of industries must be not only to minimise the cost of satisfying the regional demand for the products of the package industries, but also to ensure that each participant receives at least the non-redistributive part of net benefits. In other words, the optimal package is that which combines equity with efficiency in such a way that each participant would be better off than in a state of no-cooperation.

Without doubt the package deal approach is characterised by a measure of flexibility and could be instrumental in reducing the complexity of the problem of balancing the conflicting objectives of efficiency and equity. Much of the success in implementing a "package" depends on the industries selected. It can be presumed that this approach provides the best solution in the case of new industries which do not exist in any of the participants, and in which economies of scale are particularly important, a large amount of investment is involved, and externalities in terms of location are relatively unimportant.^{35/}

^{35/} On this point see, for example, ECAFE, Methodology of United Nations Study on ASEAN Economic Cooperation, E/CN.11/CAEP. 4/L.11, 1 November 1971, p. 14 (mimeo.).

The industries must be carefully selected on the basis of detailed feasibility studies, which would reveal the impact of these industries on value-added, employment, foreign exchange saving and earning, and other variables on each of the participants. It is implicit that the selection of industries must reflect the factor combinations of the countries concerned, or rather the capital intensity of the production process.

But of course no approach can claim to be workable in every respect. Any package deal must not only be economically viable, but also politically acceptable to the countries concerned. This is in view of the fact that countries may have different social and economic objectives, and therefore place different weights on the benefits attributed to integration industries. Thus, only individual governments, which are likely to be the initiators of the package deal agreement, are in a position to judge whether the package offered is politically acceptable or not.^{36/} In addition, the agreement introducing the package must be worked out very carefully, especially with respect to the financing, ownership, and control of the package industries.

On these grounds the package deal approach seems to have definite advantages over other approaches surveyed earlier in the chapter. Aside from ensuring from the beginning to all

^{36/} For a supporting view, see UNIDO, Report of the Expert Group Meeting on Regional Industrial Cooperation, held in Vienna during 6-10 December 1971, ID/WG.111/2, 30 December 1971, p. 8 (mimeo.).

the participants what each considers as an acceptable share of net integration benefits, it can offer with a reasonable chance of success a practical initial path to broader integrative efforts. What enhances its attractiveness is that it does not require fundamental changes in the economic systems prevailing in the participating countries, and thus the package industries could be accommodated with relative ease. With this in mind, the package deal approach will be adopted as the basic element in the framing of a strategy for an integrated industrial development in the Arab Middle East region.

PART II

The Case of the Arab Middle East

CHAPTER FOUR

ARAB ECONOMIC COOPERATION AND INTEGRATION^{1/}

Introduction

Having developed in Part I of this study the relationship between economic integration and development in general, and the methodology for evaluating integration projects as well as the techniques for implementing industrial integration schemes, the focus of interest in this part will shift to the relevance of economic integration to the development of a specific regional grouping, the Arab Middle East countries.

For the purposes of this study, these countries are taken to include the Arab countries in Asia together with Egypt and Sudan. The Asian Arab countries are Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen, and Democratic Yemen.^{2/} This choice has been guided by the following basic considerations which will be developed further in the course of the study.

In the first place, it is believed that the above countries form a meaningful economic region within the Arab

^{1/} In its first part, the chapter draws heavily on a paper prepared by the author late in 1977 on the request of the OECD in the context of the "Interfutures Seminars on Developing Countries". The paper is entitled Arab Economic Development and Integration, and was presented in the "Arab Countries Seminar" held in Beirut during 13-15 February 1978. The purpose of these Seminars is to allow a better understanding of the long-term development prospects for some selected developing countries and regions, and to identify the major policy issues which help determine these prospects.

^{2/} Throughout this study, unless otherwise stated, the term "Arab countries" will be used to denote the above-mentioned countries.

World.^{3/} They are a relatively compact region which attains a high degree of complementarity in resources and markets.^{4/} This makes integration among all or some of them more feasible (in terms of inception and durability) than pan-Arab integration which is being envisaged by the League of Arab States, the Council of Arab Economic Unity (CAEU) and other inter-governmental Arab economic organisations. Indeed, a central theme of this study is that economic integration, particularly among developing countries, ought to be conceived among a selected group of countries in order to facilitate the solution of the problem of distribution of integration benefits and costs.

Secondly, the countries concerned seem to have vested interests in regional economic cooperation and integration, given their present state of economic development and the regional availability of capital surpluses. The dramatic increase in oil revenues since 1971, which is affecting favourably the supply of capital in the non-oil-countries, has already created a drive for rapid socio-economic development and growth. It is becoming amply evident that the emergence of an efficient pattern of economic development in the Arab region requires a certain degree of intra-regional coordination of investment decisions. What helps in this

^{3/} The term "Arab World" will be reserved in this study to denote the Arab countries in Asia and Africa. The African Arab countries, which are not covered in the study, are Libya, Tunisia, Algeria, Morocco, Mauritania, Somalia, and Djibouti. In all there are 22 countries, including Palestine, which are members of the League of Arab States.

^{4/} The Arab countries covered in this study comprised in 1975 64 per cent of the total area of the Arab World and about 70 per cent of its population, but contributed no less than 75 per cent of its total Gross Domestic Product (GDP).

direction is that most of the Arab countries have been involved for a comparatively long time, though without much success, in various schemes and agreements for economic cooperation and integration. It is presumed that the findings of this study would be useful in suggesting new integration strategies and policies in the region as a whole.

Furthermore, the countries concerned (excluding Sudan) belong to the United Nations Economic Commission for Western Asia (ECWA).^{5/} As is the case with other regional economic commissions, ECWA focuses in its work programme on strengthening the economic relations among the member countries, and undertakes and sponsors surveys and studies on economic and technological problems and development in the region. This is likely to influence positively the prospects for economic integration in the region. Of course, membership in ECWA does not in any way compromise the Arab countries' membership in the Arab League or any of the Arab economic organisations. Efforts for regional collaboration could proceed within the two frameworks, despite some overlapping. It is important to note that ECWA has contributed notably in recent years to the compilation of statistical information on a regional basis. This should prove very helpful in the present study, given the

^{5/} ECWA was created on August 9, 1973, by Resolution 1818 - IV of the United Nations Economic and Social Council (ECOSOC), to replace the United Nations Economic and Social Office in Beirut (UNESOB) which served the Arab countries since 1963. ECWA is one of five economic commissions which report to the ECOSOC; the other four being the commissions for Europe (ECE), Asia and the Pacific (ESCAP), Latin America (ECLA), and Africa (ECA).

incomparability and sometimes the lack of statistics on the national level.

To provide a background for our study of the potential and prospects for economic integration within the Arab region, this chapter will give a critical account of the attempts at regional economic cooperation and integration among the Arab countries of the Middle East since the early 1950s.^{6/} It is important to note that although these attempts were mostly conceived within the framework of the League of Arab States, and more recently within the framework of the CAEU and other regional organisations, they involved mostly the countries covered in this study. This in itself supports the choice of geographic coverage of the study. However, our concern will be with the general economic reasons which rendered these attempts ineffective. But an important aspect of the chapter will be to indicate that the vast capital surpluses accruing to the oil countries are rapidly becoming a vital factor in promoting the idea of economic integration, but what is lacking now is a coherent and well-defined strategy for integration.

Framework of Economic Regionalism

The search for regional economic organisation in the Arab World started with the establishment of the League of

^{6/} The distinction between "cooperation" and "integration" is based on the proposition that the former aims at reducing discriminatory measures among a group of countries, while the latter aims at suppressing such measures to create a "transnational economy".

Arab States in 1945. Article II of the Charter of the League provides that

"the League ... has also as its purpose the close cooperation of the member-states, with due regard to the organisation and circumstances of each state, on the following matters: (a) economic and financial affairs, including commercial relations, customs, currency, and questions and agriculture and industry; and, (b) communication; this includes railroads, roads, aviation, navigation, telegraphs, and mail". 7/

Further, Article IV of the Charter provides

"For each of the questions listed in Article II, shall be set up a special committee in which the member states shall be represented. The committees shall be charged with the task of laying down the principles and extent of cooperation. Such principles shall be formulated as draft agreements, to be presented to the Council [of the League] for examination preparatory to their submission to the aforesaid states."

However, the search for economic regionalism did not gather momentum until the conclusion of the Arab Joint Defence and Economic Cooperation Pact of 1950. This Pact provides for cooperation among the member-states in the exploitation of natural resources, expansion of mutual trade, and coordination of economic activities. In accordance with Article VIII of this Pact, the Arab Economic Council (AEC) was set up in 1953. This Council which was given an autonomous status within the Arab League in 1959, comprises the Arab ministers of economy and finance. As will be revealed later, the AEC acted as a

7/ For a documentary record of the League of Arab States, see Muhammad Khalil, The Arab States and the Arab League, Vols. I and II (Beirut: Khayats, 1962).

forum for negotiating many of the agreements which now govern Arab economic cooperation and integration.^{8/}

The first landmark in Arab economic cooperation dates back to 1953 when the first multilateral agreement for facilitating trade exchanges and regulating transit trade was signed.^{9/} This agreement was geared to integrate the markets of the contracting-countries.^{10/} It went as far as exempting almost all Arab agricultural commodities from tariff barriers, and granting certain industrial goods tariff reductions amounting to 25 or 50 per cent (as prescribed in the lists annexed to the agreement). But the agreement contained escape clauses (covering "goods subject to government monopoly" and goods which any government may decide to ban completely), and suffered from a great number of built-in defects. It did not contain flexible provisions to ensure its development, either

^{8/} The AEC has been criticised for not having a plan or a policy for the development of a pattern for regional cooperation. The choice of cooperation agreements by the AEC was rather accidental, without any system of either priority or logical sequence. This was partly due to the lack of planning on the part of the Arab League Secretariat, and partly to the lack of response from the Arab States. See Burhan Dajani, Regional Cooperation of Arab States in the Field of Industrial Development, UNESOB-UNIDO-IDCAS, Inter-Regional Seminar on Selected Aspects of Industrial Policy, Beirut 4-15 January 1971, ID/WG. 86/7, 16 November 1970, p. 13.

^{9/} No attempt will be made in this study to examine the bilateral agreements concluded between the various Arab countries. The focus is on multilateral agreements involving three or more countries. As a matter of principle, the Arab League encouraged multilateral relations among the Arab States, but did not object to bilateral relations which could enhance the prospects for broader relations.

^{10/} The agreement was ratified by Egypt and Jordan (1953), Iraq, Lebanon, Saudi Arabia and Syria (1954), and Kuwait (1961).

by adding new goods to the lists or by increasing the rate of tariff-preference. Also it did not contain the appropriate provisions for settling payments arising from the exchange of goods, and more importantly, it allowed for the imposition of administrative (quantitative) restrictions on trade exchanges when deemed necessary by the contracting-countries. The agreement did not interfere in the level of tariffs applied by the contracting-countries, and hence it was significant only in the case where the tariff was so high as to make the tariff-preference substantial.^{11/}

On the whole, the agreement proved to be of some practical significance to the countries which at the time had no exchange control and other non-tariff barriers (i.e. Lebanon, Jordan, Saudi Arabia and Syria), especially as tariff preferences and exemptions were superior to those of the bilateral agreements concluded earlier. In fact this agreement was viewed against the trading arrangement inherited from the mandatory rule, which collapsed through the creation of independent customs regimes and the conclusion of several bilateral trade agreements.^{12/} However, the re-emergence of

^{11/} For a more elaborate discussion of these defects, see Dajani, op. cit., pp. 14-16.

^{12/} One of these arrangements was the de facto free trade area between Syria, Lebanon, Palestine and Transjordan which came to an end in 1948. Another arrangement was the Libano-Syrian customs union which was subjected to severe strain after the independence of the two countries in 1946, and was dissolved in 1950. Incidentally, a Syrian proposal to re-establish the customs union and create a legal basis for it was made in a joint economic meeting held in Chtaura (Lebanon) on 17 November 1954, but Lebanon was not receptive to the idea. The text of this proposal was published in the Economic Bulletin of the Damascus Chamber of Commerce, No. 1, 1955, pp. 119-137 (in Arabic).

bilateral agreements with still better provisions soon undermined the above agreement. In addition, the rise of restrictive trade policies and state trading (in Egypt and later on in Syria and Iraq) made non-tariff barriers more significant in determining the pattern and direction of foreign trade.^{13/}

The need to introduce drastic changes into the agreement or to replace it by a new one became obvious in the late 1960s, and caused heated discussions within the AEC. While Iraq favoured the amendment of the agreement so as to meet the changing situation and lead eventually to market integration, Egypt favoured a much more ambitious scheme which is the Agreement of Arab Economic Unity, drafted by a team of experts in Bhamdoun (Lebanon) back in 1956. This issue was not totally resolved until April 29, 1964, when the Agreement of Arab Economic Unity came into force after being signed and ratified by Egypt, Syria, Iraq, Jordan, and Kuwait.^{14/} However, this did not affect the existence of the multilateral trade agreement.

Article I of the Arab Economic Unity Agreement provides for the creation of a full economic union which would

^{13/} Between 1954 and 1959 the agreement was amended four times to add a small number of industrial goods to the lists subject to a tariff-preference. In 1960, a protocol was signed (but not ratified by all countries) according to which the addition or deletion of goods can be effected through administrative decisions by the contracting-countries, without the need of ratification by the national legislative authorities. See League of Arab States, Department of Economic Affairs, Report on the Activities of the Arab League in the Economic Field, 1945-71, Cairo, 1971, p. 21. (in Arabic).

^{14/} Morocco signed but did not ratify the agreement.

ensure for the member-states and their citizens on equal basis the following:^{15/}

- (a) freedom of movement of individuals and capital;
- (b) freedom to exchange domestic and foreign goods;
- (c) freedom of residence, work, employment, and practice of economic activity;
- (d) freedom of transport, transit and the use of means of transport, seaports and civil airports; and,
- (e) freedom of ownership, bequeath and inheritance.

To achieve economic unity among the Arab States, Article II of the agreement provides that the member-states should undertake to make their countries one customs area, subject to one administration, and unify customs tariffs, legislations, and regulations which are applied in every one of them. The above Article provides also that the member-states should coordinate their policies in the fields of agriculture, industry and domestic trade and unify their economic legislations so as to ensure equal opportunity for all citizens engaged in agriculture, industry and services. In accordance with Article II of the agreement, a permanent body called the Council of Arab Economic Unity (CAEU) is established to elaborate the successive stages towards economic

^{15/} As an aid to the reader, the full text of the agreement is presented in English in Appendix "A".

unity and to follow-up their implementation. It comprises the representatives of the member-states, and its decisions are taken by a two-thirds majority vote.^{16/} The Council is supported in its work by technical committees and sub-committees, and the General Secretariat which is based in Cairo, Egypt.

As a first step towards the realisation of an Arab economic union, the CAEU adopted on August 13, 1964, Resolution No. 17 establishing the Arab Common Market (ACM). Only four of the member-countries, namely, Jordan, Iraq, Syria and Egypt, ratified the Resolution. Kuwait refrained from approving this Resolution, fearing that it might jeopardise its trading interests with the outside world. The ACM was scheduled to come into effect on January 1, 1965, and to complete trade liberalisation through gradual elimination of tariff and non-tariff barriers within five years for agricultural products and ten years for industrial goods produced in the member-countries.^{17/} Under resolution No. 372 adopted in May 1968, the time span for trade liberalisation was reduced by three years, and the free trade area envisaged became effective as from January 1, 1971.

It ought to be mentioned that the member-countries were reticent about trade liberalisation. They resorted heavily to the escape clause provided for in the ACM Resolution,

^{16/} All decisions of the CAEU must be ratified by the national legislative authorities in order to become binding. Within the Arab League decisions are binding only if taken unanimously.

^{17/} In formulating the trade liberalisation programme the CAEU took into consideration the tariff reductions and exemptions accorded by the multilateral trade agreement of 1953.

which allows, upon the approval of the CAEU and for a period not extending beyond the final stage of trade liberalisation, the exclusion of certain products from liberalisation. To justify such attitudes, the member-countries pointed out that the CAEU has not yet completed the studies concerning the coordination of economic plans and that in the absence of an Arab payments union freeing of intra-Arab trade would lead to payments difficulties.^{18/}

Various measures were adopted by the CAEU in an attempt to transform the free trade area into a common market. Among these measures were the approval of a draft of a unified customs law, and of an approach to the problem of setting external tariffs.^{19/} It also approved agreements for facilitating the movement of labour and capital as well as the exchange of investments among the member-countries. In the field of fiscal cooperation, it adopted an agreement on the avoidance of double taxation and tax evasion and an agreement on cooperation in tax collection. It also stressed the need for industrial coordination, and held two extraordinary sessions at the level of the Arab ministers of planning in 1970 and 1971. Among the basic industries selected by the CAEU for study were: fertilizers; iron and steel; petrochemicals; paper, pulp and synthetic silk; agricultural machinery and tractors;

^{18/} Ahmad El-Ghandour, "Economic Cooperation and Integration Efforts in Selected Countries of Western Asia", in ECWA, Studies on Development Problems in Countries of Western Asia, 1974, United Nations, New York, 1975, p. 37.

^{19/} To overcome this problem, the CAEU Secretariat suggested to begin with the unification of the external tariffs on primary products as the national tariffs do not vary widely.

spinning and weaving; and, pharmaceuticals.

However, all these measures remained without any significance on the practical level, and one can say that the CAEU had a dismal record of attainment during the first decade of its existence. Although its membership was enlarged in recent years,^{20/} the free trade area remains confined to the original members and proved to be of limited significance on trade expansion and growth. To understand the reasons behind this phenomenon, it is necessary to examine closely the magnitude and composition of intra-ACM trade. But to place this trade in its broader perspective, the salient features of intra-regional trade will first be examined briefly.

A corollary of the predominance of Arab trade with the developed market economies (i.e. Western Europe and the United States) is the small share of intra-Arab trade in total trade. Although there has been some expansion in intra-regional trade during the 1960s and the early 1970s, the respective shares of intra-regional exports and imports remained modest. During the period 1971-76, intra-regional exports accounted no more than 5 per cent of total exports, while intra-regional imports accounted no more than 10 per cent of total imports. However, the economic structure and nature of import and export requirements make intra-regional trade of more importance for some countries than for others.

^{20/} The members which joined the CAEU after its creation are the Sudan, Yemen, Democratic Yemen, the United Arab Emirates, Libya, Somalia, Mauritania, and Palestine.

Ostensibly, the regional market is of minor importance to the oil exporting countries. During 1971-73, it accounted for an annual average of about 4 per cent of total exports in the case of Iraq and for much lower rates in the other oil countries. In contrast, the regional market absorbed during the above period a large annual average share of the exports of Jordan (52 per cent), Lebanon (44 per cent), Yemen 31 per cent), and Syria (18 per cent). On the import side, the general pattern is the same although differences among countries are less acute. During the period under review, the oil countries depended on the region in varying degrees, ranging between 8 per cent in the case of Kuwait and 0.1 per cent in the case of Oman. Jordan, Syria, Lebanon and the two Yemens depended on the region for imports ranging between one-fifth and one-fourth of the respective total imports.

Table 4.1 gives the matrix of intra-Arab trade during 1976. The distribution of this trade corroborates the importance of the regional market for a selected group of countries; namely, Syria, Lebanon and Jordan. Basically, this importance is accounted for by the resource endowments of these three countries, and their complementarity with respect to agricultural production. It is only in the case of Lebanon that a growing proportion of regional exports consists of light industrial goods mainly destined to Saudi Arabia and the Gulf

TABLE 4.1

Matrix of Intra-Arab Trade, 1976
(In Million \$)

To From	Bahrain	Egypt	Dem. Yemen	Iraq	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Syria	Sudan	UAE	Yemen	TOTAL
Bahrain	-	-	2.1	4.3	-	6.5	-	10.5	8.4	167.6 ^{a/}	-	-	84.5	1.5	285.4
Egypt	0.4	-	0.1	14.3	26.1	0.7	10.8	-	1.0	23.0	11.3	9.7	1.7	2.1	101.2
Dem. Yemen	-	-	-	-	-	-	0.1	-	-	0.4	-	-	0.1	11.0	11.6
Iraq	-	4.9	-	-	21.2	4.9	33.9	-	0.2	3.1	21.5	68.6	2.0	0.7	161.0
Jordan	0.2	3.6	-	7.6	-	9.9	5.0	-	1.1	22.5	19.3	0.3	-	-	69.5
Kuwait	-	9.0	-	67.0	4.0	-	-	-	-	-	11.0	23.0	58.0	47.0	219.0 ^{b/}
Lebanon	2.8	72.2	1.6	37.0	20.1	36.2	-	1.1	2.0	1.8	42.4	11.5	21.4	0.1	250.2
Oman	-	-	-	0.1	-	-	-	-	-	0.5	-	-	0.4	-	1.0
Qatar	3.5	0.1	-	0.2	-	0.1	0.8	-	-	8.9	-	-	1.7	-	15.3
S. Arabia	639.0 ^{b/}	9.0	-	-	16.0	9.0	25.0	-	4.0	-	71.0	1.0	87.0	43.0	904.0
Syria	0.2	22.4	1.1	9.0	21.2	3.6	3.8	-	0.8	45.1	-	0.2	1.2	-	108.6
Sudan	-	18.8	2.0	2.1	3.0	0.7	1.3	-	-	10.7	3.8	-	1.1	-	43.5
U.A.E.	12.0	1.3	0.9	0.9	1.3	16.6	0.8	33.2	64.7	90.1	1.2	0.3	-	3.0	226.3
Yemen	-	-	2.1	-	-	-	-	-	-	1.3	-	-	-	-	3.4
All Countries	658.1	141.3	9.9	142.5	112.9	88.2	81.5	44.8	82.2	375.0	181.5	114.6	259.1	1108.4	2400.0

a/ mainly refined oil products.

b/ mainly crude oil.

Sources: Compiled from national foreign trade yearbooks of the respective countries.

countries.^{21/} However, as will be emphasised below the limited basis for trade in the region can be attributed to the low level of development as well as the general trend towards self-contained industrial development.

Turning to intra-ACM trade, Table 4.2 reveals that this trade lagged considerably behind growth in total trade after 1970, on the export and import sides. Intra-ACM exports, after increasing from 6.2 per cent of total ACM exports in 1964 to 10.6 per cent in 1970, declined to 5.8 per cent in 1975. Similarly, intra-ACM imports, after increasing from 2.8 per cent to 4.8 per cent, declined to 1.8 per cent, respectively. It is of interest to note that the changes in intra-ACM exports and imports resulted in the aggravation of the deficit incurred in the trade balance of each of the member-countries with the remaining members. This is of special significance to Egypt which recorded a surplus in its balance of trade with the other ACM members during 1964-70.

Table 4.3 shows intra-ACM exports in selected major commodities in 1975. Although the list of commodities is not exhaustive, it makes it clear that there is little overlapping

^{21/} An important aspect of industrial development in Lebanon has been the growing share of industrial exports in overall exports. In 1974, industrial exports reached LL 846 million, against LL 444 million in 1973 (an increase of 91 per cent). Almost 90 per cent of these exports were destined to the neighbouring Arab countries, especially Saudi Arabia which absorbed about one-third of total. See Elias Gbantus, A Survey on the Present Situation of the Lebanese Economy and the Plans for Its Reconstruction, Japanese Embassy in Beirut, March 1978, (unpublished study).

TABLE 4.2

Intra-Arab Common Market Trade,
1964-1975

(in 000 \$)

	Egypt	Iraq	Jordan	Syria	TOTAL	% of ACM World trade
<u>Exports</u>						
1964	4,418	3,082	4,353	13,702	25,555	6.2
1968	15,486	9,736	7,501	19,586	52,309	11.0
1970	23,570	14,196	8,403	20,087	66,256	10.6
1973	18,821	20,859	12,273	25,059	77,012	7.6
1974	23,784	19,590	18,257	31,216	92,847	5.9
1975	24,652	16,780	21,390	46,756	109,578	5.8
<u>Imports</u>						
1964	770	11,673	12,821	23,440	48,704	2.8
1968	8,922	15,669	12,185	27,050	63,826	4.2
1970	14,649	18,500	15,540	38,793	87,482	4.8
1973	20,010	17,326	34,720	44,381	116,437	4.2
1974	23,962	30,291	43,780	59,001	157,034	2.1
1975	36,281	40,982	39,785	73,655	190,703	1.8
<u>Balance of Trade</u>						
1964	+3,648	-8,591	-8,468	-9,738		
1968	+6,564	-5,933	-4,684	-7,464		
1970	+8,921	-4,304	-7,137	-18,706		
1973	-1,189	+3,533	-22,448	-19,322		
1974	-178	-10,701	-24,523	-27,785		
1975	-11,629	-24,202	-18,395	-26,899		

N.B.: Export figures exclude Iraqi oil, Syria and Egyptian cotton, and Jordanian phosphates, which are mostly destined to world markets.

Source: Compiled from data given in CAEU, General Secretariat, Annual Report on Arab Foreign Trade, 1975, Cairo (in Arabic).

Intra-ACM Exports in Selected Major Commodities, 1975
(in thousands of \$)

Exports From	Egypt	Iraq	Jordan	Syria	TOTAL	Percentage composition
<u>Food, drink & Tobacco</u>						
Live animals	-	-	-	2,858.0	2,858.0	3.3
Onions	-	-	22.0	337.0	359.0	0.4
Potatoes	166.0	-	6.3	100.5	272.8	0.4
Lentils	-	-	50.1	4,938.1	4,988.2	5.8
Tomatoes	-	-	1,355.4	-	1,355.4	1.6
Cucumbers	-	-	50.1	-	50.1	0.0
Other vegetables	-	-	1,330.3	-	1,330.3	1.6
Citrus fruit	-	-	594.7	-	594.7	0.7
Chickpeas	-	-	-	598.6	598.6	0.7
Melons	63.9	-	78.3	317.0	459.2	0.6
Rice	2,087.9	-	-	-	2,087.9	2.4
Almonds	-	-	403.8	-	403.8	0.5
Bananas	63.9	-	153.4	-	217.3	0.2
Dates	-	3,374.4	-	-	3,374.4	3.9
Peanuts	92.0	-	-	-	92.0	0.1
Apricot paste (Kamar-uddin)	-	-	-	1,150.0	1,150.0	1.3
Sugar confectionery	107.3	-	169.0	-	276.3	0.3
Preserved vegetables	378.2	-	-	-	378.2	0.5
Vegetable oil	-	493.2	-	-	493.2	0.6
Olive oil	-	-	90.8	-	90.8	0.1
Beer	-	-	118.9	-	118.9	0.1
Cigarettes and tobacco	-	81.8	325.5	1,998.9	2,406.2	2.8
Sub-Total	2,959.2	3,949.4	4,748.6	12,298.1	23,955.3	27.9

(Continued)

<u>Raw Materials</u>					
Marble, raw	-	319.3	-	319.3	0.4
Asphalt	-	118.9	-	743.9	0.9
Hides and skin	-	1,061.1	-	2,915.5	5.3
Wooden products	-	-	398.6	398.6	0.5
Wool, raw	-	-	1,428.6	4,843.5	5.7
Cotton, raw	-	-	19,678.6	19,678.6	22.8
Plastic paste	-	610.0	-	1,782.1	2.0
Iron and steel	580.1	-	-	580.1	0.7
Raw lead	-	701.0	-	701.0	0.8
Oilseeds	40.9	-	-	40.9	0.0
Dying materials	470.2	87.8	-	558.0	0.6
Sub-Total	1,091.2	7,154.2	2,810.3	21,505.8	37.8
<u>Fuels</u>					
Benzine	-	1,101.2	-	1,101.2	1.3
Liquid gas	-	1,428.8	-	1,428.8	1.6
Sub-Total	-	2,530.0	-	2,530.0	2.9
<u>Manufactures</u>					
Cement	171.2	-	798.2	969.4	1.1
Paper and paper products	-	-	889.0	889.0	1.0
Plastic products	-	-	1,330.3	1,330.3	1.6
Pharmaceuticals	447.2	-	2,404.0	2,851.2	3.3
Clothing	628.7	216.2	1,264.6	3,634.4	4.2
Blankets (cotton & wool)	-	40.5	134.6	175.1	0.2
Fabrics (cotton & synthetic)	230.0	-	2,197.4	4,013.1	4.7
Cotton fibres	2,195.2	-	25.0	2,470.7	2.9
Foot-wear	-	-	212.9	212.9	0.3

(Continued)

Soap	-	135.1	-	-	-	135.1	0.1
Glassware	-	-	-	-	137.8	137.8	0.2
Nitrogenous fertiliser	-	20.3	-	-	20.3	20.3	0.0
Shaving cream	-	91.2	-	-	91.2	91.2	0.1
Butagas cookers	-	81.1	-	153.4	234.5	234.5	0.3
Heaters (electrical & others)	-	270.2	-	228.5	498.7	498.7	0.6
Zinc products	-	-	-	541.5	541.5	541.5	0.6
Elevators	-	-	-	435.1	435.1	435.1	0.5
Batteries	-	-	-	400.7	400.7	400.7	0.5
Electric wires	38.3	-	-	-	38.3	38.3	0.0
Chemicals	54.1	-	-	-	54.1	54.1	0.0
Motors for trucks	112.4	-	-	-	112.4	112.4	0.1
Tractors	-	27.0	-	-	27.0	27.0	0.0
Bicycles	-	81.1	-	-	81.1	81.1	0.1
Refrigerators	370.6	-	-	-	370.6	370.6	0.4
Television sets	286.2	-	-	-	286.2	286.2	0.4
Buses and cars	7,053.4	-	-	-	7,053.4	7,053.4	8.2
Sub-Total	11,587.3	962.7	11,015.2	3,498.9	27,064.1	27,064.1	31.4
GRAND TOTAL	15,637.7	14,596.3	18,574.1	37,302.8	86,110.9	86,110.9	100.0

Source: As for Table 4.2.

in exports. This suggests that exports consist of commodities which the other members do not produce or export. About 28 per cent of total intra-ACM exports consisted of food items, with Syria contributing about 51 per cent of these items, followed by Jordan (20 per cent), Iraq (16.5 per cent), and Egypt (12.5 per cent). Raw materials accounted for about 38 per cent of total intra-ACM exports, of which two-thirds was contributed by Syria (mostly raw cotton). Fuels which accounted for 3 per cent were supplied totally by Iraq. As to manufactures which accounted for 31 per cent of total intra-ACM exports, about 43 per cent of them was contributed by Egypt, 41 per cent by Jordan, 13 per cent by Syria, and only 3 per cent by Iraq.

A number of economic and non-economic factors are responsible for the relatively poor performance of intra-ACM trade.^{22/} In fact, the experience of the CAEU in the context of the ACM produces a new evidence that in a developing setting mere trade liberalisation fails to bring about any significant expansion in the exchange of goods. On the basis of the above figures, it can be noticed that trade liberalisation after 1970 became continually less significant and most of the intra-ACM (about 70 per cent) consisted of traditional exports. The low share and composition of manufactures exchanged within

^{22/} For other studies on intra-regional trade, see Rodney Wilson Trade and Investment in the Middle East (London: Macmillan, 1977), Chapter V; Samir A. Makdisi, "Arab Economic Cooperation", in Roberto Aliboni (ed.), Arab Industrialisation and Economic Integration (London: Croom Helm, 1979), pp. 90-130; and, H. Askari and J. Cummings, "The Future of Economic Integration Within the Arab World", International Journal of Middle East Studies, Vol. 8, No. 3, July 1977, pp. 289-315.

the ACM suggest that trade liberalisation has not been significant from the point of view of contributing to the process of economic development, through stimulating industrial growth, utilising idle capacity, making use of large-scale economies and overcoming foreign exchange constraints. As will be argued in a later chapter, the parallel development of industry among the Arab countries in general and the ACM countries in particular, leaves little scope for trade exchange in a static context and renders market integration undesirable to the less efficient partner since it would no longer be in a position protect its industries against imports from the more efficient partner.^{23/} Even when assuming that the partner countries are at the same level of industrial development, one partner may be in terms of economic size and resources more capable than the others in exploiting the opportunities for development emerging from market integration. It is mainly on these grounds that the ACM countries resorted frequently to bilateral and even trilateral arrangements amongst themselves to specify the volume of exchanges and the means of payments. This was facilitated by the fact that state trading prevails in three of the member-countries (Egypt, Syria and Iraq).^{24/} These arrangements undermined considerably the unity of the

^{23/} Moreover, in the case of a common market, trade diversion makes the less efficient partner "subsidise" expanded employment and income generation in the more efficient partner, and this strains the balance of payments position of the former and decreases its real income.

^{24/} For an excellent account of the operations of state trading organisations in these and other Arab countries, see Mohamed K. Anous, Cooperation Among State Trade Organizations of Arab Countries, UNCTAD, TD/B/C.7/37, 11 October 1979.

ACM scheme.

It cannot be denied that political and ideological rifts between the Arab countries in general and the ACM countries in particular exerted unfavourable effects on economic cooperation and integration. Conversely, political rapprochement between some of these countries and for some periods of time, triggered various bilateral schemes and agreements for economic cooperation.^{25/}

Against this background, it is comforting to observe that a more realistic approach is being cultivated among the Arab countries. There is a growing awareness on their part that economic fragmentation hinders their development and progress as well as their ability to resist outside pressures. They seem now to appreciate more the need to develop a system of collective self-reliance which embraces in addition to the economic field areas of vital importance.^{26/} Not only factor

^{25/} Political considerations could be vital in determining the level of economic relations. Reference is often made to the sharp increase in trade between Syria and Egypt following their political merger in the United Arab Republic in 1958. Paradoxically, economic factors were of crucial importance in the dissolution of the union in September 1961. See E. Kanovsky, "Arab Economic Unity", Middle East Journal, Vol. 21, No. 2, Spring 1967, pp. 215-216; and, Ragaei El-Mallakh, "Economic Integration in the United Arab Republic: A Study in Resources Development", Land Economics, Vol. 36, No. 3, 1960, pp. 252-265.

^{26/} For example, Saudi Arabia, Kuwait, the United Arab Emirates, and Qatar agreed to set up in Egypt the Arab States Military Industrial Organisation with an initial capital of \$ 1 billion. Before its dissolution in 1979, the Organisation was producing some weapons mostly under licence. For a background, see The Economist, June 28, 1975, p. 67.

endowment in the Arab region speaks for the creation of such a system. The initiative taken by some of the oil countries to earmark sizeable margins of their capital surpluses for development purposes in other Arab countries is becoming rapidly a key factor in promoting the idea of regional collaboration and integration.

Capital As An Integrating Factor

After the dramatic increase in oil revenues, especially since 1973, the Arab World became more than a "geographical expression". Being faced with the challenge of absorbing and managing efficiently their capital surpluses, the oil countries have acted to channel some of these surpluses to other Arab countries, either in the form of loans and aid for development purposes or in the form of budget-support.^{27/} This has not only made the Arab markets among the fastest-growing markets in the developing world, but also broadened the scope for development, nationally and regionally. A recent survey of ECWA remarks that

^{27/} It is thought that substantial capital flows have been effected since 1967 to Egypt, Syria and Jordan (the countries directly involved in the Middle East conflict). But these do not appear in published material, and can be considered either military or economic aid, to the extent that military aid can replace resources which the receiving countries would otherwise have had to use for economic purposes. See Y.A. Sayigh, The Determinants of Arab Economic Development, Vol. I, (London: Croom Helm Ltd., 1978), p. 696.

"Cooperation in the financial field has constituted the more salient aspect of regional cooperation in recent years. Such cooperation has become increasingly motivated by a sense of moral commitment to overall regional prosperity and the reduction of disparities among member countries, in contrast to an earlier emphasis on security and political considerations." 28/

It is difficult to ascertain the magnitude of the financial flows within the Arab region, given that most of the private transfers and some of the public transfers are not well-publicised. By all measures, the financial flows from the oil to the non-oil countries in the Arab region are sizeable and have reached unprecedented levels after 1973.^{29/} In 1976, the five surplus countries (i.e. Iraq, Kuwait, Qatar, Saudi Arabia and UAE) provided the other Arab countries in the region with bilateral concessional assistance (net disbursements) amounting to \$1321.8 million, against \$1173.1 million in 1975. This represented 36.6 and 28.2 per cent, respectively, of the total assistance provided by these

28/ ECWA, Development Planning Division, Survey of Economic and Social Developments in the ECWA Region, 1976-77, Beirut, May 1978, p. 86.

29/ Total financial flows from the surplus countries in the region rose from \$1.28 billion in 1973 to \$4.27 billion in 1974 (an increase of 235 per cent immediately after quintupling oil prices), and to \$6.21 billion in 1976. In 1976, Saudi Arabia accounted for 45 per cent of these flows, followed by Kuwait (30 per cent), the UAE (19 per cent), Qatar (4 per cent), and Iraq (2 per cent). Expressed as a percentage of GNP, the financial flows in 1976 were 7.04, 11.50, 11.45, 10.37, and 0.75 for the above countries respectively. See OECD, Development Cooperation, 1977 Review; and, CAEU, Official Financial Assistance to Developing Countries From Arab Countries Members of OPEC, 1973-76, a paper prepared by UNCTAD Secretariat, December 1977, Cairo.

countries to developing countries. Egypt, which is not accounted for in the above percentages, received \$1872.8 million in 1975 and \$1028.2 million in 1976. In 1976, four of the Gulf states formed the so-called Gulf Organisation for the Development of Egypt (GODE) which has already financed or guaranteed a flow approaching \$2000 million.

No doubt that this assistance was of some help to the deficit countries in meeting their foreign exchange requirements for development. According to a study prepared by ECWA in 1974, the total foreign capital needs of the six deficit Arab countries in its region (i.e. Jordan, Lebanon, Oman, Syria and the two Yemens) for development during the period 1971-75 were estimated at about 2 billion dollars, with Jordan and Syria accounting for the larger part of this deficit (\$0.8 and \$0.5 billion, respectively).^{30/} Of course, the capital needs of the above countries have grown rapidly in recent years, and could be estimated at about 6 billion dollars during the period 1976-80. Assessing the state and prospects of intra-regional capital flows Sayigh writes:

"... in spite of the inadequacy of Arab flows inside the region, these flows have become much more substantial, and promise to grow further in volume, using many new forms and modalities. Before long, Arab capital flows should make it unnecessary for capital-short countries to seek aid from sources external to the region." ^{31/}

^{30/} ECWA, Regional Finance Availabilities and the Capital Needs of Various Countries in Western Asia, 1971-75, ECWA/DDP/L.1, July 1974.

^{31/} Sayigh, op. cit., p. 690.

To understand how the regional availability of capital is influencing and will continue to influence for some time to come the process of economic integration in the Arab region, it is necessary to examine the various institutional measures taken by the Arab countries, individually and collectively, to channel capital surpluses. The promising aspect of these measures is that they carry with them bilateral and/or multilateral financial flows which can play a catalytic role in the process of economic integration. As such these flows tend to be more appealing to the countries concerned as a means for integration than the mere removal of discriminatory measures or the coordination of existing economic policies.

Unilateral Institutions

After attaining its political independence, Kuwait was desirous to strengthen its relations with the Arab World and for that purpose it set up in 1961 a regional example by establishing the Kuwait Fund for Arab Economic Development (KFAED).^{32/} The initial capital of the Fund amounted to KD 50 million, which was increased to KD 200 million in 1966 and to KD 1000 million (about \$3400) in 1974, when the Fund's area of activity was extended to include all developing countries. As stated in its Charter, the purpose of the Fund is

^{32/} For a detailed study of KFAED, see Soliman Demir, The Kuwait Fund and the Political Economy of Arab Regional Development (New York: Praeger, 1976). Also see Robert Stephens, The Arabs New Frontier (London: Temple Smith, 1976).

"to assist Arab and other developing States in developing their economies and, in particular, to provide such States with loans for the implementation of their development programmes, in accordance with the provisions of this Charter". 33/

During the period 1962-76, KFAED's loans were spread among 14 Arab countries in Asia and Africa. These loans totalled KD 245.3 million, of which KD 159.1 million went to the Arab countries covered in this study. Table 4.4 reveals that there is a heavy concentration on infrastructure in total commitments to the countries in the region, with industry and agriculture coming second. The emphasis on infrastructure can be explained by the point made earlier that the process of economic development hinges much on the creation of such facilities. Furthermore, since infrastructural facilities are not directly productive they are likely to claim more of the capital borrowed on concessional terms.

The establishment of a similar fund had to wait until 1971, when the Abu Dhabi Fund for Arab Economic Development (ADFAED) was launched.^{34/} The initial capital of the Fund amounted to 50 million Bahraini dinars (\$105 million), but was increased to 2,000 million Emirates dirhams (\$500 million) in 1974 to extend its operations to all developing countries in Asia and Africa. Unlike KFAED, the ADFAED is entitled in accordance with its charter to participate directly in projects

33/ KFAED, Law and Charter (Law No. 25, 1974, for the reorganization of the Fund), no date.

34/ ADFAED was enacted by Law No. (3) 1971. Abu Dhabi is the wealthiest among the seven Emirates forming the UAE.

TABLE 4.4

KFAED: Sectoral Distribution of Loans to Arab Countries
During 1st January 1962 to
30th June 1976

(in 000 KD)

Country	Agriculture	Transport, Communi- cation & Storage	Electricity	Industry	TOTAL	Percentage
<u>Countries covered in the study</u>						
Jordan	6,480	-	3,260	6,980	16,720	10.5
Bahrain	-	500	7,350	1,490	9,340	5.9
Egypt	-	27,800	10,000	13,700	51,500	32.4
Syria	-	7,000	9,900	2,000	18,900	11.9
Iraq	-	-	2,620	3,760	6,380	4.0
Lebanon	-	800	1,600	-	2,460	1.5
Yemen	5,020	1,780	-	3,000	9,800	6.1
Democratic Yemen	4,530	4,500	-	-	9,030	5.7
Sudan	20,310	7,000	-	7,670	34,980	22.0
Sub-Total	36,340	49,380	34,790	38,600	159,110	100.0
Sectoral percentage	22.8	31.0	21.9	24.3	100.0	
Other Arab countries*	21,250	33,150	18,050	13,700	86,200	
Grand total of loans	57,590	82,530	52,840	52,350	245,310	

* Tunisia, Algeria, Somalia, Morocco, and Mauritania.

Source: Compiled from KFAED, 14th Annual Report, 1975/76, Kuwait, p. 106 (in Arabic).

through equity financing. The Fund's total loan commitments by the end of June 1975 amounted to Dh 865 (\$215 million), and its equity participation in capital Dh 24 million. The terms of loans differ according to the type of project involved, as is the case with KFAED. For industrial and tourism projects, the interest rate is 4.5 per cent, the grace period being four years and the maturity period 14 years; for electric power projects the corresponding terms are 3.5 per cent, 4 years and 17 years; and for infrastructural projects 3 per cent and 5 and 20 years. All loans are subject to a 0.5 per cent administrative charge.

In 1974, two similar funds were established by Saudi Arabia and Iraq. The Saudi Fund for Development (SFD) started its operations in April 1975, as an agency for the government entrusted with the provision of project-lending to developing countries.^{35/} Its capital was fixed at SRls 10 billion (about \$2.84 billion). To be eligible for lending, a project must contribute to the economic and social development of the recipient country, and be significant in terms of its priority over other projects and its integration with other economic activities in that country. There must also be sufficient supplementary sources of finance to cover the full costs of the project. For the fiscal year ending June 1976, SFD signed and committed loans in the amount of SRls 3.85 billion

^{35/} SDF was chartered under Royal Decree No. M/48, dated September 1, 1974, as a legal entity with autonomous financial status.

"affecting some 400 million people in 23 developing countries".^{36/}

The share of the Arab countries covered in this study was about SRls 846 million (or 36 per cent) of total loans committed.

The countries concerned were only three, with Syria being promised loans totalling SRls 550 (mainly for port expansion, electricity, and highway projects including the Damascus-Lebanese highway); Yemen SRls 140 million (for electricity, silo project, and livestock development project); and, Bahrain SRls 100 million (for hydroelectric power station).

The Iraqi Fund for External Development (IFED) started its operations very recently and there are no details on its activities.^{37/} Its capital is ID 50 million (\$169 million), and it has a borrowing capacity of twice the amount of the capital and reserves. This Fund is specifically conceived as a means for achieving the economic integration and development in the Arab countries. Article II of the Fund's Law, states that the main purpose of the Fund is to finance part of the development plans of the Arab and developing countries through the following:

- (a) The provision of medium- and long-term concessional loans to development projects in other Arab and developing countries with priority given to projects which are of vital importance to the development of the countries concerned;

^{36/} The breakdown of loans by project type was: 71 per cent for development of infrastructure; 18 per cent for agricultural projects; and 11 per cent for health and education. The geographic distribution of the loans was: 45 per cent in Africa; 52 per cent in Asia; and, 3 per cent in others. Kingdom of Saudi Arabia, The Saudi Fund for Development Annual Report 1975/76.

^{37/} IFED was created under Law No. 77, dated 6 June 1974.

- (b) Participation in development projects, especially those of an investment nature, priority being given to projects which help bring about Arab economic integration; /emphasis added/
- (c) The encouragement of the investment of public and private capital, directly or indirectly, in development projects;
- (d) The provision of technical assistance to developing countries in all fields where problems are experienced in connection with economic development; and,
- (e) The financing of pre-feasibility and feasibility studies.

Multilateral Institutions

In point of fact, Kuwait has displayed a judicious patronage of Arab economic integration. Upon the proposal of KFAED the Kuwaiti Government suggested in 1967 the creation of the Arab Fund for Economic and Social Development (AFESD). The idea of this Fund was prompted after the Middle East war of June 1967, by the desire to aid the Arab countries which were directly involved in that war (i.e. Egypt, Syria and Jordan). This aid was taken care of by the famous "Khartoum Agreement" ^{38/} and the Kuwaiti proposal continued to receive attention and support as being an institutional measure for assisting in Arab development and reconstruction, as has been

^{38/} This agreement was reached at the Arab Summit Conference held in Khartoum following the June 1967 war. It provided for financial assistance from Kuwait, Libya and Saudi Arabia to Egypt and Jordan, with Syria refusing any assistance.

envisaged in the 1950s.^{39/} In May 1968, the Arab Economic Council passed a resolution approving a revised version of the "Agreement Establishing the Arab Fund for Economic and Social Development".^{40/} It was not until April 1973 that the AFESD started its operations from its base in Kuwait, and this was considered as a significant turning point in the history of Arab economic cooperation and integration.

According to Article II of its agreement,^{41/} the Fund shall participate in the financing of economic and social

^{39/} The need for establishing an Arab regional financial development agency was recognised as far back as 1953, when the first conference of Arab Ministers of Finance and Economy which was held in Beirut discussed the matter. But it was not until 1957 that the Arab Economic Council approved an agreement to establish the "Arab Financial Institution for Economic Development". This Agreement which failed to obtain the necessary ratifications from the Arab governments, fixed the capital of the Institution at 20 million Egyptian pounds, to be subscribed to by the members in proportion to their contributions to the budget of the Arab League (thus giving Egypt a controlling interest). The main aim of the Institution as prescribed in the Agreement was to encourage "the steady growth of productive projects undertaken by governments, organisations, and individuals. Such encouragement shall be manifested either by granting these projects loans, guaranteeing loans granted to them, participating in them, or preparing technical studies for them". See League of Arab States, Report on the Activities of the Arab League in the Economic Field, 1945-71, Cairo, 1971, pp. 47-57.

^{40/} The resolution considered this agreement as replacing the previous agreement for the Arab Financial Institution for Economic Development.

^{41/} Since AFESD can play an important role in the promotion of regional integration within the scheme proposed later on in this study, the full text of the agreement establishing it is presented in English in Appendix "B".

development projects in the Arab countries by:

- (a) Financing economic projects of an investment character by means of loans granted on easy terms to Governments, and to public or private organisations and institutions, giving preference to economic projects that are vital to the Arab entity and to joint Arab projects; [emphasis added]
- (b) Encouraging, directly or indirectly, the investment of public and private capital in such a manner as to ensure the development and growth of the Arab economy; and,
- (c) Providing technical expertise and assistance in the various fields of economic development.

The initial capital of the Fund was increased to KD 100 million, and was increased to KD 400 million in April 1975. All 21 Arab countries subscribe now to the capital.^{42/} The borrowing capacity of the Fund is twice the amount of its capital. Loans provided by the Fund have an average maturity period of 20 years, grace periods of 5 years and an interest rate of 4 per cent for the least developed countries and 6 per cent for the others. Priority is given to regional projects which involve two or more countries, with emphasis on infrastructural development (mainly telecommunications, electricity, transport systems, and water and sewers). Table 4.5 shows that by the end of 1977 total loan commitments to the Arab World were KD 295.3 million, of which KD 108.3 million went to the Arab countries covered in this study. A special unit was created in the Fund to identify investment opportunities in the Arab countries and prepare feasibility studies. The Fund is also

^{42/} The largest subscriber is Kuwait (30 per cent of initial capital), followed by Saudi Arabia, Libya, Egypt, Iraq and UAE (with subscriptions ranging between 18 and 5 per cent). Syria and the remaining countries have 3 per cent or less.

TABLE 4.5

AFESD: Sectoral Distribution of Loan Commitments to the Arab Countries, as of 31 December 1977

(in million KD)

Country	Transport and Communications	Water and sewers	Electricity	Manufacturing Industry	Agriculture	Oil storage and gas	TOTAL	%
<u>Arab countries covered in study</u>								
Jordan	5.0	-	11.9	-	-	-	16.9	8.1
Syria	-	12.0	6.0	-	5.4	2.0	25.4	12.1
Egypt	12.0	18.0	12.0	25.9	-	-	67.9	32.4
Yemen	3.8	11.0	13.0	-	-	-	27.8	13.3
Lebanon	5.0	-	6.0	-	-	-	11.0	5.2
Dem. Yemen	13.5	-	1.0	1.7	-	-	16.2	7.7
Bahrain	-	-	5.0	-	-	-	5.0	2.4
Oman	-	-	-	-	-	6.0	6.0	2.9
Sudan	33.2	-	-	-	-	-	33.2	15.9
Sub-Total	72.5	41.0	54.9	27.6	5.4	8.0	209.4	100.0
Sectoral %	34.6	19.6	26.2	13.2	2.6	6.1	100.0	
Other Arab Countries*	36.3	-	7.2	16.0	22.4	4.0	85.9	
Grand total of Loans	108.8	41.0	62.1	43.6	27.8	12.0	295.3	

*Tunisia, Algeria, Morocco, Somalia, and Mauritania.

Source: Compiled from AFESD, Annual Report, 1977, Kuwait, p. 28 (in Arabic).

cooperating with UNCTAD and UNDP in a programme for the identification and preparation of inter-country feasibility studies and investment projects. This programme, which will extend over six years and cost about \$20 million, is to promote Arab economic cooperation and integration, facilitate the flow of financial resources, and increase the absorptive capacity of the Arab countries.

Another initiative taken by Kuwait to strengthen the institutional framework needed to promote financial flows among the Arab countries was The Inter-Arab Investment Guarantee Corporation (IAIGC). The proposal for this scheme was submitted to the First Arab Industrial Development Conference held in Kuwait in March 1966. It was approved by the Conference, and the Kuwaiti Government was entrusted to study it and prepare a draft agreement. On behalf of the Government, KFAED sponsored the scheme throughout the preparatory stages, and in December 1970 the Arab Economic Council passed a resolution approving the agreement establishing this Corporation. In May 1974, the Corporation started its work, and it has now a membership of fifteen Arab countries. Of the countries covered in this study, Iraq, Kuwait, Lebanon, Qatar, Syria, Saudi Arabia, Yemen, and UAE are members.

The purpose of IAIGC is to "provide insurance coverage for Arab (private) investors in the form of reasonable compensation for losses resulting from non-commercial risks" so as

to promote capital flows between the member-countries. To serve that end, the Corporation

"shall carry out activities which are ancillary to its main purpose and in particular the promotion of research relating to the identification of investment opportunities and the conditions of investments in the member countries". 43/

An important aspect of the agreement establishing the Corporation is that it does not make any distinction between capital-importing and capital-exporting countries. As such it creates an arrangement in which both groups of countries would participate on an equal footing. 44/

The non-commercial risks covered by the Corporation include: (a) nationalisation or confiscation without compensation; (b) the non-transferability of principal and dividends; and, (c) losses which may result from war, military action, or public civil disturbances. The Corporation has an open-ended capital amounting initially to KD 10 million, and was increased to KD 25 million in October 1975. However, the smallness of the capital is seen as a major constraint on the future operations of the Corporation, since total coverage cannot exceed five times the amount of capital plus reserves and no single

43/ IAIGC, Convention Establishing the Inter-Arab Investment Guarantee Corporation, Kuwait, no date, p. 5 (Article II, paragraph 2). For a legal study, see Ibrahim Shihata, "Arab Investment Guarantee Corporation: A Regional Investment Insurance Project", Journal of World Trade Law, Vol. 6, No. 2, 1972, pp. 185-202.

44/ Z.N. Nasr, The Kuwait Fund Scheme for the Guarantee of Inter-Arab Investments, KFAED, May 1972, p. 4.

operation can exceed 10 per cent of the aggregate amount of the capital plus reserves (or 20 per cent in the case of investment in Arab joint projects). By the end of 1976, total insurance coverage by the Corporation reached KD 2.5 million, representing the foreign exchange component in several projects with a combined capital of KD 15 million.^{45/}

In retrospect, the establishment of the above two multilateral institutions which coincided more or less with the exponential growth in oil revenues, did not only mark a new phase in the process of Arab economic cooperation and integration, but also triggered a chain of multilateral institutions and projects. These are helping to transform the oil wealth into a "common heritage" and to establish a wide community of interests and aspirations among the Arab countries. It is possible to classify these institutions and projects into three major groups: (a) those that aim generally at strengthening the movement towards regional- or sub-regional cooperation and integration, and they have been conceived within the framework of the Arab League and the CAEU; (b) those that aim at the integrated development of a productive sector in a number of countries, and they have been conceived mainly within the framework of the Organisation of Arab Petroleum Exporting Countries (OAPEC); and, (c) those that aim at the development of a certain sector in one or more countries with a regional perspective. Each of these groups will be examined

^{45/} In case the investor has the nationality of the host country as well as that of any other contracting-country, the nationality of the host country is the one to prevail. In all cases, nationals of the host country are not eligible for insurance.

succinctly in the following paragraphs.^{46/}

Several attempts have been made by the Arab Economic Council to establish a number of Arab joint ventures, but with very limited success. Only one joint venture was realised after it was proposed in 1956, and that is the Arab Potash Company.^{47/} It has a capital of JD 4.5 million, subscribed to by Jordan, Saudi Arabia, Iraq, Egypt, Syria, Lebanon, Kuwait, and private investors including the Arab Bank. Its purpose is the exploitation of the Dead Sea mineral resources and the manufacturing of chemical products for export and domestic consumption. This project was disrupted in 1967 as a result of the Middle East war, but later in 1975 attempts were made to reactivate it by seeking foreign loans of the order of \$75 million to start operations again.

On its part, CAEU recognised in 1973 as a matter of policy the importance of joint ventures in the process of Arab economic integration. It was decided that Arab countries

^{46/} The focus here is on the multilateral institutions and projects which have been formed with regard to regional and sub-regional economic integration. Institutions which were set up by the Arab countries solely or with participation from other countries for development purposes are not included (such as The Arab Bank for Economic Development in Africa, The Arab Fund for the Provision of Loans to African Countries, and the Islamic Development Bank). Also multilateral projects which do not specifically address themselves to Arab economic integration are not included. For a complete listing and review of all projects, see CAEU, Arab Projects and Arab International Joint Projects, Cairo, First Edition, 1977 (in Arabic).

^{47/} The other ventures which were approved by the Arab Economic Council but never realised were The Arab World Airlines Corporation (in 1961), and the Arab Oil Tankers Corporation and the Arab Maritime Company (in 1963). The oil tankers was undertaken a decade later by OAPEC.

which are not yet members of the CAEU can take part in the establishment of these ventures and contribute to their capitals as shareholders. Once a joint venture is established and the board of directors is elected, it becomes totally independent from the CAEU. Each venture is conceived as a holding company which can manage from its headquarters the subsidiaries and branches. It is conceived that the mother company and its subsidiaries could establish different forms of cooperation at both the national and regional levels. This cooperation could range from pure research to field studies including market research. Priority should be given in establishing such ventures to those which: (a) exploit available Arab resources; (b) improve the welfare of the Arab individual; (c) develop basic industries; (d) increase food supply; and, (e) increase Arab exports.^{48/} Already four joint ventures have been created: the Arab Company for the Development of Animal Resources (based in Damascus with a capital of KD 66 million); the Arab Company for Mining (based in Amman, capital KD 120 million); the Arab Company for Pharmaceuticals and Medical Supplies (based in Cairo, capital KD 60 million); and, the Arab Company for Industrial Investments (based in Baghdad, capital KD 150 million). Only the first two of these companies started their operations, both in the second half of 1975.

^{48/} CAEU, A Summary Report on the Activities of Arab Joint Ventures and Arab Functional Federations, Cairo, 1977, pp. 2-7 (in Arabic).

An important Arab joint venture was established in 1974, the Arab Investment Company (AIC), with the capital being subscribed by Abu Dhabi, Bahrain, Egypt, Kuwait, Qatar, Saudi Arabia and the Sudan. At a later stage, Iraq, Jordan, Morocco, Syria and Tunisia joined the company. The total capital of the Company is \$255 million, of which about 48 per cent is contributed by Abu Dhabi, Kuwait, and Saudi Arabia. The main purpose of this Company which took the form of a joint stock company, is to promote the investment of Arab capital in economic development projects in the fields of agriculture, industry, trade and services. For this purpose the Company undertakes to:

- (a) Establish new projects or participate in equity capital in such projects, and also purchase, partially or wholly, projects that are already in operation;
- (b) Carry all business activities to achieve its objectives;
- (c) Place funds in, and borrow directly from, the financial market;
- (d) Issue bonds and accept time deposits, as may be needed to achieve its purposes; and,
- (e) Provide technical assistance and undertake any studies required to achieve its objectives.

The Company started its operations in 1975 from its headquarters in Riyadh. It has already invested in two major projects; one is the Kenana Sugar Company in the Sudan and the other is the Arab International Insurance Company. It is presumed that the Company will focus on the private sector and will play an active role in the promotion of a regional financial market.

As to the joint ventures which aim at the integrated development of selective productive sectors, OAPEC has been most active. OAPEC was formed in 1968 by Saudi Arabia, Kuwait and Libya. Membership in this Organisation is open to any Arab country in which oil forms an important source of national income, and by 1973 it was enlarged to include as well Bahrain, Algeria, Syria, Iraq, Qatar, Egypt and the United Arab Emirates.^{49/} One of the Organisation's objectives is to assist member-countries to integrate the oil sector with other sectors of their economies. To serve that end, OAPEC undertook the establishment of four major joint ventures. The first of these ventures is The Arab Maritime Petroleum Transport Company (AMPTC), established in 1973 with headquarters in Kuwait. The authorised capital is \$600 million, and the Company is to undertake all activities of maritime transport of hydrocarbons, including the purchase of tankers for crude, liquefied gas, refined products and petro-chemicals. Great emphasis is laid by the Company on training and development of capable personnel to operate the Company's fleet which is of over two million tonnes. The second venture is The Arab Shipbuilding and Repair Yard in Bahrain. The authorised capital is \$300 million. This project is a long-term one and could be instrumental in promoting regional

^{49/} The major distinction between OAPEC and OPEC (the Organisation of Petroleum Exporting Countries) is that the former is primarily concerned with the long-term aspects of cooperation and interdependence among its members, whereas the latter is concerned with defending the interests and rights of its members and negotiating better terms for oil exports. For an excellent study of these organisations and the background which led to their formation, see Zuhayr Mikdashi, The Community of Oil Exporting Countries: A Study in Governmental Co-operation (London: George Allen & Unwin Ltd., 1972), especially Chapter 3.

industrial development through training technical workers.

The third venture is The Arab Petroleum Investments Corporation (APIC), established in 1975 with headquarters in Damman and an authorised capital of SRls 3600 million (\$1 billion).

The main purpose of the Corporation is to assist in the financing and capitalisation of petroleum industries and ancillary industrial projects and services. While giving preference to projects undertaken jointly by the member-countries, the Corporation endeavours to advise these countries on the investment of their capital funds in such a way as to strengthen their economic potential. The fourth venture established by OAPEC is the Arab Petroleum Services Company (APSC). It was established in 1976 with an authorised capital of 100 million Libyan Dinars and headquarters in Tripoli (Libya). The activities of this Company and its subsidiaries will include well drilling and maintenance; well sounding and testing operations; perforation operations; well logging; analysis of samples of well corings; reservoir engineering and petroleum geology; topographical surveys; geophysical activities, etc...

In January 1976, Kuwait demonstrated again its enthusiasm for Arab joint ventures which at the same time showed promising potential for profit, by initiating the United Arab Shipping Company (UASC) in collaboration with the United Arab Emirates, Bahrain, Qatar, and Iraq. The authorised capital of the company is KD 180 million, and

its headquarters in Kuwait. It was decided to merge the national shipping company of Kuwait with UASC, and this was a great help to the success of the new venture considering that the Kuwait Shipping Company was the largest dry-cargo shipping concern in the Arab World. It is reported that UASC plans to have a fleet of 100 ships by 1980 and 150 by 1985, and it is likely to become one of the leading companies in international shipping late in the 1980s, if the present trend of import growth to the region continues.^{50/}

Realising the need for a regional telecommunication system, which would promote economic and trade relations as well as emphasise the common culture and language of the Arab people, the Arab League sponsored The Arab Satellite Communication Organisation (ARABSAT).^{51/} This Organisation which came into being in April 1976, has its headquarters in Riyadh and it has already awarded a consultancy service on the \$100 million project. The tender is for a five-year survey of the telecommunications needs of Arab countries, recommendations for the number of transponders and satellites required, and design of both space and ground segments.^{52/} The proposed

^{50/} Middle East Economic Digest, London, 27 February 1976, pp. 5-6.

^{51/} The Arab Telecommunications Union, which was established as a specialised agency within the Arab League in 1953, initiated this project. It received financial help from the International Telecommunications Union and the AFESD to finance preparatory work.

^{52/} Middle East Economic Digest, Special Report on Telecommunications, 27 May 1977, p. v-vi.

network will improve telephone, telegraph and telex communication and facilitate the exchange of radio and television programmes. It is expected that the system will come into operation early in 1980s, and pay for itself after four years.

In addition to the above two groups of joint ventures, the Arab countries have attempted an innovative joint venture by which a sector in one country is developed with a regional perspective. In line with the concept of "food security", AFESD has envisaged the achievement of maximum self-reliance in food production for the Arab World, in the context of an agricultural development programme in the Sudan.^{53/} As such Sudan will become the "breadbasket" of the Arab World. This programme is to be implemented by a multilateral offshoot of AFESD, the Arab Authority for Agricultural Investment and Development (AAAD), will extend over a period of 25 years (1976-2000) and will be carried out in two phases.^{54/} It envisages the cultivation of wide areas together with the improvement

^{53/} Only 9 per cent of total cultivable land in Sudan is actually utilised (i.e. 16 out of 200 million acres), and water resources and labour do not pose serious problems for expansion. The agricultural sector sustained in 1973 about 82 per cent of total population. The concern of the Government with the development of rural areas is reflected in the relatively high share of investments allocated to the agricultural sector (35 per cent) in the present development plan (1977/78-1982/83). For a recent survey of the economic potential of Sudan, see Report of the ILO/UNDP Employment Mission, 1975, Growth, Employment and Equity: A Comprehensive Strategy for the Sudan (Geneva: International Labour Office, 1976).

^{54/} AADAI was created in April 1976, with a capital of KD 150 million (\$517 million). The participants are Algeria, Egypt, Iraq, Kuwait, Libya, Mauritania, Morocco, Qatar, Saudi Arabia, Somalia, Sudan and the United Arab Emirates.

of agricultural institutions such as credit facilities, distribution of fertilizers and agricultural mechanisation. Under the first phase (1976-85), the production of most major commodities will increase between 100 and 150 per cent (these include cotton, grain, oil seeds crops, pulses, fruits and vegetables, meat and fish), except for wheat and sugar production which will be increased by about 500 per cent. After meeting local demand, production surpluses will be exported to the Arab countries as well as other countries. It is estimated that cotton exports will maintain their volume in 1985, but their earnings will decline from over 50 per cent to about 23 per cent of total export earnings. Among the new export commodities will be sugar, wheat, fruits and vegetables. It is estimated that the Arab World would absorb about two-thirds of total Sudanese exports in 1985. On the other hand, the potential exports to the Arab World would account 40 to 50 per cent of projected imports of meat, 40 per cent of vegetable oils, 20 per cent of sugar, but only 1 to 2 per cent of wheat since Sudan is not a major producer.^{55/} The programme contains some hundred projects distributed among the following sectors: crop and forestry production, livestock and fishery production, agro-allied industries, transport, water resources, hydro-electric power, supporting infrastructure and services. The overall cost will be (in 1975 prices) about 2.5 billion Sudanese pounds (or \$6 billion) of which 65 per cent will be in foreign exchange.

^{55/} AFESD, The Basic Program for Agricultural Development in Sudan, 1976-85, Kuwait, 1976, p. 7.

Finally, through the initiative of the CAEU the Arab Monetary Fund (AMF) was established on April 27, 1976, with a capital of 750 million SDR's. The headquarters of the Fund is in Abu Dhabi. Unlike the International Monetary Fund, the AMF carries the functions of a payments union along with short-term and medium-term financing, and it has made its first lending operation early in August 1978 to Egypt. It is expected also that the AMF will play an active role in the development of an Arab financial market, a subject which increasingly captures the attention of Arab economists and institutions.^{56/}

Towards Integrated Development

The account given in the preceding section is clearly indicative of the favourable impact which capital surpluses had since 1973 on regional economic cooperation and integration. It makes it evident that regional efforts have shifted from trade to the financial field. Although it is too early to make a proper assessment of this development, considering that most of the institutions and projects established have not been in operation for a sufficiently long time, several basic observations can be made.

^{56/} For a complete survey of national capital and money markets, see League of Arab States, Department of Economic Affairs, Capital and Money Markets in the Arab World, Cairo, 1978 (in Arabic). Also, see General Union of Chambers of Commerce, Industry and Agriculture for Arab Countries, The Arab Financial Market, the proceedings of the symposium on the development of an Arab financial market held in Damascus during 14-19 May 1977, Beirut, 1977 (in Arabic).

In the first place, the creation of AFESD as well as other multilateral financial institutions, in which the oil countries are heavily represented, has introduced a new dimension for the regional flow of funds. Although the unilateral funds (KFAED, ADFAED, SDF, and IFED) give compelling priority to the Arab countries in their overall concessional lending, they are geared to the finance of national development projects. As such they are apt to plan their operations primarily in financial terms and with due regard to the bilateral (especially political) relations with the receiving country. In contrast, the AFESD which is purely for the Arab countries gives explicit preference to integration projects and is active in the identification and formulation of joint investment programmes in specified productive sectors and sub-sectors. It is true that there has been a heavy concentration in the lending operations of this Fund on national infrastructural projects, but it ought to be realised that these projects could form a part of the respective regional network or serve neighbouring countries. For example, AFESD gave a loan for the reconstruction of the Beirut seaport which is regaining much of its importance for the Arab hinterland in view of the increased reliance on container transport.^{57/} On this basis, AFESD must be regarded as an integration bank, while the various unilateral funds as development financing institutions.

^{57/} A new inter-Arab transit agreement (concerning mainly Lebanon, Syria, Jordan, Kuwait, Iraq, and Saudi Arabia) has been drafted recently by the CAEU and approved by the Arab Economic Council, to replace the 1956 agreement. A main feature of the new agreement is to facilitate container transport across the Arab territories.

This distinction must not, however, minimise the importance of coordinating the activities of all these funds in order to avoid any overlapping or possible contradictions in investments for the region as a whole.

Secondly, the creation of a number of Arab joint ventures has added to the regional flow of capital another dimension which is beyond mere lending. Specifically, joint equity financing of economic projects. Such financing could be viewed as an effective instrument for economic integration, since it could optimise the use of productive factors in the Arab countries and bring about a community of interests through the sharing of risks and profits by various investors. It seems, however, that up to now these ventures have been mostly induced by the direct financial returns expected from them, especially as they are not supported yet by a preferential system for trading and labour movement among the participating countries. It is interesting to note in this respect that Saudi Arabia which had strong reservations against joining the Arab Economic Unity Agreement, is among the major subscribers to the capital of the joint ventures sponsored by the CAEU. In addition, despite the relatively large size of capital involved in most ventures, they are not likely to encompass a large share of the activity in their respective fields, and thus stand on the "commanding heights". Inter-Arab joint ventures are apt not only to face competition from similar units operating in a national context, but also to have a very

limited bargaining power vis-à-vis non-Arab multinational companies. A striking example is that of AMPTC which, despite enjoying a large initial capital and a borrowing capacity of about \$1.5 billion, had to face fierce competition from the national maritime oil transport companies, and in no way has its Arab character been an advantage. Although such competition is surely desirable in principle, it made it difficult for AMPTC to take-off. In contrast, ASRY in Bahrain is proving now to be capable of competing effectively with other drydocks in the Gulf, especially that of Dubai which has already been written off as uneconomic by shipping sources.^{58/}

Thirdly, the larger part of the regional capital flows comprised public funds, due both to the prominence of the public sector in the field of investments and the lack of proper incentives for the exchange of private investments. In fact, all institutions and joint ventures reviewed earlier were sponsored either directly by the Arab governments or by inter-governmental organisations. This could be taken to reflect the political will on the part of the Arab governments to cooperate economically, and in this sense it is a very desirable development. A major aspect of this development is that it makes the discussions and work in the various inter-Arab economic organisations much more meaningful. Since the

^{58/} Middle East Economic Digest, 22 July 1977, p. 3.

early 1960s, an impressive array of "consultative" Arab organisations have been established, and these could be instrumental in identifying the areas and means for cooperation and integration. Amongst these organisations there are the Industrial Centre for Arab States (IDCAS), the Arab Agricultural Development Organisation (AADO), the Arab Labour Organisation (ALIO), the Arab Organisation for Standardisation and Metrology (ASMO), and the Arab Organisation for Administrative Sciences (AOAS). On the non-governmental level, there are numerous regional economic organisations which could also play a role in promoting integrative efforts. Amongst these there are the functional federations (i.e. commodity producers' associations) which were sponsored by the CAEU to bring about some rationalisation to existing industries. Already federations for the following industries have been set up: iron and steel, chemical fertilizers, textiles, engineering and food processing. On the same level there are professional (syndical) unions for engineers, workers, bankers, and economists. There is also the General Union of Chambers of Commerce, Industry and Agriculture for Arab countries which has its General Secretariat based in Beirut. When established in 1951, this Union was the first economic organisation to call for integration, and it is working closely with CAEU, the Arab League and other organisations for the achievement of this objective.^{59/}

^{59/} See Robert W. Macdonald, The League of Arab States: A Study in the Dynamics of Regional Organization (Princeton, N.J.: Princeton University Press, 1965), pp. 211-212.

Fourthly, although the regional flow of capital served the idea of regional integration, one must recognise that this flow came in the wake of the dramatic increase in oil revenues, and non-economic factors relating to "Arab solidarity" helped a great deal in promoting it. It is likely therefore that this flow would be susceptible to changes in the future, unless it is linked to a process of regional development. In this respect, it is important to note that this flow did not take place in the context of a comprehensive programme designed to promote a more rational division of labour on a regional or sub-regional level. Hence, the flow of capital so far lacked a sense of direction, and its cumulative effect on the overall process of economic integration has been minimal. But the fact remains that this flow made a major breakthrough in regional efforts and now offers a real opportunity to pursue development on a regionally-integrated basis, given the smallness of the domestic market and the narrow range of resources found in each country individually.

To recapitulate, the regional availability of capital has been crucial in re-orienting the approach to Arab economic integration, from mere trade liberalisation to investment coordination. It is more plausible and in the interest of the Arab countries in the long-run to mobilise the region's financial resources in an integrated form which would attain for these countries, individually and collectively, a more rational allocation of resources.

An attempt is being made within the framework of the Arab League to frame a strategy for future Arab economic integration.^{60/} This strategy will take final form after approving it by the first Arab economic summit meeting which is due to be held in Amman, Jordan, during November 1980. The basic elements of the proposed strategy are:

(a) The maximisation of the flow of capital surpluses for national and regional investments, with a view to develop an integrated and self-sustaining productive base which would strengthen the economic structure of the countries concerned and achieve a balanced growth in both geographic and economic terms;

(b) The development of manpower resources to meet regional requirements in the long-run, through joint vocational and training programmes;

(c) The creation of an indigenous technological base, through pooling and coordinating national programmes for developmental research; and,

(d) The creation of an efficient common infrastructure.

Certainly any integrative effort implies the attainment of a certain degree of collective self-reliance for the participants, since it envisages the development of interdependent

^{60/} This was carried out in accordance with Resolutions Nos. 600 and 624 (dated 8 January, and 8 December 1975) of the Arab Economic Council. A group of Arab economic experts, headed by the prominent economist Burhan Dajani, worked on this strategy since the beginning of 1977. Upon completion the strategy will be submitted to the above Council for final approval.

economic structures. However, from a country's point of view, this does not necessarily mean a shift towards autarky, but a larger degree of selectivity and change in external economic relations induced by trade liberalisation and other policy measures. This suggests that economic integration ought to be assessed not purely in terms of economic efficiency, but also in terms of its contribution to the achievement of certain developmental objectives which cannot be attained individually. Evidently this proposition is amply relevant to the Arab countries which display a marked complementarity in factor supply. A fuller appreciation of this point can only be made by relating it to the dynamics of economic growth and development in the Arab countries. It is with this purpose that we turn in the next chapter to examining the economic framework in the Arab Middle East.

CHAPTER FIVE

ECONOMIC FRAMEWORK IN THE ARAB MIDDLE EAST

In this chapter an attempt will be made to examine in some detail the general economic framework in the Arab Middle East countries with a view to assess the role of economic integration as an alternative development strategy. As a background, the chapter will first examine the resource endowment, production structure and foreign trade of the Arab countries, and then assess the need for development. This will be followed by an examination of the development strategies advocated at present in the region, and the emerging patterns of development. Finally, the chapter will attempt to predict future development trends and the place of economic integration in overall development.

Economic Resources

The Arab countries included in this study form a relatively vast region, extending over an area of 7.2 million square kilometers. With a total population estimated in 1976 at 102 million, or approximately 4 per cent of world population, average density in the region amounted to about 14 persons per square kilometer. A striking feature of the region is the marked unevenness in the distribution of human and natural resources among its various parts. The markets

are widespread and separated by deserts and semi-arid areas, thus leading to communications and marketing difficulties.

The major population concentration occurs in the valleys of the Nile, Euphrates and Tigris which form the backbone of the region's agricultural potential, as well as in the coastal areas where seasonal rains make extensive farming or grazing possible. With respect to the agricultural countries, it is noticed that in 1976 the density of population on land with permanent crops was the highest in Egypt (1282 persons per sq. km.), followed by Yemen (347), Iraq (217), Jordan (204), and Syria (138).^{1/}

The population growth in the Arab countries is among the highest in the world. With an overall annual rate of natural increase averaging between 2.5 and 3.8 per cent, the region is demographically characterised by a very young age structure and a high dependency ratio. About 44 per cent of total population is below 15 years of age, and only 3 per cent is above 65 years. In the Gulf countries there is some deviation from this regional pattern due to the temporary immigration of workers, which at the same time caused rapid population growth in Kuwait, Qatar, and the UAE ranging between 5 and 9 per cent per annum during the period 1960-75.^{2/} About one-

^{1/} The figures are derived from U.N. Food and Agriculture Organisation (FAO), Production Yearbook, 1976, Vol. 30, Rome.

^{2/} ECWA, Demographic and Related Socio-Economic Data Sheets for Countries of the Economic Commission for Western Asia, No. 2, January 1978, Beirut.

third of total population live in urban centres which are growing at 4.6 to 5.5 per cent per annum, compared with 4.0 to 4.5 per cent for the world as a whole. It is assumed that if present migratory movements within the Arab countries continue, about 70 per cent of the population would be urbanised by the year 2000.^{3/}

The Arab countries, taken as one unit, have apparent elements of diversity and similarity. As oil and agricultural land provide the base for economic activity and growth in the region, it has become fashionable to classify the Arab countries into two groups: one comprising the oil-producing and -exporting countries, and the other comprising the agricultural (or non-oil-producing) countries.^{4/} However, this dichotomic classification, apart from not allowing for the inclusion of Lebanon or Egypt, conceals the relative diversity of resource endowment among the countries in each group.

On the one hand, Iraq, which is a major oil-producer, enjoys a considerable agricultural potential and more than half of its population is engaged in agricultural pursuits. This contrasts sharply with most of the other oil-producing countries which suffer from the lack of exploitable resources

^{3/} Saad-Eddin Ibrahim, Urbanization in the Arab World, a paper presented to the First Regional Population Conference of the ECWA, 1974, Beirut, p. 11.

^{4/} The oil-producers are Bahrain, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and UAE. The agricultural countries are Egypt, Sudan, Jordan, Syria, Yemen, and Democratic Yemen. Though Lebanon is heavily dependent on services, the agricultural sector influences to some extent the overall economic picture.

other than oil and natural gas, while even their human resources are quite limited. For example, the combined populations of the tiny states of Bahrain, Kuwait, Qatar, Oman and the UAE do not exceed 2.5 per cent of total population of the region, whereas Egypt and Sudan together account for a little less than two-thirds of total population.

On the other hand, the agricultural countries display marked differences in the levels of their land fertility and water resources, as well as in specialisation in agricultural production due to climatic and other geographic conditions.^{5/} Agriculture is mainly rain-fed in the northern part of the region, and the inadequacy and seasonality of rainfall limits the scope for agriculture in Syria and the the two Yemens. Irrigation predominates in Egypt, Sudan, Iraq and to a lesser extent in Jordan. But water resources in Iraq allow for expanding agricultural production. In addition, some of the agricultural countries are endowed with some rich mineral resources which if developed could become important sources of income and employment. These resources include oil which is being produced and discovered in Egypt, Syria and more recently in Sudan; phosphates in Jordan, Syria and Egypt; iron ore in Egypt, Sudan and Syria; manganese in Sudan and Syria; copper in Jordan and Sudan; and, rock salt in Democratic

^{5/} It has been estimated that the production cost of wheat amounts \$80 in Iraq, \$63 in Jordan, \$83 in Lebanon, and \$50 in Syria. Indicative World Plan for Agricultural Development 1965-85, Near East Subregional Study, FAO, No. 1, Vol. II, 1966, Rome, p. 176.

Yemen. Although the agricultural countries are more densely populated than the oil-producing countries, their domestic markets are comparatively small (with the exception of Egypt), and rapid population increase in most of them works persistently towards negating growth in per capita income.

Turning to the elements of economic similarity, it is noticed that these arise basically from the state of underdevelopment which characterises all countries concerned. Admittedly, underdevelopment (or development) is present in varying degrees and modes in the two groups of countries. For instance, in contrast with the agricultural and most other developing countries, the oil-producers enjoy considerable surpluses in their balances of trade and payments. They also enjoy per capita incomes which are among the highest in the world. The common features of underdevelopment are, inter alia, the high rates of population growth, lack of skills, inadequacy of infrastructure and development institutions, technological dependency, and low average productivity of factors of production (see Table 5.1).

But the most dominant feature of underdevelopment is the excessive reliance of economic growth on the production and exportation of one or a few agricultural and extractive products. This feature reflects the openness of the Arab economies and their vulnerability to external influences, and thus renders economic development a pressing task for both

TABLE 5.1

ARAB COUNTRIES: Some Demographic and Related Socio-Economic Indicators, 1975

Country	Population de facto (in 000)	Population per square kilometre	Annual average population growth (1960-74)	Per capita income (in US \$)	Economically Active of total population (%)	% of females in total active population
Bahrain	256	410	3.4	2,350	26.7	6.0
Egypt ^{a/}	36,656	37	2.5	310	31.5	14.4
Iraq	11,124	26	3.2	1,100	25.2	4.2
Jordan ^{b/}	2,737	28	3.3	430	23.0	6.3
Kuwait	995	56	9.1	11,640	30.6	11.6
Lebanon	2,550	245	2.7	1,080	26.9	18.4
Oman	1,500	5	3.1	1,660	...	...
Dem. Yemen	1,668	6	3.1	220	26.6	18.5
Qatar	170	8	8.3	7,240	47.2	2.2
Saudi Arabia	7,227	4	1.8	2,830	21.0	2.2
Syria	7,355	40	3.3	560	25.0	21.1
Sudan	17,757	7	2.2	240	31.2	...
UAE	558	7	13.4	13,500	53.1	3.3
Yemen	4,526	23	2.4	180	25.1	12.1

^{a/} Figures for 1976^{b/} Figures refer to the West and East Banks of Jordan.

Sources: ECWA, Demographic and Related Socio-Economic Data Sheets for Countries of the ECWA, No. 2, January 1978, Beirut; and, World Bank, Atlas Figures for 1976, Washington 1977.

groups of countries. Therefore, to understand the nature and objectives of the process of economic development, it is important to examine the economic growth and structure, and the foreign trade position of the countries under discussion.

Economic Growth and Structure

There is an obvious deficiency in national accounting time-series in the Arab countries covered in this study. Even when these series are available they are usually for very short periods of time (2 to 4 years) and expressed in current prices, thus failing to reflect real changes. Still an attempt will be made below to draw a regional picture, incorporating as many of the Arab countries as possible over the period 1960-76.

A major feature of past economic growth in the Arab region is the increase of the share of the Gulf countries^{6/} in the region's aggregate GDP, against the decline in the share of the other countries. Between 1960 and 1975, the share of the Gulf countries (in current prices) is estimated to have increased from 44 per cent to 72 per cent, whereas the share of the other countries altogether declined from 56 to 28 per cent, respectively. This can be attributed largely to the increase in world demand for Middle Eastern oil.^{7/}

^{6/} These include Bahrain, Kuwait, Qatar, Oman, Saudi Arabia, and UAE.

^{7/} The share of the Arab Middle East countries in world oil production reached 39.0 per cent in 1976, against 37.1 per cent in 1975, and 35.2 per cent in 1972. Middle East Economic Digest, 21 January 1977, p. 37.

During the period 1970-75, the average annual rate of growth in GDP (at constant prices) was 32.0 per cent in the Gulf countries, against about 7 per cent in the other countries. One can easily depict the spill over effect of the increase in oil revenues into the non-oil economies by the comparatively much higher rates of growth recorded during 1970-75. However, it ought to be remarked that the magnitude of expansion in the oil-economies widened further the differences in the rates of growth experienced during the 1960s in the Gulf countries on the one hand, and the other countries of the region on the other.^{8/}

Table 5.2 gives the average annual growth rates of GNP and GDP of individual countries in the Arab region. It is clear that the highest annual rates of growth in GNP during the 1960s were in the United Arab Emirates (29.5 per cent) and Oman (19.4 per cent), which became rapidly major oil-producers in the region. The older oil producers experienced lower growth rates during the same period, ranging between 11.0 per cent in Saudi Arabia, 9.6 per cent in Qatar, 8.2 per cent in Kuwait, and 5.9 per cent in Iraq. As to the non-oil countries during the same period, Jordan recorded an average annual growth of 6.6 per cent, followed by Lebanon, Syria and Egypt with rates between 4 and 5 per cent. Yemen, Democratic Yemen, and Sudan, which belong to the group of countries designated by UNCTAD

^{8/} These rates are based on statistical information presented in ECWA's Economic Growth of the ECWA Throughout the Period 1960-75, National Accounts Studies, Bulletin No. 1, May 1977, Beirut.

TABLE 5.2

ARAB COUNTRIES: Average Annual Growth Rates of Gross and
Per Capita Product, and of Population
(at constant 1970 prices)

Country	Period	GNP	GDP	Population	GNP per Capita
<u>Oil economies</u>					
Bahrain	1960-70	6.4	...	3.5	2.9
Iraq	1960-70	5.9	6.2	3.2	2.7
	1970-76	10.5	8.0	3.3	7.2
	1976	11.4	7.3	...	...
Kuwait	1960-70	8.2	6.0	9.8	-1.4
	1970-76	4.3	0.1 ^{a/}	6.1	-1.8
	1975/76	15.0	1.9	...	...
Oman	1960-70	19.4	...	2.0	17.1
	1970-77	...	...	3.6	...
Qatar	1960-70	9.6	...	...	...
Saudi Arabia	1960-70	11.0	8.6	2.6	8.4
	1970-77	16.5	12.0	2.9	13.6
	1977	25.9	17.0	...	...
U.A.E.	1960-70	29.5	...	...	...
<u>Non-oil-economies</u>					
Egypt	1960-70	4.0 ^{b/}	4.9	...	2.3
	1970-73	...	4.7	2.2	2.3
Syria	1960-70	4.6	5.7	3.3	1.2
	1977	...	3.4	...	...
Jordan	1960-70	6.6	6.8	3.1	3.3
	1970-77	5.3	9.0	3.3	2.0
Lebanon	1960-70	4.7	4.8	2.0	2.6
	1970-74	7.1	8.6	1.9	5.2
<u>Least developed economies</u>					
Yemen	1960-70	3.0	-	2.5	0.5
	1970-76	6.9	6.7	2.8	4.1
	1976	12.3	10.2	...	...
Dem. Yemen	1960-70	-2.8	...	2.3	-5.1
Sudan	1960-65	...	3.9	...	0.8
	1970-75	...	...	2.5	...

a/ 1970/71-1975/76

b/ 1960-74

Sources: ECWA, Development Planning Division, Development Trends and Prospects in Selected ECWA Countries, Beirut, January 1978; ECWA, Survey of Economic and Social Developments in the ECWA Region, 1970-78, E/ECWA/80, 29 April 1979, Beirut, pp. 14-15; and, U.N., Statistical Yearbook 1976, New York, 1977.

as the least developed among the developing countries, suffered very low rates of growth. In fact, Democratic Yemen experienced a negative growth rate during the 1960s, mainly as a result of the internal political strife which preceded independence and the decline of shipping and transit services following the closure of the Suez Canal in 1967.

In the first half of the 1970s there was a clear upsurge in growth, but more in the oil economies than in the others. The enormous growth in oil revenues (see Table 5.3) has definitely broadened the scope for development and growth in the region as a whole. This resulted mainly from a number of agreements reached with the oil companies.^{9/} The oil industry is increasingly acting as an "engine of growth" not only for the oil economies but also -- though to a much lesser extent -- for the non-oil economies in the region. This is taking place through providing employment opportunities, increasing capital transfers and private investment, and increasing the demand on the service sectors in some non-oil countries (notably Lebanon and Jordan). It is likely that present growth trends would continue in the 1980s, on the assumption that oil would be produced at more favourable terms and that Arab oil would play a more important role in the world

^{9/} Within the framework of OPEC, the major oil-producing countries in the Middle East (including Iran) concluded during 1971-73 a series of agreements with the international oil companies on posted prices, tax rates and other financial aspects relating to the exploitation of oil resources. The first of these agreements was signed in Teheran (February 1971). In October 1973, the OPEC countries were able to change the nature of the oil market from being a buyer's market (as was clearly the case in the early 1960s when OPEC was established) to a seller's market. Over a period of 18 months, OPEC took unilaterally successive decisions which quintupled posted oil prices.

TABLE 5.3

SELECTED ARAB COUNTRIES: Oil Revenues, 1970-77
(in million \$)

Country	1970	1971	1972	1973	1974	1975	1976	1977	TOTAL
Bahrain	...	...	...	74	262	280	395	...	...
Saudi Arabia	1214	1885	2745	4340	22574	25676	37809	36900	133143
Syria	34	46	52	76	432	642	665	...	...
Iraq	521	840	575	1843	5700	7500	8500	8800	34279
Qatar	122	200	255	464	1802	1700	2092	...	...
Kuwait	899	1407	1634	1980	8645	7706	8063	6800	37134
UAE ^a	233	431	551	900	5536	6000	7000	8000	28651
Egypt	...	...	...	16	104	164	232	...	...
<u>For Comparison</u>									
Algeria	272	321	613	988	3299	3262	3699	3984	16438
Libya	1351	1674	1563	2223	5999	5101	7500	8600	34011

^a/ Abu Dhabi only.

Sources: Ali Atiga, OAPC, Oil and Arab Development, Kuwait, 1978, p. 13 (in Arabic);
and, The Economist Intelligence Unit Ltd., Quarterly Review of Oil in the
Middle East, Annual Supplement, 1978.

energy scene. But as will be argued below this would be desirable only to the extent that the Arab countries would be able to optimise the use of oil revenues.

However, it is useful to remark that the growth rates in most countries were well above the minimum growth targets set for the developing world in the Second Development Decade of the United Nations International Development Strategy. These targets are 6 per cent in total gross products and 3.5 per cent in per capita gross product. In contrast, it must be pointed out that many factors have acted to depress growth rates and restrict the scope for development. Political conflicts within and among some of the Arab countries, as well as the Arab-Israeli wars of 1967 and 1973, had disruptive effects on economic activity. Moreover, the political and socio-economic transformation following land reform and nationalisation measures in Syria, Iraq and Egypt in the 1950s and early 1960s undoubtedly had a depressing effect on investment and growth in subsequent years.

It is important to recognise at this juncture that the above growth rates are mostly based on rough estimates and ought to be considered as merely suggestive. Furthermore, in the case of the oil economies, the growth rates do not reflect the actual performance of the productive capacities in these economies. The rapid growth in this case must be related primarily to the bounty of nature, on the basis of

which highly-developed extractive industries were established and managed by foreign companies.^{10/}

In this context, one can notice that the economic growth experienced since the early 1960s in most of the Arab countries was not accompanied by significant structural changes. Table 5.4 reveals that in the early 1970s only Egypt, Syria, Jordan, and Lebanon had more than 10 per cent of GDP generated in manufacturing activities. More significantly, the decline in relative importance in agriculture experienced in some countries was mainly not in favour of manufacturing, but instead either oil and services (including government) as was the case in Iraq, or services and construction as in most other countries. Manufacturing industry is still in its early stages, despite the rapid expansion achieved from an initially small base in Lebanon, Syria, Iraq and Jordan. It is significant to note here that the more productive sectors (i.e. manufacturing and oil) absorb less than one-tenth of those economically active, except in Lebanon where manufacturing absorbs about 17 per cent (see Table 5.5). This can be attributed to the high capital-intensity of the oil industry and to the infancy of manufacturing activities in all countries of the region other than Egypt.

^{10/} Various measures were taken by the oil-governments in recent years either to nationalise, partially or wholly, the oil companies or to seek participation in their capital and management. This development has narrowed noticeably the gap between GDP and GNP in some countries as a result of the decline in income outflows and repatriated income of the foreign companies (see Table 5.2).

TABLE 5.4

ARAB COUNTRIES: Percentage Distribution of GDP by Kind of Economic Activity, 1960-76

Country	Year	Currency Unit	GDP	Agri- culture- a/	Industry		Constra- ction	Trade & communi- cation	Other e/ Sectors
					Extra- ctive	Manufa- b/ cturing			
Iraq	1960	m. ID	601.4	16	36	9	4	5	17
	1970	"	1282.5	16	30	9	3	8	22
	1975	"	4022.4	7	57	6	2	5	17
Jordan	1960	m. JD	98.3	15	2	6	5	21	32
	1970	"	209.9	14	3	8	4	20	35
	1975	"	306.5	15	5	12	5	16	27
Kuwait	1966	m. KD	854.0	0	62	4	4	9	17
	1970	"	1084.0	0	63	4	3	7	18
	1973	"	2111.0	0	70	4	1	5	16
Lebanon	1964	m. £L	3200.0	12	15d/ 16d/ 16d/		6	32	27
	1970	"	4865.8	9			4	31	31
	1972	"	6365.0	10			5	32	31
Oman	1970	m. OR	104.7	16	69	0	8	2	5
	1974	"	568.5	3	69	0	10	5	11
	1975	"	738.8	2	65	0	12	7	11
S. Arabia	1963	m. SRls	8673.0	10	47	8	2	6	20
	1970	"	17399.0	6	48	10	5	6	17
	1976	"	155052.9	1	71	5	7	3	9
Syria	1963	m. £S.	3980.0	30	1	15	3	19	24
	1970	"	20198.0	18	11	12	6	24	23
	1976	"	22956.0	22	11	11	7	20	24

(Continued)

TABLE 5.4 (continued)

Egypt	1960	m. £E	1459.3	28		20		3	10	7	25
	1970	"	3145.5	25			3	4	8	5	25
	1975	"	4860.8	30			5	4	14	5	23
Sudan	1960	m. £Sd.	386.8	52			4	6	6	7	12
	1970	"	637.6	35			2	4	18	8	23
	1975	"	897.0	9			25	2	14	4	27
Yemen	1969	m. Rials	2214.6	72			1	3	13	2	7
	1970	"	2416.5	71			1	3	13	2	7
	1973	"	3709.7	61			1	4	15	2	11
Dem. Yemen	1969	m. Dinars	56.6	20			1	1	11	5	36
	1970	"	59.2	19			2	1	13	5	35

a/ Agriculture, hunting, forestry and fishing.

b/ Includes electricity, gas and water.

c/ Financing, insurance, real estate and business services; community, social and personal services and public administration and defence.

d/ In the absence of major mining activities, the figures represent mostly manufacturing.

Source: United Nations, Statistical Yearbook, 1977, New York, 1977, Table 189.

TABLE 5.5

ARAB COUNTRIES: Labour Force Distribution According to Major
Economic Sectors (in percentages)

Country	Year	Total Number of Labour Force	Agriculture	Industry	Construction	Services
Bahrain	1971	60,301	6.6	14.1	17.3	62.0
Egypt	1975	9,628,200	43.9	13.1	4.5	38.5
Iraq	1973	2,962,300	52.0	6.3	2.5	39.2
Jordan	1971	541,000	32.9	6.9	2.0	58.2
Kuwait	1975	304,582	2.5	9.6	10.6	77.3
Lebanon	1970	571,755	17.8	16.7	6.1	59.4
Oman	1972	175,000	...	...	...	...
Qatar	1975	80,303	...	...	...	...
Saudi Arabia	1975	1,601,000	28.0	6.0	20.6	45.4
Syria	1975	1,838,948	49.8	12.0	7.0	31.2
Sudan	1975	5,015,000	68.5	3.7	1.8	26.0
Dem. Yemen	1973	409,742	...	...	...	...

Sources: ECWA, Development Trends and Prospects in Selected ECWA Countries,
Beirut, January 1978, p. 11; and, I.L.O., Yearbook of Labour Statistics, 1976,
Geneva, 1976, Table 3.

With the exception of Lebanon which has a real comparative advantage in services, by virtue of its geographic position and the resourcefulness of its business community, the relative expansion in the service sectors in most of the Arab countries is essentially a reflection of the existing national imbalances in factor supplies.^{11/} The lack of labour and skills in the oil countries as well as the lack of capital in the agricultural countries, have put serious limitations on the ability to combine factors of production efficiently. Superimposed on this is the smallness of the domestic market in most countries in terms of population or income per capita. The outcome has been the absorption of some of the surplus factors of production (labour or capital) in less remunerative service activities. However, over-employment in government services (including defence) strengthened this phenomenon, and in the oil countries government employment is seen as one of the ways for redistributing oil revenues.

On the whole, one can conclude that economic growth in the Arab countries is heavily dependent on factors beyond their control. The level of income in the oil countries remains largely determined by oil exports which in turn are determined by exogenous factors. In Egypt, Jordan, Syria,

^{11/} The Democratic Yemen's economy, for example, centres around service activities, such as entrepot trade, oil refining and bunkering. But these activities cannot be relied upon for future growth, and hence present efforts aim at shifting the basis of the economy towards a greater dependence on production.

Sudan, and Yemen, agricultural production (which has also a bearing on economic activity in Iraq and Lebanon) continues to be a major determinant of income, and the fact that agriculture is mainly rain-fed (except in Egypt and Sudan) makes the level of production susceptible to the vagaries of weather. In Lebanon economic growth relied heavily on invisible exports and capital inflows which are intimately related to the economic and political environment prevailing in the region.^{12/}

Foreign Trade Position

The foreign trade position of the Arab countries mirrors clearly the present state of underdevelopment, and by examining it one can suggest the ways and means by which this state could be overcome. As pointed out above, the Arab economies are characterised by their "openness" to the outside world, and this could be depicted by relating trade to GNP. Table 5.6 summarises the foreign trade position during the period 1965-75. It can be noticed that the average annual rate of growth of exports and imports reached high levels in the first half of the present decade. This applies generally to the oil and non-oil countries but with differing trends among individual countries in each group. In the case of the oil countries, the acceleration in the growth of

^{12/} See UNESOB, Trade, Development and Economic Cooperation in Six Countries of the Middle East, Beirut, February 1968, p. 4.

TABLE 5.6

ARAB COUNTRIES: Balance of Trade and Average Annual Change in Exports
and Imports, 1965-75

Country	Balance of Trade (million US \$)		Average Annual Change ^{a/} (1970-75 in percentages)		Export/Import Ratio		Ratio to GNP (1975) (in percentages)		
	1965	1970	1975	Exports	Imports	1970	1975	Exports	Imports
Bahrain	...	115.4 ^{b/}	-312.8	39.5	41.0	31	36	21	58
Dem. Yemen	-115.0	-65.5	-125.0	17.2	-0.1	67	60	18	53
Egypt	-28.0	-25.0	-2349.0	18.0	75.0	96	37	20	41
Iraq	427.0	587.6	4072.0	49.5	47.5	216	197	58	21
Jordan	-135.0	-158.4	-578.0	37.0	31.5	14	21	35	81
Kuwait	...	1029.5	6798.0	36.5	31.0	264	384	76	21
Lebanon	-477.0	-375.5	...	...	...	33	...	26 ^{c/}	52 ^{c/}
Oman	...	-17.3	775.0	60.0	120.0	590	216	72	34
Qatar	...	...	1395.0	48.0	45.0	394	438	96	17
S. Arabia	953.0	1731.0	20844.0	65.0	60.0	350	403	89	21
Syria	-44.0	-154.5	-738.0	35.5	36.0	57	58	26	40
Sudan	-12.0	-30.0	-595.0	10.0	43.6	90	42	12	21
U.A.E.	...	...	8810.0	60.0	60.0	...	258	85	34
Yemen	...	-29.0	-283.0	31.0	55.0	9	4	8	36

^{a/} Computed from the dollar value of trade.^{b/} Excluding oil imports and refined oil exports.^{c/} Relates to 1974.

Sources: ECWA, Foreign Trade and Payments Statistics in Countries of Western Asia, 1975; United Nations, Monthly Bulletin of Statistics, various numbers; and, IMF, Direction of Trade, 1971-77, Washington, D.C.

exports should be seen against both the sharp increase in the price of oil and the increase in oil production to meet the expanding world demand. The growth in exports outstripped by far the growth in imports during the first half of the 1970s in Iraq, Kuwait, Qatar, and Saudi Arabia, and this enhanced considerably the balance of trade surpluses of these countries.

In the case of the non-oil countries, marked fluctuations in exports are observed during the period under review. This is attributed to the dependence of agricultural exports on weather conditions. At the same time, these countries had to face, as other developing countries, the unfavourable developments in international trade with respect to agricultural commodities, as a result of which the prices of their exports tended to decline vis-à-vis the prices of their imports and this turned the terms of trade against them.^{13/}

^{13/} The creation of UNCTAD in December 1964 constituted an acceptance of the need for positive international action measures to correct the adverse influences in the world economy on the developing countries. In a statement to the Ad Hoc Committee of the Sixth Special Session of the General Assembly of the United Nations held in April 1974, to discuss the problems of raw materials and development, the Secretary General of UNCTAD pointed out that

"... the international economy system has failed, over the past two decades and more to transmit adequately to the developing countries the remarkable expansion that has taken place in the developed countries. At the heart of this failure lies the unfavourable trend in the terms of trade of the developing countries. By 1972, the terms of trade of the non-oil-exporting developing countries had deteriorated by about 15 per cent compared with the mid-1950s. This is equivalent to a loss in 1972 alone of around \$10 billion, more than 20 per cent of these countries' exports, and an amount significantly in excess of the total of official development assistance from the developed market economy countries in that same year."

UNCTAD, Problems of Raw Materials and Development, Report by the Secretary General of UNCTAD prepared for the 6th Special Session of the General Assembly, New York, 1974, p. 1.

Surprisingly, these countries have not been able to expand their food production by the same rate at which their populations increased. As a matter of fact, the Arab countries as a whole experienced over the last two decades an alarming increase in their "food gap". Syria, which was a net exporter of wheat and cereals in the early 1950s, imported in 1977 almost over 30 per cent of its total wheat requirements. At present all Arab countries import wheat, but in varying degrees. During 1970-74, Iraq imported 15 per cent of its domestic requirements per annum, against 25 per cent in Syria, and between 35 and 100 per cent in the remaining countries. The general rise in income increased the propensity to import, and some measures encouraged imports as is notably the case with the open-door policy in Egypt. Added to this is the demonstration effect of the conspicuous consumption patterns which emerged in the oil countries (excluding Iraq). The resulting effect of these developments has been the aggravation of the external imbalance between foreign exchange receipts and import requirements, especially in Syria and Jordan where invisible exports are rather limited as well as in Egypt. Table 5.7 shows the main balance of payments indicators for selected Arab countries. In this respect, it is to be noticed that heavy defence commitments in the countries directly involved in the Middle East conflict aggravate the balance of payments position to a considerable extent.^{14/}

^{14/} As a percentage of GNP in 1974, military expenditures reached 16.5 per cent in Syria, 12.9 per cent in Jordan, 18.0 per cent in Egypt. Another pressure on the balance of payments of some countries (especially Syria and Iraq) has arisen from sizeable capital flight associated with uncertainties following political upheavals and nationalisation measures.

TABLE 5.7

SELECTED ARAB COUNTRIES: Summary of Balance of Payments, 1975
(in million SDR's)

Items	Iraq	Jordan	Saudi Arabia	Syria	Sudan	Egypt	Yemen
Export of merchandise (F.O.B.)	6143	118.0	23190	766	335.8	1291	11.7
Imports of merchandise (F.O.B.)	-3643	-474.9	-5384	-1174	-616.3	-3246	-218.5
Exports of services	356	307.4	3101	317	86.6	888	31.1
Imports of services	-1305	-252.6	-6179	-414	-198.1	-970	-46.2
Private unrequited transfers (net)	2	3.5	-642	43	-1.7	74	222.6
Government unrequited transfers (net)	-377	386.0	-620	539	-1.1	813	95.6
Direct investment	-178	-	1496	-	-	10	-
Other long-term capital, n.i.e.	-139	30.4	-84	-8	71.7	250	14.7
Short-term capital, n.i.e.	-1002	2.9	-1356	130	36.0	-195	-29.5
Errors and omissions	-246	14.4	-2	-4	1.5	-21	35.2
Allocation of SDR's	-	-	-	-	-	-	-
Monetisation of Gold	-	-	-	-	-	-	-
Reserves and related items	389	-135.1	-13520	-194	285.6	1106	-116.7

Source U.N., Statistical Yearbook, 1976, New York, 1977, Table 178, pp. 596-619.

Table 5.8 shows the structure of Arab exports and imports by major (SITC) commodity classes in 1975. It is to be remarked that on the export side very little diversification took place. Crude oil remains by far the most dominant export item for the oil countries and the region taken as a whole. Only in Kuwait, Iraq and Saudi Arabia are processed and semi-processed oil products starting to appear among exports. The production of exports of the aluminium smelter in Bahrain and the chemical fertilizers industry in Kuwait are also influencing the export patterns of these countries. Export of primary products form the bulk of total exports of Jordan (about 80 per cent agricultural products and phosphates), Syria (87 per cent agricultural products), Egypt (50 per cent raw cotton and rice), and Yemen (99 per cent agricultural products). Crude oil and phosphate exports form a growing share of total primary exports in Syria and Jordan. In Egypt, crude oil is rapidly becoming an export item, and in 1976 it formed about 18 per cent of total exports. Lebanon could be singled out as the only exception to this export pattern, since manufactured goods comprise no less than two-thirds of total exports. It must be remarked, however, that due to the emphasis on import-substitution industrialisation in most of the Arab countries, the exports of manufactures remained generally modest whether in relative or absolute terms. For instance, industrial products formed about 15 per cent of total Egyptian exports in 1976.

On the import side, it is noticed that manufactures comprise on the average no less than two-thirds of the region's

TABLE 5.8

ARAB COUNTRIES: Structure of Imports and Exports By Major' (SITC)
Commodity Classes, 1975 (in percentages)

Country	Primary Commodities (SITC 0 to 4)		Fuels (SITC 3)		Manufactured Goods (SITC 5 to 8)		
	Imports		Exports	Exports	Imports		Exports
	Total	Food ^{a/}	Total		Machinery ^{b/}		
Bahrain	14.7	13.2	1.6	80.9	83.5	36.9	17.5
Dem. Yemen	70.1	24.0	13.9	80.0	28.7	5.2	3.1
Egypt	56.8	35.9	65.9	10.0	43.2	20.5	32.2
Iraq	20.6	15.7	0.8	98.5	79.0	41.0	0.7
Kuwait	18.2	16.6	0.4	96.4	80.6	45.6	3.3
Jordan	24.7	21.7	79.1	0.6	63.2	31.6	20.3
Lebanon ^{c/}	33.1	23.0	33.2	0.1	61.0	20.0	66.7
Oman	42.4	41.3	0.3	99.7	49.0	16.9	-
Qatar	15.5	13.6	0.1	97.1	83.5	51.3	2.8
S. Arabia	34.4	31.0	0.1	99.7	64.3	32.7	0.2
Syria	24.8	20.6	21.9	7.3	68.5	28.8	7.7
Sudan	29.0	18.7	95.6	3.6	70.7	32.1	0.1
U.A.E.	14.4	12.8	0.1	99.9	76.6	35.1	-
Yemen	50.1	49.4	95.4	-	45.8	12.2	3.6

a/ Including beverages. b/ Including transport equipment. c/ Relate to 1970.

Sources: UNCTAD, Handbook of International Trade and Development Statistics, New York, 1976; and ECWA, Statistical Abstract of the Arab World, 1968-75, First Issue, Amman, 1977.

total imports. In most countries, there has been a general increase in the share of machinery and transport equipment imports during the first half of the 1970s, as a result of the implementation of development plans. As pointed out earlier, there has been a notable increase in the share of food imports in all countries, and this has been largely at the expense of imports of manufactured goods in the deficit countries.

Without doubt that the dominance of primary commodities on the export side and of manufactures on the import side determine to a large extent the geographical distribution of Arab trade. In 1973, the developed market economies^{15/} absorbed about 77 per cent of the (aggregate) exports of the oil economies, and about 30 per cent of the exports of non-oil economies. In the same year, they supplied the former with 74 per cent of their imports and the latter with no less than 60 per cent of their imports. As to intra-regional trade, it suffices to say here that it remains quite limited due to the competitive structure of exports and is of interest only to the non-oil economies. In 1973, the region absorbed only 1.6 per cent of the exports of the oil economies, but about 30 per cent of the exports of the non-oil economies.^{16/}

The foregoing analysis brings into focus the need for socio-economic development in the Arab countries. On the one

^{15/} Include EEC, EFTA, North America and Japan.

^{16/} ECWA, Development Planning Division, Foreign Trade and Payments Statistics in Countries of Western Asia, Beirut 1975.

hand, past economic growth in most countries has not translated itself much into development, in the form of a diversified productive base. Economic activity is still lop sided and heavily dependent on exogenous factors, despite past internal development efforts. One can say that no Arab country has yet reached a stage of industrialisation in which the manufacturing sector plays an instrumental role in promoting growth, not to mention the limited competitiveness of existing industrial structures. On the other hand, past growth rates in all the Arab countries were well below actual development potential. In some countries the question is indeed how far are we from the potential. Sudan is a case in point, as the area under irrigation cultivation could be expanded from 3.0 to 9.0 million feddan and that under rainfed cultivation from 12.0 to 32.0 million feddan. With a reasonably increased level of productivity, and assuming a crop mix not much different from that at present, production of all major crops could be increased by 4 to 8 fold, except for sugar which could be increased by up to 24 folds.^{17/} Also wide agricultural areas are still unexploited in the northern parts of Syria and Iraq where water is relatively more abundant than in the rest of the region, and agricultural production could be increased to meet growing shortages in food supply.

Manpower development is still at its early stages, considering the youthfulness of the Arab population and the

^{17/} See AFESD, The Basic Program for Agricultural Development in Sudan, 1976-85, op. cit., pp. 17-18.

limited participation of women in the labour force. This development requires extensive investments in educational facilities, health services, and training programmes. In agricultural countries under-employment could be discerned in rural areas, and there is an obvious labour surplus in the case of Egypt which could be mobilised if an increase in capital supply is attained.

In the oil-producing countries, natural gas accompanying oil production is still largely flared off although it could provide a source of cheap energy and raw materials for a wide range of industries. In addition, about 90 per cent of oil production is exported in crude form at a time when it should be possible for the oil-producing countries to increase the value-added of oil exports by processing crude oil in one form or another. Above all, only a trickle of the massive capital surpluses of the oil countries has been absorbed productively, whether domestically or regionally.

In the Arab region as a whole, infrastructure is still underdeveloped and poses serious bottlenecks to rapid development. There is an obvious need for modernisation and extension of transport and communications facilities, power, irrigation and drainage works, storage facilities, urban utilities and social services. Much of this ought to be realised before directly productive sectors could be promoted on an efficient scale.^{18/}

^{18/} For a supporting view, see Y.A. Sayigh, *op. cit.*, p. 676.

It is of great interest to note in this context that the issue of economic development is of equal relevance to the oil and non-oil countries. With respect to the oil countries, the oil industry remains a developed enclave within their economies, and the affluence observed in them is of a deceptive nature as it is tied up to a depletable, non-renewable (and for this reason a replaceable) resource. In point of fact, oil production must be distinguished from "recurrent" activities, since the sale of oil amounts only to the transformation of one form of wealth (a tangible asset) into another (a financial asset). The oil countries are demonstrating their readiness to meet the essential and yet massive oil requirements of the industrialised countries. In doing so they are transforming a part of their oil resources into financial assets which are immeasurably beyond their immediate capital needs. What needs to be underlined here is that these financial assets do not, from a theoretical point of view, increase the national wealth of the producing country. They simply increase the degree of liquidity of this wealth. In addition, whereas oil resources in the ground appreciate in value over time and are stored at zero cost, the financial assets run the risk of being depreciated by inflation and devaluation of international currencies, as well as being subjected to various commercial and non-commercial risks. In other words, under prevailing conditions it is likely that the discounted cash flow of oil revenues will be less than zero. This inherently reduces the size of the transfer of wealth

from the oil-consuming to the oil-producing countries, and turns the terms of trade against the latter. Therefore, unless the producing countries make a rational use of their revenues, by transforming them into income-generating assets which would secure the interests of present and future generations, the oil era would eventually end without having really made any positive change in the life of these countries.

Turning to the non-oil countries, the need for economic development in them can hardly be over-emphasised. The chronic deficit in the balance of payments, coupled with the internal imbalance between savings and investments has continually strained the foreign indebtedness of these countries. Only Lebanon before the present civil strife could manage to cover its sizeable trade deficit by invisible exports and capital movements. Thus, a basic economic objective of these countries is to reduce and eventually eliminate the trade deficit through increasing exports and reducing imports by way of expanding the domestic productive base. It is important to recognise in this respect that imports display a noticeable tendency to increase during the process of economic development. On one count, this process is heavily dependent on imported machinery in capital formation. To this must be added the imports of raw materials and intermediate products not available domestically. On another count, the rise in per capita income resulting from the process of economic development itself causes a shift in individual demand for imported consumer and consumer durable goods. Obviously the increase in the proportion of capital

goods and intermediate products in the import structure of developing countries makes these countries more vulnerable to any fall in foreign exchange receipts. Thus, as in most developing countries the "foreign exchange gap" represents in the deficit Arab countries a conflict between growth objectives and foreign exchange receipts, and the reconciliation of this conflict is regarded as a major policy objective.^{19/}

The central idea that needs to be highlighted here is that economic development in the Arab region is at the start of a new phase prompted by the regional availability of capital surpluses. The oil industry which is highly integrated with the industrialised countries, is not only propelling growth in the Arab region but also generating ample financial resources to accelerate the pace and correct the direction of economic development. Despite the spread of consumerism in the oil countries, it is comforting to see that they are responding to the recent increases in oil revenues with greater responsibility and determination than first anticipated. Their stated priorities for investing the oil revenues are to absorb as much as possible domestically and to invest the surpluses in the other Arab and developing countries as well as the industrialised countries. Indeed, they have not only embarked on extensive programmes for economic and social development, but also institutionalised the flow of loans and aid to Arab and other developing countries and showed greater

^{19/} See UNCTAD, Trade Prospects and Capital Needs of Developing Countries During the Second United Nations Development Decade, Report by the UNCTAD Secretariat, United Nations Publication Sales No. E.72.II.D.11.

appreciation of the need to "recycle" a part of the petromoney to the major oil-consumers, in the interest of world economic and financial stability.

In response to the emerging situation, most of the non-oil-producing Arab countries adopted policy measures to encourage the inflow of capital and attract investments from abroad. In some cases amendments in foreign investment laws were introduced, giving preferential treatment to investments coming from other Arab countries or at least treating these investments as national investments with respect to tax exemptions and other concessions. This is specifically the case of Egypt and to a lesser extent Syria. Unlike Egypt, Syria has not embarked on any large-scale "open door" policy. In 1974, Egypt promulgated this through Law No. 43 concerning the investment of Arab and foreign funds and the free zones. This law in fact replaced an earlier one (Law No. 65 of the year 1971) which was ineffective. At the same time, these countries had to face the outflow of some of its labour skills to the oil-producing countries where the levels of wages are much higher. Although this generated foreign exchange remittances to the supplying-countries, and helped to ease the balance of payments position, it entailed a social cost. It is known that many of the best qualified people in Egypt, Syria, Lebanon and Jordan have left to work in the richer

oil-exporting countries.^{20/} This deprived the supplying-countries of crucial skills which have cost a great deal to develop over the years and are now needed for development; though in the case of Egypt this effect must be viewed together with a positive one arising from the decrease of population pressure on domestic resources, including food and infrastructure.

The above discussion of the characteristics of the economic structures and development needs of the Arab countries expresses clearly the importance of these countries as a regional economic grouping. Given the highly skewed distribution of natural, human and financial resources, as between oil and non-oil countries and in individual countries within each group, the course of economic development in the Arab countries seems to be highly interrelated. Through pooling resources and markets, these countries would not only be able to optimise investment decisions but also broaden the potential for development. The main proposition here is that through economic integration the Arab countries would be in a position to achieve certain developmental objectives which either cannot be attained individually or can be attained but at a

^{20/} In 1976, the total estimate number of migrant workers from these countries was 845,000 workers, divided as follows: Egypt (410,000), Jordan (300,000), Syria (75,000), and Lebanon (60,000). Of this total, Saudi Arabia absorbed 40 per cent, Kuwait 15 per cent, UAE 5 per cent. Libya which is not covered in this study absorbed about 35 per cent of total, mostly Egyptian workers. For an excellent reference on migratory movements in the Arab region, see the country case studies of the International Migration Project, Department of Economics, University of Durham. For a summary see especially J.S. Birks and C.A. Sinclair, International Migration Project: A Summary of Provisional Findings - Empirical Patterns, Past Trends and Future Developments, September 1978.

high cost. It is necessary, therefore, to identify the major developmental objectives pursued by the Arab countries as embodied in their development strategies.

Economic Development Strategies

After gaining political independence, the Arab countries displayed a growing awareness of the need to accelerate their socio-economic development. It seems that this was largely prompted by two interrelated factors: the rise and expansion of the oil industry in a number of the Arab countries, and the emergence of the public sector as a prime motivator of development and growth.

Despite its capital-intensive nature and its apparent integration with the outside world as alluded earlier, the oil industry represents to the Arab region as a whole a break with the past. Through encouraging extensive migratory movements and raising the general level of income, it brought about new socio-economic patterns of consumption and investment. In more general terms, it raised the expectations of the population in the region. Intrinsically this has emphasised the need to increase production through a concerted effort for economic development. Elkan proposes that economic development is

"a process which makes people in general better off by increasing their command over goods and services and by increasing the choices open to them." 21/

21/ Walter Elkan, An Introduction to Development Economics (Harmondsworth, England: Penguins Books Ltd., 1973), p. 15.

In conjunction, the public sector assumed increasingly a leading role in the process of economic development, as social welfare and social justice became an area for government action. In Egypt, Syria, Iraq and Democratic Yemen, the adoption of socialist-orientated policies following nationalisation measures have greatly enhanced the role of the public sector. In the oil countries, the fact that oil revenues accrue to the government has made it inevitable that the public sector has taken a leading role in the overall process of socio-economic transformation. In contrast, in Lebanon and to a much lesser extent in Jordan, economic development remains largely in the hands of the private sector with the public sector concerned mainly with the development of infrastructure. The shift in economic power from the private to the public sector, however, varies in scope and nature as between the two groups of countries and among countries within each group.^{22/} While the public sector in the socialist-orientated countries has a firm grip on the economy by controlling the rate and pattern of investment as well as the foreign trade sector, it is concerned in the oil countries mainly with the channelling of oil revenues (through specialised institutions and public organisations) into infrastructural and development projects.

It should be realised, however, that almost all of the Arab countries have not yet formulated well-defined long-

^{22/} For a general historical perspective of the shift in economic power from the private to the public sector in the Middle East, see Charles Issawi, "Epilogue, 1961: Shifts in Economic Power", in Charles Issawi (ed.), The Economic History of the Middle East, 1800-1914 (Chicago: University of Chicago Press, 1966), pp. 510-513.

term development strategies, although in a number of them several development plans have been implemented.^{23/} These plans ought to be considered as an early stage in the long-term development process. It is beyond the scope of this study to discuss what the policy-makers in the Arab countries should decide in the context of development planning, but rather to find out what they are deciding and what they may decide in the future.^{24/} It is thought that this is necessary to expose the need for economic integration as an alternative development strategy in the Arab region. Hence, the main interest here would be to depict from present development plans, in qualitative and quantitative terms, the basic economic objectives, priorities and development policies of the various Arab countries, and then to point out the incipient trends of development in the region as a whole. Due to the lack of information, no attempt will be made to assess implementation or performance under present development plans.

^{23/} During the first half of the 1970s development plans were launched in Egypt (1973-77), Iraq (1970-74), Jordan (1973-75), Saudi Arabia (1970/71-1974/75), Syria (1971-75), Sudan (1970/71-1974/75), Democratic Yemen (1971/72-1973/74), and Lebanon (1972-77). For a detailed review of these plans see UNIDO, Comparative Study of Development Plans of Arab States, New York, 1976.

^{24/} The present cycle of development planning in the region comprises the plans of Syria (1976-80), Saudi Arabia (1975-80), Jordan (1976-80), Iraq (1976-80), Oman (1976-80), Yemen (1976/77-1980/81), Democratic Yemen (1974/75-1978/79), Sudan (1977/78-1982/83), and Egypt (1978-82). Bahrain, Kuwait, Qatar, and the United Arab Emirates have no explicit development plans, but there is sectoral planning at the ministry level in most of them. Development is at a standstill in Lebanon, as a result of the civil strife which started in April 1975 and is still going on at the time of writing.

An overview of present development plans reveals that the path of development followed by the Arab countries is generally similar to that pursued by most countries in the Third World. The emphasis is on achieving a higher standard of living for their rapidly growing populations and strengthening the movement towards self-sustained growth.^{25/} This is sought by internalising, as much as possible, the dynamics of growth through reducing sectoral disparities and increasing inter-sectoral dependencies. Given the present economic structure, this implies the expansion of the commodity-producing sectors and the building up of the related human and physical infrastructure.

Yet, one can observe at a lower level of generality that there is some contrast in the development orientation, objectives, investment priorities and policies of the oil and non-oil countries. The strategies embodied in the plans of the oil countries (excluding Iraq) are largely outward-orientated. They aim at maximising overall economic growth in terms of GDP, expanding and improving the physical and human infrastructures, and modernising the socio-economic structure. On the other hand, the strategies embodied in the plans of the non-oil countries (including Iraq) are largely oriented to self-reliance for fulfilling the basic needs of the society and reducing external dependence. They aim at

^{25/} The term "self-sustained growth" has been originally coined by Rostow to denote a situation in which a country can promote its growth by financing its domestic investments merely from domestic savings. See W.W. Rostow, "The Take-Off into Self-Sustained Growth", Economic Journal, Vol. 66, No. 261, 1956, pp. 25-48.

achieving a high rate of economic growth (higher than the rate of population increase) with a fair distribution of income and wealth, expanding the material production and related infrastructure, and creating employment.

The major distinction between the two basic strategies is that the outward-orientated one, by emphasising the maximisation of economic growth, tends to integrate the national economy into the world economy. This is attained mainly by developing the industries in which the country concerned has a definite advantage. The self-reliance orientated strategy entails more diversified objectives for the development process. It combines with the objective of high growth the objectives of satisfying the basic needs of the population (mainly through creating and spreading opportunities) and of reducing dependence on the external world.

It is necessary for our purposes to examine more closely how these objectives influence the sectoral distribution of planned investments and subsequently the pattern of development. Put differently, we need to depict the influence of these objectives on the investment priorities and on project selection which is crucial in determining future growth and efficiency. The basis for comparison between Arab development plans is lacking as they differ in scope, duration and the degree to which they are binding or implemented. In countries where the private sector dominates or plays a supporting role in development efforts (such as

in Jordan and Saudi Arabia) the plans are rather indicative and comprise mainly public outlays on infrastructural and other projects. This, together with the lack of detailed statistical information pertaining to some plans, make it more meaningful and pragmatic to confine the analysis needed to a selected group of Arab countries which are representative of the two basic development strategies alluded to above. It is implicit, however, that these strategies do not exist in the Arab countries in a pure form, and that varying combinations are actually conceived. This is particularly the case in the non-oil countries and Iraq. The countries selected for discussion are Saudi Arabia (representing the outward-orientated strategy), and Egypt, Iraq, Syria, Jordan and Yemen (representing the self-reliance orientated strategy). Since the present study is a forward-looking one, only current plans will be considered.

The Outward-Orientated Strategy

Although Saudi Arabia is a large country territorially, its resource base is extremely limited, apart from oil which assumes an over-riding importance. This has been instrumental in shaping the country's development pattern, as can be discerned from the efforts to develop the economy. During 1969-74, the first development plan was implemented, with the objective of reducing the over-dependence on oil production and promoting the development of the country's human resources. The second development plan (1975-80) sets

the following broad social and economic objectives:

- (a) Maintenance of a high rate of economic growth, by developing economic resources, maximising earnings from oil over the long-run, and conserving depletable resources;
- (b) Reduction of economic dependence on the export of crude oil;
- (c) Development of human resources by education, training and raising the standard of health;
- (d) Improvement of the well-being of all groups within the society while maintaining social stability under circumstances of rapid social change; and,
- (e) Development of the physical infrastructure to facilitate the realisation of the economic objectives.

The projected growth of the Saudi Arabian economy (in real terms) is set in the Plan at an average annual rate of 13.3 per cent for the non-oil GDP, 12.9 per cent for the Government sector, and 9.7 per cent for the oil sector.^{26/} According to the Plan, the individual sectoral projects have been made

"in the light of an assessment of the highest overall rates of growth sustainable over the next five years, taking into account the absorptive capacity of the economy as a whole." ^{27/}

The non-oil sectors projected to achieve the highest growth rate of 15 per cent are construction, transportation and

^{26/} The corresponding growth rates under the first plan period (1969-74) were 11.7 per cent, 9.0 per cent and 17.2 per cent, respectively. The growth rate of the oil sector in both plans is only notional, since oil production policies are not part of the development plan but are determined by the Supreme Advisory Council for Petroleum and Minerals.

^{27/} Kingdom of Saudi Arabia, Ministry of Planning, Second Development Plan 1975-80, April 1975, p. 74.

communications, trade, and finance and other business services. Agriculture and ownership of dwellings are projected to expand only at 4 per cent and 6 per cent, respectively. Despite the difference in projected growth, the respective shares of oil and non-oil sectors in GDP will not change significantly by the end of the Plan. Crude oil production and refining is expected to form 82.1 per cent of GDP in 1980, against 86.6 per cent in 1975. But the relative shares of some components of the non-oil sector are expected to show significant changes, with the share of construction increasing from 26.6 per cent to 33.3 per cent, and that of agriculture decreasing from 8.6 to 4.6 per cent.

The Plan was prepared in the wake of the dramatic increase in oil revenues, and thus was designed to absorb the maximum possible of these revenues. Total allocations were set at about SRls 498 billion (or \$412 billion), i.e. about nine times the total allocations of the first plan measured in constant prices. About SRls 318.4 billion (or 64 per cent of total) was set for development spending, with the following sectoral distribution (in billion SRls): water and desalination (34.1), agriculture (4.7), electricity (6.2), manufacturing and minerals (45.1), education, health and social programmes (106.1), transportation and communication (40.4), municipalities (53.3), housing (14.3), and other sectors (14.3).

The Plan requirements for fixed capital formation are estimated at about SRls 300 billion, of which SRls 250 billion is accounted for by major construction programmes in the following areas (in SRls billion): industrial plants (70), municipalities (46), schools and hospitals (45), housing (29), roads, ports and airports (24), desalination plants (20), and others (24).

It can be discerned from the Plan that the formula for growth focuses on the investment of large amounts of capital and small amounts of manpower in a few key industries which exploit the country's natural advantages. These industries are designed to diversify economic activity and reduce dependence on the sale of crude oil. In the oil-producing Eastern Region of the country, the major plants are to be constructed for gas gathering and treatment, production of petrochemicals, refining of products for export, fertilizer production, and smelting indigenous iron ore and imported alumina. Total investment in these projects during the Plan is estimated at SRls 40 billion. In the Western Region, with crude oil and NGL piped from the east, an export refinery and a petrochemical complex will account for a further investment of SRls 10 billion. This suggests that the Saudi Government is creating a vast petrochemical industry split between the eastern (at Jubail) and western (at Yanbu) areas of the country. This amounts to double diversification: expanding industrially

into products that will use natural gas rather than diminishing oil resources, and dispersing industrial activity geographically to draw population to different regions.

Other industries seem peripheral to petrochemicals and metals. Planned expansion of manufacturing industries includes increasing cement production (from 1.2 million tonnes annually to 10 million tonnes), construction of three large integrated grain-silos and flour milling, and a wide variety of other activities including food processing, construction materials and products, automobile assembly and parts production, and the manufacture of fabrics, carpets, and other consumer products.

The Saudi Government seems to be leaving most of the consumer-goods market to private enterprise. The policy of encouraging the private sector rests on the provision of loans, tariff protection, and tax exemptions.

Although the country's financial resources are more than enough to handle whatever programmes are deemed feasible and economically rational, development is facing two major constraints. One is the limited indigenous manpower, in terms of both number and skills. It is estimated that about two-thirds of the increase in manpower needed during the Plan will have to be imported. The other constraint is the inadequacy of the present infrastructure to support rapid economic growth.

It is being recognised that infrastructure (including roads, ports, power, communication, housing, desalination, etc...) must be far better developed before the private sector will look at the more long-term industrial development. It is expected that the present plan will relieve the country from the problems posed by the second constraint, especially as there is a clear need to reduce development expenditures to more reasonable levels. But definitely the overcoming of the first constraint cannot be attained in a national context, but rather in a regional context in view of the labour abundance in some Arab countries.

The Plan provides in fact a framework which allows Saudi Arabia to achieve maximum economic growth through utilising the potential gains from trade. The hydrocarbon-based industries which will form the core of the industrial structure of the country are export-orientated industries, given the size of the domestic market and the scale of production of capital-intensive industries. This pattern of industrial growth which is evident also in the neighbouring Arab oil countries is tending to integrate the oil economies with the outside world. Although this is likely to increase external dependence, it will definitely diversify the nature of this dependence through export-substitution and transform the role of the oil countries in the international division of labour. These countries will eventually replace their present role as suppliers of crude oil by another one in which they become partners in world economic growth and progress. In

other words, they are allocating their resources to the industries which can generate efficiently the means for paying for their imports according to the principle of comparative advantage. It has been pointed out in this context that

"for purposes of resource allocation, one can look upon foreign trade as a separate activity using domestic products as inputs which are then transformed through exports into imported goods as outputs". 28/

The Self-Reliance Orientated Strategy

Egypt, Iraq, Syria, Jordan and Yemen advocate in varying degrees self-reliance (or inward-) orientated strategies, depending on their economic size, resource endowment and level of economic development. In their current development plans, the anticipated average annual growth rate in GDP is highest in Iraq (16.8 per cent), followed by Egypt and Syria (12.0 per cent in each), Jordan (11.9 per cent), and Yemen (8.2 per cent). These high rates of growth reflect increased investments as well as higher efficiency of investments. Per capita GDP is also expected to increase by about 13.3 per cent in Iraq and 7.9 per cent in Syria. Growth will be achieved in the countries concerned by concentrating mainly on the commodity-producing sectors^{29/} so as to effect a basic change in the economic

28/ M. Singh, The General Strategy of Foreign Trade Planning, UNCTAD, TAD/INT/SEM.L/2, p. 4.

29/ The commodity-producing sectors include agriculture and irrigation, manufacturing and mining, and construction.

structure. It is expected that the share of these sectors in GDP will increase, between the base and target years of the respective plans, in Iraq (from 72.9 to 76.0 per cent), Syria (from 45.0 to 46.2 per cent), and Jordan (from 35.0 to 44.0 per cent), but will decrease in the case of Yemen (from 56.0 to 52.0 per cent) due to the expected increase in the share of the trade sector. In Egypt priority is to be given to projects which would play a strategic role in development (fertilizers and building materials), which respond to the needs of the people (food, clothing, housing, storage and distribution), and which are export-orientated.^{30/}

A review of the sectoral strategies of the above plans reveal that the Arab countries concerned are seeking an integrated national development, based on growth-oriented agricultural and industrial sectors. This will provide for each of these countries maximum food self-sufficiency and a strong base for national industry. Table 5.9 shows that the planned rates of growth of the industrial sector in all countries would exceed those of GDP. In Syria and Yemen, where there is much need to improve and expand physical infrastructure to support rapid growth, the planned rates of growth of the construction, and transportation and communication sectors would also exceed those of GDP. On the other hand, the planned rates of growth of the agricultural sector in all countries would be lower than those of GDP, but in no case

^{30/} World Bank, Arab Republic of Egypt: Recent Economic Developments and External Capital Requirements, Report No. 2071-EGT, May 19, 1978, p. 15.

SELECTED ARAB COUNTRIES: Planned Average Annual Rates of Growth
in GDP and Major Sectors, 1976-80

Country	Plan Period	GDP	Agri- culture	Mining	Manufacturing	Construction	Transport & Communication
Iraq	1976-80	16.8	7.0	15.5	32.9	...	...
Syria	1976-80	12.0	8.0		15.4	16.0	16.4
Jordan	1976-80	11.9	7.0		26.2	4.1	20.6
Yemen	1976/77- 1980/81	8.2	5.5		11.7	14.4	11.3
Egypt	1978-82	12.0	...	...	...	...	...

- Sources: (1) Republic of Iraq, Ministry of Planning, National Development Plan, 1976-80 (Summary), Baghdad, 1977.
 (2) Syrian Arab Republic, National Planning Council, The Fourth Five-Year Development Plan, Damascus, 1976.
 (3) The Hashemite Kingdom of Jordan, National Planning Council, The Five-Year Plan, 1976-80, Amman, 1976.
 (4) Yemen Arab Republic, Ministry of Planning, The First Five-Year Economic and Social Development Plan, 1976/77-1980/81, Sana', 1977.
 (5) World Bank, Arab Republic of Egypt: Recent Economic Developments and External Capital Requirements, Report No. 2071-EGT, May 19, 1978.

less than 5 per cent. The structural changes resulting from sectoral growth would definitely be in favour of the industrial sector. Expressed as a percentage of GDP, the share of the industrial sector (including manufacturing and mining) is expected to increase during the plan period in Syria (from 22.4 to 26.2), Jordan (from 15.6 to 28.3), Iraq (from 6.7 to 11.4, excluding mining), and Yemen (from 6 to 7). Conversely, the relative share of agriculture, expressed also as a percentage of GDP, is expected to decline in Syria (from 16.3 to 13.6), Jordan (from 10.3 to 8.3), and Yemen from (46.0 to 39.0). In Iraq, agriculture is presumed to maintain its 5 per cent share in GDP. With respect to Egypt, again infrastructure and industry are expected to record high rates of growth during the plan period.

The sectoral distribution of planned investments reflect also the priority accorded to the industrial sector in the plans under review. In the Syrian plan (1976-80), total investments are expected to be £S 54.2 billion, of which 17.3 per cent is expected to be undertaken by the private sector. Public investment will amount to £44.8 billion, allocated as follows (in percentages): agriculture (23.2 including 16.4 for the Euphrates Dam), mining and manufacturing (22.1), energy (17.8), transportation and communication (11.5), housing (8.9), and other services (16.4). The Jordanian plan (1976-80) envisages a total investment of JD 765 million (36.4 per cent of GDP), divided equally between the public

and private sectors. Net foreign financing is estimated to cover about 37 per cent of total investment requirements. Mining and manufacturing are expected to absorb 30 per cent of total investment, followed by transportation (16 per cent), water (12.7 per cent), and agriculture (5.2 per cent). The Yemeni plan (1976/77-1980/81) sets total spending at YD 16,550 million, with fixed capital formation estimated at YD 15,971 million (or 48.7 per cent of total GDP). About 41.4 per cent of fixed capital formation will be financed from external sources. Of domestic financing, the private sector's share will be about one-third. The highest share of investment (31 per cent) will be allocated to transportation and communications. Industry will receive 22 per cent (including 12.5 per cent for manufacturing), agriculture 14.3 per cent, and housing 13.1 per cent. The Iraqi plan (1976-80) envisages a total investment of ID 13,455 million (about 44 per cent of total GDP), of which 91 per cent is earmarked to the public sector. No detailed information is available on the sectoral distribution of investments over the plan period.

As to the Egyptian plan (1978-82), total allocations amount to £E 11633 million (in 1977 prices), of which 87.4 per cent will be provided by the public sector. However, it ought to be observed that the share of the private sector in investments is expected to increase from 10 per cent in 1978 to 17.6 per cent in 1982. The main emphasis in public investments is on industry (including petroleum) as well as on

infrastructure (including the Suez Canal, power, and construction) which will receive 29.2 and 45.4 per cent, respectively. Agriculture and irrigation will receive only 8.6 per cent of public investments, in view of past investments. However, the plan formulates the sectoral strategies very clearly. With respect to industry it envisages the maximisation of the net return of investments to the economy, taking into consideration the distributional impact of projects. Priority is to be given to new projects which lead to optimal scale of production, or which relieve bottlenecks hindering the development of other industries. It is argued in the plan

"that during the 1960-76 period, an import-substitution strategy was adopted and led to a number of problems. Other than the theoretical problems associated in general with import-substitution policies, the unqualified adherence to such policies in the past has led to wasteful investment in projects that were not viable for a variety of reasons - insufficient scale of production (automobiles, refrigerators and televisions) inadequate domestic inputs (sugar) and inappropriate raw materials (iron and steel) are among some of the reasons for failure. The Plan also warns that an unqualified adherence to an export-oriented industrialization strategy would also be inappropriate in spite of its theoretical superiority to import-substitution." 31/

As to agriculture, the strategy is to ensure the security of the supply of basic foodstuffs and of clothing of the population, but without affecting the importance of this sector as a foreign exchange earner. This entails some restructuring of crops by increasing the area under cereals.

31/ Ibid.

The central theme that could be discerned from the above plans is that the agricultural Arab countries are trying to make the process of development and growth more adapted to their national human and natural resource endowment. By enhancing the performance of their employed factors of production as well as bringing into productive use idle resources, they are reducing the extent of their external dependence. In other words, they are endeavouring to substitute national resources (goods and services) for imported ones, thus attaining a larger degree of national sovereignty. The emphasis in this approach is apt to be on the "disaggregation of growth" though increasing the level of income of the different groups in society. Of course, this process would have an opportunity cost in terms of growth foregone, but could be desirable from the socio-political point of view. It attains for the majority of the population what is now termed as the "basic needs".^{32/}

It is obvious that industrialisation provides a focal point in the self-reliance (or inward-) orientated strategy, but without any negligence of agriculture. In most cases, the process of economic development has to start in the agricultural sector where labour productivity is low, and the shift to industrial development becomes eminent when further increases in average productivity can best be secured by a

^{32/} The definition of this term is arbitrary, but could be taken to include individual, or household, material consumption (i.e. food, clothing, shelter, etc...); the provision of or access to education, health services; and the use of public utilities.

transfer of labour to other occupations. Thus, it seems that such a rural-based development approach is mostly suitable to the Sudan and the two Yemens. In the more developed countries (i.e. Syria, Iraq, Egypt, and Jordan), industrialisation seems to lend itself more as a vehicle for achieving the increase in productivity on which economic development is essentially based.

Economic Development and Integration

The whole Arab region seems to be at a turning point in its economic development and progress. Although this could limit the usefulness of past performances in predicting future trends, it is certain that industrialisation would remain at the core of the development strategies of the various countries in the region. For the oil countries, industrialisation could provide the basic means for absorbing a larger part of the oil revenues in productive investments, considering the limited agricultural potential in most of them. This would eventually transform the present oil economies into petro-industrial economies. Analogously, in the agricultural countries industrialisation could ensure a fuller utilisation of labour resources, and help to enhance the average productivity of labour in the entire economy. The agricultural and industrial sectors could be made mutually supporting by the creation of some industries based on agricultural inputs and others supplying the agricultural sector with certain

essential inputs such as fertilizers, insecticides and machinery. Such inputs could help in preventing agricultural development from becoming too costly in domestic or foreign exchange terms. This would eventually transform the agricultural economies into agro-industrial economies.

It must be recognised, however, that the achievement of the fundamental development objectives outlined above hinges to a large extent on the ability of the Arab countries to surmount the problems and constraints which beset their development. These problems which are common to many countries in the developing world, embrace both the demand and supply sides.

On the demand side, despite the fact that the Arab countries vary considerably in economic size, their domestic markets are considered small to sustain large-scale industries. It is generally presumed

"that the size of a country ... imposes certain constraints on the pattern of growth and hence on the character and degree to which such growth can be self-sustaining." 33/

Consequently, in the absence of export outlets the process of economic transformation sought in the Arab countries is expected to reach an "impasse", though sooner in the smaller than in the larger countries. For example, Egypt has a much

33/ William G. Demas, The Economics of Development in Small Countries With Special Reference to the Caribbean (Montreal: McGill University Press, 1965), p. 22.

wider potential for development on the basis of its domestic market than any other Arab country, though this potential can be realised only if income per capita increases notably.

Within the confines of a small market the efficiency of investments tends to be jeopardised. If for technological reasons a certain industrial plant cannot be downscaled to the size of the domestic market, it will have to operate below capacity and thus there will be a misallocation of resources. More specifically, in some industries there is apt to be a minimum-efficient-scale below which operation would be costly. At the risk of generalisation one can say that investment productivity, especially in industry, is likely to be low if based on a small market. In other words, the incremental capital-output ratio (ICOR) would tend to be high, and this will be undesirable in a country where economic development is constrained by capital shortage.

On the supply side, the emphasis on the problems besetting development differs as between the oil and non-oil countries. While the oil countries experience no financial constraints, they face serious shortages of labour at all levels, and this is being aggravated by their ambitious development plans. Although these countries are allocating sizeable proportions of their public expenditures to education and vocational training, this is not likely to ease the problem in the

short- or medium-run. In the meantime, migrational movements within the Arab region are proving to be of some help, but not without raising sharply the general level of wages. Unlike other oil countries, Iraq prefers not to import labour apart from some Arab labour, and it is endeavouring to draw the skilled manpower needed for its development almost entirely from its own population.

Another problem retarding development in the oil countries is the infrastructural weakness. This does not only limit the absorptive capacity of the countries concerned, but also increase the cost of development considerably. In Iraq, where economic activity is spread over a relatively wide geographic area, there is a pressing need to improve and expand the road and rail networks, to provide industrial and agricultural projects with better access to their major markets and to the ports. In the smaller oil countries, port congestion which could cause unloading delays up to three months is a major bottleneck to development, and resultant costs have been considerable. However, there has been some improvement in the Saudi ports (Jeddah and Damman) since the beginning of 1977 and in Kuwait and U.A.E. ports.

With respect to the non-oil countries, the lack of capital funds, which arises basically from the low level of domestic savings, is a major limiting factor in the process of economic development. In these countries, the resource

balance^{34/} is traditionally negative (i.e. dissaving) and showed marked deterioration in the 1970s as a result of the increase in investment expenditures. In 1977, the resource balance as a percentage of GDP reached 58.9 per cent in the case of Jordan, 39.8 per cent in Yemen, 22 per cent in Syria, 13.2 per cent in Lebanon, and 12 per cent in Egypt (during 1976).^{35/} It has been estimated that the "resource gap" which needs to be covered, if an average rate of growth of 10 per cent per annum is to be attained in the non-oil Arab countries during the period 1975-80, amounts to \$5.2 billion. It is estimated that domestic sources would cover 39.5 per cent of total capital required in the case of Egypt, 33.4 per cent in Sudan, 77.6 per cent in Syria, 48.4 per cent in Lebanon, 44.3 per cent in Jordan and 40.0 per cent in Yemen. On the other hand, the oil-producing countries are expected to realise during the same period surplus capital averaging about \$30.5 billion annually.^{36/}

It is not difficult to visualise how the above constraints could be overcome to a large extent through promoting development on a regional scale. The factor

^{34/} The resource balance is the result of domestic savings less gross capital formation. Obviously, the insufficiency of domestic resources in the non-oil countries to meet domestic investment requirements leads to negative resource balance ratios.

^{35/} See ECWA, Survey of Economic and Social Development in the ECWA Region, 1970-78, op. cit., pp. 33-35; and, Robert Mabro, Oil Revenues and the Cost of Social and Economic Development, a paper presented to the First Arab Energy Conference, 4-8 March 1979, Abu Dhabi, p. 25.

^{36/} R. El-Mallakh, M. Kadhim, and B. Poulson, Capital Investment in the Middle East (New York: Praeger, 1977), pp. 73-75.

disproportion on the national level could turn into a definite economic advantage when viewed in a regional context. Undoubtedly, the Arab countries could enhance considerably their development potential through promoting regional specialisation and mobility of factors of production. This can be attained in a circulatory way: the inflow of capital to the non-oil economies would allow these countries to increase their rates of investment in human resources and productive capacities, and hence increase the regional availability of skills for oil economies.^{37/} Indeed, the oil economies provide an interesting model of development which is based on an unlimited supply of capital, since the monetary capital surpluses facilitate the process of development without sacrificing present consumption standards. This means that through raising capital-output and capital-labour ratios it would be possible to shift the dependence of the economy from the production of crude oil to high technology, capital-intensive industrial production. Yet, this seems difficult to achieve within an unchanged social framework, since the capital absorptive capacity is not only limited by the degree of skills available but also by the smallness of the indigenous labour force.

^{37/} Some of the non-oil countries, especially Jordan and Syria, are starting to suffer from the present outflow of skills to the oil countries. Syria is seriously considering the imposition of restrictions on the movement of skilled and semi-skilled workers. See Middle East Economic Digest, 11 March 1977, p. 9.

It cannot be denied that there is a wide cognizance among the Arab countries of the desirability of intra-regional coordination of development efforts. In most development plans regional economic cooperation and integration is stated as a declared objective. The Jordanian Plan states explicitly that

"Emphasis should be placed on cooperation with sister Arab countries through the coordination of their development efforts and the establishment of joint projects, particularly in the fields of minerals and mineral-based industries. Emphasis should also be placed on promoting economic integration among the Arab countries as well as on developing infrastructural facilities which serve the above purposes." 38/

The Syrian Plan lists among its objectives the improvement of

"the transport and communication network with the world in general and the Arab countries in particular." 39/

The Yemeni Plan advocates the

"concentration on integrative projects, both Yemeni and Arab, by executing projects which may achieve unification of the two Yemens and provide closer ties with the other Arab countries." 40/

38/ The Hashemite Kingdom of Jordan, National Planning Council, The Five-Year Plan for Economic and Social Development, 1976-80, Amman, 1976, p. 29.

39/ Syrian Arab Republic, National Planning Council, The Fourth Five-Year Development Plan, 1976-80, Damascus, 1976, p. 7. (in Arabic).

40/ ECWA, Summary of the First Five-Year Plan of the Yemen Arab Republic, November 1977, Beirut, p. 28.

The Saudi Plan reiterates the Saudi Government's commitment to aid Arab and other countries "in fulfilling their development aspirations", and lists some of the major institutions established alone or with participation from other Arab countries to handle such aid.^{41/} Among these institutions the Saudi Arabian Development Fund which was established in 1974 with a capital of SRls 10,000 million, and the Islamic Development Bank which was established in 1976 with a capital of Islamic Dinar 2,000 million (or the equivalent to US \$2,400 million) of which 10 per cent represents the share of Saudi Arabia.

Historically, the Arab countries were among the first to recognise in the post-World War II period the merits of regional economic cooperation and integration, and their efforts have aroused academic interests since some time.^{42/} But as could be discerned from the previous chapter, their achievements in this field have been rather disappointing. Although political differences loomed large in disrupting their integrative efforts, it is firmly believed that the economic factors already discussed, combined with the lack of emphasis on the proper approach to integration, were also of great significance. The basic idea in this respect is that economic integration among the Arab countries is not merely a question of reducing or eliminating discriminatory

^{41/} Kingdom of Saudi Arabia, Ministry of Planning, Second Development Plan, 1975-80, Riyadh, 1975, pp. 46-48.

^{42/} For instance, see the two articles by Daniel H. Garnick, "On the Economic Feasibility of A Middle Eastern Common Market", The Middle East Journal, Summer, 1966, pp. 265-276; and, "Regional Integration and Economic Development in the Middle East", Middle Eastern Affairs, Vol. 12, No. 10, December 1961, pp. 294-300.

measures. It calls for a positive action based on a regional investment policy which coordinates investment programmes in productive sectors, to reap the benefits of specialisation and scale in an enlarged market.

On the whole, the agricultural sector does not pose any serious problems in the process of economic integration, given the natural specialisation in production and the need to bridge the widening gap in food. The major industrial crops produced in the region at present (e.g. cotton in Egypt) are mainly exported to the outside world, and this will continue in the case of integration. The production of food crops on an integrated basis is not likely to generate, at least within a decade or so, considerable surpluses beyond the needs of the region. It is important to recognise, however, that agricultural activity in the Arab region is still resource-based and there is a need to base it more on science and modern technology, especially when it comes to vertical expansion and the use of desert-like areas. The Arab countries have a definite interest in pooling their agricultural research activities.

The industrial sector in the Arab countries lends itself much more to the concept of integration at the present stage of development. In the first place, and as argued earlier, industrialisation plays a central role in the process of economic transformation in view of its dynamic qualities, and accordingly industrial integration will spill over into other

sectors and help more in gathering momentum in the overall integration process. In the following passage, Mabro and Radwan reveal eloquently the centrality of industrialisation in the above context:

"Economic theory lends some support to the case of industrialization. Industry is the privileged locus of the division of labour, economies of scale, and technical progress, the main agent of economic growth. It transmits technical advances, embodied in capital goods of industrial inputs, to other sectors. Output per man is generally higher in industry than in poor agriculture, and the re-allocation of labour from a low- to a high-productivity sector is a factor of growth. Finally, and despite the fashionable scepticism about external economies, it remains true that industry acquaints labour and management with the modes of thinking, the discipline and organization, the processes and tools of the technological world, and that this increased familiarity slowly spreads elsewhere in the economy." 43/

Secondly, most of the Arab countries have already devoted sizeable portions of their resources for developing their physical and social infrastructures, and have reached now a stage where they need to expand and diversify their productive sectors. It is amply evident from the above survey of selected development plans that the industrial sector is assigned a leading role in the development process. Unlike the preceding stage of development, the new stage would require more formal regional cooperation and integration.

43/ Robert Mabro and Samir Radwan, The Industrialization of Egypt 1939-73: Policy and Performance (Oxford: Clarendon Press, 1978), pp. 1-2.

Thirdly, it is rapidly becoming apparent that the emerging patterns of industrial investments are not in the long-term interests of the Arab countries. In the case of the oil countries, there is much duplication in industrial investments in view of these countries' similar resource bases. This, together with the geographical grouping of industries, is apt to increase greatly the danger of ruinous competition between these countries in export markets, whether within the region or outside it. At the same time, and perhaps more importantly at this stage of development, these patterns of investment are not conducive to a rational exploitation of finite resources in the region and tend to keep the economies concerned open to external influences. On the other hand, industrial development in the non-oil countries is taking place largely within national compartments, and this is not only producing similar industrial patterns but also lowering the ceiling for industrial development and preventing from the use of certain modern technologies. Again here the result has been the spread of some of the scarce domestic resources (capital and skills) thinly among numerous small and relatively inefficient enterprises.

It was argued in the first chapter that economic integration in developing settings is marked with great uncertainty, and that it is very important for its success to adopt an allocative approach which would avoid the occurrence of "crises" among the participants due to

maldistribution of benefits and costs of integration. It is more consistent with this approach to have integration start in an area in which the participants have a vested interest. From the above analysis, the industrial sector can be considered a priority area for integration among the Arab countries. To argue further this proposition, it is necessary to examine closely the industrial position, problems and prospects in the Arab countries.

CHAPTER SIX

INDUSTRIALISATION IN THE ARAB MIDDLE EAST

The starting proposition of this chapter is that industrialisation^{1/} in the Arab Middle East countries has not so far produced significant structural changes or contributed markedly in promoting exports. Aside from the fact that industrial development has only a short history, this can be attributed to the way by which industrialisation has been approached in most Arab countries. An attempt will be made first to examine the general approach to industrial development, the policy framework governing the industrialisation process, and the emerging industrial growth patterns. This will be followed by an analysis of the compatibility of present policy instruments and the measures in attaining the objective of greater level of industrialisation. The chapter will be concluded by an assessment of the significance of regional industrial integration as a major ingredient of industrial development policy.

The General Approach to Industrialisation

Broadly speaking, there are two distinct approaches to industrial development. One is an outward-looking approach

^{1/} Unless otherwise stated, the terms "industrialisation" and "industry" are used throughout this study in their restricted sense to denote manufacturing industry only. This will exclude oil-exporting industry, but include industries based on the processing of extracted oil such as refining, petrochemicals, fertilizers, etc...

which aims at producing manufactured goods largely for export. In line with the principle of comparative advantage, the production of such goods ought to be intensive in the factor of production which is relatively abundant in the producing country. The rationale of this approach is to increase export earnings of the country concerned, and hence improve its ability to import goods needed for development purposes. Under this approach we can include as well the processing of raw materials for export, the question is whether this processing is carried out by local or foreign-owned firms. The other approach is an inward-looking one. It aims at substituting imports by domestic production, without much consideration to the principle of comparative advantage in both static and dynamic contexts. The rationale of this approach is to lessen the constraints imposed by foreign exchange shortages and ensure a reasonable degree of industrialisation.

Obviously, these approaches are poles apart as far as the participation in the international division of labour is concerned. Considerations such as factor endowment, level of industrial development, and size of the domestic market are instrumental in determining the choice of the approach. The framing of the approach is basically made by manipulating commercial policy. This policy tends to be highly discriminatory in the case of the inward-looking approach and non-discriminatory in the case of the outward-looking approach. Of course, it is possible to conceive varying combinations of

the two approaches, and the optimal one is that which promotes at the same time production for export and for domestic consumption. However, in most developing countries there is a strong accent on import-substitution. But this should not conceal the fact that some developing countries, particularly in Latin America and the Far East, succeeded in expanding markedly their exports of manufactures (mainly low-cost and relatively labour-intensive manufactures).^{2/}

The drive towards import-substitution has been conditioned mainly by two interrelated considerations. First, the developing countries generally are late-comers in the field of industrial development and accordingly they are at a disadvantage vis-à-vis developed (industrialised) countries in exporting to world markets. This remains valid despite the view that developing countries can benefit from back-logs of innovations and past experiences and can avoid the pitfalls and difficulties encountered by early-comers. In addition, it has been proven that there is a bias in the tariff structure of the developed countries against exports from developing countries.^{3/} Secondly, substitution is usually the most potent initial phase of industrialisation. It "takes-over" from foreign producers an existing market for a wide range of industrial goods, mostly

^{2/} See UNCTAD, Trade and Development Policies in the 1970s, Report by the Secretary General of UNCTAD for the first review and appraisal of the implementation of the International Development Strategy, New York, United Nations Publications Sales No. E.73.II.D.14, pp. 3-4.

^{3/} Bela Balassa, "Tariff Protection In Industrial Nations and its Effects on the Exports of Processed Goods from Developing Countries", Canadian Journal of Economics, Vol. I, No. 3, August 1968, pp. 583-594.

finished consumer goods, which can be produced with limited capital requirements and on the basis of a small market. As such it is apt to generate rapid industrial growth and release foreign exchange for the importation of capital equipment and other essential goods.

Turning to the Arab countries, one can notice that the process of industrialisation gathered momentum only in some of them; namely, Egypt, Lebanon, Syria, Iraq, and Jordan. Of these countries, only Egypt has a long record of industrialisation that goes back to the first half of the nineteenth century.^{4/} In the other countries, industrialisation started in the period following World War II, but did not make roots until the late 1950s.^{5/} However, a common feature is that industrialisation was largely induced by policy instruments which favour import-substitution. More importantly, in the case of Egypt, Syria, and Iraq, industrialisation was approached by direct participation of the public sector in industrial activity. As far as the other countries in the Arab region are concerned, industrial development is still at an embryonic stage, though remarkable progress has been made over the last few years especially in the oil-rich countries.

4/ For a brief expose of early industrialisation in Egypt, see Mabro and Radwan, op. cit., pp. 9-29.

5/ The industrialisation process in Iraq started in the late 1930s, but was disrupted by World War II. For a detailed historical account, see Kathleen Langley, The Industrialization of Iraq (Cambridge, Mass: Harvard University Press, 1961). For a historical account of industrialisation in the other countries of the region, see Kurt Grunwald and J. Ronall, Industrialization in the Middle East (New York: Council for Middle Eastern Affairs Press, 1960).

It is evident from available data that the rate of growth of value-added in manufacturing in the major Arab countries averaged during the 1960s about 8 per cent per annum. In individual countries, the annual rates of growth ranged from 7.9 per cent in Jordan to 8.0 per cent in Syria, and 8.2 per cent in each of Lebanon and Iraq.^{6/} But as growth rates are sensitive to base year values, it is more useful to relate the value-added in manufacturing to GDP. Table 6.1 reveals that in the early 1970s, the ratio of value-added in manufacturing to GDP was highest in Egypt (26.2 per cent), followed by Syria (13.7 per cent), Jordan (10.9 per cent), Sudan (8.0 per cent), and Iraq (3.0 per cent). The high ratios in the case of Bahrain and Democratic Yemen arise from the oil refining activities in them.

More significantly, the above Table reveals the structural imbalance in Arab manufacturing industry, which in itself is a clear indication of the early stage of industrialisation in the region. In the non-oil countries, there is a marked bias for consumer industries which have been developed mainly on an import-substitution basis. Tariff protection is the most widely used instrument for the promotion of industrial activity in these countries, and in some cases it is associated with quantitative restrictions in the form of import licensing and a quota system. In countries which experience a deficit

^{6/} ECWA, Survey of Economic and Social Development in the ECWA Region, op. cit., p. 139.

ARAB COUNTRIES: Distribution of Value-Added in Manufacturing By Major Industry Classes
(Value in million \$ and current prices)

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Country	Year	Consumer Industries		Intermediate Industries		Capital Industries		Construction Materials		TOTAL		Total Value-Added as % of GDP ^{a/}
		Value	%	Value	%	Value	%	Value	%	Value	%	
Jordan	1960	9.5	60.0	0.3	1.8	1.7	10.7	4.4	27.5	15.9	100.0	
	1974	53.2	50.8	20.0	19.1	19.6	18.7	12.0	11.4	104.8	100.0	10.9
Syria	1963	90.1	77.2	10.6	9.1	8.6	7.4	7.4	6.3	116.7	100.0	
	1972	202.8	71.9	35.4	12.6	24.9	8.8	18.9	6.7	282.0	100.0	13.7
Iraq	1964	55.2	42.1	42.8	32.6	9.0	6.9	24.1	18.4	131.1	100.0	
	1975	129.4	33.6	141.2	36.6	62.3	16.2	52.4	13.6	385.3	100.0	3.0
Kuwait	1966	20.0	8.9	178.7	79.6	15.5	6.9	10.4	4.6	224.6	100.0	
	1972	47.9	26.1	106.5	58.0	15.1	8.2	14.2	7.7	183.7	100.0	4.3
S. Arabia	1968	25.4	47.1	2.0	3.7	26.5	49.2	-	-	53.9	100.0	
	1976	33.1	17.8	72.7	39.1	21.8	11.7	58.5	31.4	186.1	100.0	4.2 ^{b/}
Bahrain	1970	2.1	1.7	120.5	98.3	-	-	-	-	122.6	100.0	
	1972	14.4	11.2	114.5	88.8	-	-	-	-	128.9	100.0	42.5
D. Yemen	1969	5.1	12.0	36.9	86.6	0.6	1.4	-	-	42.6	100.0	
	1972	5.5	20.6	20.6	77.2	0.6	2.2	-	-	26.7	100.0	16.2
Yemen	69/70	7.3	80.2	0.2	2.2	0.8	8.8	0.8	8.8	9.1	100.0	
	74/75	34.5	80.1	2.8	6.5	0.4	0.9	5.4	12.5	43.1	100.0	4.3
Oman	1970	0.5	-	-	-	-	-	-	-	-	-	
	1974	5.7	-	-	-	-	-	-	-	-	-	0.3
Egypt	60/61	419.5	67.8	98.7	15.9	78.0	12.6	23.0	3.7	619.2	100.0	
	1974	1066.5	54.4	500.4	25.5	314.3	16.0	80.0	4.1	1961.2	100.0	26.2
Sudan	1966	76.2	82.1	10.9	11.8	5.7	6.1	-	-	92.8	100.0	
	1970	118.4	81.2	15.5	10.6	12.0	8.2	-	-	145.9	100.0	8.0
UAE	1970	2.7	79.4	-	-	-	-	0.7	20.6	3.4	100.0	
	1974	6.6	65.4	-	-	-	-	3.5	34.6	10.1	100.0	0.2

a/ at factor cost. b/ in 1975... N.B.: Lebanon is excluded due to the non-availability of statistics.

Source: Compiled from IDCAS, A Statistical Profile of Manufacturing Industry in the Arab States, presented to the Second Meeting of the Arab Ministers of Industry, Tunisia 8-13 November 1977, published in Cairo (in Arabic).

in their current account (especially Egypt, Syria and Jordan), these measures have been utilised both defensively to deal with the payments situation, and positively to attain the objective of a greater level of industrialisation. The desirable effect of these instruments on industrial development arises from their discriminatory impact on the relative prices of inputs and outputs, and subsequently on the allocation of resources.

It is important to recognise that the extent of protection differs as between countries and between products in any one country. In 1969, the unweighted averages of tariff rates and other charges ranged (in percentages) from 57.3 in Egypt to 32.5 in Syria, 31.1 in Jordan, 23.1 in Iraq, and 21.5 in Lebanon.^{7/} It is rather difficult to depict the extent of the protective element in these rates, since customs duties form an important source of public revenues in these countries. As to protection applied to individual commodities, it is noticed that tariffs escalate according to the degree of processing involved in producing the imported goods. Accordingly, nominal tariffs are higher on imports of manufactured final products than on inputs, whether of raw materials or capital goods.^{8/} From the standpoint of production decisions, the effective rate of protection is more meaningful than nominal rate of protection, as the value-added in new

7/ UNESOB, Problems and Methods of Establishing Common External Tariffs for the Countries of the Arab Common Market, Beirut, 1971 (in Arabic and French).

8/ Wilson, op. cit., p. 73.

industries in the Arab countries is often only a small proportion of the total value of the product. It is presumed therefore that in the countries concerned generally the nominal rates of protection are much lower than effective rates, and this gives better chances for import-substitution industrialisation.

In the oil countries, the bias in the industrial structure is for intermediate industries which comprise mainly refining activities and petrochemical production. This is also the case in Democratic Yemen which relies heavily on refining. However, these countries differ as to the dependence of their industries on export markets, with this being highest in Bahrain and Democratic Yemen (with respect to refined oil) and Kuwait and Saudi Arabia (with respect to petrochemicals). As will be revealed later, the oil countries are increasingly taking advantage of the availability of cheap energy to create hydrocarbon industries which are highly integrated with the outside world.

What needs to be stressed here is that past industrial growth has not yet produced a significant degree of economic and social transformation. This can be attributed largely to the emphasis on import-substitution and the pattern of industrial growth which emerged. Faced with a small and in some cases widely dispersed domestic market, import-substitution industrialisation tended to take the form of individual and

comparatively unrelated plants for the production of light (mostly consumer) goods, and hence the linkages between these plants and the rest of the economy were kept to a minimum. It is estimated that a little less than two-thirds of the total value of manufacturing output of the region consists of food, textiles, wood products and plastics. However, in view of a relatively larger domestic market and the availability of diversified resources, there has been some deviation from this pattern in the case of Egypt. Almost all branches of manufacturing industry, especially the chemical, pharmaceutical, engineering and electrical industries, experienced rapid expansion, and this provided Egypt with a wider industrial base which has many inter-sectoral and inter-industry linkages.^{9/} To demonstrate these aspects of industrialisation in the Arab countries, it is useful to give a profile of the industrial structure and policy frameworks governing industrialisation in selected Arab countries.

Patterns of Industrial Growth

Despite the common features which characterise the process of industrialisation in the Arab countries, it is possible to depict some differences among these countries with regard to the policies pursued, the problems faced, and the future prospects as may be determined by the emerging patterns of industrial growth. Accordingly, the countries

^{9/} Ibid., p. 53.

chosen for study must reflect these differences, and at the same time be representative so as to permit the generalisation of the findings to a certain extent. The countries which will be studied are: Egypt, Syria, Jordan and Lebanon from among the non-oil countries, and Iraq and Saudi Arabia from among the oil countries.

Egypt: In view of the population pressure in the agricultural sector, industrialisation assumes a vital importance in the national development policy of Egypt. The modern phase of industrialisation which started in 1930 was typically import-substitution, despite the change in economic system from free enterprise to mixed economy during the 1950s, and to planned socialist economy following the extensive nationalisation measures in 1961. The tariff system of 1930 was designed to promote industries using local raw materials by protecting them. However, the process of industrialisation remained relatively slow until the early 1950s, despite some acceleration during World War II as a result of the reduction of external supplies. The structure of industry was dominated by a small number of industries processing agricultural products, especially cotton.

The First Industrial Programme (1957-61) was a major development in the industrialisation of Egypt. It marked the beginning of a period in which the Government became directly involved in industrial development, after being merely

"promotional" by adopting a protective tariff policy directed towards encouraging private investments in industry. This involvement was intensified in the 1960s when comprehensive economic planning was introduced and the public sector emerged as the major industrial entrepreneur. Furthermore, the nationalisation of foreign trade enabled the public sector to subordinate the import policy to the long-term development plans. During the period 1959-70, total public investments in industry amounted to £E945.3 million, or about ten times the total investment in industry during the 1950s.^{10/}

The adoption of import-substitution as a strategy for industrialisation in Egypt was dictated largely by the desire to accelerate the rate of industrial growth and save foreign exchange. The attractiveness of this strategy in the case of Egypt is enhanced by the fact that it entails, at least in the early stages, minimum capital and technical requirements. It is important to remark that the average annual growth rate of industrial production during the First Five-Year Development Plan (1960/61-1964/65) was about 8.5 per cent (against a planned rate of 14.5 per cent), and this contrasts favourably with previous growth rates. But after 1965, and particularly after the June 1967 War, the rate of growth declined considerably and in 1968 it was negative, the major reason being the acute shortage in foreign exchange needed to finance new and existing industries, largely caused by the heavy defense

^{10/} Fouad H. Awad, Industrial Policies: The Experience of the United Arab Republic, UNESOB-UNIDO-IDCAS, Interregional Seminar on Selected Aspects of Industrial Policy, Beirut 4-15 January 1971, ID/WG.86/11, 15 July 1971, p. 18.

commitments. Although there was some improvement in 1970 and the years after, it is not likely that industrial growth has regained fully its previous strength. However, it is estimated that in 1975 the share of the industrial sector in GNP was 19.4 per cent, against 8 per cent in 1945, whereas this sector absorbed 12.5 per cent of total labour force, against 9 per cent, respectively.^{11/}

Available figures reveal that considerable strides have been made since 1950 to satisfy local demand for consumer and durable industrial goods, in addition to an appropriate contribution to supplies of intermediate products including building materials, iron and steel, chemicals, and petrochemicals. Table 6.2 illustrates the change which took place in industrial structure between 1947 and 1975. It is clear that there was a decline in the share of consumer industries in gross value-added in favour of intermediate industries, and to a much lesser extent in favour of consumer durable/equipment industries. Yet, food and textile industries remain the main contributors of value-added, accounting together for 38.5 per cent of total gross value-added in manufacturing in 1975. The importance of the textile industry can also be discerned from the fact that it is the major employer and exporter of manufactures. In 1966/67, this industry absorbed about 32.3 per cent of industrial labour, and provided about 20 per cent of total industrial exports. As a World Bank report points out,

^{11/} IDCAS, An Evaluation of Industrial Development in Egypt, a study presented to the 4th Conference on Industrial Development for Arab States, December 1976, p. 9. For an index of industrial production during the period 1945-70, see Mabro and Radwan, op. cit., Table 5.2 (p. 84), and Table 5.3 (p. 87).

Industry	1947		1966/67		1969/70		1975	
	Value Added	%	Value Added	%	Value Added	%	Value Added	%
<u>Basic Consumer Industries</u>								
Food	10.5	20.7	44.0	12.1	104.5	20.4	140.0	17.5
Beverages	1.7	3.4	3.9	1.1	4.9	0.9	12.0	1.5
Tobacco	5.4	10.6	13.8	3.8	14.2	2.7	27.6	3.4
Textiles	21.8	43.0	120.6	33.2	120.9	23.6	168.0	21.0
Wearing Apparel	1.1	2.1	17.4	4.8	22.9	4.4	50.7	6.3
Sub-total	40.5	79.8	199.7	55.0	267.4	52.0	398.3	49.7
<u>Intermediate Industries</u>								
Wood	0.1	0.2	3.8	1.1	15.8	3.0	18.7	2.7
Paper	0.5	0.9	9.1	2.5	9.8	1.9	22.0	2.3
Printing	1.1	2.2	7.1	2.0	14.5	2.8	18.5	1.2
Leather	0.5	1.0	2.5	0.7	4.9	0.9	9.8	1.1
Rubber	0.2	0.4	3.0	0.8	5.4	1.0	9.2	12.0
Chemicals	2.1	4.2	39.4	10.8	54.9	10.6	96.3	-23.9
Petroleum	1.0	2.1	16.0	4.4	11.2	2.2	40.1	5.0
Non-metallic	1.4	2.8	15.6	4.3	23.5	4.5	52.2	6.5
Basic metals	0.2	0.3	12.4	3.4	23.9	4.6	28.0	3.5
Metallic products	1.7	3.4	15.5	4.3	16.6	3.2	56.0	7.0
Miscellaneous	0.3	0.6	5.1	1.4	30.4	5.9		
Sub-total	9.1	18.1	129.5	35.7	210.9	40.6	326.9	41.3
<u>Consumer Durables/Equipment</u>								
Furniture	0.8	1.8	9.2	2.5			10.0	1.0
Non-electric machinery	-	0.0	3.9	1.1	6.4	1.2	33.2	4.0
Electric machinery	-	-	10.8	3.0	16.9	3.3	32.3	4.0
Transport equipt.	0.3	0.3	9.8	2.7	14.9	2.9		
Sub-total	1.1	2.1	33.7	9.3	38.2	7.4	75.5	9.0
TOTAL	50.7	100.0	362.9	100.0	130.8	100.0	800.7	100.0

Source: 1947 and 1966/67 figures from Mabro and Radwan, *op. cit.*, and 1969/70 and 1975 figures from Ministry of Planning, as reproduced in World Bank, Arab Republic of Egypt: Economic Management in a Period of Transition, Vol. III, May 1978, Report No. 1815-EGT, p. 71.

the dominant place of textiles is the consequence of import-substituting policies rather than the exploitation of a natural advantage.^{12/} It is argued in this respect that the textile industry in Egypt does not yield an economic return measured in terms of the social opportunity costs of inputs. Egyptian long-staple cotton is considered of a superior quality, and unless it is used to produce a high quality output which is marketable at high international prices the industry concerned will show negative value-added at international prices.

The above Table reveals also that the fastest growing industries were chemicals. The presence of a wide and expanding domestic market for chemicals facilitated the creation of import-substitution industries producing fertilizers (for the agricultural sector), alcohol, detergents, paints, acids, as well as some consumer goods having high income-elasticity of demand such as soap and pharmaceuticals. Other branches of industry which expanded markedly during the period under review were basic metals, electric machinery, and transport equipment.

It is evident that the import-substitution strategy left its imprint on the pattern of industrial growth. The change in the shares of the various industries in gross value-added indicates that the import-substitution process is being extended through backward linkages, from consumer industries to intermediate industries as well as consumer durables. It

^{12/} World Bank, Arab Republic of Egypt: Economic Management in a Period of Transition, Vol. III, p. 73.

can be noticed that the subordination of the tariff structure to the import-substitution policy created discrimination against capital good industries as very little or almost no tariffs are applied to them. However, the fact that comprehensive economic planning was introduced in 1960 and the public sector was responsible for the larger part of industrial investments could be taken to suggest that the emerging pattern of industrial growth reflects as well the state planning policy. Incidentally, gross fixed investment in industry increased from £29.5 million (or 25 per cent of total investments in the economy) in 1952/53 to £67.8 million (30 per cent) in 1961/62, and £119.7 million (31 per cent) in 1972. During the period 1969-74, the public sector provided no less than 95 per cent of industrial investments.^{13/} It is to be noticed, however, that the role of the public sector in industry has not been to compete with the private sector, but rather to meet the industrial growth targets which the private sector cannot attain either due to the lack of resources or the risks involved. Hence, the private sector remained largely confined to consumer industries, whereas the public sector dominated the intermediate industries (including iron and steel, chemicals, and petrochemicals) as well as the machinery and transport equipment industries. To assess the place of the public sector in industry, it is useful to point out that in 1975 it accounted for about 76 per cent of gross fixed investments, 59 per cent of the value-

^{13/} World Bank, Arab Republic of Egypt: Economic Management in a Period of Transition, Vol. VI: Statistical Appendix, pp. 117-118.

added, 46 per cent of value of production, 53 per cent of exports, 43 per cent of labour force, and 63 per cent of wages paid.^{14/}

The import-substitution policy in Egypt seems to have provided excessive protection, to the extent that there was little pressure to improve productivity and efficiency.^{15/} This was aggravated by the government employment policy after 1962, which under the pretext of social welfare tended to increase the number of redundant workers in public enterprises. While import-substitution was envisaged as a means to improve the balance of payments position, the heavy dependence on the importation of capital goods and certain industrial inputs caused a continuous drain on foreign exchange holdings. As a result, the utilisation of productive capacity in many industries became directly dependent on the inflow of capital from abroad.

There is a general presumption that despite the expansion of the industrial sector, there is a pressing need to attain a more rational distribution of resources among various industries, a fuller utilisation of existing capacity, and a more competitive cost and price structures. Only a few industries are internationally competitive. Two measures can be used to depict the efficiency with which resources are used. One is the effective rate of protection (rather than the nominal rate of protection) which measures the percentage increase in value-added made

^{14/} Ministry of Industry and Mineral Resources, Public Organisation for Industry, Elements of the Industrial Development Strategy in Arab Republic of Egypt Until 2000, a study presented to the 4th Conference on Industrial Development for Arab States, Baghdad, December 1976, p. 3 (in Arabic).

^{15/} See Awad, op. cit., p. 16.

possible by the protective structure. In other words, it represents the difference between value-added at domestic and world prices expressed as a percentage of value-added at either one of the two sets of prices. The other measure for depicting the efficiency in the use of resources is the direct domestic resource cost of production (in terms of opportunity cost or shadow price) to save one unit of foreign exchange or to gain one unit of that exchange (in terms of value-added generated). By comparing the direct domestic resource cost with the prevailing rate of foreign exchange, it would be possible to test the efficiency of investment. If it is equal or less than the rate of foreign exchange considered, then the investment is optimal. But if it is greater it means that there is a misallocation of resources and it is cheaper to import the product in question rather than produce it domestically. Using the effective rate of protection, Mabro and Radwan suggest that some of the basic consumer good industries are heavily protected. Tobacco and textiles top the list, followed by modern consumer durables (including electric equipment). They conclude that the pattern conforms broadly to that in developing countries.^{16/}

The "open-door" policy pursued actively since 1973 seems to provide a new starting point for Egyptian industry. The rationale behind this policy is that Egypt is in need of

^{16/} Mabro and Radwan, op. cit., p. 61.

foreign technology and capital to accelerate the process of economic growth and modernisation, and this calls for an outward-looking economic policy. Law No. 43 on Arab and Foreign Investments and the Free Zones Authority provides a framework for encouraging foreign investments in industry, especially export-orientated projects. If established in the free zone areas of the Suez Canal and Alexandria, the project could benefit from certain tax and customs duty exemptions. Capital invested in inland projects should be consistent with the social and economic objectives of the national development plan, and should take the form of participation with public or private Egyptian capital (with certain exceptions). Article VI of the above Law provides explicitly that the assets of projects created under this Law "cannot be seized, blocked, confiscated or sequestrated".

This turn in policy seems to coincide with a new phase of industrial development where a more intensive type of growth is required. This has to come through increasing specialisation and a more critical selection of projects in order to ensure a proper foundation for a more self-supporting industries which could contribute in promoting industrial exports. It is expected that the industrial sector in Egypt will continue to assume a leading role until the year 2000. Most probably, the structural composition of the industrial sector will be conditioned by the desire to encourage the industries which can ensure an optimal use of domestic resources,

facilitate the transfer of technology, and generate foreign exchange. There is a wide scope for developing agro-industries, with a view to attain a large degree of self-sufficiency in food supply by the end of the present century. But this requires first a drastic change in the composition of agricultural production, mainly by reducing cotton production in favour of other crops. The presence of relatively large deposits of iron ore, phosphates and other minerals provides a base for developing metallic and chemical industries. Natural gas in Abu Madi and Abu Gharadiq fields can be utilised to produce fertilizers and sponge iron.

Syria: Modern industrialisation in Syria started on a significant scale only in the early 1950s, mainly through private initiative. The nationalisation measures in 1964 expanded considerably the role of the public sector in economic activity and introduced development planning. Since 1960, three five-year economic and social development plans were implemented, with the fourth currently being implemented.

According to Legislative Decree No. 103 issued in 1952, industrial investments by both the public and private sectors can benefit from exemptions from customs duties on machines, equipment and raw materials. Also all registered industrial enterprises are exempted from real estate tax for a period of six years, and from income tax for 3 years from the beginning of operation. The state provides land for industrial

usage at low rentals for periods ranging between five and ten years, as well as training and research facilities, low-cost power, and soft long-term loans. High tariff protection is provided for industrial goods produced locally, and excessive use of import licensing is made to enhance this protection.

In the 1950s, Syrian industry remained confined to the production of consumer goods based mainly on the processing of domestic agricultural crops such as cotton, sugar beet, wheat, fruits, and vegetables. Although some diversification took place after 1965 as a result of the involvement of the public sector, it is evident that Syrian industry is dominated by small-scale enterprises producing for the domestic market simple manufactures, including processed food, textiles, cement, refined petroleum, glass, refined sugar, vegetable oil, soap, beer, plastic items, washing machines and refrigerators.

Since 1965 the public sector became increasingly more important than the private sector, whether in terms of capital investment or value-added and employment. In 1974, cumulative industrial investments by the public sector reached £S4084.8 million (about 80 per cent of total industrial investments) with a total employment of 76,343 workers and wages of £S359.1 million.^{17/} In 1970, there were 27,665 public and private

^{17/} Syrian Arab Republic, Central Bureau of Statistics, Statistical Abstract of 1976, Vol. 29, 1976, Damascus, pp. 301, 309, and 311.

manufacturing establishments employing 129,182 workers. About 98 per cent of these establishments employed less than ten workers per establishment. Industrial production was mainly concentrated in food processing and in textiles, clothing and leather industries which accounted for 37 per cent and 36 per cent of total production, respectively. These two production lines absorbed about 65 per cent of total workers, and paid about 71 per cent of total earnings.^{18/}

Available data for the period 1963-76 indicate that the average annual growth rate in manufacturing was 7.3 per cent. Yet, the share of this sector in GDP showed very little change, remaining in the neighbourhood of 15 per cent. Table 6.3 shows the dominance of traditional industries which include food, beverages and tobacco and textiles, in addition to non-metallic mineral product industries. These industries usually emerge in the early stages of industrialisation. It is noticed that the gross value-added generated in food, beverages, tobacco, textiles, and wearing apparel amounted to 60.7 per cent of total gross value-added in 1977, against 73.3 per cent in 1963. In contrast, the share of some intermediate industries increased noticeably. Amongst these industries were chemicals which are expected to expand further in the 1980s after the completion of major projects in fertilizers, refined petroleum products, and plastics. It is noticed also that the share of fabricated

^{18/} IDCAS, Statistics on Small-Scale Industry in the Arab Countries, Cairo, December 1977 (mimeo).

Industry	1963		1970		1975		1977	
	Value-Added	%	Value-Added	%	Value-Added	%	Value-Added	%
Food manufacturing	109.3	17.5	134.2	16.5	202.7	16.4	216.2	13.5
Beverages	11.4	1.8	10.5	1.3	15.0	1.2	20.7	1.3
Tobacco	125.2	20.0	116.4	14.4	162.6	13.2	186.9	11.7
Textiles	201.2	32.2	253.2	31.2	328.1	26.6	483.0	30.3
Wearing apparel	8.6	1.8	22.0	2.7	47.8	3.9	62.5	3.9
Leather products	3.5	0.6	5.1	0.6	9.6	0.8	11.7	0.7
Footwear	3.1	0.5	5.9	0.7	12.7	1.0	16.9	1.1
Wood and cork	3.2	0.5	5.1	0.6	6.2	0.5	5.4	0.3
Furniture and fixtures	34.3	5.5	27.5	3.4	41.8	3.4	61.1	3.8
Paper and paper products	0.5	0.1	2.2	0.3	0.2	0.0	4.4	0.3
Printing and publishing	2.5	0.4	8.3	1.0	11.0	0.9	14.5	0.9
Chemical products	4.8	0.8	11.3	1.4	56.5	4.6	44.9	2.8
Petroleum refinery	17.3	2.8	54.4	6.7	61.3	5.0	94.0	5.9
Rubber products	4.1	0.7	9.1	1.1	8.9	0.7	3.7	0.6
Plastic products	0.1	0.0	2.8	0.4	7.5	0.6	7.6	0.5
Glass and glass products	8.1	1.3	9.8	1.2	9.3	0.8	7.7	0.5
Non-metallic mineral products	32.2	5.2	43.3	5.3	41.1	3.3	81.8	5.1
Iron and steel basic industries	-	-	-	-	5.7	0.5	2.0	0.1
Non-ferrous metal basic industries	4.4	0.7	13.4	1.7	19.5	1.5	19.9	1.3
Fabricated metal products (excluding machinery and equipment)	42.5	6.8	42.8	5.3	86.4	7.0	119.1	7.5
Non-electrical machinery	4.0	0.6	17.2	2.1	49.0	4.0	59.3	3.7
Electrical machinery, appliances	2.9	0.5	14.0	1.7	51.3	4.2	61.9	3.9
Other manufacturing industries	1.1	-	2.5	0.3	-	-	11.4	0.3
TOTAL	624.3	100.0	811.0	100.0	1234.2	100.0	1596.6	100.0

N.B.: Columns may not add up to total due to rounding.

Source: Compiled from ECWA-UNIDO, Industrial Development in Syria: Prospects and Problems, October 1979, Table V.7, pp. 144-145.

metal products, machinery and equipment in total gross value-added increased from 8.1 per cent in 1963 to 15.1 per cent in 1977. These are mainly durable consumer goods based on imported components and parts.

It is of interest to note that the ratio of consumer good imports to total imports declined from 5.6 per cent in 1961 to 1.6 per cent in 1973, suggesting that industrial output is geared mainly to the domestic market. Simultaneously, the ratio of capital good imports increased from 16.7 per cent to 23.5 per cent in 1961 and 1973, respectively.^{19/}

From reviewing the pattern of industrial investments under the five-year plans, one can notice that these investments were concentrated in certain priority industries. During 1966-77, cumulative capital investment in overall manufacturing industry totalled £S4400.8 million. The two major traditional industries (food manufacturing and textiles) absorbed 32.1 per cent of investments, almost in equal shares. As to investments in new industries, the chemical industries (mainly fertilizers) absorbed 16.4 per cent, the petroleum refining industry 16.7 per cent, and non-metallic mineral industries (mainly cement) 15.6 per cent. During the same period the share of the public sector in total investments was 95 per cent.^{20/}

^{19/} IDCAS, An Evaluation of Industrial Development in Syria, a study presented to the 4th Conference of Industrial Development for Arab States, Baghdad, 12-19 December 1976, pp. 5-7, (in Arabic).

^{20/} ECWA-UNIDO, Industrial Development in Syria, op. cit., pp. 148-152.

An important feature of Syrian industry which is receiving much attention nowadays is the relatively high level of capital-intensity per worker, which is not consistent with the country's factor endowment and leads to sub-optimal use of factors of production. Between 1962 and 1972, the domestic product originating in the manufacturing sector increased by 126 per cent, whereas industrial employment increased by only 46 per cent.^{21/}

The contribution of manufacturing industry to Syrian exports is still limited and did not exceed 36.4 per cent of total exports in 1977. The larger part of industrial exports (about 80 per cent) comprises textiles, wearing apparel, leather products, food, beverages and tobacco. During 1973-77 there was some change in the structure of industrial exports. In 1977, textile exports increased to 63.4 per cent of total exports (against 40.5 per cent in 1973), whereas the food, beverage and tobacco exports declined to 12.4 per cent (against 41.4 per cent). However, in 1977 only 20 per cent of Syria's industrial output was exported. But this ratio varied markedly from one line of production to another, with textiles at the top (40 per cent), followed by fabricated metal products and machinery (20 per cent), and then chemicals, petroleum products and plastics (12 per cent).

^{21/} Op. cit., p. 16.

Many problems beset the industrial development of Syria. Amongst these problems are the smallness of the domestic market and the presence of excess capacity due to uneconomical plant sizes. According to a study prepared by IDCAS in 1969, efficiency in Syrian industry varies significantly from one plant to another, and all industrial branches were reported to have been operating below capacity for some time. Many reasons have been cited, including stoppages resulting from lack of proper maintenance and use of machines from different countries and of different model years, frequent interruptions in electric power supply, and shortage of skilled labour and specialised technicians.^{22/}

There has been more recognition recently of the need to reactivate the private sector for participation in development. This is conceived mainly through the creation of industrial free zones in various parts of the country, particularly on the Jordanian frontier. These free zones are managed by the General Organisation of Free Zones which was set up in 1971, and they are designed to promote export-orientated industries which benefit from cheap labour and the availability of certain materials. By giving generous tax exemptions they are meant also to attract foreign and Arab private investments.

There is a clear tendency to introduce new production lines and increase capacity in certain existing industries in

^{22/} See IDCAS, Industry Survey of Syria 1969, Cairo, 1970, (in Arabic).

Syria. The current five-year development plan (1975-80) provides for the implementation of a number of projects which would broaden the industrial base and strengthen related infrastructure. Analysis of the investment programme under the above plan shows that there is emphasis on chemical and engineering industries. Fertilizer production is expected to increase considerably in order to satisfy a larger degree of local demand for agriculture. An ammonia-urea fertilizer plant, with a capacity to produce 300,000 tonnes of ammonia and 315,000 tonnes of urea fertilizer annually, is being constructed in Homs for a total cost of £S 1000 million. Also a triple-superphosphate plant in Homs is being expanded to increase its production capacity to 450,000 tonnes annually. The plan provides for the creation of new industries for paper, footwear, tyres, electric bulbs, electric cables, batteries, as well as cement plants in Tartous and other centres in the country.

Jordan: A free enterprise policy has always been pursued in Jordan. Government intervention only occurred when it was found necessary to induce private investments. However, the Jordanian Government followed appropriate policies for promoting industrial development. The main policy instruments are tariffs. Duties range from zero to 90 per cent. In general, duties on capital goods are zero and on raw materials and spare parts range between zero and 15 per cent.

It is observed that manufacturing in Jordan is confined largely to products in which there is some advantage with respect to transportation (as the case is with cement), the supply and processing of raw materials (phosphates, petroleum, leather, and food processing) or some form of protection (cigarettes, plastics, and beer). Despite the fact that most industries were originally planned to supply the domestic market, there has been some success in exporting to the neighbouring countries. The items exported include cigarettes, liquid batteries, textiles, sole and upper leather, paper, cement and medical and pharmaceutical products.

The typical manufacturing unit in Jordan is small. In 1974, there were 7,389 manufacturing establishments employing 23,199 workers with total wages amounting to JD 23.2 million. Of these establishments 93.0 per cent employed from 1 to 4 workers each. The remaining 7 per cent of the total number of establishments were responsible for 80 per cent of total industrial production, 88 per cent of total value-added, and 53 per cent of total industrial labour. These establishments include the major firms producing refined oil, cement, vegetable oil, textiles, and cigarettes.^{23/}

An IDCAS study shows that consumer industries in Jordan contributed 67 per cent of total industrial production and 55 per cent of total value-added in 1960. But these ratios declined

^{23/} IDCAS, Statistics on Small-Scale Industry in the Arab Countries, op. cit., pp. 5-6.

in 1974 to 46 and 38 per cent, respectively. This was due to the increase in the share of intermediate industries in overall industrial production from 6 to 27 per cent and in value-added from 4 to 29 per cent, as a result of the expansion of cement and refined petroleum. However, the industrial structure affected the composition of Jordanian imports. The share of consumer good imports (excluding food) decreased from 22.2 per cent in 1964 to 15.3 per cent in 1974. On the other hand, the imports of capital goods increased from 21.1 per cent to 24.8 per cent, respectively. The imports of intermediate goods averaged 24 per cent during 1964-74, due to the heavy dependence of the import-substitution industries on imported inputs.^{24/}

The present Development Plan of Jordan (1976-80) continues the emphasis on manufacturing and mining industry. It is expected that in 1980 income from this sector will be JD 144 million, an increase of 26.2 per cent over 1975. With respect to manufacturing, the Plan envisages the establishment of new processing industries and the expansion of existing ones with a view to producing import-substitution consumer and intermediate goods as well as export-orientated goods. By this the Plan aims at achieving a greater degree of integration and interaction among local industries and between the industrial sector and other sectors. The Plan calls specifically for the achievement of

^{24/} IDCAS, An Evaluation of Industrial Development in Jordan, a study presented to the 4th Conference on Industrial Development for Arab States, December 1976, pp. 6 and 11 (in Arabic).

"... a higher degree of Arab industrial coordination through cooperation with other Arab countries and conforming with their long-term strategies of industrial development." 25/

While the Jordanian Government will maintain its free enterprise policy and act to induce through various policy instruments private investments domestically and from abroad, it will participate in a number of major industrial projects. Amongst these projects is the Jordan Fertilizer Company which has a capital of JD 20 million, of which 26 per cent is to be subscribed by the Government. This Company will construct units for the production of sulphuric acid (3200 tonnes per day), phosphoric acid (1100 tonnes per day), and fertilizer of the triple-superphosphate, and mono- and di-ammonium phosphate types (2000 tonnes per day). The bulk of production will be exported.

In Jordan where only minor restrictions are imposed on the movement of capital, the Encouragement of Investment Law of 1972 provides for full exemption of net profits of approved projects from income taxes and social services taxes for six years, as well as exemption from taxes on building and loans for five years and from customs duties on capital equipment. It is expected that a larger part of development financing will be provided externally. Both foreign and Arab capital are permitted to be invested in approved projects, and then they are

25/ The Hashemite Kingdom of Jordan, National Planning Council, The Five-Year Plan 1976-80, p. 172.

accorded the same treatment as local capital.^{26/}

Lebanon: Due to the impact of the present war in Lebanon on the industrial sector and the economy in general, it is rather difficult to make a proper assessment of the present status of the manufacturing sector. However, it is important to note the experience of Lebanon in manufacturing, since it evolved as an outward-looking one and has been able to compete in the largely unprotected domestic market and in the Gulf markets.

Tariff protection and import control have been used as major instruments for promoting investment in Lebanon. But the tariff protection has been characteristically modest. Liberal tax incentives were also given to promote investment and to encourage re-investment of profits. In the absence of restrictions on the transfer and repatriation of foreign capital or the remittance of profits, new industrial enterprises are exempted from income tax for a period of six years provided that they aim at producing new commodities and materials, that the value of the assets of the enterprise is not less than one million Lebanese pounds, and that the total salaries paid by the enterprise to its employees and workers operating in Lebanon are not less than 200,000 Lebanese pounds annually.^{27/}

^{26/} Law No. 53 of 1972 for the Encouragement of Investment, published in the Jordanian Official Gazette, No. 2386, 16 October 1972.

^{27/} Legislative Decree No. 3018, dated 25 March 1972. See Beirut Chamber of Commerce and Industry, Lebanese Industrial Laws and Decrees, Beirut, no date.

In the absence of readily exploitable mineral resources, Lebanese manufacturing industry concentrates mainly on light industrial goods such as food, textiles, cotton and wool fabrics, leather goods, cigarettes, pharmaceuticals, and paper products. Some assembly plants under foreign licence were established prior to the present war to make refrigerators, conditioning units and household appliances. Lebanon has two cement factories, and two oil refineries. In 1970, the contribution of the major industrial branches to value-added were: food, beverages and tobacco (27.8 per cent), textiles (20.2 per cent), non-metallic mineral products (13.1 per cent) and fabricated metals (10 per cent). But measured in terms of employment, the share of textiles was the highest (36.7 per cent) followed by food, beverages and tobacco (15.1 per cent), wood and furniture (16.9 per cent), and non-metallic mineral products (10.6 per cent).^{28/}

According to the latest industrial census, there were in 1968, 6349 manufacturing establishments employing 64,950 workers and having a total capital investment of £L 1.1 million.^{29/} The largest single branch of manufacturing was food processing which comprised 2319 units employing 11,513 workers and having investments in the order of £L 155 million. However, most industries have contributed a great deal toward export, but their participation in substituting for imports did not develop well enough except for food products.

^{28/} ECWA/UNIDO Industry Division, An Industrialization Policy and Strategy for Lebanon, 1 June 1978, Beirut, p. 5.

^{29/} Lebanese Republic, Ministry of National Economy, Industrial Census of 1968, Beirut.

Despite its limited physical potentialities, Lebanon is considered generously endowed with human skills and through this it is playing a leading role in the economic development of the entire Arab region. It is reckoned now that the prospects of the Lebanese industry after a final settlement of the political issues is made, depends much on the ability to attract back the Lebanese skills which have emigrated during the civil war (estimated at about 75,000 skilled and semi-skilled workers) as well as inviting foreign capital to participate in the reconstruction task lying ahead. Already the Lebanese Government is considering an industrial promotion programme which aims at allowing the creation of industries without prior licensing, promoting industrial exports, and providing tariff protection for some industries and for certain periods of time. However, it seems that this programme, if adopted, would revive the old time conflict between merchants and industrialists, as the former have always been insisting on minimum intervention in the freedom of trade. What is more important is that industrial development and its finance would remain in the hands of the private sector, with the role of the government restricted to the carrying out of some important capital projects to provide a more modern and industrially-oriented infrastructure.

Iraq: Industrial investment has been largely undertaken by the public sector, especially after the nationalisation measures which took place in 1964 under Law No. 99 and which

affected 77 large industrial projects. The share of the public sector in industrial investments increased from 51.1 per cent of total during the period 1961-64 to 57.3 per cent during 1965-69. Until 1954 this ratio did not exceed 2.5 per cent.^{30/} According to the Industrial Census of 1971, there were 31,234 private and public manufacturing establishments in Iraq employing 128,925 workers with total wages of KD 42.1 million. Of these establishments 95.8 per cent employed less than ten workers each. The value of production of all manufacturing establishments amounted to ID 269.6 million, of which about two-thirds was produced by the public sector. The value-added of all manufacturing establishments amounted to ID 103.8 million, and was produced almost equally by the private and public sectors.

The most important two branches of industry are the food, beverages and tobacco, and the textile and wearing apparel industries. In 1971, these industries alone produced about 55 per cent of total value of manufacturing production and 46 per cent of total value-added. Other manufacturing industries, including chemicals, non-metallic and processed metallic products, paper and wood products, and repairs, accounted for the remaining parts of the total value of production and total value-added. Except for the chemicals and chemical products industry where the public sector's participation in petroleum refining is predominant, the private sector is active in all branches.

^{30/} Republic of Iraq, Ministry of Industry and Minerals, Industrial Development Strategy in Iraq, a study presented to the 4th Conference on Industrial Development for Arab States, 1976, p. 13 (in Arabic).

The emphasis in Iraq has been on import-substitution industries including specifically textiles and wearing apparel, cotton ginning, spinning and weaving cotton and wool, tanning, footwear, construction materials, and paper and paper products. As a result of the growth of such industries, the ratio of consumer good imports (excluding food) to total imports declined from 22.8 per cent in 1959 to 12.3 per cent in 1971. In contrast, the imports of intermediate goods increased from 7.1 to 12.6 per cent, and the imports of capital goods from 30.1 to 38.3 per cent, in 1959 and 1971 respectively. In this respect, it is noticed that in 1970 consumer good industries accounted for 72.5 per cent of the total value of manufacturing output and 61.9 per cent of total value-added.^{31/}

One of the major problems facing industrialisation efforts in Iraq is the lack of technical and managerial skills. This problem is aggravating as a result of the extensive investments made in the industrial sector since 1973, as well as the limited success of government policy to attract Iraqi skills residing abroad. Another problem is the existence of a considerable degree of under-utilisation of capacity in many of the manufacturing industries. In 1969, only some branches of the food industry, leather tanning and petroleum refining industries were operating at rates about 80 per cent of maximum capacity. Other industries were operating at lower rates ranging between 50 and 80 per cent, and in a few cases this

^{31/} IDCAS, An Evaluation of Industrial Development in Iraq, a study presented to the 4th Conference on Industrial Development for Arab States, December 1976, pp. 7-8 (in Arabic).

rate went as low as 10 per cent or less.^{32/}

The term "explosive development" has been coined to designate the massive development efforts in Iraq following the rapid increase in oil prices. The theme is to industrialise the country as rapidly as possible, with a view to exploit domestic natural resources. It is envisaged in the current economic development plan (1976-80) that the industrial sector will receive about 40 per cent of total allocations. A wide range of projects based on gas and oil are presently under implementation. Among these projects, there are the export refinery in Khor al-Zubair (southwest of Basra) which will have a capacity of 15 million tonnes per annum, and the expansion of the Basra oil refinery which will produce 4 million tonnes as of 1979. A liquefied petroleum gas (LPG) plant is being built in Rumaila with a capacity of 3.3 million tonnes per annum, and the first stage of a gas-gathering system with a capacity of 0.2 million LPG is also being built in Kirkuk. Several petrochemical plants are being constructed for the production of urea, nitrogenous fertilizer (mainly for export), polyethylene, polyvinyl chloride, and caustic soda. A plant for the production of phosphoric acid, sulphuric acid, and phosphate-based fertilizer (mainly for export) is expected to be completed by 1980. Steelworks (to export about 1.5 million

^{32/} These include manufacturing units for the production of tyres (10 per cent), artificial sponge (8 per cent), sodium hydrochloride (4 per cent), and bicycles (assembly) (3 per cent). See IDCAS, Industrial Survey of Iraq, 1969, Cairo 1970 (in Arabic).

tonnes per annum) and an aluminium plant are to be completed by the end of the development plan. A light engineering complex in Baquba is under construction, and will manufacture washing machines, electric irons, fans, sparking-plugs and locks. A vehicle assembly and manufacturing complex is being also constructed in Suwaira.

It remains to be seen, however, to what extent these projects when completed can be operated efficiently. According to official sources the emphasis on large-scale projects in recent years caused in 1975 industrial establishments to run a deficit of about ID 120 million, mainly as a result of them operating at 30 per cent below capacity.^{33/}

Saudi Arabia: As in other oil producing countries (excluding Iraq), modern manufacturing activity in Saudi Arabia is still in its infancy. But in recent years there has been rapid development as a result of the government policy to promote industrial development as a means of diversifying the economic structure. The government offers special incentives to industrial firms, including income tax and import duty exemptions. It has established the Industrial Studies and Development Centre as an agency to prepare feasibility studies and help prospective investors. Well-equipped industrial estates have also been created in Jeddah, Riyadh and Dammam.

^{33/} A statement made by the Iraqi Minister of Industry and Minerals, see Middle East Economic Digest, Special Report on Iraq, 3 June 1977, p. v.

In March 1974, the Saudi Industrial Development Fund was established with the purpose of expanding and diversifying industrial development within the private sector. By January 1977, the Fund approved loans totalling SRls 4.2 billion to 209 projects. Electricity projects received about 64 per cent of total loans, followed by building materials projects.^{34/}

A striking feature of the industrial scene in Saudi Arabia and other oil-producing countries is the increased direct involvement of the public sector in industrial activity, though the extent and type of this involvement varies from one country to another. Whereas the role of the public sector in industry in Egypt, Syria and Iraq is dictated by the socialist-orientated policies followed after the nationalisation measures, it is dictated in the other countries by the need to support and supplement private initiative especially when it comes to large projects requiring sizeable capital. Saudi Arabia presents a case in point. The Government policy has been

"... to establish, in collaboration with foreign and domestic enterprise, a complex of export-oriented heavy industries based on hydrocarbons and minerals with a view to exploiting the country's potential comparative advantage in this field, and on the other hand, to provide incentives and external economies to the private sector to establish a number of industries supplying the basic consumer and development needs of the economy thus reducing the country's dependence on imports."^{35/}

^{34/} This Fund was established under Royal Decree No. 325.

^{35/} Saudi Arabian Monetary Agency, Annual Report 1397 (1977), Riyadh, p. 65.

In 1962, the Saudi Government established the General Petroleum and Mineral Organisation (PETROMIN) to develop oil and closely related mineral industries, both independently and in collaboration with private enterprise. Already PETROMIN has taken the initiative of establishing a large number of enterprises, including oil refineries, petrochemical factories and a steel rolling mill in Jeddah.

The task of establishing basic industries was transferred in 1975 to the Ministry of Industry and Electricity, which in turn established in 1976 the Saudi Basic Industries Corporation (SABIC) to be responsible mainly for establishing the hydrocarbon and mineral-based industries of the Second Development Plan (1975-80). The initial capital of this Corporation is SRls 10 billion, of which 75 per cent would be sold to the public by the end of 1982. Already SABIC has gone some way in the implementation of a number of petrochemical complexes and a steel rolling mill in the two rising industrial centres at Yanbu and Jubail.

Oil refining dominates other manufacturing activity. Despite some improvement in non-oil manufacturing, it still exhibits many of the characteristics of a non-industrial setting. Obviously, Saudi Arabia has a natural advantage in the chemical and chemical product industries. These industries are likely to generate high returns to labour and capital employed and attain a high export potential. In 1974, these

industries accounted for 34.2 per cent of the total gross value-added of the non-oil manufacturing sector (against 3.6 per cent in 1968).^{36/} The larger part of these industries belongs to the public sector, while private participation is very limited. Most prominent among these industries is fertilizers which is limited at present to the Saudi Arabia Fertilizer Company (SAFCO) ammonia/urea complex at Dammam. Other industries in this sector are plastic products, detergents, and paints and soap. Next in importance to these industries is the non-metallic mineral product industries which generated in 1974 about 27.2 per cent of gross value-added of the non-oil manufacturing sector (against 23.8 per cent in 1968), and the most prominent of which are cement and gypsum. In the same year, the share of other branches in gross value-added was as follows: fabricated metals, machinery and equipment 13.1 per cent (against 19.4 per cent in 1968), food, beverages, and tobacco 9.6 per cent (against 22.7 per cent), paper, paper products, printing and publishing 7.6 per cent (against 4.7 per cent), and basic metal industries 1.3 per cent (against 6.1 per cent).

It seems that at the present stage the factors limiting industrial development in Saudi Arabia relate mostly to rigidities on the supply side. Despite the sizeable supply of capital and foreign exchange, the country is extremely

^{36/} ECWA, Survey of Economic and Social Developments in the ECWA Region, op. cit., p. 143.

deficient in the supply of labour at all levels. It is not possible to enhance the capital absorptive capacity before transforming a considerable part of the available financial resources into human and physical capital. Although some import-substitution industrialisation will continue to generate growth within the economy, structural transformation within the economy is not likely to take place without developing supply-oriented petrochemical industries which can generate high returns to labour and capital utilised.

Evaluation of Industrial Patterns

The foregoing brief analysis of the industrial structure in selected Arab countries suggests some basic characteristics of the industrial sector, which could be generalised to other Arab and developing countries emphasising import-substitution industrialisation. In the following paragraphs these characteristics will be exposed, with a view to predict future prospects for industrialisation in the Arab region as a whole.

Firstly, most of the growth experienced in the manufacturing sector in the Arab countries has been based on consumer non-durable industries. Although these industries declined in relative importance in recent years in the more industrialised Arab countries (i.e. Egypt, Syria, Iraq, and Jordan), due to the emergence of consumer durable and of

intermediate industries, they remained responsible for the larger part of manufacturing activity. However, in these countries the expansion in intermediate industries was mainly due to the expansion in the oil refining capacity. As could be discerned from Table 6.1, there has been some expansion in consumer industries in the oil-producing countries and Democratic Yemen, but the manufacturing sector is still based on intermediate industries, mainly oil refining and petrochemicals.

Secondly, the bias for consumer industries which was induced by the import-substitution approach did not help to develop an integrated industrial sector, in terms of both its capability to meet increasingly the demand for manufactured goods by the other sectors of the economy and its reliance on locally produced rather than imported supplies of intermediate and capital goods. Table 6.4 indicates clearly that the larger part of domestic consumption of intermediate and capital goods is satisfied by imports, suggesting that the next phase in import-substitution should focus on such goods.

Thirdly, the consumer industries in the Arab countries display a market overlapping, especially with respect to food processing, textiles, pharmaceuticals, paper and paper products, and leather products. This does not only restrict the scope for intra-regional trade exchange when production surpluses are realised, but also deprives the countries concerned from reaping the benefits of specialisation and large-scale production.

SELECTED ARAB COUNTRIES: Ratio of Domestic Consumption^{a/} Covered by Domestic
Manufacturing Output By Major Industry Classes

(Value in million \$)

	Jordan (1974)	Egypt (1974)	Syria (1972)	Sudan (1970)	Iraq (1975)	Kuwait (1972)	UAE ^{b/} (1974)	Yemen (1974/75)
<u>Consumer Industries</u>								
Domestic production (1)	106.0	4862.5	620.5	281.8	822.7	101.4	12.2	77.1
Imports	196.4	998.4	181.8	93.7	930.3	486.1	315.6	144.1
Exports	12.2	203.4	29.7	26.2	40.4	67.2	-	1.4
Apparent consumption (2)	290.2	5657.5	772.6	349.3	1713.6	520.3	327.8	219.8
Ratio of (1) to (2) in %	36.5	86.0	80.3	80.6	48.1	19.5	0.4	35.1
<u>Intermediate Industries</u>								
Domestic production (1)	39.0	942.5	104.7	44.9	305.4	410.5	-	4.4
Imports	148.5	769.8	162.8	111.7	781.9	50.8	69.8	341.0
Exports	-	233.6	-	3.5	50.4	40.4	-	-
Apparent consumption (2)	187.5	1478.7	267.5	153.1	1036.9	420.9	69.8	345.4
Ratio of (1) to (2) in %	20.8	64.0	39.1	29.0	29.4	97.5	-	1.3
<u>Capital Industries</u>								
Domestic production (1)	46.2	988.8	92.2	34.8	306.7	57.7	12.6	9.5
Imports	141.7	582.5	194.8	105.7	2491.8	260.2	438.6	15.4
Exports	17.7	25.6	-	-	2.0	43.5	-	-
Apparent consumption (2)	170.2	1545.7	287.0	140.5	2796.5	274.4	451.2	24.9
Ratio of (1) to (2) in %	27.1	64.0	32.0	25.0	11.0	21.0	2.8	38.2
<u>Total Manufacturing Industries</u>								
Domestic production (1)	191.2	6793.3	817.4	361.5	1434.8	569.6	24.8	91.0
Imports	486.6	2350.7	539.4	311.1	4204.6	797.1	824.0	500.5
Exports	29.9	462.6	29.7	29.7	92.4	151.1	-	1.4
Apparent consumption (2)	647.9	8681.4	1327.1	642.9	5547.0	1215.6	848.8	590.1
Ratio of (1) to (2) in %	29.5	78.0	61.6	56.0	25.9	46.9	2.9	15.4

^{a/} Apparent consumption = domestic production + imports - exports.

^{b/} Relates to Abu Dhabi which represents 70 per cent of UAE figures.

Source: As for Table 6.1

Table 6.4 indicates that only a very small percentage of total manufacturing output is exported.

Fourthly, the excessive use of tariff protection and quantitative restrictions in some cases have encouraged the establishment of new industrial plants with comparatively high cost structures. Although these plants could contribute to income and employment, they are apt to have an adverse effect on the level of welfare of consumers by reducing consumer's surplus. But in developing countries there is a general tendency to give more weight to industrial growth than to the increase in total income.^{37/} Moreover, behind the protective wall there has been a marked proliferation of small-sized plants using simple and sometime outmoded technologies. This has minimised the contribution of industry in forming a reasonably trained labour force with varying levels of skills and qualifications, which is a basic requisite for the technological transformation of other sectors and subsequently modernising the whole economy. On the whole, industrialisation has the potential to narrow the gaps in productivity among sectors and regions. But in many developing countries the gulf between the modern and the traditional sectors is great and unless an intermediate technology is found the spreading of technical know-how would be limited.

^{37/} For example, see F. Andic, S. Andic, and D. Dosser, A Theory of Economic Integration for Developing Countries (London: Allen & Unwin, 1971), pp. 17-18.

Fifthly, the presence of a protective wall, however, has contributed in keeping industrial returns at a high level. Accordingly, industrial wages tended to remain also high, whatever the employment situation was.^{38/} But it can be observed in the case of the non-oil Arab countries that high incomes, though they have enlarged the domestic market, have nevertheless not provided an additional supply of capital for financing new industrial investments. This can be explained by the lack of the proper institutions for channelling savings on the one hand, and the spread of new consumption patterns on the other.

Sixthly, it seems that the industrial sector in the Arab countries has not been absorbing labour at a satisfactory rate. Although industrial employment started from a small base, its rate of growth lagged considerably behind that of industrial production. It is reckoned that only a small part of the low labour absorption is due to the natural increase in labour efficiency. The larger part could be related to both the expansion of capacity by the adoption of relatively capital-intensive techniques of production as well as the modernisation of old capacity in a more capital-intensive way. Without doubt the "capital deepening" in the industrial sector has been induced by the cascaded structure of tariff rates which favours the importation of capital goods and machinery. Moreover, the drift towards capital-intensive and labour-saving

^{38/} On this point, see Little (et. al.), op. cit., p. 81-82.

techniques of production in the context of developing countries is usually related to the limited choice of technology. The countries have to rely mainly on imported modern technology which is both deliberately and innately determined by the requirements and factor endowment of industrialised countries, and, in particular,

"it is shaped by the underlying assumption that capital is abundant, that labor is relatively scarce, and that wage rates are correspondingly high." 39/

Using the most-labour-intensive method in industrialised countries would, therefore, mean a sacrifice in labour productivity. But in the case of the developing countries, the argument is that

"... given capital as the scarce factor ... the problem is not to save the use of it in the production process, but rather to maximise the output which can be gotten from it." 40/

Seventhly, it seems that the process of import-substitution in the Arab countries did not help much to ease the balance of payments difficulties, since most industries by depending heavily on imported inputs tended to strengthen the external linkages. In many cases the dependence on the outside world increased both to maintain existing and to build new productive capacities. In Egypt, Syria and Iraq, industrial growth was expedited mainly by public investments and the use

39/ W. Baer and M. Hervé, "Employment and Industrialisation in Developing Countries", The Quarterly Journal of Economics, Vol. 80, No. 1, 1966, p. 97.

40/ H.W. Singer, International Development: Growth and Change (New York: McGraw-Hill, Inc., 1964), p. 58-59.

of high and indiscriminate tariffs together with over-valued exchange rates.^{41/} This has led to a certain degree of misallocation of productive resources, not to mention the absence of the stimulus for innovations which foreign competition usually provides. It is not unrealistic to suggest here that most of the Arab countries which have gone some way in the process of industrialisation have been concerned more with increasing the size of their industrial investments (for employment and political prestige purposes) than with the efficiency of the industrial structure.

Eighthly, the smallness of the domestic market together with the use of capital-intensive techniques have led to the spread of under-utilisation of capacity, and subsequently to low levels of labour and capital productivity. Excess capacity ranges between 25 and 50 per cent in Egypt, Syria, Jordan, and Iraq.^{42/} What adds to the complexity of this phenomenon is the limited scope for export to which reference has already been made.

Ninthly, although the process of import-substitution in the Arab countries has contributed to the expansion of the manufacturing component of their GDP, it seems that it cannot remain the mainspring of industrial growth; it cannot form the basis for the development of industries in which

^{41/} For a detailed discussion of the currency and exchange systems in the Arab region, see Wilson, op. cit., pp. 81-89.

^{42/} See IDCAS, An Approach to Industrial Development Strategy and Arab Industrial Cooperation, a working paper presented to the 4th Conference on Industrial Development for Arab States, Tripoli, Libya, April 1964, p. 5.

economies of scale play a major role.^{43/} Aside from the fact that import-substitution has a degree of irrationality and a tendency to "exhaustion", there is a need in the Arab countries to have the industrial sector well-integrated, related to their natural resources, more efficient and oriented towards the outside.

There is a general presumption that industrial growth in contemporary developing countries moves roughly along the same pattern. Starting with the manufacture of finished consumer goods, industrialisation moves on successively, through backward linkage effects, to the manufacture of intermediate and capital goods.^{44/} Frequently, however, intermediate and capital good industries are large-scale industries and they stimulate industrial growth by creating industries as users of their products. But their efficient operation requires the existence of a wide market. Otherwise they will have to operate below capacity in the absence of export possibilities. In addition, these industries require heavy investments which may be beyond the means of individual countries. In a number of the Arab countries it seems that the process of import-substitution has virtually exhausted the possibilities for industrialisation

^{43/} This complies with the experience of many developing countries approaching their industrialisation through import-substitution. For example, see "The Growth and Decline of Import Substitution in Brazil", Economic Bulletin for Latin America, Vol. 9, No. 1, March 1964, United Nations, New York, pp. 1-11.

^{44/} Albert Hirschman, "The Political Economy of Import-Substituting Industrialization in Latin America", Quarterly Journal of Economics, Vol. 82, No. 1, February 1968, p. 6.

on the basis of the national market. If the process of industrialisation is to progress through backward linkages it ought to be based on an efficient import-substitution with a spillover to external markets.

Prospects for Industrialisation

It is reassuring to observe from current development plans that the Arab countries are re-orienting their industrial development strategies, though in varying degrees, so as to take export possibilities into consideration. They seem now to realise more than ever before that self-contained industrial development is no longer feasible for mobilising their idle resources, diversifying their industrial structures, and accelerating the rates of economic growth. This can be taken as a recognition on the part of the Arab countries for the need to rationalise their protective policies, which though they served the purpose for industrialisation in the first stage are likely to become barriers to growth in subsequent stages.^{45/} By doing so they would be looking outwardly for more demand and inwardly for supply, rather than the other way round. It is indeed paradoxical that while industrialisation in most countries has been largely prompted by the unfavourable demand conditions facing their traditional (non-oil) exports,

^{45/} For a perceptive discussion of this point, see John H. Power, "Import Substitution As An Industrialization Strategy", The Philippine Economic Journal, Vol. 5, No. 2, 1966, pp. 167-203.

the promotion of an efficient pattern of industrial growth remains closely linked with developments in the external sector.

It is of great significance to note that this process of re-orientation in the approach to industrial development comes at the same time that the oil-producing countries are embarking on investment programmes that are highly charged with large capital-intensive industrial projects. Given the paucity of natural resources other than oil and natural gas, the scope for investment domestically lies mainly in energy-intensive and hydrocarbon-based industries. It is amply evident that such industries to be operated efficiently require a wide market, much larger than any of the domestic markets of the Gulf countries, and accordingly they are readily export-oriented.

Thus, we can see that both non-oil and oil Arab countries are facing now the challenge of producing manufactures competitively for export. However, it is necessary at this juncture to draw a distinction between the export industries which could be contemplated by the non-oil countries, and those that are being constructed in the oil countries. As pointed out in Chapter Four, the oil-producing countries are endeavouring to have a more effective and efficient control of their financial resources through the creation of industries that are highly integrated with the world. Their industrial strategy is to increase the value-added of oil exports by expanding refining capacity, developing petrochemical and fertilizer complexes, and creating other hydrocarbon-based industries, and to conserve

flared gas by developing high energy-consuming industries such as cement, iron and steel, and other smelting operations.^{46/} Since most of these industries involve advanced technologies and possibly patented processes of production as well as markets beyond those available domestically and regionally, they need to be established and operated (at least in the shorter-run) with participation from industrialised countries. It is possible to visualise in this pattern some sort of a tripartite development, combining efficiently Arab capital and resources with Western technology to serve world markets.^{47/}

^{46/} In this context, it is useful to note that the Kuwaiti Government participates in a large number of industrial enterprises, and it created in August 1974 the Higher Council for Petroleum which comprises the ministers of oil, finance, and trade and meets under the chairmanship of the Crown Prince. This Council is entrusted with the formulation of the general policy for the exploitation of oil resources and related industries. The Kuwaiti Government encourages industry through the Industrial Bank of Kuwait (49 per cent of capital owned by Ministry of Finance and the Central Bank), which makes feasibility studies and grants loans at 4 per cent to industrial users. Established in 1974 with a capital of KD 100 million, this bank encourages regional coordination and cooperation by promoting investments in joint ventures with partners from the Gulf. In other oil countries, national companies have been established to initiate industrial projects related to oil resources. The most active of these is the Abu Dhabi National Oil Company (ADNOC), which aside from being involved in petroleum marketing and refining, is interested in industrial projects entailing petrochemicals or heavy industry valued Dh 50 million (\$12.8 million) or above. The Abu Dhabi Investment Authority was established in 1976 to conduct on the part of the State investment activities, and to undertake solely or jointly with others the establishing of banks, trading, industrial and agricultural companies, as well as insurance, sea, land and air transport companies.

^{47/} Some of the Arab countries have shown recently increased willingness to relax the grip on their economies, and seem now to be ready to have multinational companies from the United States, Europe and Japan to make use of their technologies. But this readiness varies, with Saudi Arabia and the Gulf countries adopting very permissive policies, and Iraq at the other extreme approving only Arab multinational companies to own projects in its territories.

But what needs to be stressed here is that the highly concentrated development phenomenon in the oil-producing countries is unconsciously leading to the creation of similar industrial bases which would definitely reduce the scope for regional trade, and by inducing competition in international markets would undermine the bargaining power of these countries.

As to the non-oil countries where national resources are more diversified, export industries are likely to be in the first stage "feeder" industries which produce industrial goods that are suitable as inputs for other industrial products, such as electrical and electronic equipment, cars and other engineering and mechanical machinery. These industries would provide the basis for the production of capital goods at a later stage. In view of the low competitiveness of these countries at their present level of industrial development, they are likely to promote their industrial exports to selected markets, mainly neighbouring markets in order to economise on transport costs. Incidentally, Syria and Jordan are trying to promote export industries through the establishment of a joint industrial free zone on their borders. This project is being handled by the Syro-Jordanian Industrial Free Zone Company which has a capital of £S 60 million and managed by a board of directors consisting of six members, three from each country.^{48/} It is intended to draw into this zone a complete range of heavy, medium and light industries, with priority being given to those that satisfy three basic criteria: that

^{48/} The Company was created following the Economic Cooperation and Regulation of Commercial Exchange Agreement signed between Syria and Jordan on 6 April 1975. The Company's Articles of Association were ratified by Syria under Law No. 21 of 1975.

they are export-oriented, that they use raw materials and intermediate products available in Syria and Jordan, and that they enhance the technical capability of the domestic labour force in the two countries. Aside from the usual range of tariff exemptions and fiscal benefits offered in any free zone arrangement, the above project has a strategic location with respect to the Arab markets in the Middle East and as such it could encourage foreign investments which need to operate on a regional scale.

The above analysis brings into focus the importance of regional industrial integration not only to the non-oil countries but also to the oil countries. With respect to the non-oil countries, industrial integration provides a broader scope for accelerating industrialisation mainly by extending the geographical and product coverage of import-substitution. This can be conveniently discussed from the point of view of existing industries and that of new industries.

The enlargement of the market affects existing industries in two major respects. First, it may expand production without the need to make new investments, merely by utilising excess capacity installed in anticipation of increases in domestic demand due to technological reasons. Assuming the non-existence of constraints on supply, this leads to instant gains to the country in which production takes place, but may reduce welfare in the consuming country if trade diversion results. Secondly,

the enlargement of the market allows for enhancing efficiency by increasing competition among similar production units. The smallness of the domestic market in the Arab countries does not allow the establishment of more than one or two plants in many industries, and this creates monopolistic tendencies as well as vested interests opposing competition.

The more promising aspect of regional industrial integration relates to new industries. With an enlarged protected market the non-oil Arab countries can continue the process of import-substitution industrialisation and embark on the creation of large-scale industries which were not feasible because of the limitations of domestic markets. At the same time, the enlarged market may facilitate the optimum location of new industries in terms of the supply of raw materials, energy, and external economies. This is of crucial importance in reducing the costs of production (or development) and in developing an efficient pattern of specialisation in production. But it needs to be stressed that import-substitution on the regional level ought to be designed differently than on a national level; it has to be more selective, oriented towards efficient production without much protection, and offer the possibility of increasing exports to the outside world.

With respect to the oil countries, regional industrial integration must be viewed in a different perspective. On one count, it is a known fact that due to the lack of proper infrastructure and the need to import skills for operation and

maintenance, the cost of constructing a new plant in these countries exceeds the cost of constructing a similar one in the United States, Western Europe, or Japan by 50 to 150 per cent.^{49/} It can be presumed that no project in the oil countries can produce for international markets without some sort of subsidy. In most cases, high costs do not result only from inflated construction costs and long construction duration, but also from the relatively heavy transportation costs and the low level of plant utilisation. On another count, the international market for petrochemicals exhibits cyclical fluctuations in demand and prices, and this enhances considerably the danger of competition between the exporting countries. It makes much sense for these countries to coordinate their investment decisions, and it should be in their long-term interest to dovetail their productive sectors with those of the other countries in the region.

It is not difficult to conceive within this framework how the emerging patterns of industrial growth in the Arab countries carry with them the seeds for regional cooperation and integration. Of course, this is substantiated by the skewed distribution of resources among these countries and the pressing need to rationalise their use, by allocating them in accordance with regional comparative advantage with a view to satisfy regional demand at a lower cost than would have

^{49/} It is reported that bids from industrialised countries to the oil countries for plant and machinery are bloated. According to the Saudi Deputy Minister of Planning, "the big international companies in the U.S., Western Europe, and Japan seem to have three sets of prices: a regular price, a higher one for the oil-producing countries, and a still higher one for Saudi Arabia". Fortune, Vol. 98, No. 2, 31 July 1978, p. 116.

been possible on a national basis. As such the Arab countries could produce for each other more of what they consume and at a lower cost, thus attaining a certain degree of collective self-reliance.

Yet, the argument developed in Part I of this study and which calls for a gradualist approach to integration, remains valid here. It is more realistic and consistent with the industrial set-up of the Arab countries to start the industrial integration process on a piecemeal basis rather than across-the-board. Taking the view that industrial integration ought to supplement, rather than substitute, national development efforts, it should be possible to select a group of industries which can generate certain net benefits if allocated among the Arab countries on an integrated basis. In other words, the focus of interest in the first stage should be directed to those industries which support national development objectives, but cannot be attained in isolation.

It has already been mentioned that candidate industries are essentially those whose minimum-efficient-scale requires access to a regional market. Accordingly, such industries are not profitable when producing for a national market only, but could become so when pooling the markets of the concerned countries. Using this as a basic criterion, it should be possible to screen certain industries in the Arab countries

which have a potential for regional integration, and from which, on the basis of supplementary criteria, an industrial package could be worked out.

CHAPTER SEVEN

POSSIBILITIES FOR INDUSTRIAL INTEGRATION

IN THE ARAB MIDDLE EAST

The main purpose of this chapter is to explore some of the possibilities for industrial integration among the Arab Middle East countries. This means that we will be addressing ourselves specifically to those industries which, for reasons of scale economies, tend to operate more efficiently on a regional or even a sub-regional basis. Intrinsically, these industries are of strategic importance and it may take some time for scale economies to be realised in them if operated on a national basis.

As a point of departure, the chapter will first establish some empirical estimates of minimum-efficient-scale (m.e.s.) from various published data, with a view to form an idea of what could be the m.e.s. for selected intermediate and capital industries in the context of factor supplies in the Arab countries. The next step will be to identify, on the basis of the data obtained and the main orientation of industrial growth reviewed in the preceding chapter, the lines of industrial production which could offer opportunities for substantial economic gains, through optimising the use of resources, if established on an integrated basis within the Arab region. This will be followed by a general assessment of the possibilities and desirability of Arab integration in

a number of industrial sectors, before taking up a case study of the fertilizers industry in the next chapter. In the final part of the chapter some concluding observations about integration industries will be made.

Empirical Estimates of M.E.S.

The concept of economies of scale is based on the general presumption that the expansion of the scale of productive capacity of an industry, or plants within a certain industry, leads total production costs to increase at a lower rate than that of output. In other words, economies of scale can be expressed in terms of an inverse relationship between the average cost of production and the scale of operation in an industry.

As pointed out in Chapter One, it is useful in examining the sources of scale economies to make a distinction between internal and external economies. The former is an entirely technological factor, independent of the market size or factor endowment of any one country. It arises mainly from indivisibilities which dictate a certain size for plant and machinery if optimal efficiency is to be attained. In general, investments do not vary as a linear function of capacity, but in accordance with a power function whose exponent ranges between zero and one. On the other hand, external economies of scale tend to develop with industrial

expansion and concentration, as this will lead to the creation of enterprises and services which would be uneconomic with a small industrial output. The effect of these economies is a downward shift in the long-run average cost of the industrial plants concerned.

Though convincing evidence of the existence and magnitude of economies of scale could be lacking for many industries, their importance can hardly be over-emphasised. Technological changes have increasingly broadened the scope of economies of scale, thus requiring a certain minimum scale of market and production as an efficiency criterion. In this respect, a UNCTAD report points out:

"For every type of industrial production the question of the optimum market size arises, and unless the volume of sales reaches a certain minimum the cost per unit and the price to the consumer will be high and the capacity to compete low. Production costs in many industries decline steadily as output increases, and consequently large market outlets are indispensable, particularly if advantage is to be taken of modern production methods." 1/

It is important to recognise that the drive towards building large productive units in the industrialised countries has been induced basically by the desire to accelerate economic growth as well as to increase efficiency in the utilisation of resources, thereby releasing some resources for other uses.

1/ UNCTAD, Trade Expansion and Economic Integration Among Developing Countries, op. cit., p. 6.

Indeed, the larger part of the world's research and development efforts are being undertaken by the industrialised countries and devoted to making their technologies increasingly labour-saving or capital-intensive to comply with domestic factor proportions.

It is not surprising that the setting up of large scale units in developing countries (as one form of transferring technology) has been encountered by many difficulties arising from both the pattern of resource endowment and the limited market opportunities. Since the realisation of scale economies depends on domestic factors, including mainly the size of the market, availability of developed infrastructure, managerial skills and capital supply, most developing countries can operate only at a relatively small-scale in comparison with industrialised countries.

This renders the choice of the techniques of production as one of the most important decisions facing developing countries in their economic development endeavours. It is obvious that this choice affects considerably the pattern of income distribution and economic structure. There is often a direct relation between scale and employment, as the larger the scale is the lower will be usually the labour/capital ratio. Generally, in developing countries a more labour-intensive technique of production would generate greater social benefits. Aside from employment creation,

small scale technology offers important advantages. It allows a more optimal use of existing infrastructure and could be less demanding than large-scale technologies with respect to new infrastructure. In addition, small scale technology may be more consistent with the need to localise production of certain goods related to "basic human needs" such as textile fibres, vegetable oils, and sugar, and which use domestic inputs (including labour) intensively. Incidentally, China gave great priority to the design and manufacture of small-scale cement and fertilizer plants, as a means of creating employment opportunities in limited rural areas and to attain some degree of regional economic independence.^{2/} Recent studies have indicated that downscaling is economically feasible and could offer numerous opportunities to adapt technology and products to local needs and to integrate the traditional and modern sectors.^{3/}

However, developing countries usually have a limited choice of technology, especially with respect to intermediate and capital industries. The technologies embodied in these industries are geared for large scale production, and their

^{2/} For a detailed study on the subject, see Jon Sigurdson, Mini Cement Plants, Research Policy Program, University of Lund, Discussion paper No. 105, November 1976.

^{3/} Some of these studies have been initiated by the London-based "Intermediate Technology Group" with respect to industrialisation possibilities in many developing countries. A pioneering study on the subject which has not been published yet is that of Robert Goffin, Reduction d'Echelle et Adaptation des Technologies Industrielle dans les Pays en Voie de Developpement, OECD, Paris.

factor mix tend to be rigidly determined. This remains largely the case even with the recent attempts made to downscale and adapt industrial technology (as for instance in the iron and steel industry with the introduction of the direct reduction process). Many of the developing countries are still not in a position to engage in certain manufacturing industries at a scale appropriate to their factor proportions and domestic markets. This applies specifically to two broad categories of industries characterised by economies of scale.

One category includes the processing industries which involve basically the transformation of raw materials by physical or chemical processes that are vertically integrated. Most prominent among these industries are petrochemicals, fertilizers, iron and steel, chemicals, sugar, and pulp and paper. The other category includes the engineering industries which involve the mass production of different industrial products or their components. Amongst these industries are motor vehicles, machine tools, engines, electronics, and appliances. Through horizontal specialisation it is possible to spread the production process in these industries over a number of separate units, and this in itself allows the assembling of different models of the same product. On the whole, engineering industries offer comparatively better prospects than processing industries for both factor substitution and downscaling, and their development could be

instrumental in deepening the industrial base of other industries processes.^{4/}

In the absence of an "appropriate technology" for a certain industry which would optimise the use of domestic resources, a developing country may opt for a technology which provides in terms of domestic factor proportions a production cost greater than the competitive import prices of the product in question. This may be justified by the growth implications of the industry such as producing a capital or an intermediate good which is crucial for development and saves foreign exchange, as well as the indirect effects such as the dissemination of technical know-how and learning. For instance, a country like Egypt which has labour abundance and a large agricultural sector could be much more interested in the creation of a fertilizer industry and the cost at which production would take place, than in making the production function of that industry more labour-intensive. This means that the adoption of a certain technology which does not suit domestic factor proportions could be justified if the project in which it is embodied generates an acceptable social rate of return, using as suggested in the methodology developed in Chapter Two "border prices" to measure inputs and output.

^{4/} For a more detailed discussion on this point, see R. B. McKern, A Study on Opportunities for Low-Scale Manufacture in Developing Countries, OECD, Development Centre, CD/R (77)10, Paris, April 1977, pp. 16-25.

What is important under these circumstances is to avoid the occurrence of diseconomies of scale, by ensuring market outlets to sustain m.e.s. of production. Given the existence of scale economies, the m.e.s. would be reached when the average unit-cost of output ceases to decrease. It is necessary to point out, however, that m.e.s. represents an arbitrary point, as it is sometimes difficult to determine the level of production above which costs cease to decrease or at least there is no sharp change in the rate of decrease. Pratten considers in his pioneering study the m.e.s. as

"the minimum scale above which any possible subsequent doubling in scale would reduce total average unit costs by less than 5% and above which any possible subsequent doubling in scale would reduce value added per unit (total costs less the cost of bought out materials, services, and components) by less than 10%." 5/

In many developing countries, m.e.s. cannot be attained with respect to a large number of intermediate and capital industries. This is usually precipitated by both the smallness of the domestic market and the limited international competitiveness of industry. On these grounds, the creation of a sufficiently large protected market, on a regional or even sub-regional basis, emerges as a means for attaining m.e.s. in certain industries, and subsequently achieving more efficiently the objectives of industrialisation.

5/ C.F. Pratten, Economies of Scale in Manufacturing Industry (Cambridge: At the University Press, 1971), p. 26.

It is possible to use m.e.s. as a criterion or a guide for identifying industries which ought to be created on a regional basis, or as a measure to find out at what level of production a plant is likely to be viable. After identifying an industry, current and future demand for its products are estimated, nationally and regionally, and by using the scale-up factor (see Table 1.1) it will be possible to assess the scale economies in capital arising from larger production units. Ideally, estimates of m.e.s. have to be based on highly detailed micro-economic data obtained from existing industries. But this is extremely difficult to achieve in the case of the Arab countries as well as in many of the developing countries, as the relevant data is usually not publicised or the industry under question is simply not in existence. The alternative in this case would be to draw on published data for other countries, despite some limitations inherent in this method. It is certain that industrial plants tend to be affected by the economic environment in which they operate, and accordingly m.e.s. cannot be considered only in its technological context. The m.e.s. of the same industry could vary from one country to another and from time to time, depending on, inter alia, relative factor prices, quality of available skills and raw materials, as well as non-production costs arising from the environment in which the industry is located. Differences among countries in these respects affect the shape of scale curves.

The Arab countries exhibit varying proportions of factors of production and levels of industrial development. On the one hand, the Arab oil countries have capital abundance with very little indigenous skills at all levels, and their industrial development is still in its rudimentary stages. On the other hand, the Arab agricultural countries have relative labour abundance, though the degree of development of skills varies from one country to another, and they have already gone some way in their industrialisation process. But on the whole, locational characteristics in the Arab countries work towards augmenting the cost of industrial projects, in comparison with other countries, especially industrialised countries. This is not caused only by higher fixed capital expenses, but also by higher requirements for working capital and pre-operating expenses. Obviously, this increases the amount of construction cost which has to be written off every year during the expected life of the plant and consequently inflates total costs.

But one must consider against any plant cost disadvantage in the Arab oil-exporting countries at least, the possibility of offsetting a part of this cost through concessional lending to industrial projects. It is estimated that an interest differential from 10 per cent per annum in an industrialised country to 5 per cent per annum in Kuwait for instance is just sufficient to offset a plant cost differential of about 35 per cent, on the assumption that the same amount of profits

can be generated.^{6/}

Under these circumstances, the importance of large-scale production in reducing unit-cost output cannot be over-estimated. But to attain efficiency in a plant of a large size, it is necessary to have the appropriate managerial skills as well as the technological adaptability. In addition the cost of transporting and distributing produced goods to the customers must be weighed against expected benefits from economies of scale, as it may be worthwhile to "decentralise" production to serve the more distant customers. Thus the lower are the costs of "overcoming the environment", the larger is the m.e.s. of an industrial plant. It is likely that m.e.s. would be large if the plant is located in a densely populated area, or if the economies of scale of transport or other costs of overcoming the environment are considerable.^{7/} As a corollary

^{6/} It seems, however, that turn-key contracts which are much desired in the Gulf region, tend to bloat equipment and machinery especially in relation to plant capacity. According to a project which was submitted to the Industrial Bank of Kuwait for consideration, it was found from the cost figures for machinery and equipment in similar projects in Jordan and Egypt (within the capacity range of 6,000 to 17,000 tonnes) that the cost of equipment and machinery for a plant of a capacity equal to that in Kuwait should be about \$4 million. Allowing for extra equipment (basically air-conditioning units) and a 20 per cent for escalation and contingency, a reasonable estimate for the equipment and machinery of the Kuwait plant could be \$6 million, rather than the contract's \$10 million. See Abdel-Monem Omran, Industrial Projects in Kuwait: Costs and Incentives, a paper presented to the Conference on Industrial Strategies and Policies for Kuwait, Kuwait, 24-26 March 1980, pp. 8-9 and 15.

^{7/} On this point see Frederic L. Pryor, "The Size of Production Establishments in Manufacturing", Economic Journal, Vol. 82, No. 326, June 1972, pp. 550-552.

to this, m.e.s. tends to increase in the longer-run, along with the process of economic development and the increase in the size of population.

On this basis, it is not unrealistic to use as a guide in the case of the Arab countries m.e.s. data relating to industrialised and other countries. This can be justified further by the fact that the Arab countries depend heavily on imported technologies, and usually no attempt is made to modify or adapt the industrial process or products. This applies particularly to the Arab oil-producing countries which are pursuing outward-looking industrialisation, and accordingly they have to maintain the quality of products in order to resist competition from similar products and substitutes. In addition, technologies are changing rapidly and generally production costs are being reduced, and this makes m.e.s. data of a rather approximate nature but could be used to provide an idea of the level of production at which a regional or sub-regional market is necessary to support an industry.

Table 7.1 presents a compendium of estimates of m.e.s. obtained from different sources for industries in which production is likely to be more efficient under an integration arrangement. The cost data to which these estimates relate exclude the costs of marketing and distribution. It proved to be difficult to cross-check the reliability of estimates available from more than one source, since in most cases not

Empirical Estimates of M.E.S. in Selected Manufacturing Industries

Product-Process	Pratten ^{a/}	ASEAN ^{b/}	CACM ^{c/}	UNIDO ^{d/}	Scherer ^{e/}	Others ^{f/}
<u>Refining and Petrochemicals</u>						
Acetate rayon			1,400 tpa			220,000 tpa
Ammonium nitrate						220,000 tpa
Ammonium sulphate				250,000 -		
Caprolactam				300,000 tpa		
Caustic soda and chlorine		Depending on capacity of paper and petro-chemical plants				
Detergent powder	70,000 tpa					
Diammonium phosphate	250,000 tpa			250,000 -		
Dimethyl therepltalate				300,000 tpa		
Ethylene	300,000 tpa	550,000 tpa		50,000 -		
Methanol				66,000 tpa*		
Monomer for synthetic fibres				250,000 -		
Oil refining	10,000,000 tpa			300,000 tpa		
Plastic products	Substantial economies continue to large output of many products		200,000 bpd		30,000 bpd	

Product-Process	Pratten ^{a/}	ASEAN ^{b/}	CACM ^{c/}	UNIDO ^{d/}	Scherer ^{e/}	Others ^{f/}
Phosphoric acid		330,000 tpa				10,000 - 15,000 tpa
Polymer (synthetic fibres)	80,000 tpa					
Polyvinyl chloride						
Urea (Ammonia)		495,000 tpa				50,000 - 100,000 tpa
Vinyl chloride monomer						
Viscose rayon			3,000 tpa			
<u>Metallurgical Products</u>						
Iron castings:						
- cylinder blocks	50,000 tpa					
- small engineering castings	10,000 tpa					
Steel:						
- via blast & L.D. furnaces	9,000,000 tpa			600,000 tpa		
- via DR and electric furnace						
Steel billets		< 3,000,000 tpa				
Steelworks:						
- rolled products including wide strip	4,000,000 tpa				4,000,000 tpa	
- rods & bars from billets	< 500,000 tpa					
<u>Engineering Products</u>						
Agricultural machinery used for harvesting, threshing and sorting				4,000 - 6,000 tpa		
Automobile storage batteries					1 m. upa	

Product-Process	Present ^a	Admin ^b	Office ^c	URRLO ^d	Scherer ^e	Others ^f
Bicycles (a ranging of models)	<100,000 upa					
Diesel engines:						
- models in the range 1-100 h.p.	100,000 upa					
- large marine diesels	An output of at least 100,000 h.p. per annum					
Domestic electrical appliances (average of ten appliances)	At least 0.5 m. upa					
Domestic sewing machines				10,000 upa		
Domestic washing machines				20,000 - 25,000 upa		
Earth-moving machinery				2,000 - 3,000 tpa		
Electric motors (a range of models)	Output of £10 m. (1969 prices)					
Electric lamps						
- assembly			11 m. upa			
- manufacturing			30 m. upa			
Electro-mechanical domestic appliances						
Electronic capital goods (a product)	1,000 upa**					300,000 lines per annum
Electronic switching equipment					1,500 - 2,000 tpa	
Food processing machines						
Machine tools	300 employees				3,000 - 5,000 tpa	
Machine tools for working plastics					1,000 - 2,000 tpa	

Product-Process	Pratten ^{a/}	AGLAMP ^{b/}	CACI ^{c/}	UNIDO ^{d/}	Scherer ^{e/}	Others ^{f/}
Metal transforming goods			\$132 (sales value)	700 - 1,000 tpa		
Motor cars:						
- one model and its variants	0.5 m. cars per annum					
- a range of models	1 m. cars per annum					
Mining machinery				2,000 - 4,000 tpa		
Refrigerators and freezers				20,000 - 25,000 upa	800,000 upa	500,000 upa
Telephone instruments						
Turbo generators (a range)	An output of at least 6,000 M. W. per annum					
Transformers		50,000 upa (3 shifts)				
<u>Food and Agro-allied Products:</u>						
Bakery products (bread)	A throughput of 30 sacks of flour per hour					
Beer brewing	1 m. barrels per annum				4.5 m. barrels per annum	299

Product-Process	Pratten ^{a/}	ASEAN ^{b/}	CACM ^{c/}	UNIDO ^{d/}	Scherer ^{e/}	Others ^{f/}
Cigarettes					36 billion cigarettes per annum	
Sugar						3,000 - 4,000 tonnes per day of 24 hours
Construction Products						
Bricks	> 25 m. bricks per annum					
Cement		500,000 tpa			5,400 tpa	
Glass sheets (window glass)						
Plywood		6,000 sheets per day				
Portland cement	2 m. tpa				7 m. 376-pound barrels per annum	300
Textile Products						
Cotton textiles: - products	There are significant economies for long-runs					
- spinning mills making standard products	< 600,000 spindles					
- weaving mills making standard products	< 1,000 looms					
Cotton and synthetic broad-woven textiles						
Knitting products	Similar to cotton textiles				37.5 m. square yards per annum	

Product-Process	Pratten ^{a/}	ASEAN ^{b/}	CACM ^{c/}	UNILCO ^{d/}	Scherer ^{e/}	Others ^{f/}
<u>Other Products</u>						
Glass containers (narrow-necked and wide mouthed)					8,100 tpa	
Glass bottles					133,000 tpa	
Paints, lacquers and varnishes					10 m. U.S. gallons per annum	
Paper:						
- newsprint					500,000 tpa	
- newsprint (non-integrated mills)					300,000 tpa	
- printing paper					500,000 tpa	
Shoes:						
- ordinary shoes					< 300,000 pairs per annum	
- non-rubber shoes					1 m. pairs per annum	
Welded tubes (small and medium diameter)					9,500 tpa	

Notes: * Lower capacities are not possible due to technical reasons as it is not possible to use centrifugal compressors due to the volumetric rate of delivery.

** This product is representative of computer and radar equipment, but the industry makes a wide range of products some of which are relatively unsophisticated and for which the economies of scale are smaller.

m.= million; tpa = tonnes per annum; upa = units per annum; bpd = barrels per day.

TABLE 7.1

Sources:

- a/ Data relates mostly to Britain. C.F. Pratten, Economies of Scale in Manufacturing Industry (Cambridge: At the University Press, 1971), pp. 269-277.
- b/ Data for ASEAN countries and other developing countries. ECAFE, Asian Industrial Survey for Regional Cooperation, AIDC (9)/1, New York, 1973, Vol. I, pp. 79-80, and Vol. II, various pages.
- c/ Data for CACM countries derived partly from U.S. plants. ECLA, Possibilities of Integrated Industrial Development in Central America (New York: United Nations, 1964), various pages.
- d/ Data for various industrialised and developing countries. UNIDO, First World-Wide Study on the Petrochemical Industry: 1975-2000, UNIDO/ICIS.83, 12 December 1978, various pages; UNIDO, The World Iron and Steel Industry, UNIDO/ICIS.89, 20 November 1978, p. 95; and, UNIDO, Engineering Industry, Monograph No. 4, ID/40/40 (New York: United Nations, 1969), pp. 22-23.
- e/ Data for USA, Canada, UK, Sweden, France, and West Germany. F.M. Scherer, "The Determinants of Industrial Plant Sizes in Six Nations", The Review of Economics and Statistics, Vol. LV, May 1973, No. 2, pp. 135-145.
- f/ Data for developing and developed countries. IDCAS, Industrial Coordination Symposium: Fertilizers and Petrochemical Industries, Kuwait, 16-20 January 1971, 4/01/012, Cairo, 1972, various pages; IDCAS, Development of Sugar Industry in the Arab Countries, KS 2/39/2/12/5, Second Industrial Development Symposium for Arab States, Kuwait 10-17 October 1971, p. 39; ECLA, The Establishment of a Telecommunications Industry Within the ECLA Region, Joint ECWA/UNIDO Industry Division, 6 June 1978, p. 23; and, Martin Carnoy, Industrialization in a Latin American Common Market (Washington, D.C.: The Brookings Institution, 1972), pp. 88-89.

the same definitions and accounting procedures of cost and capacity were employed. This is in addition to the fact that estimates are the product of different technologies used by plants, and the plants themselves have different ages and dates of manufacture. The mere fact that some of the estimates are taken from regional studies (i.e. ASEAN and CACM) provides an evidence of the importance of the industries concerned in a regional framework.

The classification of industries in the above Table helps to indicate the lines of industrial production which could be pursued in the Arab countries on an integrated basis. It is clear that the majority of these industries are highly related to the available resources in the Arab region and are likely to be the focus of interest in the industrialisation efforts in the immediate future. This will become more evident by using some of the above estimates, despite the shortcomings inherent in them, to explore the possibilities for integrated industrial development.

Possibilities for Industrial Integration

Considering the direct relationship between industrial integration and economic development, it is essential that the industries considered for an initial integration scheme among the Arab countries are those which ensure a wider and more

efficient use of national resources as well as the achievement of developmental objectives which cannot be attained separately. It is necessary that these industries should supplement previous development efforts and gradually increase interdependence among the Arab countries to attain a certain degree of collective self-reliance. In other words, industrial integration should aim at organising production so as to optimise the use of factors of production, thus satisfying regional needs more efficiently and contributing further to development.

Priority ought to be given, therefore, to those objectives which require for their realisation the pooling of markets and resources. Most prominent among such objectives is the establishment of industries in which production is partly destined to meet demand in other countries, or in which certain production inputs are imported from other countries in the region. The search for such industries could be started by looking at the national development plans. In addition, the identification of integration industries could be made on the existence of scale economies. This makes it possible to pinpoint the industries which can be operated profitably only when producing for the combined markets of all or some of the Arab countries. As can be discerned from the previous section and available data, significant internal economies of scale could be realised in manufacturing industries producing basic metals and metal products, building materials, petrochemicals, chemical products, pulp and paper, textiles, and printed materials. Moreover, these industries tend to have strong

forward and backward linkages, and accordingly their establishment is conducive to investment decisions which broaden the productive capacity and the expansion of the market size.^{8/}

Evidently, this methodology requires for its implementation competent teams of industrial economists and engineers, capable of studying the actual situation with respect to the market size and the feasible efficient size of production units. A major limitation, however, is that the benefits derived from the economies of scale must be weighed against increased transportation and marketing costs. If these costs are high they may outweigh the cost-saving derived from scale, and subsequently would lead to the creation of plants of sub-optimal size. In any event, the concept of economies of scale must be employed with care in identifying integration industries, since there is always a risk in generalising the experience of one country to others.

As mentioned in Chapter Two, an alternative criterion for identifying integration industries is the availability of natural resources and factor supplies in some countries which could be combined to produce goods for a regional market. For instance, capital supply from Kuwait could be invested in expanding the exploitation and processing of the phosphate

^{8/} According to a pioneering study on the inter-industry linkages in U.S.A., Italy, Japan and Norway, the iron and steel industry has the highest combined forward and backward linkage score followed by non-ferrous metals, paper and paper products, petroleum products, coal products, chemicals, textiles, rubber products, and printing and publishing industries. See H.B. Chenery and T. Watanabe, "International Comparisons of the Structure of Production", Econometrica, Vol. 26, No. 4, October 1958, pp. 487-521.

deposits in Jordan to produce fertilizers for Syria and other agricultural countries in the region. In the same vein, integration industries could be those which require amounts of investment that are beyond the means of individual countries. Obviously, such industries can be more instrumental in activating the process of integration and broadening its scope, and on this basis they ought to be distinguished from those industries identified on the basis of economies of scale. In making a distinction between national and integration projects, Lara considers that the fundamental criterion for identifying integration projects

"would appear to be not only the measure in which they exploit opportunities offered by the expanded market but also their contribution to the process of integration itself." 9/

Bearing in mind all these considerations, it is possible to depict certain lines of industrial production which could be established on an integrated basis among the Arab countries. It is certain that only a few of the Arab countries can independently develop efficiently capital goods and heavy large-scale industries. Aside from Egypt, and to a much lesser extent Iraq and Syria, the economic size of the Arab countries under consideration in terms of population and resources is very small. This applies specifically to the Gulf countries which are strikingly small. But the Arab countries together have the

9/ Cristóbal Lara, "The Evaluation of Economic Integration Projects", in Multinational Investment, Public and Private, in the Economic Development and Integration of Latin America, Round Table, Inter-American Development Bank, Bogota, Colombia, April 1968, p. 154.

potential to develop such industries on a viable scale, considering their complementarity in resources and markets. What is important in this respect is to make sure that the selected industries can employ intermediate technologies which are suitable for both the level of industrial development and the factor proportions of the host countries.

In the context of the factor supplies available in the Arab countries, two broad categories of industries could be identified. One category comprises the energy- and capital-intensive industries which could be established in the oil-producing countries. These industries represent a crucial phase of industrial development in which growth could emerge in several directions, and their development ought to be on a broad front in view of the linkages between them. One line of growth could start from the expansion of oil refining capacities for the production of numerous petrochemicals, including ethylene, fertilizers, pesticides, synthetic protein, synthetic fibres, plastics and detergents. In this range of industries, petrochemicals assume a strategic importance as they can feed many sectors with inputs. For instance, synthetic fibres could make possible the establishment of domestically-based textile industries. Also petrochemical products could provide substitutes for traditional materials such as steel, wood, and rubber. Another line of growth in this category could start from the establishment of gas-based metallurgical and construction industries. Of particular importance in this line

is the iron and steel industry, on which the manufacture of machinery and equipment depends, and aluminium.

The other category of industries comprises industries which are characterised by a fairly heavy capital investment and the need for sophisticated manpower skills. These industries could use more labour and less capital per unit of output than the capital-intensive variants, and they could be established in the agricultural Arab countries which are labour abundant. One line of growth could spring from the establishment of capital goods industries for the assembling and finishing of certain engineering products such as agricultural machinery, transport vehicles, engines, electrical machinery and other equipment. More specifically, the Arab countries need to produce in this line plant equipment for petrochemicals, heavy chemicals, oil refining, as well as equipment for construction and mining, power generation, and communications. It is likely that in the initial stage most inputs to these industries would have to be imported, but eventually they could be manufactured locally, thus leading to the creation of a wide range of ancillary industries. In view of their strong forward and backward linkages, the economic viability of many of these industries depends on producing a "product-mix", possibly in a number of countries, whereby one product can be produced for use as input in another. Another line of industrial growth which could emerge in the agricultural Arab countries relates to natural resource-based industries which require large-scale operation and substantial investments. These include food processing,

such as sugar and vegetable oils, as well as paper and leather manufactures.

The assessment of the possibilities and desirability of Arab integration in certain industries belonging to the above two categories could be made by relating the m.e.s. of the individual industries as given in Table 7.1 to the national and potentially integrated Arab markets, and then giving the penalty cost involved in comparison with overseas production when producing on a national basis. A major limitation in this methodology is the lack of reliable and detailed information on the size of the Arab markets, especially that these markets are developing rapidly and it is extremely difficult to put realistic bounds to them.

In the remaining part of this chapter, an attempt will be made to examine specific industries in a number of industrial sectors, whose economic viability can be enhanced by the pooling of scarce resources, skills, and markets. These sectors will be: (a) refining and petrochemical industries; (b) metallurgical industries; (c) capital goods industries; and, (d) food and agro-allied industries. Since our purpose here will be to expose the areas for integration, rather to evaluate the benefits of integration precisely, the discussion will be in broad terms. In the next chapter a methodological study will be undertaken to evaluate the potential for integration in the Arab fertilizer industry, and to provide guidelines for the selection of integration industries which could be included in an "industrial package".

Refining and Petrochemical Industries

The importance of the vast oil and natural gas resources as a basis for industrialisation in the Arab region can hardly be over-stressed. By establishing petrochemical industries the oil-producing countries would not only be ensuring a fuller utilisation of their resources, thereby increasing the value-added of their exports, but also investing a part of their ample financial resources in income-generating projects. In most of the Arab countries, the pattern and scale of development in the petrochemical field are increasingly demonstrating the need for regional integration, as a means for reducing the cost of development and improving competitiveness and bargaining power vis-à-vis the outside world. It is becoming more conceivable to expect the emergence of a regional market for petrochemicals, similar to the one which was achieved for iron and steel in Europe prior to the formation of the EEC.

Petrochemicals are chemical compounds or elements directly derived from oil or natural gas. A significant portion of them are produced as by-products or as joint products because many of the production processes are inter-related. Generally, chemical companies manufacture many products which may include basic raw materials, semi-finished goods and sometimes consumer goods. It is useful to make a distinction between heavy or basic chemicals, fine chemicals, and finished products.

Basic chemicals are usually produced in large quantities often more than 500,000 tonnes per annum, and they are key raw materials for other chemical products. The main basic products are olefine (ethylene, propylene, butadiene), aromatic (essentially benzene and xylenes) and methanol.^{10/} These basic hydrocarbons are the key products of the petrochemical industry. The paths leading from them to the finished products are many and complex. Yet, the main paths can be identified: ethylene and propylene serve as basic products for the most important plastics which can be used for construction and other purposes; aromatics for the basis for the synthesis of noncellulosic fibres mainly for the textile and fabric industries; butadiene is involved in the production of the major synthetic rubbers; and methanol is used essentially for the production of formol, one of the constituents of adhesives.

In addition, oil and natural gas are the main sources of ammonia, urea, and other types of fertilizers. These products are of such strategic importance that many countries insist on producing them, even at a higher cost than the price of imports. Recently, certain forms of bacteria have been found which convert hydrocarbons into protein.

^{10/} There are two basic processes for producing these products: (a) steam cracking, which is the main source of olefine but which can also be used to produce aromatics; and, (b) catalytic reforming which, independently from its use in refining, produces aromatics for the petrochemical industry. In addition, steam reforming is used essentially for the synthesis of ammonia as well as for the synthesis of methanol. See UNIDO, First World-Wide Study on the Petrochemical Industry: 1975-2000, UNIDO/ICIS.83, 12 December 1978, p. 20.

It is not difficult to imagine how all these and many other petrochemical products create linkages with other industries and sectors within the economy, and accordingly play a dynamic role in the overall process of economic development. In the industrialised countries, especially after World War II, most petrochemical industries experienced a high rate of growth. This was a result of the stability of oil prices until the early 1970s as well as the rapid expansion in the consumption of petrochemicals and of their emergence as relatively cheap substitutes for natural products. In a world-wide context, the United States remained the major producer of petrochemicals until the mid-1950s (accounting for about 87 per cent of world production), but Western Europe and Japan developed rapidly their industries after 1960. Table 7.2 shows that in mid-1977 about 82 per cent of the existing production capacities of major petrochemical industries in the world belonged to Western Europe, North America (U.S.A. and Canada), and Japan, whereas the Middle East countries (including non-Arab countries) had about 0.4 per cent. It is to be noticed that the larger part of the petrochemical production in the Middle East countries comprises ethylene, plastics, and synthetic fibres, reflecting the narrow base of existing industries. Despite the sizeable investments which are being made, the share of the Middle East countries in world production capacity of major petrochemicals will not exceed 3 per cent in 1985.

(in 000 tonnes)

Products	Western Europe		North America		Japan		Middle East ^{a/}		Others		Total	
	1977	1985	1977	1985	1977	1985	1977	1985	1977	1985	1977	1985
Basic Products												
Ethylene	14165	24500	14450	28000	4510	8200	190	3000	5692	22100	39907	85800
Propylene	8020	...	7100	...	3800	...	40	...	2366	...	20326	...
Butadiene	2153	...	2270	...	872	...	33	...	712	...	6040	...
Benzene	5802	10900	6400	12500	2550	4000	...	650	4012	10850	18764	38900
Paraxylene	1220	3200	1908	4200	636	2180	...	230	486	4090	4250	13900
Orthoxylene	848	...	603	...	315	...	...	...	360	...	2126	...
Methanol	3920	4500	4624	7700	1164	1200	54	1700	3555	11780	13317	27180
Sub-Total	36128	43400	37355	52400	12847	15580	317	5580	17163	48820	103630	165700
Intermediate Products												
Ethylene oxide	1730	...	2450	...	490	...	...	...	394	...	5064	...
Vinyl chloride	4860	8600	3100	7300	2290	2900	69	1500	1998	8900	12317	29200
Styrene	2945	6300	3580	7200	1535	2750	25	350	498	4800	8583	21400
Monomer for synthetic fibres	4740	...	5253	...	2660	...	...	...	2063	...	14716	...
Dimethyl Terephthalate	...	1595	...	2663	...	740	...	60	...	2042	...	7100
Therephthalic acid	...	650	...	1400	...	1220	...	80	...	1150	...	4500
Acrylonitrile	...	2150	...	1400	...	1100	...	...	...	1550	...	6200
Caprolactam	...	1200	...	750	...	700	...	...	...	1750	...	4400
Sub-Total	14275	20495	14383	20713	6975	9410	94	1990	4953	20192	40680	72800
End Products												
Main plastics	15416	29400	12265	29400	5623	9160	163	3430	5674	29540	39141	101030
Synthetic fibres	3397	4400	605	5350	1145	2140	131	350	6338	7760	11616	20000
Synthetic rubber	1884	2500	2195	3200	739	1600	45	220	1970	4300	6833	11820
Detergents	1114	...	755	...	330	...	10	...	708	...	2917	...
Sub-Total	21811	36300	15820	37950	7837	12900	349	4000	14690	41700	60507	132850
GRAND TOTAL	72214	100195	67558	111063	27659	37890	760	11570	36826	110712	205017	371430

a/ Excluding north Africa.

Source: Compiled and reclassified from UNIDO, First World-Wide Study on the Petrochemical Industry: 1975-2000, op. cit., pp. 221-223 and 243-245.

Focussing on the Arab countries in the Middle East, one can notice that although they contribute about one-third of total world oil production, and possess about two-thirds of world oil reserves and one-fifth of world natural gas, their utilisation of this wealth is largely confined to the extraction and shipping of oil. The oil refining industry is relatively limited in the Arab countries and does not exceed 5 per cent of world oil refining capacity. Only about 10 per cent of crude oil produced in the Arab countries is refined locally, and this is due to the tendency in the past on the part of the foreign oil companies to locate refineries near consumption centres, rather than near the oil-fields. However, the Arab oil and petrochemical industries have been undergoing rapid growth since 1974. Various national policies have been devised to conserve flared natural gas by setting up gas gathering and liquefaction plants, and to establish petrochemical industries. The fact that these industries are of large-scale and cannot be based on the domestic market, they are conceived from the beginning as export-oriented industries.

According to a recent study,^{11/} the existing refineries in the Arab region produce considerably more refined products than is needed to meet regional demand, even when including the needs of bunkering trade. The region's net export of refined products is contributed largely by Saudi Arabia, Kuwait, and Bahrain (accounting for over 90 per cent of the export surplus

^{11/} ECWA, Study on the Economics of Oil Refining in the ECWA Region, Beirut, 15 February 1980.

in 1978). Under present circumstances it seems that regional cooperation in the refining industry to meet future demand (for fuel consumption and feedstock for petrochemical industries) is more conceivable than exporting refined products to the rest of the world, especially Western Europe. This can be attributed to several factors. One is the high cost involved in transporting refined products. It is cheaper to transport crude oil than to transport the refined products into which it is transformed by refining. Another reason is that production costs in the Arab countries are higher than those of refining units in Europe, due to the higher capital costs of building a refinery in a developing setting. In addition, a tariff on the imports of refined products into Europe may be imposed, which is not the case with crude oil.

It would be highly economic for the Arab countries to expand their refining capacities on an integrated basis, not only to meet their future demands at the lowest possible cost but also to compete effectively in export markets outside the region. Table 7.3 shows clearly the over-supply situation with respect to refined products in 1976, and which will definitely aggravate by early 1980s as a result of the planned expansion in refining capacity, especially in the major oil-producers. Considering that the m.e.s. for oil refining amounts to 200,000 barrels per day, or about 10 million tonnes per annum, it can be observed that this scale is more than any one of the Arab countries can actually absorb domestically. Even with the

(in 000 barrels per day)

Country	Refining Capacity As of End 1978				Production			Consumption			
	Existing	Under Construction	Planned ^{a/}	TOTAL	1972	1974	1976	1972	1974	1976	1985 ^{b/}
Bahrain	250.0	-	-	250.0	239.0	240.7	212.4	36.0	2.4	4.1	7.0
Egypt	236.0	30.0	250.0	516.0	128.3	146.2	199.9	152.0	156.0	153.0	175.0
Dem. Yemen	169.0	-	-	169.0	73.3	54.5	...	11.0	16.0	17.0	20.0
Iraq	226.0	94.0	150.0	470.0	92.2	89.2	...	76.2	84.4	112.0	160.0
Jordan	29.6	-	-	29.6	16.3	19.9	...	16.7	19.9	22.2	50.0
Kuwait	644.0	-	-	644.0	420.2	395.4	410.8	16.4	19.3	30.2	50.0
Lebanon	53.0	-	-	53.0	43.4	48.6	...	44.0	58.0	59.0	68.0
Oman	...	...	...	...	...	...	...	8.3	22.7	...	35.0
Qatar	10.0	50.0	-	60.0	0.6	0.6	5.4	2.0	3.5	5.9	20.0
Saudi Arabia	725.0	780.0	620.0	2125.0	608.1	648.1	703.5	54.8	87.7	166.3	250.0
Syria	237.0	-	80.0	317.0	44.4	37.5	54.3	55.0	67.0	75.7	110.0
Sudan	23.8	-	-	23.8	22.3	21.5	...	19.0	19.0	28.0	36.0
U.A.E.	15.0	120.0	300.0	435.0	...	...	8.2	3.2	6.5	14.1	24.0
Yemen	...	...	...	...	...	...	...	...	...	...	10.0

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^{a/} Scheduled for completion by 1982.^{b/} Estimates.

Sources: (1) OAPEC, Secretary General's Fifth Annual Report, Kuwait, December 1978, Table 8, pp. 42-43;
 (2) OAPEC, The Importance of Petrochemical Industries in Arab Joint Economic Action, May 1978, pp. 45-46 (in Arabic); and, (3) OAPEC Bulletin, Vol. V, 1979, selected numbers.

anticipated growth in consumption which is likely to range between 8 and 15 per cent per annum between 1976 and 1985, depending on the increase in income level and industrial development, only Saudi Arabia is likely to have domestic consumption of refined products above the m.e.s. output.

This means that in the absence of export possibilities, the efficient operation of an oil refinery in any one of the Arab countries involves a cost which has to be borne by the society. According to estimates presented by Pratten, the cost of production per tonne of refined products increases by about 27 per cent if the operating rate is 50 per cent of the "m.e.s." and by about 63 per cent if the operating rate is 20 per cent.^{12/} In this context, it would be desirable for example to set up a refining unit in Alexandria, Egypt, where it is possible to use crude oil from the SUMED pipeline, to supply refined products to Egypt and the Sudan which in 1985 will have a combined consumption of about 210,000 barrels per day. Another example would be to set up a refining unit in Syria to use oil coming through pipeline from Iraq to supply in addition to itself Lebanon and Jordan. However, this could be difficult to achieve as the presence of a refining capacity in most countries is considered of strategic importance, not to mention its significance as a major prerequisite for the development of petrochemical industries.

^{12/} Pratten, op. cit., p. 35.

After 1975, following the sharp increase in oil prices, the Arab oil countries started considering spending more on petrochemical industries than on refining. The pattern of investments in these industries emphasises the need for regional coordination and integration, especially when viewing the petrochemical industries in an international perspective. Despite the availability of huge quantities of feedstocks and a virtual monopoly on raw materials, Arab petrochemical industries tend to face considerable difficulties. These difficulties arise from both the need to operate on a large-scale due to the nature of the technology utilised and the higher cost of setting up petrochemical plants in the Arab countries, in comparison with industrialised countries where the market potential lies.

In terms of available technologies, oil and natural gas are amongst the major resources which require for their optimal use a wide market, usually larger than what the domestic market can offer. Due to the great achievement of research and technology, there has been a continuous expansion of the size of production units, and subsequently of m.e.s. and the amount of capital invested. This must be seen with the tendency to establish integrated petrochemical complexes (i.e. several production units) to carry out the successive processes of transforming raw materials and intermediate products, and thus improve the economics of production. In most cases, vertical expansion in production is less costly than horizontal expansion,

from the standpoint of both capital and operating expenses. But the substantial investments usually involved require efficient and continuous operation at a high level, as well as an effective maintenance of the large complexes. Moreover, it is often argued that the relatively high rate of obsolescence of processes in petrochemical industries emphasises the need to recover promptly the high cost of R & D through a high ratio of sales to investment.

It can be observed, therefore, that along with the expansion of the average size of petrochemical plants as a result of the expansion in demand and technological progress, m.e.s. has been creeping upwards. For example, m.e.s. of ethylene plants was until 1955 in the range of 20,000 to 40,000 tonnes per annum, but increased to 100,000 tonnes per annum in 1963. After that, it more than doubled to reach 200,000 to 300,000 tonnes per annum, and by 1970 it reached 500,000 tonnes per annum.^{13/} It is reported now that Japan has already abandoned the production of ethylene plants with a capacity of less than 300,000 tonnes per annum. Generally, petrochemical plants can only be profitable if operated at, or near, design capacity to reap full benefits of scale economies.

It proved to be extremely difficult to establish the market for ethylene and other intermediate petrochemical products

^{13/} IDCAS, Industrial Coordination Symposium: Fertilizers and Petrochemical Industries, Kuwait, 16-20 January 1971, 4/01/012, Cairo, 1972, p. 174.

in the Arab countries. Aside from the lack of detailed statistical information, the market for such products is not already established on well-defined trends and for certain products it needs to be developed first. For instance, the production of ethylene must be downstreamed to other products. It can be polymerised directly to plastic polyethylene, oxidised to ethylene oxide or chlorinated to give ethylene dichloride and hence vinyl chloride which can itself be polymerised to polyvinyl chloride (PVC). Thus, one can observe that a wide range of petrochemical industries will have to be planned simultaneously in order to ensure the proper industrial linkages. However, both developing markets and modern production technologies demand large industrial units and capacities, and it is certain that the smaller oil-producing countries will have to rely heavily on export markets, regionally and internationally, if serious over-capacity is to be avoided.

The plants which are being executed or planned in most of the Arab countries represent the first generation of petrochemical industries. Aside from a number of nitrogenous fertilizer plants in Egypt, Kuwait, Saudi Arabia, and Qatar, no important beginnings in the petrochemical field were made in the Arab countries during the 1960s. Table 7.4 shows the planned capacities of selected petrochemicals in the Arab countries during the period 1979-85. It can be discerned that there is much overlapping in planned capacities, and that these capacities are of a large scale in comparison with what the domestic market

(in 000 tonnes)

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Product	S. Arabia	U.A.E.	Iraq	Qatar	Kuwait	Egypt	Jordan	Syria	TOTAL
Basic Products									
Ethylene	2050*	300	140	300	350	300	-	-	3440
Propylene	-	-	-	-	110	150	-	-	260
Butadiene	-	-	-	-	110	-	-	-	110
Paraxylene	-	-	-	-	87	100	-	-	187
Orthoxylene	-	-	-	-	60	48	-	-	108
Benzene	-	-	-	-	284	155	-	-	439
Intermediate Products									
Styrene	320	-	-	-	330	190	-	-	840
Ethylene glycol	460	-	-	-	135	50	-	-	645
Monovinyl chloride	280	200	-	-	-	34	-	60	574
Vinyl chloride monomer (VCM)	250	200	63	-	200	107	-	-	820
Dimethyl terephthalate (DMT)	-	-	50	-	-	50	-	-	100
End Products									
High density polyethylene (HDPE)	-	190	30	-	100	100	-	-	420
Low density polyethylene (LDPE)	600	150	60	150	120	200	-	-	1280
Polypropylene	-	-	-	-	-	100	-	-	100
Polystyrene	250	-	-	-	250	75	-	-	575
Phosphoric acid	-	-	400	-	-	-	390	-	790
Caustic Soda	360	-	42	-	-	-	2	-	404
Polyvinyl chloride (PVC)	-	-	150	-	-	-	-	-	150
Sulphuric acid and oleum	-	-	1500	-	-	-	1000	-	2500

* Output of three units in Jubail and one unit in Yanbu.

Sources: Compiles from: (1) UNIDO, First World-Wide Study on the Petrochemical Industry 1975-2000 (appendices), UNIDO/ICIS.83/Add. 1, 3 October 1978; (2) Chem Systems International Ltd., Feasibility Studies for the Development of Olefin and Aromatics Industries for International and National Markets in Arab States, Vol. I, prepared for IDCAS, January 1976, London; and, (3) Middle East Economic Digest, Special Report on Petrochemicals, December 1977, p. ix.

can absorb, and this carries with it not only growing dependence on export markets, but also the potential for conflict and competition in these markets. For instance, it is observed that the Arab countries will contribute about 3.4 per cent of world ethylene production in 1985, but a little less than half of Arab production would be absorbed within the Middle East area by that year.^{14/} This means that the Arab countries will have to find markets for 1.5 million tonnes of ethylene in other parts of the world, possibly Asia (notably India) and Africa, and this geographic concentration would lead to severe competition among them. The market for ethylene in the Arab countries is determined by production of related intermediate and end-products (i.e. LDPE, HDPE, ethylene oxide and VCM), which as shown in the above Table is relatively limited. On a national level, it is useful to observe, for instance, that the petrochemical complex in Qatar which is based on the production of 300,000 tonnes per annum of ethylene is to export no less than one-third of its production and use about 140,000 tonnes for the production of low density polyethylene.

The fact that the petrochemical development in the Arab countries is still in its very early stages makes it extremely difficult to put realistic bounds to the regional or national markets. It is possible to have very large changes in demand for a product by the establishment of just one new consuming

^{14/} See UNIDO, First World-Wide Study on Petrochemical Industry, op. cit., pp. 241-242.

plant. For instance, the demand for dimethyl ~~thereptalate~~ and ethylene glycol would increase from zero to several tens of thousands of tonnes within a short period as new polyester fibre facilities are established. According to a study prepared for IDCAS by Chem Systems International Ltd.,^{15/} only a few petrochemical products can be based on the regional market. These include polypropylene which could be used for producing packaging material for fertilizer products in the region; dimethyl ~~thereptalate~~ the demand for which is expected to increase rapidly as a result of the development of polyester fibre industries; and, vinyl chloride monomer which will be increasingly used for the production of PVC for consumer uses as well as for industrial and construction applications as in the case of most developed countries. Current demand for other petrochemicals is likely to remain modest or increase at a slow rate, hence generating substantial surpluses for export. Amongst these products are ethylene glycol, high density polyethylene, styrene (only in Egypt the supply/demand situation will be brought to balance by 1985), polysterene, and xylenes. It is to be remarked that most of the Arab countries have large-scale low density polyethylene units in their petrochemical plants for the 1980s, and although there is a substantial demand for this product in the region it is expected that if all plans come to fruition there will be a substantial export potential by 1985.

^{15/} Chem Systems International Ltd., Feasibility Studies for the Development of Olefin and Aromatics Industries for International and National Markets in Arab States, Vol. I, January 1976, London, pp. I-4 to I-13.

Much of the success of the Arab countries in building up petrochemical industries depends, therefore, on their ability to minimise production costs, in comparison with other producers. Undoubtedly, the Arab countries provide an ideal location for such industries, due to both the availability of investment funds and the fact that the costs of oil and natural gas in them compare favourably with their costs elsewhere. But as one can perceive from the preceding discussion, high operating costs, due to the smallness of the market on the basis of which the Arab petrochemical industries would have to operate at least in the shorter-run, coupled with high capital costs of constructing these industries, reduce considerably the advantage of having cheap raw materials.

It is known that production costs of petrochemicals vary considerably from one plant to another, depending on the size of the plant, the process used, price of raw materials and energy, availability of skills, investment costs (and depreciation rate), and locational advantages. This makes it possible to have different capital costs for various locations, even though the machinery and process technologies involved are imported from the same source. Accordingly, it is useful to distinguish the cost changes due to differences in scale from those caused by other variables.

Table 7.5 shows that the capital costs of a plant in the Arabian Gulf are significantly higher than in Western Europe,

TABLE 7.5

Comparison of Plant Capital Costs:

Western Europe vs. Arabian

Gulf

Item	W. Europe	Arabian Gulf (%)		
	%	Low	High	"Best Estimate"
Equipment	50.0	55.0	60.0	58.0
Civil Work	5.0	5.0	6.0	6.0
Erection	30.0	30.0	40.0	36.0
Engineering & procurement	10.0	11.0	13.0	12.0
Engineering services	5.0	6.0	8.0	7.0
Total	100.0	107.0	127.0	119.0
Incremental construction period (months)	-	3	12	6
Incremental cost due to interest over longer construction period (% of total)	-	2.5	10	5
Overall cost ratio	1.00	1.10	1.40	1.25

Source: Chem Systems International Ltd., op. cit.,
p. III-26.

by 25 per cent on the average.^{16/} The cost differential could vary from one Gulf country to another depending on the degree of development of infrastructure and the type of plant considered. As can be seen from the above Table, differences in costs result from a number of factors, including shipping costs for equipment and materials, different design parameters arising from temperature and climatic conditions, travel and maintenance costs of expatriate employees, and lack of proper industrial infrastructure. Moreover, longer construction time, ranging between 30 and 50 per cent more than in Europe, adds up to costs.

This makes it to the advantage of the Arab countries to opt for large size petrochemical plants, in order to benefit from economies of scale and reduce unit-cost to improve international competitiveness. It is envisaged that by trebling production capacity, it would be possible to save between 20 and 45 per cent in investment, depending on the product and the process used, and also operational profitability would improve as a result of lower wages, and lower depreciation and maintenance costs as per unit of production. Despite the lack of definite information on Arab market sizes for petrochemicals, it can be presumed that m.e.s. cannot be attained

^{16/} It ought to be remarked that capital costs have grown considerably with the scale of plant. A new ethylene plant with an annual capacity of 500,000 tonnes per annum costs about \$400 million if built in an existing site, but over \$500 million if a new site is to be exploited. According to a survey carried out by the Chemical Industries Association of the U.K., plant and construction costs in the U.K. have gone from a cost index 100 in 1970 to 275 in 1977 and is expected to reach 396 by 1980. This means that within a decade (1970-80) the cost of building the same plant increased by four times, without counting additional equipment for pollution abatement and energy conservation. See UNIDO, First World-Wide Study on the Petrochemical Industry, op. cit., p. 7.

on a national basis for the majority of basic and intermediate petrochemical industries, and that regional integration is desirable to attain the objectives of industrialisation more efficiently.^{17/} Table 7.6 gives a general idea of the probable impact of capacity on investment cost and operational profitability in the petrochemical industry. It can be noticed that the capital cost per tonne of capacity decreases with the increase in design capacity, as it amounts to £75 with a capacity of 20,000 tonnes and £56.7 with a capacity of 60,000 tonnes. Moreover, it can be noticed that the operating expenses decrease from £20 to £17 per tonne of design capacity with the above shift. Accordingly, the rate of return on investment increases from 13.3 per cent to 25.6 per cent. This helps to illustrate the importance of the size of the market on the viability of the petrochemical industry.^{18/}

In the light of the foregoing discussion, it seems that the development of the petrochemical industry calls for consorted

^{17/} It must be recognised that with the increase in oil prices after 1973 the production cost structure of the world petrochemical industry changed considerably. In 1972, feedstock and energy accounted for about 44 per cent of the production cost of ethylene, but increased to 73 per cent in 1978. Consequently, the proportion represented by amortisation and return on investment declined from 40 to 19 per cent of production cost in 1972 and 1978, respectively. Such change in cost structure gives the Arab countries the chance to set up smaller plants, but the need to offset higher capital and transportation costs mentioned above retains the desirability of large-scale plants.

^{18/} This point is discussed in detail with respect to ammonia/urea which is a major ingredient for producing fertilizers, in Chapter Eight, where a methodological study is made.

TABLE 7.6

Impact of Capacity on Operational
Profitability in Petrochemical Industry

	Plant A	Plant B	Plant C
Capacity (in tonnes per year)	20,000	40,000	60,000
Fixed capital, including buildings (in million £)	1.5	2.5	3.4
Annual production expenses (in £):			
- Raw materials	652,000	1,314,000	1,971,000
- Operating expenses	400,000	720,000	1,020,000
- Depreciation (10%)	150,000	250,000	340,000
Sales revenues (in £)	1,400,000	2,800,000	4,200,000
Internal rate of return	13.2%	20.6%	25.6%

Source: CAEU, A Working Paper on the Creation of An Arab Federation for Petrochemical Industries, Cairo, 1977 (?), p. 9 (in Arabic).

efforts among the Arab countries in both the production and marketing fields. There are definite economic gains from coordinating investment decisions in order to optimise the performance of factors of production and avoid harmful duplication in production facilities. It would be mutually beneficial if the Arab countries specialise in petrochemical production and cooperate in building up joint terminalling, storage and distribution facilities especially that they have to demonstrate security of supply to export markets. This requires the formulation of an Arab strategy which would regard the Arab region as an integrated economic unit for petrochemicals and entail

the creation of joint marketing activities to avoid unnecessary competition and permit market entry costs to be shared among the countries concerned. Such a strategy, aside from ensuring a growing regional market for petrochemicals to fall back upon in case of difficulties or undesirable fluctuations in world markets, strengthens the bargaining power of the Arab countries in marketing their products and obtaining industrial licenses.

It is of great significance to realise that the petrochemical industries which are being established in the Arab countries are enclaves within the national economies. Aside from being designed and executed by foreign engineering and contracting firms, the capital expenditures are partially channelled to the outside, and their operation and maintenance tend to be highly dependent on expatriates.

But the petrochemical industry could be partly built up as a centre for smaller industrial units. The production chain which could emerge from the petrochemical industry in various directions would definitely amplify the domestic effects and induce the generation of investment and employment opportunities. Synthetic fibres (possibly blended with cotton) provide the basic raw materials for the textile industries which are considerably more labour-intensive than petrochemical plants and which in turn create demand for machine tools and equipment. Ammonia and urea are major ingredients for the production of nitrogenous fertilizer

which is a major input for the intensification and expansion of agricultural activity. Low density polyethylene provides the opportunity of setting up packaging material industries, possibly to cater for the fertilizer and food industries. High density polyethylene and polyvinyl chloride provides the basic raw materials for a wide range of industries related to agricultural usage (e.g. pipes) and construction activities (e.g. flooring, roofing, walls, etc...). Black carbon could be used to produce synthetic rubber for the manufacture of tyres for cars, trucks and tractors. All of the above products are essential for a modern society, and will be developed in the Arab region, though some beginnings have been made in the production of tyres in Egypt and polyethylene related industries in the Gulf.

Metallurgical Industries

One of the major facets of the rapid socio-economic transformation in the Arab countries relates to the development of metallurgical industries. These industries usually transmit impulses through linkage mechanisms to other industries, of which the most prominent are metalworking and construction industries which provide the main source of capital formation required for accelerating economic growth. In point of fact, the availability of huge quantities of natural gas in the Arab region offers the opportunity of developing two important

metallurgical industries: iron and steel, and aluminium. The potential for integration in these two industries will be outlined in the present section.

Although iron and steel is mainly developed in countries which have a strong industrial tradition, developing countries are rapidly increasing their own potential to produce steel. While the developing countries possess about 30 per cent of the world reserves of iron ore, they contributed only 10 per cent of world iron and steel production in 1977. There is a high correlation between the size of the country and the existence of an iron and steel industry and its structure. This is shown by the fact that with the exception of Qatar and Abu Dhabi, which are in an exceptional situation as oil producers, no country with less than one million inhabitants has considered the establishment of an iron and steel project. Also no developing country with less than ten million inhabitants (except Chile) possesses or has constructed a capacity for the production of flat products, and no developing country with less than 30-40 million inhabitants (except Algeria, Argentina, and Chile) possesses or has constructed a capacity for the production of fine and alloy steels.^{19/}

The iron and steel industry is capital-intensive with a specific requirement of about \$1000 for each tonne per annum

^{19/} UNIDO, The World Iron and Steel Industry, UNIDO/ICIS.89, 20 November 1978, p. 69.

of steel-ingot production capacity. Additional investment "upstream" (i.e. for supply of the necessary inputs), and "downstream" (i.e. for processing of steel in manufactured products) will have to be undertaken and may amount to investments of the same order. About 3 tonnes of ore, coking coal, outside scrap, oil and fluxes are needed to produce one tonne of steel. The marketable output can be estimated at roughly one tonne per tonne of steel ingot produced. Thus, a country producing 100 tonnes of steel per annum needs to secure a yearly input of some 300 tonnes of raw materials and an outlet for some 100 tonnes of products, by-products and other materials. Although this industry is a large buyer of heavy capital goods and this represents a heavy burden on the balance of payments, it saves foreign exchange by reducing the imports of steel.^{20/}

The world demand for steel has been increasing rapidly. It increased from 269 million tonnes in 1955 to 683 million tonnes in 1976. The larger part of steel production is concentrated in the industrialised countries, with the USSR, USA and Japan accounting in 1976 for about 54.2 per cent of world production (against 59.6 per cent in 1955). Consumption of steel per capita per annum ranges between 400 and 500 kilograms in the developed countries, whereas it is less than 30 kilograms in the developing countries in Asia and Africa. This indicates the need to increase production in developing countries as the process of economic development proceeds, especially in those countries which possess iron ore, sources

^{20/} See UNIDO, Problems and Opportunities in the World's Iron and Steel Industry, UNIDO/IOD.50, 22 November 1976, pp. 5-6.

of power, and space. According to the UNIDO Industrial Conference held in March 1975 in Lima, Peru, iron and steel production of developing countries should account for 25 per cent of world production by the year 2000.

In current ironmaking practice, the term "iron ore" is used to denote any iron-bearing material which can be economically used to manufacture pig-iron. Pig-iron is the intermediate form through which almost all iron must pass in the manufacture of steel.^{21/} Most pig-iron is produced by the blast furnace route and the basic oxygen system (BOS) which require high-grade coke obtained from coking coal. The fact that about 95 per cent of coking coal is available in developed countries explains why these countries have developed a production route starting from coke and coking coal as a reducing agent. On the other hand, the developing countries are much better endowed with natural gas and oil, having about 45.8 per cent and 79 per cent of world reserves, respectively. Moreover, these countries have about 63 per cent of world hydroelectric potential.^{22/} With the recent development of an alternative production route based on the direct reduction (DR) process, the oil- and gas-producing countries have emerged as potential producers of iron and steel, especially as they have sufficient investible funds. The DR process was developed

^{21/} For a review of technologies used in the iron and steel industry, see UNIDO, Technological Profiles on the Iron and Steel Industry, Development and Transfer of Technology Series No. 11, United Nations, New York, 1978.

^{22/} UNIDO, The World Iron and Steel Industry, op. cit., pp. 77-79.

first in Mexico in 1957 to make use of natural gas available domestically and to eliminate imports of scrap iron and coking coal. Natural gas provides both a reducing agent to remove oxygen from iron ore, and a cheap source of electrical energy. This process makes it possible to achieve economies in the costly heavy installations and to pass directly from iron ore to sponge iron which is capable of being charged into an electric furnace to be converted into steel.

The non-availability of coking coal in the Arab countries and the abundant availability of natural gas suggest the possibility of greater use of DR processes in these countries to produce sponge iron. It is estimated that using the gas which is presently flared off could produce 240 million tonnes of sponge iron per annum.^{23/} In the Arab countries covered in this study, there are no iron ores which are of high enough purity and quality, and the range of ores which can be used in DR installations is still relatively small. But sizeable iron ore deposits exist in other Arab countries like Mauritania, Morocco, Algeria, Tunisia, and Libya. However, sponge iron is a possible substitute for scrap iron and its use is now well established, aside from the fact that transporting it over long distances has already been proved. It is considered as a high-quality product which can be used not only for the production of ordinary steel but also for fine and alloy steels. In the Arab region,

^{23/} Ibid., p. 82.

it can be used in existing steel making plants as in Egypt, or as the basis for the development of integrated plants with electric arc furnaces to transform it into steel as envisaged in most of the Arabian Gulf countries.

On the whole, the iron and steel industry in the Arab countries is of a recent origin and still underdeveloped. But most Arab countries are considering setting up steel industries to exploit more fully available raw materials and other natural resources including natural gas. It is to be recalled that Egypt was the first Arab country to establish an integrated iron and steel complex at Helwan in 1958 (followed by Tunisia in 1966 and Algeria in 1969).^{24/} Most of the steel produced in the Arab countries is later processed through rolling mills to produce steel rods for construction, or through other plants to produce steel pipes. A number of small plants containing smelters and limited capacity rolling mills are found in the Arab countries, and these rely largely on imported or locally available scrap. But many of the existing plants are working below capacity, mainly due to the lack of raw materials (i.e. scrap and/or billets) and some plants suffer from imbalance between melting and rolling capacities such that one or the other may not be fully utilised.^{25/}

^{24/} The whole Arab World contributes only 0.1 per cent of world steel production, and only three countries, Egypt, Algeria, and Tunisia, contribute 90 per cent of total Arab production.

^{25/} See Omar Grine, "Transfer of Technology in the Arab Steel Industry", in A.B. Zahlan (ed.), Technology Transfer and Change in the Arab World (London: Pergamon Press, 1978), p. 459.

Table 7.7 summarises the planned capacities for the production of iron and steel in selected Arab countries. It can be observed that there is a clear shift to the use of DR process, which is more advantageous than the traditional integrated or semi-integrated blast furnace plants. Aside from using cheap natural gas as a reducing agent, this process can be employed efficiently at a capacity of 600,000 tonnes per annum against 9 million tonnes per annum for the classical plant (see Table 7.1).

Table 7.8 presents the demand/supply situation for iron and steel in the Arab countries in 1977 and a forecast for 1980. It is observed that the majority of the Arab countries depend on imports of iron and steel, though in varying degrees. Although this dependence is likely to decrease in some countries (notably Saudi Arabia and Syria) as a result of the increase in domestic production, the surge in development spending in other Arab countries is likely to perpetuate, if not increase, the dependence on imports. However, the oil-producing countries are likely to reach a situation in which steel production will definitely outstrip local demand, and export markets will have to be sought. For instance, Qatar Steel Company markets at present only 30 per cent of its production domestically, and exports the rest to Saudi Arabia and the United Arab Emirates which will soon have their own steel production.^{26/} As a matter of fact, some consider Saudi Arabia as potentially the world's

^{26/} See Arab Economist, op. cit., p. 14.

TABLE 7.7

SELECTED ARAB COUNTRIES: Major Iron and Steel
Projects Planned, 1978-85

Country/ Site	Type	Annual Capacity (in tonnes)	Cost (Approx.)	Completion Year
Qatar				
Umm Said	Integrated DR	440,000	\$338 m.	1978
Kuwait				
Shuaiba	Integrated DR	1,000,000*		1980
Iraq				
Khor El-Zubair	Integrated DR	1,200,000		1983(?)
Saudi Arabia				
Jubail	Integrated DR	1,500,000		
Jeddah	Rolling mill	250,000**	\$90-100 m.	
	Pipe mill	78,000	\$57 m.	1980
Oman				
		380,000	\$72 m.	?
		120,000	\$23 m.	?
U.A.E.				
Abu Dhabi:	DR steelworks	400,000	\$200 m.	?
Ruweis	and/or sponge iron plant	800,000	\$500 m.	
Dubai:	DR steelworks		\$350 m.	1985
Jebel Ali				
Egypt				
Egyptian Iron & Steel Co.	DR unit	400,000		1983 (?)

* This is a joint venture between Kuwait and Mauritania. It is owned by the Arab Establishment for Mining and Industry which was set up in 1973 to carry out mineral extraction operations, assess economic viability of industrial projects, and invite tenders for the iron and steel complex.

** Expansion from 45,000 tonnes.

Sources: Compiled from Arab Economist, Vol. XI, No. 123, December 1979, pp. 12-16; UNIDO, Experience, Perspective and Projection of Developing Countries in the Iron and Steel Industry Particularly in Africa and the Arab World, UNIDO/IOD.118, 14 October 1977, pp. 51-52; and, Middle East Annual Review, 1978, London, 1977, p. 77.

ARAB COUNTRIES: Iron and Steel Production, Consumption and Trade,
1975 and Forecast for 1980
(in 000 tonnes)

Country	Production		Imports		Exports		Consumption		Consumption per capita (kgs.)	
	1975	1980	1975	1980	1975	1980	1975	1980	1975	1980
Egypt	1691	2025	-	-	310	522	1381	1503	35	34
Bahrain	-	-	25	35	-	-	25	35	97	117
Iraq	210	430	445	470	-	-	655	900	59	70
Jordan	185	290	155	270	105	145	235	415	91	134
Kuwait	-	-	180	205	-	-	180	205	225	170
Lebanon	295	390	370	480	30	100	635	770	235	256
Qatar	-	200	23	-	-	150	23	50	135	200
Saudi Arabia	160	265	280	80	-	-	440	345	42	28
Sudan	-	-	140	130	20	35	120	95	7	6
Syria	135	245	120	90	20	45	235	290	32	35
Dem. Yemen	-	-	-	-	-	-	110	158	61	79
TOTAL	2976	3845	1738	1760	485	977	4039	4766	40	43

Sources: Compiled from (1) Middle East Economic Digest, March 19, 1976, p. 36; and, (2) Arab Iron and Steel Institute, Arab Iron and Steel Bulletin, No. 112, November 1979, Algiers, (in Arabic).

lowest-cost producers of steel in view of its huge gas resources. This can be asserted by the high incidence of energy costs in this industry and which account for about one-fifth of total costs.^{27/}

It is evident from Table 7.8 that regional production of iron and steel could satisfy about 80 per cent of regional consumption in 1980, against 73 per cent in 1975. What is more striking is that national demand in most of the Arab countries, especially the oil-producers, will not be enough to support production at the m.e.s. level. This enhances the desirability of coordinating the development of the iron and steel industry, with a view to reduce unit-cost and produce on a regional import-substitution basis. The coordination could be along vertical lines, with steel billets produced in one country and processed through rolling mills in another, or along horizontal lines, with steel mills specialising in the production of certain items at a cost which is reasonable to promote intra-regional trade.

Available data on plant capacity and capital costs in the iron and steel industry reveal that scale economies are substantial. With respect to units based on the blast furnace/oxygen steelmaking route, the capital cost index increases from 100 with a capacity of 5 million tonnes per annum to 146 with a capacity of 0.6 million tonnes, and to 213 with a

^{27/} See Grine, op. cit., pp. 454-455.

capacity of 0.2 million tonnes. In contrast, the scale economies in the direct reduction/electric furnace route, though less substantial, can be attained largely by a capacity of 0.6 million tonnes. It is estimated that the capital cost per tonne decreases from \$130 with a capacity of 0.2 million tonnes to \$100 with a capacity of 0.5 million tonnes, to \$88 with 0.6 million tonnes, \$84 with 1.0 million tonnes, and \$83 with 3.0 million tonnes.^{28/} What is more important is that the operating costs of the DR/EF route is lower than the BF/BOS route by 16 to 20 per cent. According to a study on the development of the Arab iron and steel industry,^{29/} the estimate cost of production per tonne of liquid steel with a capacity of 1.0 million tonnes amounts to \$72 by the DR/EF route against \$92.5 by the BF/BOS route. Evidently, this means that the oil-producing countries will have an advantage in steel production by using cheap gas in the DR/EF route, and subsequently they would be in a position to satisfy a larger part of the regional deficit in iron and steel supply. But it is obvious that this advantage can be attained only if m.e.s. production is realised.

Aluminium smelting is another metallurgical industry which is rapidly gaining importance in the Arab region, in view of the availability of cheap energy. The basic raw material of aluminium is bauxite which consists of several

^{28/} UNIDO, The World Iron and Steel Industry, op. cit., p. 95.

^{29/} Dastur Engineering International GmbH, Study of Development Possibilities of Iron and Steel Industry in Arab Countries, Vol. I, Dusseldorf, July 1973, p. 33 (unpublished study).

minerals, of which by far the largest part is aluminium hydroxide. By treating bauxite with caustic soda, alumina which is the pure oxide of aluminium is produced. As a finished metal, extracted from alumina by smelting, aluminium has many properties which make it a major contributor to modern social and industrial development.

The idea of the aluminium smelters which are being developed in the Arab oil-producing countries is that they will be provided with energy (natural gas) at a cost which, together with the financial investment involved, would enable to produce aluminium at competitive prices. However, in the case of countries like Egypt, aluminium smelters have to be seen as import-saving and to a lesser extent job creating projects. Table 7.9 shows the position of aluminium smelters and secondary plants using aluminium in the Arab countries as of 1979. It is very important to notice that secondary plants account only for a small proportion of actual and planned capacities of smelters. This suggests that aluminium production is likely to remain export-orientated for some time, and opens the possibility of cooperation among the Arab countries in marketing jointly any products surplus to the regional requirements.

It is to be recalled that Aluminium Bahrain (ALBA) was established in 1969 by a consortium with a capital of BD 90 million (of which 77.9 per cent is now owned by the Bahraini

TABLE 7.9

SELECTED ARAB COUNTRIES: Aluminium Smelters and
Secondary Plants, 1979

(in tonnes)

Country	Smelter Capacity		Secondary Capacity	
	Actual	Planned	Actual	
Bahrain	125,000	170,000	2,000 15,000	extrusions cable
Egypt	50,000	100,000	25,000	rolled products and extrusions
Qatar	-	160,000	-	
Iraq	-	150,000	15,000 3,000 10,000	rolled products extrusions wire rod
Kuwait	-	120,000	-	
Lebanon	-	-	15,000 5,000 2,000	rolled products extrusions extrusions
Saudi Arabia	-	200,000	2,000	extrusions
U.A.E.:				
Dubai	-	130,000	500 3,000	cable extrusions
Abu Dhabi	-	50,000*		

* rising to 300,000 tonnes late in 1980s.

Source: Metal Bulletin, as reproduced in The Middle East,
London, October 1979, p. 100.

Government). Bahrain was considered well-placed geographically between the source of bauxite in western Australia and end-users of aluminium blocks in Europe. Despite many teething problems, ALBA is now considered a successful enterprise, producing about 120,000 tonnes of aluminium per annum (for which 235,000 tonnes of alumina have to be imported). In 1978, it was the largest employer in Bahrain, having a total workforce of 2229 (of which 1548 were Bahrainis), and its contribution of value-added to the economy was BD 25 million.^{30/}

Egypt is another country in the region which has reached a relatively advanced stage in aluminium smelting. In 1974, it started its aluminium complex at Naga Hammadi with a capacity of 50,000 tonnes per annum, which is to be increased soon to 100,000 tonnes. Saudi Arabia and Dubai have also gone some way in developing their aluminium industries, but elsewhere most projects are still in their early stages. However, the decision of SABIC late in 1979 to buy 20 per cent of ALBA's equity will strengthen its position in obtaining raw materials as well as in marketing aluminium. It may also encourage ALBA to revise its policies more favourably to the Gulf markets.

It is to be noticed that the aluminium industry in the Arab countries concentrates domestically on the supply of the construction sector with building components, especially

^{30/} ALBA, Annual Review, 1978, Bahrain.

door and window frames which are being rapidly substituted for wooden, steel, and plastic frames. The demand for such aluminium products in the Gulf countries, where the larger part of smelting capacity exists, increased during the 1970s at an average annual rate of 15 per cent, and it is likely to continue increasing at about the same rate in the 1980s due to the anticipated expansion in construction. According to estimates of the Arab Iron and Steel Union,^{31/} the demand for aluminium products for construction in the Gulf countries averages 1.3 kilogrammes per square meter in housing units, 3 kgs. per sq. m. in commercial units, and 1.74 kgs. per sq. m. in industrial units. Taking these figures into consideration, the expected demand for aluminium products in 1985 is likely to be (in tonnes): Saudi Arabia (20,400), Iraq (35,000), Oman (5,335), U.A.E. (5,000), Bahrain (22,000), Kuwait (8,000), and Qatar (1,500). It is estimated that total demand in these countries will not exceed 10 per cent of planned smelting capacities by 1985, and this reflects the importance of integrating this industry especially when taking into consideration the scale economies which characterise it. It is known that the m.e.s. of an aluminium smelter is 120,000 tonnes per annum, and that the capital cost per tonne amounts to \$502 with a capacity of 20,000 tonnes against \$463 with a capacity of 60,000 tonnes, and \$450 with a capacity of 120,000 tonnes.

^{31/} Data privately obtained.

It is anticipated that beyond the mid-1980s, there could be problems of over-supply, at a time when the smelters in the Arab countries should be in full production. It is expected that the Arab countries will account for 10 per cent of world aluminium production by 1985, if all plans are fulfilled. This is not likely to permit the Arab countries to exercise a certain degree of control over the market, despite their direct access to cheap energy which forms the largest single component (30 per cent) of production cost.

Although investment in aluminium production capacity seems expensive at present, it is likely to yield an acceptable rate of return as international prices would tend to increase in the first half of the 1980s, at least until the supply situation balances with demand. However, the need for integration among the aluminium producers in the Arab region seems to be pressing, in order to rationalise the use of resources and satisfy regional demand at a lower cost. It is possible for the Arab producers to look for opportunities to invest jointly in bauxite production projects in countries like Australia and Brazil so as to ensure a steady supply of raw material for their production of aluminium. In conjunction, there is a need on the part of the producers to coordinate the technologies used in order to unify the specifications of the raw materials used. On the demand side, it would be useful for the producers to look for markets in the developing world, and at the same time coordinate the development of their

secondary aluminium industries for which there is a fast growing regional market.

Capital Goods Industries

The importance of capital goods industries stems from the fact that they provide the basis for the accumulation of fixed capital in agriculture, industry, services, and even administration. They are considered as a key element in the process of socio-economic transformation. Generally, industrialisation efforts are likely to increase dependence on the outside world, unless it is associated with the development of capital goods industries.

Although these industries require relatively heavy investments, they usually contribute substantially to employment creation but they require highly skilled labour. They also have high backward linkages, and act as a promotor of engineering and electrical industries, as well as some basic industries in the fields of metallurgy, plastics and transport equipment. It is rather difficult to quantify the backward linkages of the capital goods industries, especially in the context of the Arab countries which are still at their early stages of industrialisation. What is important to realise is that the development of the capital goods industries, aside from reducing the dependence on imports helps in developing domestic skills and enhancing technological capabilities, and thus promote the industrialisation process.

Since capital goods industries tend to be a function of the size of the country, the level of its development, and the availability of an indigenous technological base, one finds that about 98 per cent of world production of capital goods takes place in the developed (industrialised) countries. Only a few of the countries which are classified as developing have capital goods industries; most prominent among them Brazil, Argentina, South Korea, India and Mexico. According to a UNIDO study,^{32/} 96 countries of the world had practically no capital goods industries in 1974. These countries can be classified into three groups. One group comprises 34 countries having each a population of less than one million, and their GNP per capita is more in the order of \$500 or above, than \$250 or below. These include from among the Arab countries Kuwait, Qatar, Oman, U.A.E., and Bahrain, all of which are oil-producing. The second group comprises 50 countries (mostly African) having each a population ranging between 1 and 10 million, and their capita GNP is generally of the order of \$250 to \$500. The Arab countries belonging to this group are Lebanon, Jordan, Syria, Saudi Arabia, Yemen, and Democratic Yemen. The third group comprises 12 countries having each a population of 10 million or more, and all of them have a GNP of less than \$250 per inhabitant, except Iraq whose per capita GNP is \$1110. The other Arab country belonging to this group is the Sudan.

^{32/} UNIDO, Capital Goods Industry, UNIDO/ICIS.70, 3 May 1978, pp. 118-129.

In countries having less than one million inhabitants, diversification of the capital goods industry does not seem to be possible, and the priorities are based on the installation of some basic technological routes which can meet the requirements of agriculture, building and maintenance. Aside from the need for highly skilled workers, the development of capital industries requires the existence of an industrial fabric to allow for subcontracting. In many of the industrialised countries, small and medium-sized companies constitute an essential environment for the development of capital goods industries, and also form a complex network of inter-industrial relationships.^{33/} It also requires the existence of upstream iron and steel or other metallurgical industries.

It is certain that the present drive towards accelerated development in the Arab countries calls for an unprecedented rise in demand for capital goods. This has been largely due to the flow of capital funds into productive activities. According to a recent ECWA/UNIDO study,^{34/} the imports of the Arab countries covered in the present study (excluding the Sudan) of all engineering products which mainly represent capital goods increased from \$1.7 billion in 1971 to \$11.1 billion in 1975, and to \$18.5 billion in 1977. It is estimated that the demand for plant and equipment (at an investment rate of 13 per cent related to GNP) will be of the order of \$65

^{33/} Ibid., p. 106.

^{34/} See ECWA, Regional Development of Selected Branches of Capital Goods Industry, Joint ECWA/UNIDO Division, October 1979.

billion by the year 1995 at the 1975 prices. Table 7.10 presents a breakdown of the imports of engineering products during the period 1971-77, and one can clearly observe the big jump in the value of imports of all items in 1975 in comparison with 1973. Without doubt, the larger part of this increase can be attributed to the regional availability of capital following the rise in oil prices, though one must not ignore the impact of world-wide inflation on the import bill. Table 7.11 corroborates this phenomenon, as it shows that the increase in imports concerned both the oil and non-oil-producing countries.

The virtual absence of engineering industries in the Arab countries is a major weakness of their industrial settings. This is coupled with the weakness of the institutional capacity to train and develop technical manpower. The development of certain capital goods industries is of critical importance to the Arab countries not only for making a fuller use of available human and natural resources, but also attaining a certain degree of technological self-reliance. As can be discerned from Table 7.1 and the previous discussion, engineering industries tend to be of a large-scale and their efficient operation requires a wide market, larger than most of the existing national markets in the Arab region. Given the complementarity in resources and markets among the Arab countries, one can appreciate the desirability of establishing such industries on a regional basis to reap the benefits of specialisation and scale. Indeed, through sub-contracting,

TABLE 7.10

ECWA REGION: Imports of Engineering Products, 1971-77
(in million \$)

Product	1971	1973	1975	1977
A. Machinery Non-Electric				
Power generating machinery	134.6	265.7	578.7	1024.9
Agriculture machinery	18.3	48.6	337.3	312.0
Office machinery	12.0	27.8	66.1	128.8
Metal working machinery	66.2	60.6	136.9	218.9
Textile & leather machinery	45.0	78.0	224.6	262.1
Special industrial machinery	137.0	102.9	1070.5	1439.5
Other special machinery	319.7	596.8	1937.0	3829.3
Total (A)	732.8	1180.4	4351.1	7215.5
B. Electrical Machinery				
Electrical power machinery	89.6	204.7	650.8	1617.2
Equipment for distributing electricity	50.0	62.3	278.2	619.5
Telecommunication apparatus	107.9	243.7	624.9	1878.7
Domestic electric equipment	20.3	48.7	146.9	280.1
Medical apparatus	4.3	6.6	19.9	30.2
Electrical machinery other	67.9	99.3	337.9	568.1
Total (B)	340.0	665.3	2058.6	4993.8
C. Transport Equipment				
Railway vehicles	19.5	27.4	79.8	116.1
Road motor vehicles	384.8	666.4	3284.5	4008.6
Road vehicles	10.3	18.5	147.6	209.4
Aircraft	154.5	257.7	647.9	857.6
Ships and boats	43.5	82.6	494.2	1097.8
Total (C)	612.6	1052.6	4654.0	6289.5
Grand Total (A+B+C)	1685.4	2898.3	11063.7	18498.8

Source: ECWA, Regional Development of Selected Branches of Capital Goods Industry, Joint ECWA/UNIDO Division, October 1979, Table 1, p. 22.

TABLE 7.11

ECWA REGION: Imports of Engineering Products By Countries and Product Groups, 1973-1977
(in million \$)

Country	Engineering Products			Machinery Non-Electric			Electrical Machinery			Transport Equipment		
	1973	1975	1977	1973	1975	1977	1973	1975	1977	1973	1975	1977
Egypt	858.3	2035.9	3305.6	421.6	1039.5	1656.1	114.0	353.9	702.1	322.7	642.5	947.4
Bahrain	160.9	381.0	655.4	85.1	223.1	284.9	44.0	84.3	126.2	32.2	73.6	244.3
Iraq	617.1	4719.2	4321.8	330.0	2256.7	2696.1	108.8	511.4	850.1	178.3	1951.1	775.6
Jordan	102.8	413.2	674.9	70.1	184.8	237.9	22.3	73.3	113.4	30.4	155.1	323.6
Kuwait	495.7	1629.2	3195.0	170.7	404.5	1172.3	135.2	362.7	691.2	189.8	862.0	1331.5
Lebanon	540.4	1077.5	475.5	260.4	487.1	222.3	103.6	154.3	112.3	176.4	436.1	140.9
S. Arabia	1190.8	6145.3	11372.1	599.2	3306.2	4510.7	221.1	883.2	2921.2	370.5	1955.9	3940.2
Syria	419.9	1201.5	1509.8	225.5	563.4	866.2	99.0	197.4	261.8	95.4	440.7	381.8
Others*	701.4	2877.4	5496.1	364.6	1312.7	2594.6	123.5	639.9	1237.3	213.3	924.8	1664.2

* UAE, Oman, Qatar, Yemen, and Democratic Yemen.

Source: Compiled and reclassified from source of Table 7.12, pp. 23-24.

it is possible for many of the Arab countries to participate in the production of machinery and equipment needed in civil works, oil refining, petrochemical and transport activities. In this context, the engineering industries, aside from creating employment opportunities, realising substantial savings in foreign exchange, and building up the technological base, can act as integrating centres by utilising the outputs of many smaller plants and by supplying the necessary equipment, and technical skills and services which make possible a wide range of industrial activities.

However, it must be realised that the importation of engineering products is inevitable for the Arab countries as well as other developing countries because this is the way in which embodied technology is imported. Incidentally, countries which have industrialised successfully, notably Japan, Taiwan, and Korea, have all begun by importing their technology in the form of finished goods, copying that technology, and then developing it themselves. It is therefore not inconsistent with the foregoing to suggest here that with respect to engineering industries the critical issue is not the scale but rather the development of technology which equally needs integration.

In the remaining part of this section, an attempt will be made to examine the possibilities for integration among the Arab countries in two major lines of production which are

highly relevant to their present stage of socio-economic development: telecommunication and electronic equipment; and, transport equipment and agricultural machinery.

There is a high degree of correlation between levels of development and communication facilities. Currently, Arab trade and other types of transactions are severely handicapped both on the national and regional levels because of the deficiencies in the existing communication systems. The improvement of internal telephone systems in a country would lead to better marketing of products, easier mobilisation of resources to meet daily requirements, and save time. Some of the industries presently planned or implemented in the Arab countries are intensive users of telecommunication facilities. The development of inter-country telecommunications will definitely promote regional integration. Using the telephone density as an indicator of the needs of the Arab countries, one can note that the number of telephones per hundred inhabitants is less than 2, as compared to 57 in Sweden and 60 in the United States.

It is reported that the Arab countries covered in this study will be spending on telecommunication equipment about \$280 million in 1980, and this will increase to \$390 million in 1985, and to \$630 million in 1990.^{35/} It should be possible for some of the Arab countries to start manufacturing such equipment, not just establishing assembly units. An output

^{35/} ECWA, The Establishment of A Telecommunications Industry Within the ECWA Region, Joint ECWA/UNIDO Industry Division, 6 June 1978, p. 20.

of 50,000 telephone units per annum is a viable scale, and gives an annual sales value of about \$2 million. Already Egypt produces telephone instruments at the rate of about 50,000 units per annum, while Syria assembles such instruments.^{36/} The increase in telephone capacity requires an overall increase in communications capacity which in turn demands switching, multiplexing, microwaves transmission, and other facilities. It is known that most of the Arab countries are now about to move towards a standard switching system. A fully integrated factory, in which the main operations of wiring and connecting are computer controlled and testing is automated by using special purpose test equipment, will have a financial break-even point when producing 125,000 lines per annum, but an output of 300,000 lines is necessary to give benefits of scale.

Table 7.12 shows the projected demand for direct exchange lines in the Arab countries, based on telephone intensity per capita GDP. It can be concluded that on the basis of domestic demand only, Saudi Arabia could support an exchange line factory only in 1985 when demand would reach 140,000 lines, and perhaps Iraq in 1990. But when taking the demand in the Arab region as a whole, one factory could be justified immediately, a second one in 1985, and a third in 1990.

There is a good opportunity also in the Arab region to coordinate the production of certain electronic products,

^{36/} Ibid., p. 24.

TABLE 7.12
ARAB COUNTRIES: Projected Demand for Direct
Exchange Lines, 1980-1990
(in numbers)

Country	1980	1985	1990
Bahrain	7,000	10,000	16,000
Egypt	39,000	40,000	60,000
Iraq	52,000	150,000	200,000
Jordan	8,000	6,000	10,000
Kuwait	48,000	104,000	160,000
Lebanon	34,000	50,000	64,000
Oman	11,000	22,000	42,000
Qatar	6,000	10,000	12,000
Syria	34,000	30,000	30,000
Saudi Arabia	140,000	300,000	300,000
United Arab Emirates	40,000	60,000	80,000
Yemen	13,000	7,000	5,000
Democratic Yemen	1,500	2,000	2,000
TOTAL	433,500	791,000	981,000

Source: ECWA/UNIDO Industry Division, Establishment of
of Telephone Cables Industry in ECWA Region,
March 1980, p. 10.

particularly integrated circuits (IC's). It is anticipated that by 1985 between 90 and 95 per cent of all electronic functions will be carried by IC's. The creation of an IC manufacturing facility in the Arab countries is of a strategic importance. There are several factors which indicate the desirability of such a venture, the most prominent of which are the large potential market, availability of skills and professionals with the necessary know-how, and the availability of investible funds. According to a feasibility study for the establishment of an IC factory in Egypt,^{37/} it was found that such a plant can be set up as a start, to compete with sub-contractors in the Far East and other low-cost (labour) areas.

^{37/} Arab Projects and Development, Feasibility Study for the
Establishment of an Integrated Circuit Factory in Egypt,
Beirut, April 1974, pp. 19-20 (unpublished report).

Based on a 1973 survey of the countries in the IC assembly business, the labour rates in Egypt are more competitive than in most of them. Expressed in \$ per hour, the typical wage (including fringe benefits) paid to an assembler in Egypt would not be more than 0.23, against 0.55 in Hong Kong, 0.45 Singapore, 0.40 Taiwan, 0.30 South Korea, 0.28 Malaysia, 0.68 Mexico, and 0.80 Portugal. It was estimated in the above study that an IC assembly plant, employing approximately 430 workers, can be established in Egypt for a total construction cost of about \$1.5 million. With the above labour cost, it is possible to expect that during the first five years the return on investment will be greater than 25 per cent per annum, and the break-even point will occur in the second year of operation whereas the original investment will be paid back in approximately four years.

Turning to transport equipment and agricultural machinery, one can notice that most of the Arab countries are considering the setting up of local car assembly plants as a first step towards greater industrialisation. The motor-vehicle industry lends itself to a gradual process of local component substitution, and accordingly it promotes growth in various industrial branches and increases value-added. Egypt was the first of the Arab countries covered in this study to start a motor-vehicle assembly plant in cooperation with Fiat. More recently, Iraq started an assembly plant for buses with Saviem, and is now considering the setting up of passenger car assembly plant. For that purpose, it created in September 1976 the General Company for

the Automobile Industry with a capital of about \$400 million. Also Saudi Arabia has set up a truck assembly plant in cooperation with Mercedes Benz.

The major constraint in the development of the motor-vehicle industry in the Arab countries seems to be the smallness of the domestic market. Table 7.13 gives a rough idea of the annual demand for motor-vehicles in the Arab World as a whole. It is important to note that the figures with respect to some countries (especially non-oil-producing) do not reflect effective demand, in view of the existing tariff and non-tariff barriers on car imports. This could be asserted by noting that the number of inhabitants per motor-vehicle in 1978 ranged between 187 in the Sudan, and 106 in Egypt, 65 in Syria, 61 in Iraq, and 13 in Lebanon, compared with 7.5 in Saudi Arabia, and 2.8 in Kuwait. Anyhow, the above Table reveals not only the relative smallness of the domestic market, but also the importance of the Arab countries as a regional market for developing the manufacture of motor-vehicles.

The development of this industry could be pursued on a sub-contracting basis, in cooperation with international companies. Such a scheme has been undertaken in a number of developing countries. One example is the Philippines which started car assembly in 1951, and in 1973 implemented the so-called "Progressive Car Manufacturing Programme of the Philippines" (PCMP). This Programme was formulated with a

TABLE 7.13

ARAB WORLD: Imports of Motor Vehicles, 1976-78
(in units)

Country	Trucks & Buses		Passenger Cars		Total	
	1976	1978	1976	1978	1976	1978
Arab Countries						
Covered in study						
Saudi Arabia	4066	1724	6077	4288	10143	6012
Egypt	9645	22248	16443	16052	26088	38300
Iraq	16107	14758	2202	4620	18309	19378
Jordan	6577	2700	5072	3525	11649	6225
Kuwait	21647	21590	44407	40001	66054	61591
Lebanon	422	1831	956	5048	1378	6879
Oman	7205	9168	5673	5380	12878	14548
Em. Yemen	1214	811	247	254	1461	1065
Qatar	7229	4722	7860	4777	15089	9499
U.A.E.	176923	182295	113295	140106	290218	322401
Sudan	4529	2250	709	1221	5238	3471
Syria	11923	6588	12488	6042	24411	12630
Yemen	4485	4468	1039	816	5524	5284
Total	289907	287232	247957	254257	537864	541453
Other Arab Countries						
Tunisia	5978	7901	3202	3962	9180	11864
Libya	29108	34657	33915	52132	63023	86789
Algeria	13164	12829	18104	1859	31268	14688
Somalia	317	n.a.	237	n.a.	554	n.a.
Mauritania	n.a.	316	n.a.	465	n.a.	781
Morocco	15801	9790	25224	18257	41025	28047
Total	64368	65493	80682	76675	145050	142169
GRAND TOTAL	354275	352725	328639	330932	682914	683622

Source: Kuwait Chamber of Commerce and Industry, The Kuwaiti Economist, No. 193, January 1980, p. 66.

view to save foreign exchange by producing domestically automotive components, and to create work for existing small and medium enterprises and upgrade technological skill levels of local manufacturing industry. This was conceived in line with the view that horizontal integration of the motor-vehicle industry, even in highly industrialised countries, is much more preferable to vertical integration.

It is not possible for the Arab countries to develop a motor-vehicle industry without protection against imported rivals. As an indication, it can be noted that the cost of assembling trucks in Saudi Arabia, with the prohibitive charge of labour, land, and general services, ranges between 10-20 per cent higher than in Europe or elsewhere, including shipping costs.^{38/} Under these conditions, regional integration could be instrumental in enhancing the viability of a motor-vehicle industry, through reducing costs by specialisation and large-scale production.

The development of the agricultural machinery and implements is another area which ranks high among the possibilities for industrial integration among the Arab countries, and could be related to their collective self-reliance. It is known that the use of agricultural machinery and implements can give high returns on investments, provided that the necessary supporting infrastructure exists. It has been

^{38/} Middle East Economic Digest, 11 November 1977, p. 6.

estimated that at least 0.5 horse-power (hp) per hectare is required for an efficient agricultural sector. At present, it is estimated that the level of available power for agriculture in the Arab countries does not exceed 0.1 hp per hectare. Arab farmers now utilise only about 15 per cent of tractors needed. Similar gaps in needs exist with regard to other farm machinery like pumps, harvestors, and transporters. The cost of importing equipment on the scale needed using foreign exchange could be well beyond the means of most of the agricultural Arab countries.

The development of an indigenous capability in farm machinery production, servicing and maintenance would be a major stimulus for transforming the agricultural activity and increasing output to meet domestic requirements in the Arab countries. According to FAO figures, the arable land and land under permanent crops in the Arab countries constitutes about 4 per cent of total area, and at least 55 per cent of the total Arab population is engaged in agricultural activities. The most common power unit used in the Arab countries is the standard tractor of 40-60 hp, and the two-wheel power tiller (walking tractor) is used on a very limited scale. Table 7.10 indicates that the imports of agricultural machinery by the Arab countries amounts to over \$330 million, and this definitely represents a sizeable foreign exchange expenditure which could be used locally in the development of various agricultural engineering industries.

Agricultural machinery is relatively simple and could be assembled and ultimately manufactured quite simply. There might well be licensing problems in the first instance but these could be overcome. Only in a few of the Arab countries plants for the manufacture of agricultural machinery and implements have already been established. In Egypt, a tractor was established at Helwan in 1961 to produce 50-hp tractors, at the rate of 3000 units per annum, as well as 3000 diesel engines for agricultural and transport uses. About half of the value of the tractor is produced domestically. In addition, large quantities of agricultural implements such as plows, trailers, sprayers, pumps and threshers are also produced in Egypt. There is a tractor factory in Aleppo, Syria, with a capacity to produce 2000 tractors and 5000 engines per annum. The production complex includes a foundry with a 5000-tonne capacity and a forge shop with 3000-tonne capacity. In Iraq, there is a tractors and implements factory at Iskandria, with an annual capacity of 38,300 tonnes of output. This amounts to about 1200 tractors and around 9000 implements.

In view of its considerable agricultural potential, serious efforts are being made in the Sudan to increase agricultural mechanisation, and to develop the agricultural machinery industry. At present, the total cultivated area is about 7.1 million hectares, of which about 5.05 million hectares could be mechanised. It is estimated that the number of tractors required for mechanising this area is about 24,000 to 30,000

tractors of 65-75 hp (including replacements), and the area per tractor will be 230 to 250 hectares. According to the present Six-Year Development Plan (1977/78-1982/83), the total cultivated area will be 8.8 million hectares by 1982/83, and it is expected to increase further with the implementation of the development programme designed by AFESD.

According to a UNIDO study,^{39/} a tractor and agricultural machinery project could be established profitably in the Sudan in cooperation with the Massey-Ferguson Co., at a total cost of \$90 million. The capital will be shared as follows: Massey-Ferguson 25 per cent; the Sudanese Development Corporation 24 per cent; and, the Sudan Government 51 per cent. The complex will include manufacturing and assembly facilities, a training centre, and other auxiliary facilities. The annual output will include tractors (300 to 400 units), combine harvesters (400 units), and other agricultural implements. Local content of implements will range from 50 to 80 per cent in the fourth year of production. When it reaches full capacity production, the project will save foreign exchange to the amount of \$7.4 million per annum; the internal rate of return will be 28 per cent (or 38 per cent if production is doubled through a second shift operation); it will employ 500 persons; and, it will have great spread effects on existing industries such as batteries, paint, machine shops and foundries.

^{39/} M. Abdulkarim Bedri, Agricultural Machinery Industry and Rural Industrialization in the Sudan, UNIDO, ID/WG.282/91, 13 October 1978, pp. 14-19.

Although the above project is an import-substitution one, it presents an area for cooperation among the Arab countries. It is not only significant for the basic agricultural development programme, but also provides an investment opportunity for the capital-surplus countries.

The fact that the Arab countries are still at an early stage of developing their agricultural machinery and implements industry, makes it much easier for them to coordinate their industrial investments in this field. Again, as with the motor-vehicle industry, horizontal specialisation would be much more desirable than vertical specialisation to attain maximum benefits.

Food and Agro-Allied Industries

Considering the relative diversity in resources, and the fact that much of the potential for development in a number of Arab countries lies in the agricultural sector, one can foresee great prospects for regional specialisation and trade in certain food and agro-allied industries. As mentioned earlier, a promising scheme has already been designed to develop the agricultural potential in the Sudan to meet many of the regional food requirements, thus attaining a degree of collective self-reliance.

As is the case with many developing countries, the "food gap" in the Arab countries is widening. In some of them, as in Egypt, the food deficit is sizeable and affects greatly the balance of payments position. The food industry is undoubtedly a key element of the food system in the Arab region. It acts as a factor for improving productivity by preventing wasteful after-crop operations, the preservation of foodstuffs, the improvement of food sanitary conditions, the optimum use of raw materials and the planning of agricultural production and distribution. In addition, the consumption of processed food products constitutes a growing proportion of total food consumption, and there is a significant correlation between GNP per capita and the level of consumption of the products of the food industry.^{40/}

A number of agro-allied industries could also be established on a regional basis. There are two major types of raw materials for such industries: (i) animal sources, such as animal skins for shoes and leather goods, and wool for textiles; and, (ii) plant sources, such as wood for paper, cotton for textiles, barley for beer, grapes for wine, tobacco for cigarettes, and animal feed.

Although food industries in most developing countries are usually characterised by the smallness of the unit size, mostly of the cottage-industry type, there are many which involve engineering design, mechanisation, and large-scale production, thus making their operation on a regional or sub-

^{40/} See UNIDO, Draft World Wide Study on Agro-Industry: 1975-2000, UNIDO/ICIS 65, 12 December 1977, pp. 9 and 22.

regional basis more profitable. Amongst these industries are sugar, vegetable oils, date syrup, sea foods, beverages, fruit juices, canned foods, and frozen foods. To illustrate the magnitude of Arab dependency on food imports, and the possibilities for attaining a degree of self-reliance through trade diversion and diversifying production, it can be mentioned that during the period 1970-73, the average annual imports of the Arab countries of some major food commodities were (in million tonnes): wheat (6.00), sugar (1.00), vegetable oils (0.40), and red meat (0.13). It is estimated that if present growth rates in population and production continue, the gap between supply and demand in the Arab countries in 1985 will increase by 40 per cent for wheat, 100 per cent for sugar, 150 per cent for vegetable oil, and 600 per cent for meat.^{41/}

An overview of the major branches of food industry (i.e. fruit and vegetables, sugar, and vegetable oils, fats and feed industries) in the Arab countries reveals that there is a marked under-utilisation of capacity in most plants, due either to shortages in raw materials or to other problems related to unbalanced equipment and shortage of operators. Moreover, most of the plants have diversified production lines, which are oriented towards the domestic market and enjoy tariff protection, and there is a need to enhance agro-industry integration in order to balance better agricultural production

^{41/} See AFESD, The Basic Program for Agricultural Development in Sudan, 1976-86, op. cit., p. 7.

with plant requirements.^{42/} Although integration in food industries should be desirable insofar as it helps to utilise excess capacity and rationalise the use of resources, it is likely that the Arab countries would be reluctant to liberalise the exchange of the production of existing industries as the economic and political costs could be much more than the net economic gains. However, in view of the rapid increase in demand for certain products, especially sugar and vegetable oils, and the need to supply them at reasonable prices, the prospects for integration become more conceivable.

Imports of refined sugar and vegetable oils form about 20 per cent and 10 per cent, respectively, of the total value of food imports of the Arab countries. This suggests the presence of a wide scope for regional import-substitution in these two basic lines of food production. According to available estimates, the per capita consumption of vegetable oil in the Arab countries will be about 11 kilogrammes per person per annum in 1985 (against about 20 to 25 kilogrammes in Europe). Vegetable oils could be extracted from olives or cotton and sesame seeds, groundnuts and sunflower, which are grown in large quantities in the Sudan, Egypt and Syria. In 1975, cottonseed production in these countries amounted to 1.4 million tonnes (or 6.1 per cent of world production), whereas sesame seed production in the Sudan and Egypt amounted to 289 million tonnes (or 14.5 per cent of world production).^{43/}

^{42/} See UNIDO, Development of the Food Industry in the Middle East Countries, ID/WG.201/13, 13 February 1975, pp. 7-15.

^{43/} UNIDO, Draft World-Wide Study on the Vegetable Oils and Fats Industry: 1975-2000, UNIDO/ICIS.46, 16 September 1977, pp. 136 and 142.

There is a good case to set up plants to produce vegetable oils for the region as well as cake for animal foodstuff. As a rule of thumb, the cost of equipment increases only by about 50 per cent if the production capacity in a vegetable oil refinery is doubled. Much the same is true of building, construction and erection costs, and practically no additional labour is required if the plant is laid out for a higher capacity from the start. Under no circumstances, a vegetable oil refinery should have a capacity of less than 10,000 tonnes and preferably 20,000 tonnes or more of oil per annum.^{44/} This could be beyond the market potential of most of the smaller Arab countries. It is interesting to note that the advantages of a larger plant become obvious when considering the utilisation of the by-products. For example, an oil refinery plant with a yearly capacity of 20,000 tonnes, treating crude oils of good quality with a maximum fatty acid content of 3 per cent, the total amount of soap stock (dry matter) or fatty acids produced would not be more than 5 per cent or about 1,000 tonnes per year. Setting up a plant for making soap out of such a small quantity of raw material, will definitely lead to a high investment cost per produced unit of output.^{45/}

The sugar industry is of strategic importance to the Arab countries. Being a commodity imported by almost all of them, and the basic requirements for its production are

^{44/} UNIDO, Regional Meeting on the Development of Selected Branches of the Food Industry in Selected Countries of the Middle East: Draft Recommendations, ID/WG. 201/14, Beirut, 3 June 1975, p. 3.

^{45/} Ibid., p. 4.

available within the region, it represents an important area for integration. As a matter of fact, Egypt has played a pioneering role in the development of the sugar industry, not only in the Arab region but also in the world at large. Other sugar producing countries in the region are Syria, Iraq, Lebanon, and the Sudan. In Egypt and the Sudan, sugar is produced exclusively from cane, whereas in Lebanon and Syria it is produced from beet and from imported raw (cane) sugar. In Iraq, sugar is produced from cane in the south and from beet in the north. Table 7.14 presents the installed capacity and sugar production in selected Arab countries. It can be observed that except in Egypt, sugar production is of a recent origin, and that sugar plants generally experience continuing problems of insufficiency of raw materials, thus preventing them from fully utilising their capacities during the beet season. The number of operating days in the sugar plants ranges between 60 and 200 days. One reason behind this is that other agricultural crops have higher returns, and tend to capture a larger part of the available land. Another reason could be the lack of water, as the case is in Iraq. Also the fragmentation of land limits the scope for mechanisation, and discourages the plantation of sugar cane.

On the whole, it seems that sugar production is expanding at a lower rate than population increase. Taking the Arab countries as a whole, consumption of sugar in 1976 was about 3.0 million tonnes, of which about 0.7 million tonnes were produced domestically with only about 48 per cent of

SELECTED ARAB COUNTRIES: Sugar Production and Plant Capacity, 1976

Country	Number of Plants	Absorptive Capacity of Crop (tonnes per day)	Capacity (tonnes per year)		Average Plant Capacity (tonnes/year)	Number of Operating Days per Year	Start-up Date of Plants
			Plant(s)	Production			
<u>Countries Covered in Study</u>							
Egypt	7	64,500 Cane	1,064,250	599,900	152,035	150	first 1869 last 1978
Sudan	3	15,500 Cane	310,000	114,000	103,333	200	first 1963 last 1976
Syria	3	3,800 Beet	41,100	n.a.	13,700	80-100	first 1948 last 1967
Iraq	3	5,000 Beet 4,800 Cane	76,000	10,200	25,333	60-81	first (?) last 1978
Lebanon	1	1,200 Beet	14,000	n.a.	14,000	80-100	1958
Total	17	84,800 Cane 10,000 Beet	1,505,350	724,100	88,550		
<u>Other Arab Countries</u>							
Morocco	9	29,200 Beet 4,500 Cane	463,600	300,500	51,511	200	first 1963 last 1977
Tunisia	1	1,500 Beet	12,600	51,900	12,600	60-80	1962
Somalia	1	4,000 Cane	80,000	33,200	80,000	200	1972
Total	11	8,500 Cane 30,700 Beet	556,200	385,600	50,563		
Grand Total	28	93,300 Cane 40,700 Beet	2,061,550	1,109,700	73,627		

Source: Compiled from Chamber of Commerce and Industry of Kuwait, Kuwaiti Economist, No. 189, July 1979, pp. 72-75.

installed capacity. It is estimated that at an annual rate of increase in consumption of 5 per cent, the Arab countries will need about 4.0 million tonnes in 1985 and 8.0 million tonnes in 2000. But it is certain that the Sudan is the only country in the region where sugar production can be increased, not only to satisfy domestic demand but also to export to other Arab countries. This is due to the availability of both land and water. Already some investments have been made to expand the area under sugar within the framework of the Kenana scheme. It is not inconceivable to attain a degree of collective self-reliance in sugar production among the Arab countries, by realising agricultural potential in the Sudan through funds from the capital-surplus countries in the region.

Concluding Observations

The foregoing survey is expressive of two major aspects of the process of economic development in the Arab countries. One aspect relates to the over-riding concern of these countries to achieve a progressive development of their economies, by attaining a certain degree of processing of the raw materials which they export so as to divert some of the employment benefits and value-added to themselves. Although this should concern the Arab countries as a whole, it applies specifically to the oil-producing countries which need to reduce their over-dependence on the crude oil industry and develop indigenous skills. The agricultural (or non-oil-producing) countries are trying to adapt the process of development and growth to their national human and natural resource endowment, in order to

reduce the leakage of purchasing power (in foreign exchange) to the outside world in the form of industrial imports.

The other aspect relates to the growing "cost consciousness" among the Arab countries with respect to their industrialisation efforts. It is amply evident that the developing setting in the Arab countries acts to augment the construction cost of industrial projects, as well as the working capital and pre-operating expenses. Aside from the development of major industrial centres to provide external economies to new projects,^{46/} these countries are pursuing, though in varying degrees, policies aiming at building up their own professional resources and manpower availability. This seems to be re-inforced to some extent by the tendency on the part of international contracting concerns to set up professional manpower, procurement, and management bases within the region, in order to minimise the effects of world inflation, and this is giving more prospects for sub-contracting to smaller firms. However, the question of cost remains intimately related to the capability of developing a comparative advantage in the industry concerned, as well as the development of the related infrastructure.

In the above context, it is observed that industrial integration among the Arab countries could be conceived as a

^{46/} At present no less than six industrial centres are being expanded or built in the Gulf region. These are Jubail and Yanbu in Saudi Arabia, Umm Said in Qatar, Jebel Ali and Ruweis in U.A.E., and Shuaiba in Kuwait.

means for rationalising the use of resources and attaining more efficiently the objectives of economic development. This is not dictated only by the complementarity in resources and markets, but also by the present stage of industrial development. It is observed that the process of industrialisation in the Arab countries is coming up against the general trend towards scale economies which characterise modern technologies developed for industrialised settings. There is a general presumption that an industrial unit of a large size costs less per tonne of installed capacity than a much smaller unit. This renders the m.e.s. of many intermediate and capital industries beyond the present market potential of most Arab countries individually. Even in the case of some petrochemical and other industries which are mainly oriented towards international markets, integration is deemed desirable as a means of avoiding unnecessary duplication in production capacities, enhancing bargaining power, and establishing a regional base for marketing.

The importance of industrial integration emerges essentially from the type of industries which it makes possible on the basis of the enlarged market. An integration industry usually tends to have a significant proportion of its output destined to meet demand in other countries within the regional grouping, and its production function tends to depend on the supply of inputs from other countries within that grouping. It is useful to view this in terms of the constraints under

which the various Arab countries operate. Aside from the limited domestic market which characterises most Arab countries, one can notice that there is a skewed distribution of factors of production among them. Whereas the oil-countries have sizeable investible funds and limited labour supply and skills, the non-oil countries are considered to be adequately endowed with human resources but suffer from the lack of capital and foreign exchange resources. Considering that integration industries require sizeable investments and various levels of skills, one can see how integration enhances the scope for using the factors of production available more productively.

However, as can be concluded from the above survey, integration industries tend to act, through their extensive forward and backward linkage effects, as a catalyst for further industrial growth. Moreover, the benefits of industrialisation tend to be "residential" in the sense that the larger part of the value-added component of output is usually retained by the country in which the production capacity is located. This introduces again the idea that all countries participating in an integration scheme must be assigned integration industries, if the scheme is to have any prospect of success and durability. The optimal solution to an "industrial package" would be that which allocates the industries among the participants in such a way as to minimise the cost of producing the total outputs of these industries. As a methodological study, the following chapter will consider the potential for integration in the

fertilizer industry among the Arab countries, basically by estimating the cost penalties involved if the scale of operation in this industry is below m.e.s. on the basis of the national market, and showing how these penalties could be overcome by operating on a regional scale.

CHAPTER EIGHT

THE POTENTIAL FOR INTEGRATION IN THE ARAB FERTILIZER INDUSTRY

The purpose of this chapter is to appraise the potential for integration in the fertilizer industry among the Arab countries, as a methodological study which could be generalised to other candidate industries for integration. This choice has been guided by two major considerations. One consideration is the developmental implications of this industry for the Arab countries from both the production and consumption points of view. To the oil-producing countries it represents an important area for investment to exploit an abundant indigenous resource which is natural gas, whereas to the agricultural countries it provides a strategic input for agricultural activity. Moreover, from a regional point of view the development of the fertilizer industry is intimately related to the objective of attaining a certain degree of collective self-reliance in food supply. Another consideration which makes this industry attractive for study is that it is already established in a number of Arab countries, and this, despite the absence of detailed cost data in published form, facilitates the assessment of integration potential.

The chapter will be divided into three parts. The first will present a profile of the fertilizer industry in a world context, with a view to depicting the characteristics of this industry. After examining in the second part the development

of the fertilizer industry in the Arab countries and the major problems facing it, an attempt will be made in the third part to appraise the integration potential of this industry and its developmental implications.

A Profile of Fertilizer Industry

The centrality of the fertilizer industry emerges from the fact that it is linked both with the agricultural and industrial sectors. This seems to be more pronounced in the developing than in the developed countries. Many of the former countries experience severe shortages in food supplies and they need to enhance their agricultural productivity with respect to industrial crops.

The three basic nutrients in chemical fertilizers are nitrogen (N), phosphorus (P_2O_5), and potassium (K_2O). Although nitrogen is found in unlimited quantities in the air, its absorption in this form by plants is very difficult. This requires its chemical transformation into another form which can be used in fertilizer material. One such form is ammonia which is a basic intermediate for the production of nitrogenous fertilizer, but could be used as a nutrient material without any further processing. Phosphorus is found in large ore deposits as phosphate rock which can be chemically treated to produce phosphoric acid which is a base material for the production of salts that can be compounded in fertilizer.

Potassium is found usually in large salt deposits and could become after some physical treatment suitable as a fertilizer material.

There has been a rapid growth in world fertilizer production and consumption over the last three decades, especially in the developing countries. In 1977/78, the total consumption of these countries of all plant nutrients amounted to 26.5 million tonnes (or about 25.6 per cent of world consumption), against 6.6 million tonnes (14.3 per cent) in 1965/66, and 0.7 million tonnes (4.7 per cent) in 1950/51. Yet, the developing countries produced only about 16.3 per cent of total world production, or about two-thirds of their own needs in 1977/78. It is of significance to note that the world consumption of nitrogenous fertilizer increased in relative importance during the period under consideration, from 28.4 per cent of all plant nutrients in 1950/51 to 48.1 per cent in 1977/78. This seems to be somewhat less pronounced in the case of the developing countries than that of the developed countries. The relative importance of nitrogenous fertilizer in total consumption of fertilizer increased from 27.1 per cent in 1950/51 to 40.9 per cent in 1977/78 in the latter countries, and from 55.5 per cent to 61.6 per cent, respectively, in the case of the former countries.^{1/}

^{1/} All figures have been derived from UNIDO, Continuous Monitoring of the Growth of Fertilizer Capacity at the National, Regional and Global Levels, ID/WG.281/14, 27 October 1978; and, FAO, Fertilizer Yearbook, 1978, Rome, 1979.

Table 8.1 shows that world fertilizer demand is expected to increase from 100.8 million tonnes in 1977/78 to about 161.6 million tonnes in 1985/86. The larger part of the increase will arise in Asia, Africa, and Latin America, as well as in East Europe. But the composition of world demand for fertilizer is not likely to change during the period mentioned above, though the demand for nitrogenous fertilizer is likely to increase more in some regions than in others, especially in East Europe and Asia. With respect to the Arab countries, the total demand for fertilizer will more than double between 1977/78 and 1985/86, and about two-thirds of the increase will relate to nitrogen and one-third to phosphate.

Although developing countries may be able to buy their fertilizer requirements from international markets at a lower price than the price at which domestic production could be available, many of these countries decide to establish their own fertilizer industry as a means of reducing dependence on the outside world and saving foreign exchange. But generally the conditions prevailing in developing countries do not encourage the establishment of a fertilizer industry, as they work for increasing capital and operating costs. In comparison with imports, the unit-cost of production could be as high as to defeat the purpose of setting up the plant.

On the supply side, aside from being a capital-intensive industry that may require investments beyond the means of

World Fertilizer Demand By Type and Region, Actual for 1977/78 and

Forecast for 1980/81 and 1985/86

(in million tonnes)

Type/Year	Arab States	West Europe	East Europe	Africa	North America	Latin America	Asia	Oceania	World TOTAL
Nitrogen^{a/}									
1977/78	0.98	9.03	13.65	0.79	10.43	2.74	11.43	0.28	49.33
1980/81	1.41	10.38	17.31	1.05	11.78	3.65	14.65	0.33	60.56
1985/86	1.95	12.48	23.70	1.58	14.61	5.03	20.35	0.44	80.14
Phosphate^{b/}									
1977/78	0.39	5.75	7.79	0.69	5.29	2.12	3.81	1.45	27.29
1980/81	0.62	6.67	8.78	0.88	5.59	2.83	5.23	1.71	32.67
1985/86	1.00	7.83	13.50	1.20	7.00	3.80	7.43	2.06	43.82
Potash^{c/}									
1977/78	...	5.35	9.37	0.47	4.94	1.32	2.43	0.32	24.20
1980/81	...	5.86	11.58	0.65	5.76	1.80	3.09	0.38	29.12
1985/86	...	6.86	15.36	0.95	6.92	2.66	4.40	0.48	37.63
TOTAL									
1977/78	1.37	20.13	30.81	1.95	20.66	6.18	17.67	2.05	100.82
1980/81	2.03	22.91	37.67	2.58	23.13	8.28	22.97	2.42	122.35
1985/86	2.95	27.17	52.56	3.73	28.53	11.49	32.18	2.98	161.59

^{a/} Includes ammonium sulphate, ammonium nitrate, urea, and others.

^{b/} Includes single superphosphate, triple superphosphate, and others.

^{c/} Includes potassium sulphate and others.

Source: Compiled from British Sulphur Corporation Ltd., Study on The Development of the Fertilizer Industry in the Arab States, prepared for IDCAS, Vol. II, 1978.

individual developing countries, it requires diverse technical and managerial skills and the existence of a suitable supporting infrastructure (both upstream for the supply of inputs, and downstream for handling and distributing output). It is estimated that plants in developing countries take five years to build, compared to two or three years elsewhere. Table 8.2 provides a useful comparison between developed and developing countries with respect to investment cost estimates of a gas-based ammonia/urea plant and a phosphoric acid complex. This Table, which is derived from a World Bank paper,^{2/} shows that the cost of investment in the ammonia/urea plant has a "location factor" varying from 1.00 in the case of a developed country to 1.52 in a developing country with some infrastructure, and 2.13 in a remote location within a developing country. However, it is noticed that the cost of machinery, equipment and spares, as well as cost of engineering charges do not vary significantly. The major variations in costs seem to be in the acquisition of land, site preparation and civil works including roads, drains, workshops, etc... Other significant variations occur in the cost of off-site and other expenses including housing amenities, and in the contingency provision for physical and site factor. Moreover, the cost of freight and insurance are obviously higher as the plant and equipment have to be imported in the case of a developing country. Similar observations can be made with respect to the investment estimates of the phosphoric acid complex as presented in the above-mentioned Table.

^{2/} W. F. Sheldrick, Chief of Fertilizer Unit, World Bank, Investment and Production Cost of Fertilizers, UNIDO ID/WG.281/10, 4 October 1978.

I T E M	Gas-Based Ammonia/Urea Plant (1650 tonnes per day)				Phosphoric Acid Complex (1000 tonnes per day)		
	Developed country	Develop- ing country	Develop- ing Country (Remote Location)	Barge ^{a/} Mounted Plant	Expansion on developed site	New site develop- ing country (some infra- structure)	New site developing country (Remote Location - No infrastructure)
- Acquisition of land, site preparation, civil works, buildings and stores	4	12	14	-	10	19	24
- Machinery, equipment and spares	83	90	98	83	50	60	64
- Freight & insurance	3	12	20	11	2	4	6
- Engineering charges, includ- ing design, erection, license fees, etc...	30	40	50	59	24	30	34
- Offsites and other expenses including start-up fees, housing amenities, etc...	16	30	55	9	6	11	26
- Barges	-	-	-	53	-	-	-
- Mooring buoy	-	-	-	12	-	-	-
Basic cost estimate	136	184	237	227	92	124	154
Price, physical and site contingency	14	46	83	23	9	31	54
Plant investment	150	230	320	250	101	155	208
Working capital	7	10	15	15	13 ^{b/}	14 ^{b/}	16 ^{b/}
TOTAL INVESTMENT	157	240	335	265	114	169	224

a/ Based only on preliminary investment cost estimates. b/ Based on phosphate rock at \$25 per tonne and sulphur at \$65 per tonne.

Source: Sheldrick, op. cit., pp. 11 and 15.

On the demand side, it can be observed that the level of fertilizer consumption in developing countries is relatively low, but with a considerable potential for growth. In view of the economies of scale which characterise the fertilizer industry, plants in developing countries tend to settle down at outputs of 60-75 per cent of designed capacity, as against 80-90 per cent in the United States and Europe. In addition, the start-up problems of the plants are greater and more prolonged.^{3/} Table 7.1 suggests that the m.e.s. for an ammonia/urea plant is about 500,000 tonnes per annum, and for ammonium nitrate and ammonium sulphate plants about 220,000 tonnes per annum each plant. This could be well above the domestic requirements of a single developing country of a large size. For instance, and as will be revealed later, Egypt which is comparatively a major consumer of fertilizers in the Arab region and in the developing world at large, is not presently in a position to sustain such levels of production on the basis of the domestic market.

It is of great significance to view all this against the growing need of the developing countries to develop domestically an adequate, dependable, and low-cost fertilizer supply. This is prompted by both the need to attain a degree of self-sufficiency in food supply and to provide a hedge against the instability of fertilizer prices in international

^{3/} See G.R. Allen, "The World Fertilizer Situation", World Development, Vol. 5, No. 5-7, 1977, p. 535.

markets. In this context, integration in the fertilizer industry among regional groupings of developing countries could be instrumental in achieving these objectives more efficiently, by both rationalising the use of resources and taking advantage of an enlarged market. In other words, through regional integration a better economic environment could be provided for the production of fertilizers.

The most obvious opportunity for integration exists between countries that are large producers of fertilizer (or can provide the principal raw materials) and countries that are large consumers. The opportunity exists also between a large number of small developing countries which require small quantities of fertilizer to improve the productivity of their agriculture. In this case the setting up of a regional fertilizer plant(s), in which all participants are involved under a joint financing, production and marketing arrangement, will generate benefits not only in terms of rationalising the use of resources but also in terms of providing dependable supply of fertilizer at a reasonable price -- at least lower than can be attained on a national scale.

The Arab countries covered in this study present a strong case for integration in fertilizer production. This view is based on the pattern of resource endowment, size of the domestic markets, and the emerging pattern of production.

The oil-countries possess the necessary raw materials, as well as the financial resources, for the production of nitrogenous fertilizer, while Jordan, Syria, and Egypt have the necessary raw materials for the production of phosphate and potash fertilizers. As the agricultural potential in the region lies only in some countries, it is possible to conceive how an efficient horizontal or vertical integration for a range of fertilizer product-mix can promote agricultural development within the region and help in combating the alarming increase in the "food gap". The need for integration is further stressed by the emerging pattern of development in the fertilizer industry as it involves much duplication in production capacity. This does not only restrict the scope for sharing the regional market, but also could lead to severe competition in markets outside the region.

Development of Arab Fertilizer Industry

On the whole, the fertilizer industry in the Arab countries is of a recent origin. Prior to World War II, the only fertilizer plant was established in 1936 at Kafr El-Zayat in Egypt, to produce single superphosphate at the rate of 25,000 tonnes per annum. The nitrogen fertilizer industry in the Arab region did not start until 1951, when also in Egypt a unit producing calcium nitrate was established at Suez. In 1966, the first export-oriented fertilizer plant was set up in Kuwait, producing ammonium sulphate and urea, and this

was followed by a number of similar plants in the region (see Table 8.3). Potash is the least significant of the fertilizer nutrients in the region, and the need for it is met by imports. However, a large-scale project for potash production is planned for Jordan to exploit the Dead Sea mineral resources, but this project is not likely to start production before 1983/84 at the earliest.^{4/}

Table 8.4 shows the trend in fertilizer consumption in the Arab countries over the last two decades. It is evident that Egypt uses more chemical fertilizer per hectare of agricultural land than any other country in the region, and compares favourably with many other developed and developing countries. About half of Egypt's consumption of fertilizer in 1977/78 was produced domestically, but it is expected that the completion of several fertilizer complexes in various parts of the country will reduce imports considerably. It is important to note that both phosphate and nitrate fertilizer industries in Egypt seem to have attained during the 1960s productive efficiency, by capitalising on the low cost of rock phosphate and electricity as well as the low labour costs

^{4/} When it becomes available, production will be in the form of potassium chloride, a product which is ill-suited to the soil conditions in the Arab region. But it is possible for the Arab countries to participate in a plant for the conversion of potassium chloride into sulphate by means of sulphuric acid attack. This operation can be located at Aqaba in Jordan, where recovered sulphur from Saudi Arabia could provide the raw material for sulphuric acid production. The by-product which is hydrochloric acid might be used in a dicalcium phosphate unit which would meet the increasing requirement for animal feed in the context of the Arab agricultural development programme in the Sudan. See British Sulphur Corporation Ltd., Study on the Development of the Fertilizer Industry in the Arab States, prepared for IDCAS, Vol. I, 1978, p. 369.

Date	Country	Company	Plant Location	Fertilizer Product
1936	Egypt	Financial and Industrial Egyptian Co.	Kafr El-Zayat	Single superphosphate
1946	Egypt	Abu Zaabal Co.	Abu Zaabal	Single superphosphate
1951	Egypt	Nasr Co.	Suez	Calcium nitrate
1958	Lebanon	Lebanon Chemical Co.	Selata	Single superphosphate
1960	Egypt	Egyptian Chemical Industrial Co.	Aswan	Calcium ammonium nitrate
1963	Egypt	Nasr Co.	Suez	Ammonium sulphate
1964	Jordan	Jordanian Phosphate Mines Co. Ltd.	Ruseifa	Single superphosphate
1964	Egypt	Nasr Co. for Coke and Main Chemicals	Helwan	Ammonium sulphate
1966	Kuwait	Petrochemical Industries Co.	Shuaiba	Ammonium sulphate
1969	S. Arabia	Saudi Arabian Fertilizer Co.	Dammam	Urea
1970	Egypt	Financial and Industrial Egyptian Co.	Asyout	Single superphosphate
1971	Iraq	General Organisation for Chemical Industries	Abu Flus	Ammonium sulphate
1971	Kuwait	Petrochemical Industries Co.	Shuaiba	Urea
1971	Egypt	Nasr Co. for Coke and Main Chemicals	Helwan	Ammonium nitrate
1972	Syria	Union of Engineering and Chemical Industries	Homs	Calcium ammonium nitrate
1974	Qatar	Qatar Fertilizer Co.	Umm Said	Urea
1975	Egypt	Nasr Co. for Fertilizers and Chemicals	Talka	Calcium ammonium nitrate
1976	Iraq	General Org. for Chemical Industries	Abu Flus	Urea

Source: As for Table 8.1, p. 68.

TABLE 8.4

ARAB COUNTRIES: Consumption of Fertilizer (N, P₂O₅, K₂O),
1961-65, 1972, and 1977
(in 100 grammes)

Country	Per Hectare of Agri. Area			Per Capita		
	1961-65	1972	1977	1961-65	1972	1977
Egypt	1099	1467	1875	106	127	143
Sudan	8	17	10	22	38	20
Bahrain	...	30	...	...	1	...
Iraq	3	25	58	3	23	46
Jordan	24	21	38	17	17	26
Lebanon	607	1606	779	85	212	91
Oman	...	...	9	...	...	11
Qatar	...	...	58	...	...	31
Saudi Arabia	...	...	1	...	4	11
Syria	12	35	59	36	74	107
U.A.E.	...	26	43	...	19	14
Yemen	...	1	3	...	1	5
Dem. Yemen	...	...	...	...	...	1
<u>Comparison</u>						
World	87	173	220	122	209	242
Africa	9	20	26	31	55	62
North & Central America	168	299	357	372	571	631
Asia	52	139	209	30	66	89
Europe	654	1166	1304	362	583	627
France	823	1630	1639	593	1025	986
West Germany	1714	2571	2654	650	793	949
Britain	746	924	1093	274	310	358
Japan	2989	3628	3869	186	192	187

Source: Compiled from FAO, Fertilizer Yearbook, 1978, op. cit.,
Table 12, pp. 10-20.

and abundant availability of engineering skills.^{5/}

Lebanon ranks second in the consumption of fertilizer in the region, but it imports the bulk of its fertilizer requirements aside from triple superphosphate. In contrast with most other Arab countries, Lebanon does not have the necessary raw materials for the fertilizer industry. The existing two fertilizer plants producing nitrogenous and phosphatic compounds rely on imports of intermediates (ammonia and phosphates) and foreign technology. The high cost of imported raw materials constitutes a major obstacle to the development of this industry as an export-orientated one.

In Jordan and Syria, the emphasis in the fertilizer industry tends to be on phosphate, due to the availability of sizeable phosphate rock deposits. Jordan's proven phosphate deposits were estimated at 1200 million in 1975, and exploitation is vested in the state-owned Phosphate Mines (with a paid-up capital of JD 10 million). In 1979, phosphate production reached 2.83 million tonnes, against 1.40 million tonnes in 1975, and 0.65 million tonnes in 1970. At an average f.o.b. price of \$33 per tonne export proceeds in 1979 amounted to \$90 million. Under its Five-Year Development Plan (1976-80), Jordan is setting up a phosphate fertilizer complex in Aqaba

^{5/} Bent Hansen and Karim Nashashibi, Foreign Trade Regimes and Economic Development: Egypt (New York: National Bureau of Economic Research, 1975), p. 271.

at a total cost of \$280 million (including a \$50-million port for fertilizer export). This complex will include units for the production of sulphuric acid (3200 tonnes per day), phosphoric acid (1100 tonnes per day), triple superphosphate, and mono- and di-ammonium phosphate (2000 tonnes per day). The phosphate rocks will be mined locally, while 200,000 tonnes of sulphur and 80,000 tonnes of ammonia will have to be imported for the production process. No less than 90 per cent of the output will have to be exported in view of the limited domestic market, but with the possibility of absorbing a larger share of sulphuric acid production domestically when the Dead Sea potash project is started.

Syria is also trying to exploit its rock phosphate deposits, and in the context of its present Five-Year Development Plan (1976-80) it is setting up two triple superphosphate plants in Homs and Deir El-Zoor with designed capacities of 450,000 and 250,000 tonnes per annum, respectively. Also it will set up an ammonia/urea plant in Homs at a cost of £S 1000 million, and a capacity of 1000 tonnes per day of ammonia and 1050 tonnes per day of urea. A nitrogenous fertilizer plant has been in operation in Homs since 1972, and in 1975 it was running only at 50 per cent of its designed capacity, producing 63,553 tonnes of ammonium nitrate.^{6/}

It is of interest to note that the development of the fertilizer industry in the Arab oil-countries has been chosen

^{6/} ECWA, Recent Development in the Chemical Industry in Syria, Joint ECWA/UNIDO Industry Division, 78-2143, 31 August 1978, p. 14.

as a first stage in the development of the petrochemical industry. As domestic consumption of fertilizer in these countries, with the exception of Iraq, is quite limited, the bulk of production is for export. Under its Five-Year Economic Development Plan (1976-80), Iraq planned fertilizer complexes consisting of a plant at Khor El-Zubair with a capacity of 541,000 tonnes per annum of ammonia and 450,000 tonnes per annum of urea, both to start operation late in 1979. Another ammonia plant with a capacity of 216,000 tonnes per annum is to be established in Basra, and a wet-process phosphoric acid plant with a capacity of 400,000 tonnes per annum is to be established in al-Qaim.

In addition to Kuwait which has the largest nitrogenous complex in the region with a capacity of 545,000 tonnes per annum, there is a nitrogenous fertilizer complex in Qatar with a capacity of 245,000 tonnes per annum which is to be expanded to 490,000 tonnes per annum by 1981.

Table 8.5 gives the production and consumption position of fertilizers in the Arab countries during 1977/78. It can be noticed that Saudi Arabia, Iraq, Kuwait, Qatar, and Lebanon realise a surplus in production over domestic consumption, and this makes export outlets crucial in sustaining efficient production. In contrast, the other Arab countries realise a deficit that varies from one country to another, depending on the size and level of agricultural activity. The dependence

ARAB COUNTRIES: Production and Consumption of Fertilizers, 1977/78
(in 000 tonnes)

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Country	N i t r o g e n				Phosphate		Potash		GRAND TOTAL
	Ammonium sulphate	Ammonium nitrate	Calcium nitrate	Urea	Comp-ounds	TOTAL	Single super-phosphate	Potassium sulphate	
<u>EGYPT</u>									
Production	1.8	193.3	-	-	0.1	195.2	80.4	-	275.6
Consumption	54.9	267.9	9.8	126.7	0.3	459.6	68.3	2.9	530.8
<u>IRAQ</u>									
Production	25.9	-	-	99.6	-	125.5	-	-	125.5
Consumption	-	-	-	-	-	47.3	-	-	56.5
<u>JORDAN</u>									
Production	-	-	-	-	-	-	1.5	-	1.5
Consumption	-	-	-	-	-	1.4	-	-	5.5
<u>KUWAIT</u>									
Production	-	-	-	291.0	-	291.0	-	-	291.0
Consumption	-	-	-	-	-	-	-	-	-
<u>LEBANON</u>									
Production	-	-	-	-	-	1.2	-	-	67.2
Consumption	-	-	-	-	-	13.7	-	-	27.9
<u>QATAR</u>									
Production	-	-	-	75.9	-	75.9	-	-	75.9
Consumption	-	-	-	-	-	0.3	-	-	0.3
<u>OMAN</u>									
Production	-	-	-	-	-	-	-	-	-
Consumption	-	-	-	-	-	0.2	-	-	0.9
<u>SAUDI ARABIA</u>									
Production	-	-	-	92.8	-	92.8	-	-	92.8
Consumption	-	-	-	-	-	4.7	-	-	8.0

(continued)

Country	N i t r o g e n					Phosphate		Potash		GRAND TOTAL
	Ammonium sulphate	Ammonium nitrate	Calcium nitrate	Urea	Compounds	TOTAL	Single superphosphate	Potassium sulphate	TOTAL	
SYRIA										
Production	24.2	-	-	-	-	24.2	-	-	-	24.2
Consumption	-	19.5	-	8.0	29.7	57.2	-	2.3	-	82.5
SUDAN										
Production	-	-	-	-	-	-	-	-	-	-
Consumption	5.1	-	-	89.9	-	95.0	0.1	-	-	95.1
U.A.E.										
Production	-	-	-	-	-	-	-	-	-	-
Consumption	0.5	-	-	-	-	0.5	-	-	-	0.9
YEMEN										
Production	-	-	-	-	-	-	-	-	-	-
Consumption	-	-	-	-	-	1.9	-	-	0.4	2.7
DEM. YEMEN										
Production	-	-	-	-	-	-	-	-	-	-
Consumption	-	-	-	-	-	0.1	-	-	-	0.2
REGIONAL TOTAL										
Production						805.8		147.9	-	953.7
Consumption						681.9		115.6	13.8	811.3

Source: FAO, Fertilizer Yearbook, 1978, op. cit., pp. 32-77. ^{a/} Figures for 1975/76.

on imports ranged between 100 per cent in the case of the Sudan and 70 per cent and 40 per cent in the cases of Syria and Egypt, respectively. What is worth noting is that aggregate production in the Arab region is more than enough to satisfy aggregate consumption, with respect to both nitrogenous and phosphate fertilizers. This in itself is a significant point on the basis of which the desirability of integration in the fertilizers industry can be argued.

According to present plans, the production of fertilizers in the Arab region is expected to increase considerably by the year 1985, such that most countries will have surpluses for export. Table 8.6 presents the results of our attempt to project production and demand for various types of fertilizer by country in 1985. As far as production is concerned, the projections are derived from the expected (existing plus planned) design capacities in 1985. It is assumed that the operating rates in fertilizer plants in the majority of the Arab countries will not improve considerably by 1985, and most probably they will range between 70 and 75 per cent. Only in Kuwait this rate is assumed to be 80 per cent. According to figures obtained privately from the Arab Federation of Chemical Fertilizer Producers (AFCFP), the operating level in nitrogenous fertilizer plants in the Gulf has been strikingly low during the 1970s. Specifically, during the period 1972-76 the average capacity utilisation in urea plants was 85 per cent in the case of Kuwait, against 56 per cent in Iraq, 48 per cent in

(in 000 tonnes)

Country/ Type	Existing Capacity (1979) (1)	Planned Capacity (1980-85) (2)	Total Capacity (1985) (3)	Projected Production Operating Rate (4)	Projected Quantity (5)	Actual Demand (1979) (6)	Projected Demand (1985)			Surplus/ Deficit (-) (1985) (10)=(5)-(9)
							Case I (7)	Case II (8)	Case III (9)	
EGYPT										
<u>Nitrogen</u>	494.0	381.7	875.7		656.7	470.0	820.0	723.1	771.6	-114.9
AS	4.0	33.5	37.5	75%	28.1	45.0	50.0	69.2	59.6	- 31.5
AN	240.0	56.0	296.0	75%	222.0	255.0	190.0	392.3	291.2	- 69.2
Urea	250.0	242.2	492.2	75%	369.1	170.0	480.0	261.6	370.8	- 1.7
Compounds	-	50.0	50.0	75%	37.5	-	100.0	-	50.0	- 12.5
<u>Phosphate</u>	110.0	98.5	208.5		156.3	100.0	285.0	180.2	232.6	- 76.3
SSP	110.0	15.8	125.8	75%	94.3	100.0	130.0	180.2	155.1	- 60.8
TSP	-	82.7	82.7	75%	62.0	-	105.0	-	52.5	9.5
Compounds	-	-	-	-	-	-	50.0	-	25.0	- 25.0
<u>Potash</u>	-	-	-		-	4.0	65.0	8.0	36.5	- 36.5
Straights	-	-	-	-	-	4.0	15.0	8.0	11.5	- 11.5
Compounds	-	-	-	-	-	-	50.0	-	25.0	- 25.0
IRAQ										
<u>Nitrogen</u>	428.7	758.8	1187.5		831.3	128.0	150.0	197.0	173.5	657.8
AS	28.7	-	28.7	70%	20.1	23.0	19.0	35.4	27.2	- 7.1
Urea	400.0	726.0	1126.0	70%	788.2	100.0	73.0	153.9	113.5	674.7
Compounds	-	32.8	32.8	70%	23.0	5.0	58.0	7.7	32.8	- 9.8
<u>Phosphate</u>	-	469.5	469.5		328.7	20.0	95.0	36.0	65.5	263.2
SSP	-	137.5	137.5	70%	96.3	-	-	-	-	96.3
TSP	-	282.0	282.0	70%	197.4	15.0	37.0	27.0	32.0	165.4
Compounds	-	50.0	50.0	70%	35.0	5.0	58.0	9.0	33.5	1.5
<u>Potash</u>	-	-	-		-	2.0	35.0	3.6	19.3	-19.3
Straights	-	-	-	-	-	0.5	-	0.9	0.5	- 0.5
Compounds	-	-	-	-	-	1.5	35.0	2.7	18.8	-18.8

LEBANON

<u>Nitrogen</u>										
AS	12.0	21.4	33.4	75%	25.1	16.0	66.0	24.5	45.3	-20.2
AN	-	15.4	15.4	-	11.6	5.0	7.0	7.7	7.3	4.3
Urea	-	-	-	-	-	6.0	22.0	9.2	15.6	-15.6
Compounds	12.0	6.0	18.0	75%	13.5	4.0	15.0	1.5	8.3	-8.3
<u>Phosphate</u>										
SSP	172.2	81.0	253.2	75%	189.9	23.0	50.0	41.4	45.7	144.2
TSP	19.2	-	19.2	75%	14.4	4.0	20.0	7.2	13.6	0.8
Compounds	141.0	47.0	188.0	75%	141.0	15.0	8.0	27.0	17.5	123.5
	12.0	34.0	46.0	75%	34.5	4.0	22.0	7.2	14.6	19.9
<u>Potash</u>										
Compounds	-	-	-	-	-	-	23.0	-	11.5	-11.5
	-	-	-	-	-	-	23.0	-	11.5	-11.5

SYRIA

<u>Nitrogen</u>										
AS	158.5	144.9	303.4	-	212.4	72.7	90.0	111.9	100.9	111.5
AN	-	-	-	-	-	2.0	5.0	3.1	4.1	-4.1
Calcium AN	120.0	-	120.0	70%	84.0	12.3	15.0	18.9	16.9	67.1
Urea	38.5	-	38.5	70%	27.0	19.6	-	30.2	15.1	11.9
	-	144.9	144.9	70%	101.4	38.8	70.0	59.7	64.8	36.6
<u>Phosphate</u>										
SSP	-	700.0	700.0	-	490.0	46.0	70.0	82.9	76.5	413.5
TSP	-	-	-	-	-	29.3	-	52.8	26.4	-26.4
DAP	-	700.0	700.0	70%	490.0	-	50.0	-	25.0	465.0
Compounds	-	-	-	-	-	16.7	20.0	30.1	15.1	-15.1
	-	-	-	-	-	-	-	-	10.0	-10.0
<u>Potash</u>										
Straights	-	-	-	-	-	2.9	9.0	5.8	7.4	-7.4
Compounds	-	-	-	-	-	2.7	-	5.4	2.7	-2.7
	-	-	-	-	-	0.2	9.0	0.4	4.7	-4.7

JORDAN

<u>Nitrogen</u>										
AS	-	-	-	-	-	5.5	9.0	8.4	8.7	-8.7
Urea	-	-	-	-	-	1.5	-	2.3	1.1	-1.1
Compounds	-	-	-	-	-	2.5	7.0	3.8	5.4	-5.4
	-	-	-	-	-	1.5	2.0	2.3	2.2	-2.2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>Phosphate</u>	10.0	473.6	483.6		338.5	7.7	16.0	13.9	14.9	323.6
SSP	-	1.6	1.6	70%	1.1	-	2.0	-	1.0	0.1
TSP	-	282.0	282.0	70%	197.4	4.7	-	8.5	4.2	193.2
MAP	-	107.2	107.2	70%	75.0	1.5	9.0	2.7	5.8	69.2
DAP	-	82.8	82.8	70%	58.0	-	-	-	-	58.0
Compounds	10.0	-	10.0	70%	7.0	1.5	5.0	2.7	3.9	3.1
<u>Potash</u>										
<u>Straights</u>	-	-	-	-	-	1.7	4.0	3.4	3.7	3.7
<u>Compounds</u>	-	-	-	-	-	0.2	4.0	0.4	0.2	0.2
						1.5		3.0	3.5	3.5
<u>SAUDI ARABIA</u>										
<u>Nitrogen</u>	151.8	460.0	611.8		428.3	15.5	10.0	23.8	16.9	411.4
AN	-	-	-	-	-	1.6	-	2.4	1.2	1.2
Urea	151.8	460.0	611.8	70%	428.3	9.2	4.0	14.2	9.1	419.2
Compounds	-	-	-	-	-	4.7	6.0	7.2	6.6	6.6
<u>Phosphate</u>	-	235.0	235.0		164.5	5.3	9.0	9.5	9.2	155.3
TSP	-	235.0	235.0	70%	164.5	0.6	3.0	1.0	2.0	162.5
Compounds	-	-	-	-	-	4.7	6.0	8.5	7.2	7.2
<u>Potash</u>	-	-	-	-	-	0.3	3.0	0.6	1.8	1.8
<u>Compounds</u>	-	-	-	-	-	0.3	3.0	0.6	1.8	1.8
<u>KUWAIT</u>										
<u>Nitrogen</u>	414.5	-	414.5		331.6	0.3	0.2	0.5	0.3	331.2
AS	33.8	-	33.8	80%	27.0	0.03	-	0.1	0.05	26.9
Urea	380.7	-	380.7	80%	304.6	0.03	-	0.1	0.06	304.5
Compounds	-	-	-	-	-	0.2	0.2	0.3	0.2	0.2
<u>Phosphate</u>	-	-	-	-	-	0.2	0.2	0.4	0.3	0.3
<u>Compounds</u>	-	-	-	-	-	0.2	0.2	0.4	0.3	0.3
<u>Potash</u>	-	-	-	-	-	0.2	0.2	0.4	0.3	0.3
<u>Compounds</u>	-	-	-	-	-	0.2	0.2	0.4	0.3	0.3

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>QATAR</u>										
<u>Nitrogen</u>	326.0	164.0	490.0		343.0	0.6	0.2	0.9	0.6	342.4
Urea	326.0	164.0	490.0	70%	343.0	0.6	-	0.9	0.5	342.5
Compounds	-	-	-	-	-	-	0.2	-	0.1	-0.1
<u>Phosphate</u>	-	-	-	-	-	-	0.1	-	0.1	-0.1
Compounds	-	-	-	-	-	-	0.1	-	0.1	-0.1
<u>Potash</u>	-	-	-	-	-	-	0.1	-	0.1	-0.1
Compounds	-	-	-	-	-	-	0.1	-	0.1	-0.1
<u>U.A.E.</u>										
<u>Nitrogen</u>	-	227.7	227.7		159.4	2.2	0.2	3.4	1.8	157.6
AS	-	-	-	-	-	0.2	-	0.3	0.1	-0.1
Urea	-	227.7	227.7	70%	159.4	1.4	-	2.2	1.1	158.3
Compounds	-	-	-	-	-	0.6	0.2	0.9	0.6	-0.6
<u>Phosphate</u>	-	-	-	-	-	1.1	0.1	2.0	1.1	-1.1
TSP	-	-	-	-	-	0.5	-	0.9	0.5	-0.5
Compounds	-	-	-	-	-	0.6	0.1	1.1	0.6	-0.6
<u>Potash</u>	-	-	-	-	-	0.7	0.1	1.4	0.7	-0.7
Straights	-	-	-	-	-	0.5	-	1.0	0.5	-0.5
Compounds	-	-	-	-	-	0.2	0.1	0.4	0.2	-0.2
<u>OMAN</u>										
<u>Nitrogen</u>	-	-	-	-	-	0.4	0.9	0.6	0.7	-0.7
Urea	-	-	-	-	-	0.1	-	0.2	0.1	-0.1
Compounds	-	-	-	-	-	0.3	0.9	0.4	0.6	-0.6
<u>Phosphate</u>	-	-	-	-	-	0.6	0.6	1.0	0.8	-0.8
TSP	-	-	-	-	-	0.3	-	0.5	0.3	-0.3
Compounds	-	-	-	-	-	0.3	0.6	0.5	0.5	-0.5
<u>Potash</u>	-	-	-	-	-	0.3	0.3	0.6	0.4	-0.4
Compounds	-	-	-	-	-	0.3	0.3	0.6	0.4	-0.4

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>YEMEN</u>										
<u>Nitrogen</u>	-	-	-	-	-	5.5	2.0	8.5	5.2	-5.2
AS	-	-	-	-	-	0.5	-	0.8	0.4	-0.4
AN	-	-	-	-	-	1.0	-	1.5	0.7	-0.7
Urea	-	-	-	-	-	4.0	1.2	6.2	3.7	-3.7
Compounds	-	-	-	-	-	-	0.8	-	0.4	-0.4
<u>Phosphate</u>	-	-	-	-	-	0.8	0.4	1.4	0.9	-0.9
SSP	-	-	-	-	-	0.8	-	1.4	0.7	-0.7
Compounds	-	-	-	-	-	-	0.4	-	0.2	-0.2
<u>Potash</u>	-	-	-	-	-	0.8	1.2	1.6	1.4	-1.4
Straights	-	-	-	-	-	0.8	0.8	1.6	1.2	-1.2
Compounds	-	-	-	-	-	-	0.4	-	0.2	-0.2
<u>DEM. YEMEN</u>										
<u>Nitrogen</u>	-	-	-	-	-	1.1	7.0	1.7	4.3	-4.3
Urea	-	-	-	-	-	1.1	5.5	1.7	3.6	-3.6
Compounds	-	-	-	-	-	-	1.5	-	0.7	-0.7
<u>Phosphate</u>	-	-	-	-	-	0.1	2.4	0.2	1.3	-1.3
TSP	-	-	-	-	-	0.1	1.4	0.2	0.8	-0.8
Compounds	-	-	-	-	-	-	1.0	-	0.5	-0.5
<u>Potash</u>	-	-	-	-	-	0.1	0.9	0.2	0.6	-0.6
Straights	-	-	-	-	-	0.1	-	0.2	0.1	-0.1
Compounds	-	-	-	-	-	-	0.9	-	0.5	-0.5
<u>SUDAN</u>										
<u>Nitrogen</u>	-	92.0	92.0	-	64.4	77.7	170.0	119.5	144.7	-80.3
Urea	-	92.0	92.0	70%	64.4	77.7	150.0	119.5	134.7	-70.3
Compounds	-	-	-	-	-	-	20.0	-	10.0	-10.0
<u>Phosphate</u>	-	-	-	-	-	1.8	20.0	3.2	11.6	-11.6
TSP	-	-	-	-	-	0.6	2.0	1.1	1.5	-1.5
Compounds	-	-	-	-	-	1.2	18.0	2.1	10.1	-10.1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Potash	-	-	-	-	-	0.04	25.0	0.1	12.6	-12.6
Straights	-	-	-	-	-	0.01	7.0	0.02	3.5	-3.5
Compounds	-	-	-	-	-	0.03	18.0	0.06	9.1	-9.1

Note: AS = ammonium sulphate; AN = ammonium nitrate; SSP = single superphosphate; TSP = triple superphosphate; DAP = diammonium phosphate; MAP monoammonium phosphate.

Sources: (1) Arab Federation of Chemical Fertilizer Producers, General Secretariat, Annual Statistical Report 1979, Kuwait, June 1980; (2) IDCAS, A Report on Industrial Development in the Arab Countries, presented to the Second Meeting of the Arab Ministers of Industry, held in Tunisia, 8-13 November 1977, published in Cairo (in Arabic); (3) British Sulphur Corporation Ltd., Study on the Development of the Fertilizer Industry in the Arab States, op. cit.; (4) Arab Mining Company, Objectives and Activities, Amman, 1980; (5) Lebanon Chemicals Co. and Selaata Chemicals Co., A Report on Activities, Beirut, 1978; (6) Saudi Arabian Fertilizer Co. (SAFCO), Report on Activities, Dammam, 1978; (7) Syrian General Fertilizer Co., Report on Activities and Plans, Homs, 1979; (8) International Phosphate Industry Association (ISMA), Phosphoric Acid Plants: 1979 Survey, A/F/79/84, May 1979, Paris; (9) Abdel Baki al-Nouri, "Situation of Ammonia and Chemical Fertilizers in the Middle East", in AFCFP, Quarterly Journal, Vol. I, No. 4, December 1979, pp. 15-17 (in Arabic); and, (10) Farouk al-Maiouf, "Chemical Fertilizers Industry in the Arab World", in OAPEC, Oil and Arab Cooperation, Vol. 4, No. 1, 1978, pp. 51-100 (in Arabic).

Saudi Arabia, and 69 per cent in Qatar. This phenomenon is confirmed by an IDCAS study which shows that the operating level as a proportion of capacity in nitrogenous fertilizer plants in 1976 ranged between 52 per cent in Qatar, 54 per cent in Iraq, 57 per cent in Syria, 63 per cent in Saudi Arabia, 73 per cent in Egypt and 82 per cent in Kuwait.^{7/} Numerous reasons such as power failures, inadequate process planning, cooling water problems, lack of skills and non-availability of spare parts, are usually cited to explain the low utilisation rate.

As to the projections of demand for fertilizers in the Arab countries in 1985, they have been derived from two sets of estimates. One set (Case I in Table 8.6) is derived from the British Sulphur Corporation study on the fertilizer industry in the Arab countries, which estimates the demand for fertilizers on the basis of the expected expansion in agricultural land and the intensification of the use of fertilizers. Although this methodology is an ideal one, the lack of reliable statistics and information on agricultural planning restricts considerably its effectiveness. This is supported by the view that much of the expansion in the consumption of fertilizers depends on the availability of the proper infrastructure and the promotion of awareness of its usefulness among farmers. Both of these are long-term commitments and require intensive development efforts, especially

^{7/} IDCAS, Arab Cooperation in the Development of the Chemical Fertilizer Industry, a working paper presented to the Second Meeting of the Arab Ministers of Industry, Tunis, 8-13 November 1977, p. 9 (in Arabic).

in Syria and Iraq where there is still much scope for agricultural development. In addition, the spread of the use of fertilizers depends much on the availability of water for irrigation and the type of crops grown. The fact that agricultural activity in the Arab countries, except in Egypt, the Sudan and Iraq, is heavily dependent on rainfall limits the expansion in fertilizer consumption.

It seems to be more realistic to think of a more gradual expansion in fertilizer consumption. According to estimates envisaged currently by AFCFP, the average annual rate of increase in fertilizer consumption in the Arab countries during the first half of the 1980s will be about 9 per cent for nitrogen, 12.5 per cent for phosphate, and 15 per cent for potash.^{8/} Using these rates and taking actual demand for fertilizers in 1979 as a base, we could compute another set of estimates for 1985 (Case II in Table 8.6). Only in a few instances, notably in Egypt and Iraq, the projections of Case II are larger than those of Case I; otherwise they are less or equal to them.

As a compromise, a third set of demand projections for 1985 (Case III in Table 8.6) was computed by finding the averages of the projections of the above two sets. By comparing the demand projections of Case III with projected production in 1985, it is possible to figure out the expected

^{8/} For a supporting point of view, see Abdel Baki al-Nouri, "Situation of Ammonia and Chemical Fertilizers in the Middle East", in AFCFP, Quarterly Journal, Vol. I, No. 4, December 1979, pp. 15-17 (in Arabic).

surplus/deficit position in 1985 for the various types of fertilizers. Table 8.7 summarises the position for the region as a whole, and can be compared with Table 8.5 to depict the magnitude of the change between 1977/78 and 1985.

Several interesting observations can be made on the basis of the above Tables, to argue further the case for integration. First, the Arab countries which are expected to incur a deficit between domestic production and demand will be the Sudan, Egypt, Oman and the two Yemens. However, it ought to be mentioned that the dependence on domestic production will increase in the case of Egypt from 52 per cent in 1977/78 to 78 per cent in 1985, whereas in the case of the Sudan the dependence ratio will increase from zero to 38 per cent, respectively. The countries which will realise a surplus for export are mostly oil-producing as their fertilizer industries are basically export-orientated. This applies as well to Jordan which is expected to export about 90 per cent of its production.

Second, it is expected that between 1977/78 and 1985 the nitrogen fertilizer production will increase by a factor of 3.8, while the phosphate fertilizer production will increase by a factor of 11.3. However, it is to be remarked that the main growth in production will be concentrated on a few nutrients, namely urea, triple superphosphate, and nitrogenous and phosphatic compounds. By 1985, urea will constitute about 83.8 per cent of total nitrogenous fertilizer production, and triple

ARAB COUNTRIES: Projected Surplus/Deficit (-) By Type of Fertilizer, 1985
(in 000 tonnes)

Country	Nitrogen			Phosphate				Potash		GRAND TOTAL				
	Ammonium sulphate	Ammonium nitrate	Calcium nitrate	Urea	Comp-ounds	TOTAL	SSP ^a /TSP ^b	Comp-ounds	TOTAL		Strai-ghts	Comp-ounds	TOTAL	
Egypt	-31.5	-69.2	-	-1.7	-12.5	-114.9	-60.8	9.5	-25.0	-76.3	-11.5	-25.0	-36.5	-227.7
Iraq	-7.1	-	-	674.7	-9.8	657.8	96.3	165.4	1.5	263.2	-0.5	-18.8	-19.3	901.7
Lebanon	4.3	-15.6	-	-8.3	-0.6	-20.2	0.8	123.5	19.9	144.2	-	-11.5	-11.5	112.5
Syria	-4.1	67.1	11.9	36.6	-	111.5	-26.4	465.0	-25.1 ^c	413.5	-2.7	-4.7	-7.4	517.6
Jordan	-1.1	-	-	-5.4	-2.2	-8.7	0.1	193.2	130.3 ^d	323.6	-0.2	-3.5	-3.7	311.2
S. Arabia	-	-1.2	-	419.2	-6.6	411.4	-	162.5	-7.2	155.3	-	-1.8	-1.8	564.9
Kuwait	26.9	-	-	304.5	-0.2	331.2	-	-	-0.3	-0.3	-	-0.3	-0.3	330.6
Qatar	-	-	-	342.5	-0.1	342.4	-	-	-0.1	-0.1	-	-0.1	-0.1	342.2
U.A.E.	-0.1	-	-	158.3	-0.6	157.6	-	-0.5	-0.6	-1.1	-0.5	-0.2	-0.7	155.8
Oman	-	-	-	-0.1	-0.6	-0.7	-	-0.3	-0.5	-0.8	-	-0.4	-0.4	-1.9
Yemen	-0.4	-0.7	-	-3.7	-0.4	-5.2	-0.7	-	-0.2	-0.9	-1.2	-0.2	-1.4	-7.5
Dem. Yemen	-	-	-	-3.6	-0.7	-4.3	-	-0.8	-0.5	-1.3	-0.1	-0.5	-0.6	-6.2
Sudan	-	-	-	-70.3	-10.0	-80.3	-	-1.5	-10.1	-11.6	-3.5	-9.1	-12.6	-104.5
TOTAL	-13.1	-19.6	11.9	1842.7	-44.3	1777.6	9.3	1116.0	82.1	1207.4	-20.2	-76.1	-96.3	2888.7

a/ Single superphosphate b/ Triple superphosphate c/ Includes diammonium phosphate
d/ Includes diammonium phosphate and monoammonium phosphate.

Source: Based on Table 8.6.

superphosphate about 75.3 per cent of total phosphate fertilizer production. Due to the emphasis on irrigated agriculture within the Arab region (especially in the Sudan, Egypt and Iraq), and the need to increase the nitrogen component in the fertilizer input in such type of agriculture, the above shift in production should be considered a desirable development. As to potash, it is expected that all requirements will be imported from outside the region, unless the Dead Sea Potash project comes into operation.

Third, despite the anticipated growth in fertilizer consumption, especially in the Sudan, Egypt, Iraq, and Syria, the Arab region as a whole will have in 1985 a surplus for export of nitrogen and phosphate fertilizers amounting to 2.9 million tonnes, or about 3 per cent of projected world demand. It must be recognised, however, that the growth in demand for fertilizers tends to be slow, as it is intimately related to the development of efficient distribution channels. Although the average per capita consumption of fertilizer in the Arab region will increase from 8 kilogrammes in 1977/78 to about 15 kilogrammes in 1985, it will remain low in comparison with world standards. In this regard, it ought to be mentioned that the Arab agricultural development programme in the Sudan will generate a large increase in demand for fertilizers, but this is not likely to take place before 1985. Anyhow, the Arab countries collectively can attain self-sufficiency in fertilizers not only with reference to the present levels of fertilizer consumption, but also to a much higher level of consumption.

Fourth, and finally, the emerging pattern of fertilizer production in the Arab region seems to be in line with the world-wide trend towards higher analysis products (i.e. urea, triple superphosphate, and diammonium phosphate). This trend is induced by the fact that low-analysis fertilizers (such as ammonium sulphate, calcium ammonium nitrate and single superphosphate) are more expensive to transport per tonne of nutrient.^{9/} But it seems now that the export outlets will be limited, as the level of fertilizer consumption in the developed countries is already high and an over-supply situation will continue to exist in these countries. This makes the African, Asian and Latin American countries potential markets for export. It is estimated that these regions will need to import about 3 million tonnes of fertilizers in 1985.^{10/} In such a situation, there is likely to be keen competition among the Arab countries in export markets.

What can be concluded from the foregoing is that the pattern of development of the fertilizer industry in the Arab countries carries with it the need for integration. This is based on two interrelated views. One is that the Arab countries possess collectively diversified resources for fertilizer production, on the basis of which they can attain collective self-reliance. In the oil-producing countries, the available

^{9/} On this point see World Bank, A Planning Study of the Fertilizer Sector in Egypt, Working Paper No. 269, Washington, D.C., July 1977, pp. 4-5.

^{10/} UNIDO, Continuous Monitoring of the Growth of Fertilizer Capacity, op. cit., p. 35.

raw material base for producing nitrogenous fertilizer represents an export potential, which is far in excess of domestic and regional demand, and the creation of a regional market would provide a stabilising factor against the wide fluctuations in international fertilizer market. In Jordan and, to a lesser extent, in Egypt and Syria, there is a considerable potential for producing phosphate fertilizer on a regional basis. Jordan also enjoys a great potential for potash fertilizer production. All this would provide not only a major element for agricultural intensification and expansion, but also a catalyst for promoting regional interdependence in food supply.

The other view relates to the economics of the fertilizer industry and its operating conditions. As in other developing countries, the fertilizer industry in the Arab countries suffers from both high investment costs and under-utilisation of capacity. It is known that the fertilizer industry is a capital-intensive industry. For instance, a 1650-tonne per day nitrogenous fertilizer plant requires about 650 workers^{11/} and costs around \$200 million, which means that the investment per worker averages \$0.3 million. On the assumption that the production of one tonne of urea requires 0.62 worker/hour, and that the average wage per worker/hour is \$8, the labour cost per tonne of urea will be \$5. If overhead expenses (amounting

^{11/} The percentage distribution of workers according to function is as follows: directors (5), technical supervision (20), operation and maintenance (50), and ordinary workers (25).

to 160 per cent of \$8 per tonne) are added, the total labour cost per tonne of urea will be \$13, or about 10 per cent of the selling price under present-day conditions. The importance of economies of scale in the fertilizer industry can be seen from the fact that a urea plant similar to the one mentioned above involves fixed expenses amounting to \$100,000 per day (assuming 10 per cent depreciation, 5 per cent maintenance, and 10 per cent rate of return), and accordingly the cost per tonne of urea would increase from \$92 to \$127 should the operating capacity fall from 90 to 60 per cent.^{12/} At the same time, one must recognise that the increases in the prices of oil-derived hydrocarbon feedstocks since 1973 have tended to make the traditional sites of ammonia/urea production in the industrialised countries (especially Western Europe, Japan, and the U.S.A.) increasingly less competitive, and this gave a leeway to the gas-abundant countries in the developing world to develop their own fertilizer industries. But as pointed out earlier, the increase in capital costs of fertilizer plants in the Arab countries (as well as other developing countries), combined with relatively low operating rates, seem to offset the advantage that these countries have gained in terms of feedstock costs over traditional producers of fertilizers. In this context, it can be argued that integration in the fertilizer industry is not only dictated by the need to reduce unit-cost for consumption in the Arab region, but

^{12/} These figures have been obtained from the discussions of of the First Consultative Meeting for the Promotion of Marketing of Chemical Fertilizers in the Arab Region, organised by IDCAS and AFCFP in cooperation with UNDP in Damascus in July 1980.

also to enable them to exploit their fertilizer raw materials for export. This will be illustrated in the remaining part of this chapter.

The Potential for Integration

The 1970s will definitely go down in history as a decade which experienced considerable changes in prices and international economic relations. Along with the accelerated increase in prices of raw materials, fuels, and utilities, investment costs have soared under the influence of inflation. According to a study prepared in 1978,^{13/} the cost of building an ammonia plant increased between 1970 and 1978 by factors ranging between 1.99 in the United Kingdom, 2.05 in Italy, 2.55 in West Germany, and 2.90 in Holland. But it must be admitted that these figures reflect, aside from inflation, a general trend as the investment costs of any plant are affected by varying domestic factors such as labour legislations, laws on environment, additional costs to introduce energy-saving techniques, etc...

The study of actual cost data of fertilizer plants in the Arab countries proved to be extremely difficult, in view of the absence of such data in published form. Moreover, there

^{13/} Centre d'Etude de l'Azote, Increase in Cost of Building An Ammonia Plant Since 1970, UNIDO, ID/WG.274/14, 5 April 1978.

are many plants in the Arab countries which are still under construction, and these will expand production capacity during the first half of the 1980s by about 65 per cent (see Table 8.6). This must be seen in conjunction with the fact that the operating level of plants tends to increase over time, as the case of Kuwait clearly indicates, and this will affect considerably production costs.

However, an attempt will be made below to draw on various cost estimates for the Arab countries as well as other developing countries, with a view to determine the production costs at varying levels of output. As pointed out earlier, the growth in fertilizer production in the Arab countries during the first half of the 1980s will be concentrated on urea which is the principal nitrogen fertilizer and on triple superphosphate which is a major phosphate fertilizer. Accordingly, the following exercise will consider the cost estimates and selling prices for these two nutrients, and then relate them to the case of the Arab countries. It should be noted that most of the cost estimates for the Arab countries have been obtained from private direct contacts with experts and representatives of some Arab fertilizers companies attending the First Consultative Meeting for the Promotion of Marketing of Chemical Fertilizers in the Arab Region, held in Damascus during 6-10 July 1980.^{14/} Yet, what proved to be a most fitting

^{14/} The countries represented in the meeting were Syria, Lebanon, Jordan, Kuwait, U.A.E., Saudi Arabia, Libya and Tunisia. Special thanks are due to Harish C. Raghbir, UNIDO expert and UNDP representative to the meeting, for his helpful comments and suggestions in estimating production costs.

survey of investment estimates for our purposes is that of Sheldrick^{15/} which is based on estimates made for the appraisal of World Bank projects and on discussions with engineering contractors undertaking plants which will start production in the early 1980s. Reference is made to this survey both to fill some of the gaps faced and to confirm estimates obtained privately. In addition, recourse is made to this survey for obtaining cost estimates for fertilizer plants in a developed site, for comparison with our estimates for the Arab countries. The British Sulphur Corporation study on the fertilizer industry in the Arab countries was also consulted to verify some of our findings.

Table 8.8 presents the investment cost estimates for a typical ammonia/urea plant and a phosphoric acid complex in the Arab region. As observed earlier, the "site factor" tends to differ considerably between developed and developing settings, as well as between various areas within a developing setting. However, the estimates obtained are representative of the Arab region as a whole, or more specifically the Arab Gulf countries where the necessary raw materials exist. The plant sizes considered are the most popular at the present time, as there is now considerable technological experience on them and economies of scale seem to be limited above them at present (see Table 7.1). The basis for our computations is the cost of plant machinery and equipment which have to be imported from abroad, thus incurring an additional cost for freight and insurance.

^{15/} Sheldrick, Investment and Production Cost of Fertilizers, op. cit.

TABLE 8.8

Estimates of Capital Cost for Typical Urea
and Phosphoric Acid Plants in the Arab Region, 1980

(in million \$)

No.	Item	Urea ^{a/}	Phosphoric Acid ^{b/}
1.	Land and preliminary site works for construction	12.0	15.0
2.	Machinery and equipment (f.o.b.)	95.0	60.0
3.	Freight and insurance (15% of No. 2)	14.3	9.0
4.	Civil engineering (40% of No. 2)	38.0	24.0
5.	Erection (28% of No. 2)	26.6	16.8
6.	Development and start-up expenses (7% of No. 2)	6.7	4.2
7.	Basic plant cost	192.6	129.0
8.	Provisions for cost escalation ^{c/}	60.0	37.9
9.	Plant investment	252.6	166.9
10.	Liquid cash (working capital)	18.0	16.0
11.	Total capital required	270.6	182.9

a/ Plant capacity 1650 tonnes per day.

b/ Plant capacity 1000 tonnes per day.

c/ Depends on the length of construction time.

Source: Compiled from private interviews with engineers
working in the Arabian Gulf.

It is to be noted that additional equipment are usually required in a developing setting with special climatic conditions such as those prevailing in the Arab oil countries. This explains the difference in the cost of machinery and equipment between a developed site and the Arab region, which ranges between 14 per cent in the case of the ammonia/urea plant and 20 per cent in the case of the phosphoric acid complex (compare Tables 8.2 and 8.8). By adding to the cost of machinery and equipment the freight and insurance expenses as well as the engineering and erection costs (in accordance with the estimated percentages obtained from engineers working in the Arabian Gulf and shown in Table 8.8), we get the basic plant cost. A 30 per cent of this cost must be added to it as provisions for cost escalation, considering that the construction period in the Arab region could range between 3 and 4 years. Thus, an ammonia/urea plant of an optimal size would cost in the Arab region about 72 per cent more than it costs in the United States, Western Europe, or Japan. In the case of an optimal size sulphuric acid complex the difference in cost would be about 60 per cent. This difference becomes more meaningful when bringing into the picture operating costs, and figuring out the difference in unit-cost between the two situations in order to assess the competitive strength in international markets.

Table 8.9 shows a comparison of production cost estimates for a urea plant in the Arab region, compared with a similar plant in a developed site. In both cases, the

TABLE 8.9

Estimated Production Costs for Urea^{a/}

	Developed Site ^{b/}	Site in Arab Region ^{c/}
Plant investment	\$150.0 m.	\$252.6 m.
Working capital	\$7.0 m.	\$18.0 m.
Total investment	\$157.0 m.	\$270.6 m.
<u>Raw materials</u>	Gas at \$2/M scf ^{d/}	Gas at \$0.3/M scf ^{d/}
Natural Gas including fuel and gas for steam and power generation \$/tonne	70.0	10.5
<u>Other variable costs \$/tonne</u>	11.9	11.9
<u>Fixed costs \$/tonne</u>	46.0	69.5
<u>Production costs \$/tonne</u>	127.9	91.9
<u>Profit 15% ROI^{e/} \$/tonne</u>	48.1	74.5
<u>Ex-Factory price \$/tonne</u>	176.0	166.4

a/ Plant capacity 1650 tonnes per day, or 544,500 tonnes per annum assuming 90 per cent utilisation capacity.

b/ Figures of the developed site obtained from Sheldrick.

c/ Investment figures obtained from Table 8.8

d/ Thousand standard cubic feet.

e/ Return on investment.

Note: The profit calculated by Sheldrick for the developed site amounts to \$48.1 per tonne, which actually represents 16.7 per cent (rather than 15 per cent) return on investment. However, in our calculations of the return on investment in Table 8.10 we considered that the profit accruing at the above capacity and ROI amounts to \$43.2 per tonne.

operating rate is assumed to be 90 per cent of design capacity. Due to differences in the cost of natural gas between oil-rich areas in the Arab region and the industrialised countries, it is estimated that the cost of natural gas used as raw materials (i.e. feedstock and energy) would be crucial in determining the unit-cost of production. Whereas this cost item represents only 11.4 per cent of total unit-cost in the Arab region, it amounts to 54.8 per cent in a developed country. In calculating this cost item, it was assumed that the production of one tonne of urea requires 35,000 standard cubic feet. It can be observed that the gas price in a developed site given by Sheldrick (i.e. \$2 per 1000 scf) is lower than prevailing prices. But this price was kept as it is on the basis that many existing producers have supply contracts concluded at a time when gas prices were low and are likely to continue for the coming few years. In contrast, fixed costs (including labour, maintenance, overheads, and depreciation) per unit of production represent 75.6 per cent and 35.9 per cent of total unit-cost, respectively. Yet, through the combined effect of these cost items, the total unit-cost in the Arab region is lower by about \$36.0 per tonne than in the developed site (i.e. \$127.8 minus \$91.9). This means inherently that the higher investment costs in the Arab region wipe-off about 60 per cent of the cost advantage in raw materials (which is \$70.00 minus \$10.50). However, assuming a rate of return on investment of 15 per cent in both situations, the price per tonne of urea (ex-factory) will be higher at the developed site by about \$35 (i.e. \$176.0 minus \$166.4).

Table 8.10 presents our computations for ex-factory price versus return on investment per tonne of the above hypothetical urea plant in the Arab region, together with the corresponding figures for a similar plant in an industrialised country. Using as a basis the investment cost calculated in Table 8.8 for the Arab region and that given by Sheldrick in Table 8.2 for an industrialised country, production costs per tonne of urea were calculated for four rates of capacity utilisation (90, 80, 70, and 60 per cent). After accounting for the rate of profit, the ex-factory prices were determined and tabulated accordingly.

Two major observations can be made on the basis of the above Table. One is that in the Arab region, possibly in Saudi Arabia, Qatar, or Kuwait, the producer (operating at 90 per cent of design capacity) can compete with a similar producer in a developed country operating at the same level and attaining a rate of return of 15 per cent. In this case, the selling price ex-factory per tonne of urea will be \$166.4 in the Arab region compared to \$171.0 in the developed country. It will not be possible to compete at a higher rate of return. The other observation is that it is not possible in the Arab region to attain an operating rate of 90 per cent, at least in the first few years of operation. The above Table reveals that the Arab producer in general can compete with the same other producer if he can operate at 70 per cent of design capacity and be satisfied with a 5 per cent rate of return on investment (the selling price in this case will be \$144.3 per tonne of urea).

Ex-Factory Prices Versus Return on Investment for Urea^{a/}

1 416 1

	Operating Rate							
	90 Per cent		80 Per cent		70 Per cent		60 Per cent	
	A	B	A	B	A	B	A	B
<u>Production cost \$/tonne</u>	91.9	127.8	100.9	133.6	112.4	141.0	127.8	150.8
<u>Return on investment \$/tonne at:</u>								
5 per cent	24.8	14.4	27.9	16.2	31.9	18.5	37.2	21.6
10 per cent	49.6	28.8	55.9	32.4	63.8	37.0	74.5	43.2
15 per cent	74.5	43.2	83.8	48.6	95.8	55.6	111.8	64.8
20 per cent	99.3	57.6	111.8	64.8	127.7	74.1	149.0	86.5
<u>Ex-Factory price \$/tonne</u>								
<u>at return on investment of:</u>								
5 per cent	116.7	142.2	128.8	149.8	144.3	159.5	165.0	172.4
10 per cent	141.5	156.6	156.8	166.0	176.2	178.0	202.3	194.0
15 per cent	166.4	171.0	184.7	182.2	208.2	196.6	239.6	215.6
20 per cent	191.2	185.4	212.7	198.4	240.1	215.1	276.8	237.3

Note: A = Arab region. B = Developed country.

^{a/} Plant capacity 1650 tonnes per day, or 544500 tonnes per annum. Total investment in the case of the developed country is \$157 million (see Table 8.2), and in the case of the Arab region \$270.6 million (see Table 8.8).

Turning to phosphate fertilizer, one would notice that the situation is essentially the same as with nitrogenous fertilizer, although the cost of raw materials tends to be much more significant than investment costs. Accordingly, phosphate fertilizer production is less sensitive to operating rate and location, but of course new plants tends to be built where the raw materials are cheapest (e.g. near a rock mine). The estimated cost data for phosphoric acid and granular triple superphosphate in the Arab region, compared with the data for a developed country, are presented in Table 8.11. It can be observed that on the assumption of an operating rate of 90 per cent and a rate of return on investment of 15 per cent, the selling price per tonne for phosphoric acid will be \$364.8 in the Arab region, compared to \$302.2 in a developed country, whereas the selling price for granular triple superphosphate will be \$168.8, compared to \$143.9, respectively. Obviously, operating at a lower rate of capacity will reduce considerably the prospects of the Arab countries for selling in external markets.

The above cost derivations for the Arab countries are extremely useful in exposing the influence of location, operating rate, and cost of raw materials on production costs and subsequently on selling prices of fertilizers. It can be deduced that the availability of cheap raw materials, especially with respect to nitrogenous fertilizer, is a necessary but not a sufficient condition for the Arab oil-countries to produce

Estimated Production Costs for Phosphoric Acid^{a/} and Granular TSP^{b/}

	Phosphoric Acid		Granular TSP	
	Arab Region	Developed Site	Arab Region	Developed Site
Plant investment (in \$)	166.9	101.0	29.0	25.0
Working capital (in \$)	16.0	13.0	9.0	8.0
Total investment (in \$)	182.9	114.0	38.0	33.0
<u>Raw materials/tonne</u>				
- Rock phosphate: (3,352 tonnes at \$30/tonne) (0.44 tonnes at \$30/tonne)	100.6	100.6	13.2	13.2
- Sulphur: (0.976 tonnes at \$85/tonne)	83.0	83.0		
- Phosphoric acid: (0.34 tonnes ^{c/})			124.0	102.7
<u>Other variable costs \$/tonne</u>	15.0	15.0	3.0	3.0
<u>Fixed costs \$/tonne</u>	83.1	51.8	14.3	12.5
<u>Production costs \$/tonne</u>	281.7	250.4	154.5	131.4
<u>Profit 15 per cent return on investment \$/tonne</u>	83.1	51.8	14.3	12.5
<u>Ex-factory price \$/tonne</u>	364.8	302.2	168.8	143.9

a/ Plant capacity 1000 tonnes per day, or 330,000 tonnes per annum assuming 90 per cent utilisation capacity.

b/ Plant capacity 1200 tonnes per day, or 396,000 tonnes per annum assuming 90 per cent utilisation capacity.

c/ Data based on phosphate rock at \$30/tonne and sulphur at \$85/tonne.

Note: Data for granular triple superphosphate obtained from Sheldrick, but adapted to account for the increase in the price of phosphate rock from \$25/tonne to \$30/tonne, and the price of sulphur from \$65/tonne to \$85/tonne, as supplied by AFCEP.

fertilizers competitively. High investment costs and low operating rates of plants could wipe-off whatever advantage these countries have in possessing abundant raw materials and financial resources. This supports strongly the case for integration in the fertilizer industry, as a means for both saving in capital costs and utilising a high rate of design capacity. The resulting effects would be a more efficient use of domestic resources expressed in a higher return on investment, combined with an enhanced capability for competing in international markets.

Considering the capital-intensive nature of the fertilizer industry, sizeable economies in capital costs as well as in operating costs can be realised through planning and operating fertilizer plants on a regional scale. To illustrate the economies in capital cost resulting from a regional plant, instead of a group of national plants, to meet regional demand, use can be made of the scale-up factor for the fertilizer industry listed in Table 1.1. For example, the anticipated demand for urea in Egypt (which is a major consumer in the region) will be about 370,800 tonnes per annum by the year 1985, or about 1100 tonnes per day. In the absence of export possibilities, this means that national demand will not be enough to support an optimal urea plant with a capacity of 1650 tonnes per day. Under these conditions, if Egypt is to set up a sub-optimal plant to satisfy domestic demand only the capital cost will be sizeable and would have negative effects on unit-cost of production. Using our

estimates for the investment cost of a urea plant in the Arab region and the scale-up factor for urea plants which is 0.4, we can estimate the capital cost of the sub-optimal plant at about \$451.0 million, as against \$270.6 million for the optimal plant. This can be expressed by the following equation:

$$\frac{\$270.6}{\$451.0} = \left(\frac{1650 \text{ tonnes/day}}{1110 \text{ tonnes/day}} \right)^{0.4}$$

What is of interest to note here is that the combined domestic demands for urea in Egypt and the Sudan in 1985 will reach about 1530 tonnes per day, almost enough to operate an optimal plant for the two countries. It is certain that such a plant if set up in Egypt will be capable of supplying the Sudan with urea at a much lower price than the going price in the Sudanese market which is about \$500 per tonne (against about \$250 per tonne in the Egyptian market), thus allowing for a good margin to absorb transportation costs of urea from Egypt to the Sudan. Undoubtedly, capital savings resulting from the integration of urea production between Egypt and the Sudan for instance could be used in these two countries to improve the infrastructure related to the fertilizer industry or even in various agricultural projects which would generate additional demand for fertilizer.

As can be observed from the preceding discussion, the development of the fertilizer industry in the Arab countries is set along horizontal lines with much overlapping in

production capacities. It appears from projected fertilizer production and demand that most of the Arab countries, excluding the Sudan and Egypt, will realise surpluses for export by 1985. This means that the Arab countries as a grouping will have to spillover an important part of their fertilizer outputs to markets outside the region.

Table 8.12 shows that prices paid by farmers for fertilizers in selected Arab countries, and Table 8.13 shows the prices of selected chemical fertilizers in major producing countries in the world. Although these prices relate to different years and are incomparable since prices paid by farmers include transportation and other distribution costs, they could be used in conjunction with the data we developed in the previous discussion to suggest the extent to which the Arab fertilizer producers can compete regionally and internationally, and the benefits and costs which would arise from integration.

It seems that if the assumptions of an operating rate of 90 per cent and a return on investment of 15 per cent are maintained, a urea producer in the Arabian Gulf offering output at about \$166 per tonne ex-factory should be able to compete with producers from the developed countries in the regional market as well as in the Asian markets. It has not been possible to obtain accurate figures for transportation costs of fertilizers between the Arab countries, mainly due

TABLE 8.12

SELECTED ARAB COUNTRIES: Prices Paid By Farmers
For Fertilizers, 1974-78
(in \$ per tonne)

Country/Product	1974/75	1975/76	1976/77	1977/78
<u>Egypt:</u>				
Ammonium sulphate	330	325	325	333
Ammonium nitrate	325	328	328	328
Calcium nitrate	379	392	392	392
Urea	338	338	361	248
Single superphosphate	266	248	248	248
Concentrated superphosphate	146	-	-	-
<u>Iraq:</u>				
Ammonium sulphate	217	-	-	-
Urea	169	-	-	-
Concentrated superphosphate	912	-	-	-
<u>Jordan:</u>				
Ammonium sulphate	920	745	-	-
Single superphosphate	702	704	-	-
Concentrated superphosphate	-	391	-	-
<u>Kuwait:</u>				
Ammonium sulphate	494	811	824	601
Urea	726	702	-	392
<u>Oman:</u>				
Ammonium sulphate	579	571	-	-
Urea	538	522	-	-
<u>Saudi Arabia:</u>				
Urea	246	226	210	209
<u>Syria:</u>				
Ammonium sulphate	643	501	-	-
Ammonium nitrate	659	454	433	-
Sodium nitrate	643	501	-	-
Calcium ammonium nitrate	642	501	-	-
Single superphosphate	541	396	377	-
Concentrated superphosphate	546	397	378	-
Potassium sulphate	303	298	284	-
<u>U.A.E.:</u>				
Ammonium sulphate	595	714	-	-
<u>Yemen:</u>				
Ammonium sulphate	-	1467	1257	1257
Ammonium nitrate	-	1185	1185	1185
Urea	-	670	620	650
Concentrated superphosphate	-	526	620	670
Potassium sulphate	-	-	484	616

Source: Compiled from FAO, Fertilizer Yearbook, 1978, op. cit.,
Tables 18, 19, and 20, pp. 81-87.

TABLE 8.13

Prices of Chemical Fertilizers, January 1980

Type of Fertilizer/Origin	\$ per tonne (f.o.b.)
<u>Nitrogenous Fertilizer</u>	
<u>Urea</u>	
United States	168 - 173
West Europe	190 - 200
East Europe	170 - 185
Arabian Gulf	195 - 205
<u>Ammonium sulphate</u>	
United States	64 - 70
West Europe	75 - 85
<u>Phosphate Fertilizer</u>	
<u>Diammonium phosphate</u>	
United States	250 - 265
South Korea	320 - 330
<u>Triple superphosphate</u>	
United States	194
North Africa	210 - 220
<u>Phosphate rock</u>	
Casablanca (Morocco)	50 - 52
United States	37 - 42
<u>Potash Fertilizer</u>	
<u>Potassium sulphate</u>	
United States	160 - 170

Source: Compiled from Arab Federation of Chemical Fertilizer Producers, Monthly Bulletin, Vol. 5, No. 52, February 1980, pp. 23-26.

to the very limited exchange of fertilizers within the Arab region at present. But there is a general presumption supported by experts in the field and the AFCEP that overland transport in the region is costly due to the absence of an adequate road network and the related infrastructure, and unless these are developed the transport costs would remain a major constraint for integration. However, to gain an approximate picture, it was possible to compile from several transport firms operating from Beirut some overland and surface freight costs between major trading centres in the region for non-bulky goods similar to fertilizers. Table 8.14 presents these freight costs expressed in \$/tonne.

One can observe that if transportation costs are taken into account, the competitive strength of the urea producer in the Arabian Gulf would be undermined within the Arab region. For instance, the transport cost of one tonne of urea from Kuwait to Damascus is about \$15.0, and this raises the overall price of Kuwaiti urea in the Syrian market to \$181/tonne. This might make it difficult to compete with urea exported by Eastern Europe at a cost of about \$170/tonne (f.o.b.), to which about \$12/tonne must be added to cover sea transport to Syria. This example can be taken to underline the importance of integration in the fertilizer industry among the Arab countries, as a means for attaining an optimal utilisation of resources and enhancing competitive strength. It is to be recalled that we are assuming 90 per cent operating capacity, and this is a heroic assumption considering prevailing conditions in the

TABLE 8.14

Overland Freight Costs Between Major Trading Centres
in the Arab Region, 1980
(in \$/tonne)

To From	Beirut	Damascus	Amman	Baghdad	Kuwait	Jeddah	Cairo	Khartoum
Beirut	-	8.0	14.0	20.0	25.0	26.0	20.0	40.0
Damascus	8.0	-	9.0	12.0	14.0	18.0	20.0	40.0
Amman	14.0	6.0	-	7.0	9.0	20.0	20.0	40.0
Baghdad	20.0	12.0	7.0	-	8.0	30.0	28.0	42.0
Kuwait	25.0	15.0	14.0	7.0	-	20.0	30.0	35.0
Jeddah	26.0	18.0	20.0	30.0	20.0	-	20.0	23.0
Cairo	20.0	22.0	20.0	28.0	28.0	20.0	-	28.0
Khartoum	40.0	41.0	40.0	40.0	35.0	23.0	28.0	-

Note: Transportation between Egypt and the Sudan on the one hand, and the rest of the Arab countries involves sea transshipment.

fertilizer industry. At a lower operating rate the competitive strength of the Arab producer would be eroded.

With respect to the export of urea to Asian markets as suggested earlier, it can be observed that the cost of transportation of urea to West Coast India amounts to 49.3/tonne from Rotterdam, against \$10.0/tonne from the Arabian Gulf. Again, assuming optimal operation of the urea plant in Saudi Arabia with a return on investment of 15 per cent, the selling price of Saudi urea in India would be \$176.4/tonne, whereas the selling price of urea from Western Europe would be \$220.3/tonne. This means that under optimal conditions the Saudi producer takes advantage of both the availability of cheap raw material (i.e. natural gas) and geographic proximity. But if the operating rate falls to 60 per cent (and rate of return on investment is kept at 15 per cent), the Saudi producer will be selling to India at \$249.6/tonne, while the West European producer would be selling at \$220.3/tonne.^{16/}

Along the same lines, it can be observed that a triple superphosphate producer in Jordan (operating at 90 per cent of capacity and attaining 15 per cent return on investment) can offer his output at about \$168.8/tonne ex-factory, thus competing easily with foreign producers, both in the region and in developing markets in Asia and Africa. Even when

^{16/} Transportation costs were derived from AFCFP, Commercial Bulletin, Vol. I, No. 1, 15 July 1980 (in Arabic).

taking into account transportation costs this would remain the case. However, it can be noticed that the Arab producers of some fertilizer compounds such as ammonium sulphate still cannot compete with foreign producers, and this reflects the early stage of development in the industry.

Summary and Conclusion

It can be suggested on the basis of the foregoing discussion that much of the success of the Arab countries in developing their fertilizer industries and making them profitable depends basically on their ability to maintain high operating rates. But given the present pattern of development in these industries which involves excessive duplication in production capacity as well as the low level of capacity utilisation which is characteristic of most Arab countries, it is difficult to see how these countries can succeed with their fertilizer industries. This must not overshadow the fact that the under-utilisation of capacity in some of the Arab countries is precipitated, aside from the smallness of available markets, by technical considerations and the generally underdeveloped setting in which the fertilizer industry operates. However, it seems that unless the Arab countries coordinate their investment and marketing strategies they will not be able to make fuller utilisation of their production capacities, and soon they will drift to destructive competition.

Indeed, it is in the interest of the Arab countries, individually and collectively, to rationalise their fertilizer industries on the regional and international levels, and thus maximise their benefits from available resources and markets. It is possible to conceive regional integration in the fertilizer industry along vertical lines. For instance, an ammonia plant in Saudi Arabia or Kuwait could supply its output to complementary plants in Syria, Lebanon or Egypt for further processing into various types of fertilizers needed in these countries, such as ammonium sulphate and ammonium nitrate. Alternatively, integration could be conceived along horizontal lines. It is interesting to note that the expected demand in the Arab countries covered in this study for urea will be about 500,000 tonnes in 1980 and will increase to about 700,000 tonnes in 1985. This means that one urea plant of an optimal size operating at 90 per cent of capacity (i.e. producing 544,500 tonnes of urea per annum) can satisfy regional demand, and another plant will not be justified until 1985. It can be seen that at the above operating rate and assuming that a 15 per cent return on investment is acceptable, regional demand in 1980 can be satisfied at a competitive price of \$166.4/tonne (ignoring transportation costs). However, if the same plant is to operate under the prevailing circumstances in the region with an operating rate of 60 per cent, the selling price will have to be \$239.6/tonne if a 15 per cent return on investment is to be realised, and \$276.8/tonne if a 20 per cent return on investment is to be realised. At such prices a Saudi

urea plant for instance will not be able to sell its output in Egypt where the price paid by farmers for a tonne of urea reaches about \$250. This will be aggravated if transportation costs are taken into account, and which amount to about \$20/tonne from Yanbu and \$40/tonne from Jubail to Cairo. But if a 10 per cent return on investment is acceptable it would be possible to sell from Yanbu due to the shorter distance involved.

The optimal solution to the problem would be to allocate the production units among the Arab countries in such a way as to minimise the cost of producing the total outputs of these units. This will not only minimise the cost of satisfying regional demand for fertilizer, but also enhance the competitive strength of the Arab countries in gaining a strong foothold in export markets. In other words, the solution must involve the determination of the investment, production, trade and transportation patterns which are likely to lead to the minimisation of costs.

It is useful to note finally that the AFCFP which was established in 1975, has now more than 26 member-companies from most Arab countries, dealing in nitrogenous, phosphate and potash fertilizers and their raw materials. The main objectives of this organisation are to help its members in resolving their production problems, collect information and statistics about the fertilizer industry in the region and

internationally, carry out technical and commercial studies, help in training of personnel and professionals, and provide advice on management, operation and maintenance. The AFCFP also envisages assisting in and encouraging the establishment of Arab joint ventures for fertilizers as a means for rationalising the use of resources. Such companies could be designed along the lines of the Arab Mining Company which was established in Amman with an authorised capital of KD 120 million subscribed by several Arab countries, and which now holds some shares in various fertilizer companies throughout the Arab World. It would be a useful idea if the AFCFP could develop a common export marketing organisation for fertilizers among the Arab countries, as this would enable to fix a common price and gain more bargaining power in external markets.

CHAPTER NINE

A STRATEGY FOR AN INTEGRATED INDUSTRIAL DEVELOPMENT IN THE ARAB MIDDLE EAST

This chapter focuses on the elements which are deemed central in the framing of a strategy for an integrated industrial development in the Arab region. It also discusses the major requisites for the successful implementation of such a strategy. As a background, the first part of the chapter looks briefly at how industrial integration has been contemplated on the Arab multilateral level.

Rudiments of Arab Industrial Integration

The first practical step taken by the Arab countries in the field of industrial integration was the convening of the Committee of Arab Experts on Economic Development and Planning in 1963.^{1/} The Report of the meeting noted that in most of the Arab countries the essential factors needed to promote national planning are almost non-existent. These include the lack of proper national accounts and statistical information, techno-economic studies and expertise, a proper central planning machinery, and a sense of planning awareness among the people to exert efforts necessary for the successful

^{1/} This meeting was organised by The General Secretariat of the League of Arab States during 30 September to 10 October 1963, in Cairo. It was attended by experts from Jordan, Algeria, Syria, Yemen, Egypt, Tunisia, Iraq, Kuwait, Lebanon, Morocco, and Libya. For the papers presented to the meeting and the Report, see League of Arab States, Department of Economic Affairs, Committee of Arab Experts on Economic Development and Planning, Cairo, 1965 (in Arabic).

implementation of development plans. The Report noted also that almost all plans in the Arab countries represent budgets for various national products, and no attempt has been made to exploit the possibilities for regional industrial integration. In its recommendations, the Report emphasised the need to strengthen and promote the planning machineries in the Arab countries, and to promote both cooperation in planning and plan harmonisation.

The Arab Economic Council, after considering the above Report, decided to set up under its wing the Economic Planning and Industrial Coordination Committee to undertake studies aiming at facilitating the coordination of investment decisions among the Arab countries.^{2/} This Committee held its first meeting in Kuwait during 15-25 November 1965.^{3/} It highlighted in its discussions the importance of industrial coordination, as a means for reaping the benefits of specialisation and economies of scale, and recommended the creation of a specialised agency within the framework of the League of Arab States to be entrusted with the task of promoting actively such coordination. Also it drafted an inter-Arab agreement for the creation of a standards and metrology organisation, which was approved by the AEC in December 1965. Similarly,

^{2/} This Committee was created under Decision No. 209, adopted at the 9th Session of the AEC held on 17 December 1963.

^{3/} This meeting was attended by representatives from Jordan, Algeria, Sudan, Iraq, Saudi Arabia, Syria, Egypt, Yemen, Kuwait, Lebanon, Libya, Morocco, and an observer delegate from UNESCO.

the First Conference on Industrial Development for Arab States, which was held in Kuwait during 1-10 March 1966, recommended the creation of an industrial development centre, and called on the Arab States to ratify the agreement establishing ASMO.^{4/}

In July 1967, the ASMO agreement came into force. This Organisation, which is based in Cairo, has played so far a very active role in promoting cooperation between national standards and metrology organisations in the Arab countries, and in designating a large number of unified Arab standards. It has also organised a number of symposia and training programmes on various aspects of its field of specialisation. It seems that due to its technical nature, ASMO did not experience any serious setbacks in its work.

In May 1968, IDCAS was established with its base in Cairo. The objectives of this Centre are to promote Arab industrial cooperation and integration, conduct techno-economic feasibility studies which would promote industrial development and optimise the use of resources, enhance efforts directed towards raising productivity and developing skills, and promote the exchange of industrial information among the Arab countries. The work of IDCAS remains largely consultative, and it has focused on conducting detailed industrial surveys for a number

^{4/} This Conference was sponsored jointly by UNIDO and the Kuwaiti Government, and was one of the regional Conferences sponsored by the United Nations as a prelude to the International Symposium on Industrial Development which was held in Athens (Greece) during 29 November to 19 December 1967.

of Arab countries, as well as conducting field studies in some industries (including textiles, building materials, edible oil, canning, fertilizers, and glass, ceramic, and porecelain) with a view to improve productivity. It has also organised a large number of specialised meetings to study the possibilities for coordinating production programmes in some existing industries (such as fertilizers, petrochemicals, and iron and steel). In addition, IDCAS sponsors with UNIDO and the hosting government the Conference of Industrial Development for Arab States.^{5/} This Conference has become a very important occasion for discussing industrial development in the Arab World, as it is mainly concerned with strategies, policies and plans for industrialisation and measures required to solve the problems confronted by the Arab States. With this orientation, the Conference is usually attended by the Arab ministers of industry, policy-makers, and representatives of a wide range of Arab and international organisations involved in industrial development.

It should be noted that the CAEU differs from IDCAS and ASMO in that it is a decision-making body, and not merely a consultative one. In accordance with Article II (paragraph 5) of the Arab Economic Unity Agreement, the CAEU endeavoured to attain industrial coordination and integration among its

^{5/} The Conferences held so far were in Kuwait (October 1971), Tripoli, Libya (April 1974), Baghdad (December 1976), and Algeria (November 1979). The author of this study gained a great deal of knowledge about the situation of industrialisation in the Arab World by participating in these Conferences, representing the General Union of Chambers of Commerce, Industry and Agriculture for Arab Countries.

member-countries. Most of the rudimentary work has been done in the Sub-Committee for Industrial Coordination and Mineral Resources. This Committee studied the possibility of coordinating certain basic industries, for starting the process of industrial integration. The industries selected for study were: petrochemicals, iron and steel, fertilizers (nitrate and phosphate), paper and pulp for artificial silk, machinery and agricultural tractors, and spinning and weaving. Although specialised technical groups to study each of the above industries were set up (Resolution No. 346 of the Council), very little progress was made beyond preparing preliminary studies on some of the above industries. At the same time, the CAEU took a number of decisions calling on the members not to establish competing industries, and each of them was given the right to object to the establishment of industries in other member-countries which are similar to its own industries (Resolution No. 216). But this right was not exercised except once, by the Syrian Government against a Jordanian plan to establish a textile industry. The Syrian Government proposed later to establish that industry as a joint venture between Syria and Jordan.

The major achievement of the CAEU in the field of industrial coordination has been the creation of functional federations for existing industries in a number of industrial sectors. Aside from helping in coordinating the purchases of raw materials and machinery, these federations endeavour to

coordinate the product marketing and training of technicians and skilled workers. The federations which have already been established and started their operations are: The Arab Federation for Iron and Steel (based in Algeria), The Arab Federation for Engineering and Electrical Industries (in Baghdad), The Arab Federation for Textile Industries (in Cairo), The Arab Federation for Chemical Fertilizer Products (in Kuwait), and The Arab Federation for Building Materials (in Damascus).

However, it can be said that the CAEU succeeded in sharpening the issues involved in regional industrial integration, and created a regional point of view for approaching the problems involved. In a Seminar organised jointly by CAEU, UNCTAD, and ECWA, the question of industrial integration was discussed at length, and it was recommended that

"Industrial integration, through the allocation of certain units of production to individual Arab countries willing to participate in a scheme of industrial programming, should be adopted as a basic principle of Arab economic cooperation." 6/

Also it was observed that

"The concept of integration projects should not be interpreted in a narrow manner so as to exclude national projects which may have a positive effect for the region as a whole." 7/

Furthermore, the Seminar observed that

6/ CAEU-UNCTAD-ECWA, Report and Recommendations of the Seminar on Problems of Trade Expansion and Economic Integration Among Arab Countries, held in Cairo during 18-23 May 1974, p. 14.

7/ Ibid., p. 15.

"The problem of equitable distribution of benefits of economic integration is probably less acute within the Arab region than in other regions, in view of the fact that the variety of existing potential natural, human and financial resources within the area permits each country to receive a fair share of benefits." 8/

This piecemeal approach to industrial integration was further discussed in another Seminar organised by the CAEU. In that Seminar, it was proposed that an Arab industrial commission be created for the purpose of discussing and approving the implementation of industrial projects contained in national development plans and geared mainly to Arab markets, as regional projects. Such projects would be given free or preferential access to Arab markets, on condition that they use raw materials or intermediate products from the importing countries. In addition, such projects would enjoy a certain degree of protection against imports from the outside world.^{9/}

These theoretical developments within the CAEU are of great significance from the standpoint of the present study. They support the basic contention developed in the preceding chapters, which advocates a gradualist approach in industrial integration as a route towards further integration. They also converge with the idea on which the "package deal" approach is based.

8/ Ibid.

9/ CAEU, The Detailed Report of the Seminar on Arab Industrial Coordination, held in Alexandria, Egypt, during 22-26 June 1976, pp. 74-75 (in Arabic).

An Industrial Integration Strategy

Industrial integration among sovereign countries is a continuous process; it has a beginning but no end. Yet it is possible to proceed with this process in such a way that one phase would form the basis for another. The strategy we are contemplating in this study for the Arab countries focuses on a partial range of industries which have the potential for integration. Given the rudimentary attempts made by the Arab countries so far, this strategy relates necessarily to the initial phase of industrial integration, and therefore it aims at making a breakthrough in a long-term process. It is likely therefore that when the next phase comes this strategy will have to be adjusted, or even superseded by a new one.

In economic jargon, the word "strategy" can be used to denote the fundamentals underlying the operational approach to a long-term process for solving a certain economic problem, and accordingly the emphasis in any strategy ought to be on rationale rather than on operational details.^{10/} This could be taken to suggest three basic elements which are central in the framing of a strategy for integrated industrial development among the Arab countries. These elements relate to: (a) the formulation of a system to manage the problem of distribution of benefits and costs of integration; (b) the setting of

^{10/} This conception is derived from a definition of development strategy in I. Sachs and K. Laski, "Industrial Development Strategy", Industrialization and Productivity, Bulletin No. 16, United Nations, New York, 1971, p. 35.

criteria for identifying the industries to which the concept of integration would be applied; and, (c) the identification of criteria for allocating integration industries among the participants. Having developed the basic ideas underlying these elements in Part One of this thesis, we will attempt in the following paragraphs to spell them out in the context of the economic environment in the Arab countries as portrayed in the preceding chapters of Part Two.

The "Package Deal" Approach

As suggested in Chapter Three, the "package deal" is a desirable approach for implementing an industrial integration scheme among the Arab countries. This view is based on several considerations relating to the economic size and level of development of these countries. Although the Arab countries can be conveniently classified into two broad categories (as oil- and non-oil-exporting), they display a certain degree of heterogeneity in resource endowment, economic objectives and priorities, and socio-economic systems. It is not surprising, therefore, to find varying economic performances and development experiences amongst them. This can be ascertained not only in terms of income per capita and other socio-economic variables (see Table 5.1), but also, and more importantly, in terms of the share of manufacturing in GDP and exports (see Tables 5.4 and 6.4)

However, as can be discerned from the various integration attempts by the Arab countries, the adjustment of production patterns through market integration involves a cost to the less developed and/or smaller countries. Moreover, these countries might not be in a position to derive the same benefits from the opportunities open up by integration as the more developed and/or larger countries. For instance, Egypt is more capable of sustaining development on the basis of the domestic market, and therefore has less urgency to integrate with other Arab countries than the case might be with Jordan which has a limited market. Having attained a higher level of development and possessing diversified resources, Egypt can polarise within its economic activity emerging from a regional customs union or common market. At the other extreme, the two Yemens and the Sudan regardless of their development potential cannot compete within a regional market and they would tend to bear the larger part of the costs arising from integration, and therefore they may have independently better growth prospects, at least in the shorter-run.

But considering the potential complementarity in resources and markets among the Arab countries, one can see the harmful economic consequences of existing national frontiers. It is certain that a higher level of output from given resources could be attained in an enlarged market. The "package deal" could be looked upon as an effective system for removing these harmful economic consequences with respect to a number of production lines, and for ensuring a proper inlet for wider

integrative efforts. As pointed out earlier, the attractiveness of this approach arises from the fact that it provides a direct means for allocating a number of integration industries among the Arab countries, rather than leaving this to the unregulated functioning of the enlarged market. Thus, this approach avoids the polarisation of integration benefits in the more developed countries, and promotes reciprocity in these benefits. It also facilitates the measurement of benefits and costs which is largely a subjective matter and will have to be based on each country's resource endowment, economic conditions and long-term development objectives. The relative diversity in resource endowment among the Arab countries is in itself a helping factor for assembling varying industrial packages for integration, and for selecting an optimum "product-mix" which attains a certain degree of collective self-reliance for the participants.

Identification of Integration Industries

The existence of substantial scale economies in capital and operating costs can be taken as a basic criterion for identifying industries for integration among the Arab countries. It is possible on the basis of cost estimates for varying production capacities of a certain industry to estimate the economies of scale, in terms of both unit-cost of production and capital required per unit of output, if the industry under consideration operates on a regional rather than on a national

scale. The discussion in Chapters 7 and 8 is clearly indicative of the range of industries which can be considered on this basis as candidates for integration. At the same time, it can be observed that these industries have a direct bearing on the developmental objectives of the Arab countries. Considering that the essence of integration is to accelerate the process of economic development, it seems to be more desirable to think as well of other development-related criteria for identifying integration industries in the context of the Arab countries. This is supported by the fact that the problems involved in obtaining accurate engineering data, defining the market sizes, and considering transport costs, make it exceedingly difficult to put realistic bounds on the potential economies obtainable by the enlargement of the market.

As the case is with other developing countries, the process of economic development in the Arab countries involves a partial withdrawal from the world economy, in order to attain internally generated and sustained growth. This means that the selection of a development project must not be based only on private profitability, but also on its favourable effects on other projects (such as providing useful inputs or enlarging the domestic market), on developing and training manpower, and on the dissemination of modern technology throughout the economy. The outcome of all this would be to reduce the international orientation of economic development, and to realise a greater degree of self-reliance.

It can be presumed that integration projects can attain such effects on a more rational basis, as they would enjoy a wider market and a more balanced factor supply. The implication is that an integration industry is one which, aside from realising economic efficiency effects through scale economies, generates interdependence among the countries concerned and contributes to the bringing about of a certain degree of collective self-reliance. The case study on fertilizers in Chapter 8 illustrates these points clearly. To start with, this industry is characterised by scale economies, and the m.e.s. is well above national market sizes of the Arab countries. This means that there is a wide scope for regional integration, whether along vertical or horizontal lines, and this reflects itself in a lower unit-cost of production such that little or no protection would be needed to make the selling price competitive with international prices. Considering the capital-intensive nature of this industry and the relative capital deficiency in Syria and Jordan where large phosphate rock deposits exist, it is possible to see how capital funds from the oil-countries could help in developing the phosphate fertilizer industry in these countries. Moreover, the development of the fertilizer industry is of a regional interest as the agricultural potential lies in some of the Arab countries, and there is generally a growing need to attain a degree of self-sufficiency in food.

In a "package deal" system it seems more feasible to concentrate on new industries, rather than existing ones, in

order to make it more appealing for as many of the Arab countries as possible to participate in the scheme. It would be costly, economically and politically, to start with the integration of existing industries, especially those which have been established for a number of years behind protective barriers. However, one must not rule out the possibility of transforming an existing national industry into a regional one, possibly through investments from other countries. Anyhow, it remains for the participating countries to agree among themselves as to what industries are to be considered as integration industries, bearing in mind their relevance to the regional market and their levels of economic development.

Allocation of Integration Industries

It is possible to distinguish between two types of measures for influencing the distribution of benefits in any integration scheme: "preventive", or ex ante, measures which are applied from the outset to ensure the equitable distribution of benefits, and "corrective", or ex post, measures which are primarily to strengthen the former during the process of integration.^{11/} Essentially, the "package deal" approach is a "preventive" measure. Its success in the initial stage rests heavily on the allocation of integration industries among all the participants in an acceptable way.

^{11/} For a discussion of these measures, see UNCTAD, Current Problems of Economic Integration: The Distribution of Benefits and Costs of Integration Among Developing Countries, op. cit., Chapter IV.

It is evident that in the case of the Arab countries some sacrifice in efficiency must be made to ensure an acceptable degree of equity in the distribution of industries. Therefore, the industrial package must represent a reasonable compromise between equity and efficiency. A complicating factor may arise from the fact that the concept of specialisation in production on which the package deal is based involves the creation of a complementary rather than a competitive structure in a number of basic industries. Paradoxically, this can be a source of conflict, especially in the early stages of integration. On the one hand, it entails for each of the partner countries a heavy structural dependence on the others for the supply of goods, which may not be politically appealing. On the other hand, industrial integration may entail trade diversion for some of the partner countries inasfar as they have to substitute imports by higher-cost products of a partner country, as is likely to be the case with the Arab oil-countries.

This should not mean that the allocation of industries among the Arab countries has to be a political agreement. The allocation of all industries must be supported by social benefit-cost analyses, in order to demonstrate the equity in the distribution of net benefits among the countries concerned, possibly by discounting these benefits to their present values. But it would enhance considerably the acceptability of the package if these analyses are carried out with the prevailing political framework of the Arab region in mind.

It is possible to settle conflicts of interest which may arise between the Arab countries in allocating integration industries among them, by allocating first the industries which belong naturally to certain locations and then use the "footloose" industries to balance up the package.^{12/} By intuition, the energy- and capital-intensive industries must be established in the oil-producing countries, whereas the agro-industries and the relatively labour-intensive industries have to be established in the agricultural Arab countries. In the same direction, it would be important to allocate to a certain Arab country the integration industry which complements existing industries, and accordingly help to strengthen the respective domestic demand, not only by enlarging but also deepening the extent of the market. In other words, the integration industries could become within a reasonably short time "development poles" in the region, attracting within each of the economies concerned ancillary industries and new tertiary activities. The identification of the appropriate industrial projects for each Arab country is, therefore, a necessary step in the process of allocating the industrial package.

^{12/} Schydrowsky suggests a different system which he calls the "sequential assignment procedure". Under this system, the assignment of all integration industries to the participants is not made simultaneously, but as projects become available. He draws a distinction between industries which exhibit market differences in costs between alternative locations and those which are not sensitive to locations, and proposes the application of the system with respect to the latter industries. Daniel M. Schydrowsky, Journal of Common Market Studies, Vol. 9, No. 4, 1971, pp. 299-307.

The objective is to determine the optimal allocation of the various industries selected and the level of their outputs in order to satisfy regional demand, with a view to ensure for each participant a total cost of the products included in the package less than their cost if purchased in world markets. This can be arrived at by using the benefit-cost analysis developed in Chapter 2, to make the necessary inter-country comparisons of production costs, and balancing the economies of scale brought about by integration against the accompanying increase in transport costs. This means that if the transport cost of a certain product is high, the optimum distribution of production units could be more dispersed than would be the case if only production costs are considered. What is important in an optimal package is to combine equity and efficiency in such a way as to make each of the countries concerned better off than in a state of non-integration.

A strategy such as the one outlined above could provide for the Arab countries both a "stepping-stone" for further and broadly based integration, and a "big push" in the overall process of economic and social development through the types of industries which it makes feasible.^{13/} It would be ideal

^{13/} In the context of the restructuring of the world industry as envisaged by the Lima Conference (1975), the share of the Arab World in world industrial output is estimated to increase from less than 1 per cent in 1975 to about 6 per cent in 2000. See F. Le Guay, UNIDO, Possibilities Open to the Industrialization of Arab Countries in the Framework of a New World Industrial Structure, a paper presented to the Seminar on Industrial Coordination for Arab Countries, Alexandria, Egypt, 22-26 June 1976, p. 9.

if this strategy can be applied to all the Arab countries covered in this study. But it might not be readily applicable to the Arab oil-countries as it rests heavily on the concept of collective self-reliance. It emerges from Chapters 5 and 6 that the relative positions and comparative advantages with respect to industrialisation differ drastically as between oil and non-oil countries. This is conceived not only in terms of national resources and size of the market, but also in terms of national development objectives.

It can be observed that industrialisation in the oil countries is evolving mainly in an international context. This is being prompted concurrently by two forces. One is a push force arising from the desire of these countries to invest as much as possible of their oil revenues in large-scale industries, mainly in participation with international companies which can provide the appropriate technologies and expertise. The other is a pull force arising from the desire of multinational companies to take advantage of cheap energy by establishing process industries that are highly integrated with the industrialised countries. A pioneering venture in this field is Aluminium Bahrain. In the same field, the relatively recent innovation in the use of natural gas as a reductant to produce sponge iron is offering now the oil countries the possibility of becoming major producers of steel. This innovation does not reduce only investment costs by eliminating the need for a blast furnace and coking coal,

but also the efficient size of a direct reductant plant to half the size of a traditional plant, thus bringing steel production within the grasp of the smaller oil countries. Moreover, it can be argued that major industrial countries are showing eagerness to involve themselves in the oil-countries either through investment or the transfer of technology, as a means of providing some guarantee for their oil supplies in the future.

Although this trend is a desirable one for the oil countries it has inherent weaknesses. In the first place, the duplication of industries reduces considerably the bargaining power of these countries vis-à-vis multinational companies, especially with respect to the marketing of output and the acquiring of technology. As pointed out recently,

"... it seems that the fate of the export-oriented industrialisation plants of Middle Eastern and North African oil-producers will rest as much on politics as on economic considerations. Saudi Arabia is probably the only one of them with the economic power to force its products on to the world markets if it should so choose to do. All the other countries in question will find themselves in weaker bargaining positions. For them, however ambitious their plans, access to the markets of the industrialised world cannot be assumed, but must be bargained for." 14/

Another weakness is that this trend leads to a wasteful use of the scarce factors of production available in the oil-

14/ Louis Turner, "Petrochemicals, Refining and Gas Exports - Problems With Costs and Marketing", in Middle East Annual Review, 1978, London, 1979, p. 90.

countries and in the Arab region as a whole. Obviously, this could raise costs and subsequently erode whatever international competitiveness the oil-countries may have in certain industries. As pointed out earlier, attempts at reducing costs are being made through concentrating major industrial projects in one or two centres in each country, allowing basic infrastructure and services to be provided more economically as well as confining environmental risks.

However, one can depict a growing awareness in the oil-countries for the need to coordinate their industrial development. This finds expression in the various joint ventures created within the framework of OAPEC, as mentioned earlier. A more recent move has been the creation of the Gulf Organisation for Industrial Consulting (GOIC). This Organisation which is based in Doha (Qatar) resulted from an agreement signed on 26 February 1976 by the ministers of industry in Saudi Arabia, U.A.E., Iraq, Qatar, Kuwait, Bahrain and Oman. Its purposes are to promote industrial cooperation and integration through the collection and dissemination of information on projects and industrial policies, to make proposals for joint industrial projects among the member-countries, to promote cooperation in the technical field, and to help in project evaluation. The Organisation operates through a Council comprising representatives of the member-countries and a Secretariat. Upon the advise of the Secretariat, the Council formulates the appropriate measures for promoting

industrial cooperation and integration. It is hoped that the above Organisation will be also instrumental in helping the oil-countries to make joint marketing and procurement arrangements among themselves.

It can be argued, however, that it is desirable for the Arab oil-countries to integrate economically with other countries in the region as this will be in their interest at least in the longer-run. Despite their growing importance to the world as oil and natural gas producers, their linkages with the rest of the Arab region are growing rapidly and will definitely intensify in the future. As indicated in Chapter 4, the supply of capital from the oil-countries is emerging rapidly as an integrating factor. It is not only increasing the mobility of labour and generating demand for the goods and services of other Arab countries, but is also providing funds for development purposes on national and regional scales. In point of fact, the oil-countries have displayed much readiness to support regional economic action, and Kuwait can be cited as the best example in this respect.

The creation of a regional market would definitely provide a more favourable framework for investing a larger part of the capital surpluses within the region, and reduce dependence on the outside world. It is believed that the oil-countries, which have an international orientation in their industrial development, should nevertheless try as much

as possible to promote their industrial exports to the other Arab countries as a hedge against cyclical fluctuations in international markets. In fact, extra-regional export possibilities can be treated as an opportunity to further improve the efficiency of regional industries. On the grounds that economic attractiveness in a regional integration scheme calls for the participation of the largest possible number of countries, it will be desirable if the proposed strategy addresses itself to the Arab region as a whole.

Yet, it is not necessary that all countries should be obliged to take part in each deal. But enough countries should participate in order to realise the advantage from enlarging the market. Several possibilities present themselves in this regard. It can be argued that Egypt, with its diversified national resources and the size of its potential market, has the greatest potential among the Arab countries for development on a national basis, and accordingly it might find little incentive to join an integration scheme at present. But this must not overshadow the fact that Egypt has always been at the centre of the Arab economic integration movement, and at present it represents a strategic reserve for manpower to the Arab countries (especially in the Gulf) and at the same time offers attractive investment opportunities for Arab capital. Also it can be argued that the two Yemens, being the least developed in the region, might not be keen on joining an integration scheme as they would be in a less

advantageous position in it. Added to this is the fact that they are geographically distant from the non-oil Arab countries. It might be more logical to promote the integration of these two countries in a separate scheme which suits their present levels of economic development.

A promising sub-region for integration could be that comprising Lebanon, Syria, Jordan and Iraq. It is believed that this sub-region provides a proper setting for applying the package deal, due to a number of reasons. Firstly, the countries concerned form a compact geographic area which offers proximity between production and consumption centres. On this basis, it can be considered of an optimal size. As Erlenkotter points out,

"Although the potential advantages from integration of expansion and location policies are substantial, marginal returns diminish rapidly as the size of the integrated group is enlarged." 15/

Moreover, in a small grouping the process of integration could be reduced to a manageable task, by diminishing the the possibility of unequal economic strength.

Secondly, intra-trade in the sub-region is relatively developed, and integration is not likely to disrupt trade with the immediate neighbouring countries. It is felt that the neighbouring oil-countries will support integration in

15/ Donald Erlenkotter, "Economic Integration and Dynamic Location Planning", Swedish Journal of Economics, Vol. 74, No. 1, 1972, p. 8.

the sub-region, especially if it provides a scope for investing a part of their capital surpluses.

Thirdly, these countries have gone some way in their industrialisation processes, and are now at virtually similar levels of industrial development. This would facilitate greatly the solution of the problem of distribution of industries, and provide a basis for balanced industrial growth in the future.

Fourthly, three of the above countries (i.e. Syria, Jordan and Iraq) are members of the CAEU, and as such they have already committed themselves to the idea of integration. Lebanon, on the other hand, is not a member of the CAEU but has been traditionally in favour of the formation of a regional common market. On several occasions, it submitted to the Arab Economic Council memoranda calling for the realisation of a regional integration scheme. In point of fact, the reluctance of Lebanon to join the CAEU has been mainly due to socio-political rather than economic reasons. Just before the outbreak of hostilities in 1975 it was in the process of negotiating an agreement with the CAEU according to which it would enjoy the same rights and privileges as the member-countries. Incidentally, the CAEU decided in June 1975 (Resolution No. 701) to invite the Arab non-members to attend its sessions and committee meetings as observers, if they so desired.

Fifthly, due to geographic and historical reasons, the countries of the sub-region under consideration enjoy a large degree of social integration. This could be a contributing factor in the promotion of economic integration.

What needs to be stressed, however, is that irrespective of the number of countries covered, the success of the implementation of the proposed strategy will have a direct influence on the future of economic integration in the Arab region as a whole. It is important therefore to examine in the remaining part of this chapter the essential conditions for this.

Requisites for Successful Integration

The proposed strategy needs to be implemented within an institutional framework. This means that the decision to invest and the choice of industries in which investment is to be made have to be taken away, to some extent, from the market. Being an inter-governmental body, CAEU provides an appropriate framework within which the participants can negotiate agreements and allocate industries, and accordingly seek the protection of their national interests. As pointed earlier, the CAEU is a decision-making body, and this distinguishes it from the Arab Economic Council. It is envisaged that the implementation of the strategy could be undertaken by the General Secretariat of the CAEU, through drafting an

agreement containing a "package deal" and then persuading the governments of the Arab countries to sign it. Since the agreement cannot possibly foresee and settle all points which may give rise to conflict, it would be extremely useful to have an offshoot of CAEU comprising the heads of the national planning bodies in the Arab countries. This body will examine projects and decide which of them are promising enough to justify detailed pre-feasibility study.

The drafting of the industrial package agreement would have to come after a "gestation period" during which feasibility and techno-economic studies are made for the candidate industries. These studies could be made through a joint effort between CAEU, IDCAS, and AFESD, thus helping to weld together some part of the Arab institutional set-up in an operational framework. Alternatively, an Arab investment appraisal fund could be created to prepare the necessary studies. Several guidelines can be suggested for the drafting of the agreement, in order to have it accepted by the participants with minimum political effort. These can be summarised in the following points.

First, to provide flexibility in the negotiation of the agreement, it would be advisable to prepare feasibility studies for a number of footloose industries, in excess of what is needed for the package deal. These industries could be used to assemble alternative packages from which the participants can choose one. In every case, the overriding

concern should be to minimise for each country the total cost of the products involved in the package. Given the projected demands for the products in the participating countries, the task, therefore, would be to adjust future supplies at the lowest possible cost without disrupting the reciprocity in benefits among the participants. However, the "optimal" package is that which meets the approval of all participants.

Second, it will be useful in order not to let the participants pre-empt possibilities for integration industries, to work out a list of such industries (mainly in the capital and intermediate categories) the establishment of which needs prior joint consultations. This has been applied in the Andean Group where some industrial sectors have been reserved for regional programming. It could be desirable, in order not to restrict unnecessarily the scope for national initiative in industrialisation, to specify that any industry planned or expanded by any one of the countries concerned should become subject to joint consultations if its output satisfies for example at least 50 per cent or more of the regional market.

Third, the products of the industries concerned should be allowed free access to the markets of all the participants, as of the date the agreement comes into force. This would provide an incentive for the participants to start the establishment of the industries allocated to them. The removal of tariffs should not be a problem if the industries are new.

Only in special circumstances, a gradual removal of tariffs could be allowed over a specified period (2 to 3 years) to ease the impact arising from the loss of customs duties. This could be for example the case of Jordan whose public finance is heavily dependent on customs duties, and thus it has been reticent about trade liberalisation within the framework of the Arab Common Market.

Fourth, the integration industries have the right to be considered "infant industries" eligible for protection through a common external tariff applied by the participants. There is a general presumption that a partial withdrawal from the outside world is a precondition for economic development, but the cost at which this is attained should be kept to a minimum. One way of handling this problem would be by making a distinction between competitive and non-competitive imports, with a view to have in the package deal as many industries as possible substituting non-competitive imports. Such industries would require a lower degree of protection, with the possibility of removing it at later stages. This means in the context of the theory of customs unions that the selected industries ought to be largely trade-creating rather than trade-diverting within the integrating region. In point of fact, industrial integration must not be understood as a complete substitute for the need to promote trade with extra-regional markets. On the one hand, the combined markets of the Arab countries may not be large enough to support efficiently certain industries (as is the

case with many petrochemicals), and this requires extra-regional markets. On the other hand, the foreign exchange constraint is likely to remain a critical factor in the growth process of the participants (excluding the oil-countries) as they cannot supply among themselves all the machinery and capital goods needed to expand their productive capacities. In any event, excessive protectionism is conducive to high-cost structure and discriminates against investment in export industries.

Fifth, in order to combat any monopolistic tendencies which are inherent in the exclusivity given to the integration industries to produce for the whole region (or a certain sub-region), it is important to specify in the agreement that the prices of the products of these industries must be set on the basis of costs rather than with reference to tariff protection. Evidently, the level of prices will be instrumental in determining the pattern in which the benefits and costs would enhance the viability of the integration scheme, and this implies the need for periodic negotiations among the participants to ensure that over-pricing is avoided. In addition, it is necessary to include in the agreement specifications for the products concerned, possibly upon the advice of ASMO.

Sixth, it might be more pragmatic not to specify in the agreement the way in which the capital of the integration industries would be subscribed. What is important is that each country should retain a certain proportion of the capital

for private initiative, depending on the prevailing economic systems. In Egypt, Syria, and Iraq industrial investments are mainly made by the public sector, whereas in Lebanon, and to a lesser extent, in Jordan the private sector is dominant. In the oil-countries, the public sector is active in industrial investment owing to the fact that oil revenues accrue to the governments. It would be desirable if, on a mutual basis, equity participation by the contracting governments is allowed. This will not only compensate partly the governments concerned for foregoing the right to establish the industries allocated to the others, but also will give them access to share in the benefits accruing to these industries and take part in managing them.^{16/}

Seventh, the agreement should set a time limit for the establishment of the integration industries. As an integration bank, AFESD can play a vital role in inducing the establishing of industries through giving preference to their financing. This is in addition to the possible role of AFESD with the CAEU in identifying integration industries and drawing feasibility studies for them. It might be necessary to create joint machinery to implement the projects involved, considering the diverse skills and expertise needed for large-scale industries. This machinery could take the form of a joint contracting company with participation from one or more international contracting companies in order to benefit from their experience. It is

^{16/} This proposal is inspired by the idea of forming regional companies as a means for economic integration suggested in I.M.D. Little, "Regional International Companies As An Approach to Economic Integration", Journal of Common Market Studies, Vol. 5, No. 2, 1966, pp. 181-186.

possible to set up this joint company either on an ad hoc basis just to implement the projects involved in the package deal, or on a permanent basis to implement future integration projects.

There are certain exogenous factors which can be of crucial importance in determining the success of the above scheme. Foremost among these factors is the presence of a developed infrastructure within the region. In this respect, it ought to be noticed that there is a lack of an integrated surface transport system, and this makes overland transport costly. According to a recent ECWA study,

"Present overland transport networks do not offer enough capacity to traffic on many routes, nor adequate levels of serviceability on others. Important gaps on international links are still to be filled before convenient connections can be effected. Some highway and railway alignments are still inconsistent with the present pattern of political boundaries or with that of population settlements and economic activity centres. The latter, in particular, have undergone so many radical changes over the last two decades that international transport has to use existing inappropriate routes or lengthy detours, thus incurring extra cost or expensive trans-shipments." 17/

It is important for the countries of the region to harmonise their programmes for developing the road networks and improve containerisation.

17/ ECWA, Development of an Integrated Transport System for Western Asia, Masterplan Study, Part I (Iraq, Jordan, Lebanon, and Syria), Beirut, p. 1.

There is also deficiency in the human infrastructure. The Arab countries as a whole need to develop their institutional capability for developing and training technical manpower. This poses a difficult problem in view of the reluctance on the part of some Arab countries (notably Syria and Iraq) to invite foreign skills on a large scale to contribute to their development. What has been written on this issue almost two decades ago seems to remain valid:

"... there will remain a very important bottleneck, namely the supply of high-talent manpower. Arab nationalism not being territorial like most other nationalisms, but rather linguistic and somewhat theocratic, is incapable of liberally absorbing and naturalising foreign talent and technique. Economic development in the region will have to depend on the cultivation of Arab manpower and on the naturalization in the Arab world of science and research developed elsewhere. Cultivation of talent, as we well know, is much longer and much more costly process than the building of factories, and may constitute a real problem for the future development of Arab economies." 18/

However, a growing number of professionally qualified Arabs are working now in various parts of the industrialised world, and it is worthwhile for the Arab countries to provide proper incentives for attracting them back. No doubt the acceleration of the industrialisation process would in itself provide a major incentive, especially if the training of manpower is related back to the educational system.

18/ Albert Badre, "Arab Economic Development: Between Native Sentiments and Foreign Ideologies", Middle East Forum, March 1959, Beirut, p. 35.

It is relevant to mention here that due to the fact that the technology and its products are physically separate, it has been possible for the Arab countries (as well as most developing countries) to follow a policy of industrialisation based mainly on the installation of imported machinery and turn-key factories (i.e. technology-free transfer of capital goods), with only a few successful attempts to transfer the associated technology -- mainly in management and maintenance. In other words, the Arab countries have been focussing mainly on the importation of "technological products" in the form of manufacturing facilities. This has not only broadened the extent of their "technological dependence", but also increased their costs to the extent that they had to import the skills needed to operate the factories. Hence, we can now find countries in the Arab region which claim to have some of the most modern and technologically advanced industries (mainly in the field of petrochemicals), yet at the same time are not acquiring the technological capability to manufacture even the simplest type of machinery.

Obviously, the package industries will require substantial and high level technology to be developed with them, including the capability in plant design and construction, product design, market research and applied R & D. The ultimate aim of the Arab countries should be to develop an indigenous technological base which would provide them with the knowledge

and skills associated with conceiving, designing, manufacturing, managing, and maintaining any product or activity. By achieving this aim they would be able to optimise the use of their own human and natural resources, and devise the production techniques which are relevant to their development strategies and cultural environment. It is being envisaged now that if the Arab countries are to build up their technological infrastructure they have to invest in research and development something in the order of 1 to 2 per cent of their total annual GNP. This ought to be considered as an extension of their investments in fixed capital. It is very important to ensure the proper management of research, not only to determine its optimal volume and scope but also to bring it in line with the longer-term planning and the integration needs of the region as a whole. Incidentally, the idea of creating an Arab Centre for the Transfer and Development of Technology is now being studied by ECWA. Also the KFAED is envisaging the establishment of an Arab Fund for Scientific and Technological Development.^{19/}

It can be discerned from the first chapter that the process of economic integration is necessarily a self-sustaining one. Once it gathers momentum, there will be pressures to broaden its scope to include other areas and to elevate it to higher levels of integration, otherwise it will slip backward to disintegration. In fact, no Arab country has ever made a

^{19/} See Abdlatif Y. Al-Hamad, Towards Establishing An Arab Fund for Scientific and Technological Development, KFAED, Kuwait, February 1978.

frontal attack on economic integration, and the criticism has been mainly on the way this integration is being approached. It can be assumed, therefore, that the success of the industrial package scheme would induce further integration among the participants.

While the package deal could be applied with virtually no harmonisation in economic policies, the next phase in the integration process would require such harmonisation. Accordingly, the participants should simultaneously start considering this, with a view to achieving a greater degree of uniformity in tax and other incentives for industrial development. Since the enlarged market in the Arab region is likely to attract investments from the outside, it is also necessary for the participants to coordinate their foreign investment laws. Considering that economic activity in the countries concerned, as in other developing countries, has a high political content, it is certain that further integration would entail a more explicit political agreement.

CHAPTER TEN

SUMMARY AND CONCLUSION

The post World War II period has been marked by a growing awareness of the need to regionalise international trade and institutionalise discriminatory policies. Under the influence of the EEC, various regional groupings in the developing world have been created. However, it has become evident that economic integration in the context of developing countries ought to be approached as a strategy for economic development, rather than simply a tariff issue as is basically the case with developed countries. The dynamic effects of integration are more relevant than the static effects in the evaluation of integration schemes among these countries. The coordination of investment decisions within an enlarged market would enable the integrating countries to take advantage of complementarity and scale, and hence reduce the cost of their development.

It is amply evident from past experiences of various regional groupings that not all member-countries in an integration scheme are willing to accept the conditions of production and trade occurring through mere trade liberalisation. This means instead alternatives must be found, such as the "allocative" approach, which would ensure for the less developed among the integrating countries a fair and equitable share of the overall benefits of any scheme.

The case of the Arab Middle East countries is found uniquely instructive, and many of the observations on them have equal applicability to most developing countries. Although these countries have developed as distinct political and economic entities, several attempts have been made to promote their economic integration. This has culminated in the creation of the Arab Common Market among four countries. But all these attempts met very limited success, though the failures are not irreversible. Even apart from political differences which are usually crucial in determining the scope and pattern of Arab economic relations, the lack of success was mainly due to the emphasis on market integration, rather than on coordination of investment and production programmes.

However, a new phase of economic development and integration is emerging in the Arab region. The oil industry, though existing in only some of the Arab countries, carries with it the seeds of change and regional integration. Despite the fact that this industry is highly integrated with the industrialised countries, it is propelling growth in the Arab region as a whole and generating ample financial resources to accelerate the pace and correct the direction of economic development. Moreover, the regional availability of capital is influencing the process of economic integration, through the creation of a number of unilateral and multilateral institutions to finance development projects. These institutions can play a catalytic role in the process of economic integration by lending at concessional terms to regional projects or

national projects having regional importance. It is envisaged that the financial flows caused by these institutions would tend to be more appealing to the countries concerned as a means of integration than the mere removal of discriminatory measures or the coordination of existing economic policies.

Despite the fact that the financial flows which have taken place helped promote regional cooperation and integration, and assisted in re-orienting it from mere trade liberalisation to investment coordination, it has not been linked to any integrative vision. As such they lacked a sense of direction, and their cumulative effect on the overall process of integration has been limited. However, this must not conceal the fact that these flows made a major breakthrough in regional efforts and now offer a real opportunity to pursue development on a regionally-integrated basis.

The industrial sector in the Arab countries seems to be a fertile terrain for integration. It is rapidly becoming apparent that the emerging patterns of industrial growth are not in the long-term interests of the Arab countries. The oil-producing countries are excessively duplicating their industrial investments. Although this is understandable on the basis of the similarity in resource endowment, it is apt to increase greatly the danger of competition between these countries in export markets, whether within the region or outside it. In the non-oil countries, industrial development is taking place largely within national compartments, and this

is not only leading to similar industrial growth patterns but also limiting the scope for industrial development and preventing the adoption of modern technologies which rely on scale economies.

It is amply evident that the Arab countries as a whole will eventually evolve into an operative form of collective self-reliance in view of the complementarity in their resources and markets, and it is in their interest to integrate their industrial development as a basis for wider integrative efforts. This is supported by the fact that industrialisation lies at the core of economic development in all Arab countries. Through industrial integration, it will be possible to provide a broader scope for accelerating industrialisation through the extension of the geographical and product coverage of import-substitution, especially ~~with~~ respect to industries characterised by scale economies. In addition, it should be possible to avoid cut-throat competition among oil-countries in export markets.

It is observed that industrialisation in the Arab countries is inconsistent with the general trend towards scale economies which characterise modern technologies that are essentially developed for industrial settings. In an attempt to explore some of the possibilities for industrial integration among the Arab countries, it was found that m.e.s. cannot be

attained with respect to a large number of intermediate and capital industries, due to both the smallness of the domestic market and the limited international competitiveness of these industries. This provides ample evidence of the importance of integration as a means not only for broadening the scope for industrialisation but also attaining its objectives more efficiently. In this respect, it can be noticed that the Arab oil countries are trying to introduce a certain degree of processing of the raw materials which they export so as to divert some of the value-added and employment benefits to themselves. At the same time, the Arab agricultural countries are trying to adapt the process of economic development and growth to their human and natural resource endowment in order to reduce the leakage of purchasing power (in foreign exchange) to the outside world in the form of industrial imports.

In the context of the factor supplies available in the Arab countries two broad categories of industries can be identified for integration purposes. One includes the energy- and capital-intensive industries which could be established in the oil producing countries. These industries represent a major phase of industrial development in which growth could emerge in several directions, and their development ought to be on a broad front in view of the linkages between them. It is not inconceivable to expect the emergence of a regional market for petrochemicals, similar to the one

which was realised for iron and steel in Europe before the formation of the EEC. The other category of industries comprises those which are characterised by a fairly heavy capital investment and the need for sophisticated manpower skills. These industries could use more labour and less capital per unit of output than the capital-intensive variants, and they could be established in the agricultural Arab countries which are labour abundant.

The assessment of the possibilities and desirability of Arab integration in certain industries belonging to the above two categories can be made by relating the m.e.s. of individual industries to the national and potentially integrated Arab markets, and then giving the penalty cost involved in comparison with overseas production when producing on a national basis. A partial use of this methodology was made to examine specific industries in a number of industrial sectors, whose economic viability can be enhanced by the pooling of scarce resources, skills and markets. These sectors are: (1) refining and petrochemical industries; (2) metallurgical industries; (3) capital goods industries; and, (4) food and agro-allied industries.

It is observed that high operating costs, due to the smallness of the market on the basis of which the above industries would have to operate at least in the shorter-run, coupled with high capital costs of construction,

reduce considerably the advantage of having cheap raw materials or labour. To illustrate this, the case of integration in the Arab fertilizer industry was examined as a methodological study. It emerged from this study that integration is deemed desirable not only as a means of avoiding unnecessary duplication in production capacities, but also for enhancing bargaining power and establishing a regional base for marketing.

Considering that it might be costly, in both political and economic terms, to integrate existing industries, it is thought that it would be more desirable to focus on new industries which would provide the momentum for further integration. It is thought that the approach to the integration of new industries must be simple and focus on a few industries as a start, in order to facilitate the prediction of the implications of integration by the countries concerned.

For that purpose, the "package deal" approach is suggested. It is believed that this approach could be economically viable and politically acceptable to the integrating countries, and can offer a practical initial path to broader integrative efforts. The credibility of this approach is enhanced by the fact that it allocates simultaneously to the integrating countries the industries

identified as "integration industries", thus guaranteeing from the beginning to all countries what may be an acceptable share of the net benefits of integration. It is thought that this approach could influence the allocation of industries in both an efficiently and a politically acceptable manner, and remedies many of the ills experienced in various regional groupings.

Using this approach, an attempt was made in the final Chapter to frame a strategy for an integrated industrial development. This strategy establishes the criteria for identifying the candidate industries for integration, and identifies the criteria by which these industries could be allocated to the participating countries.

Undoubtedly, integration will always be guided by political and economic factors. The Arab countries have developed as a distinct political and economic entities, and accordingly they have tended to put their own, immediate, short-term interests before those of the region which are of a long-term nature. But the benefits of integration among them would be considerable and open up new avenues for development. It is presumed that the proposed strategy for industrial integration can be implemented with minimum political effort, but it is

certain that further integration will require more political support. One hopes that the Arab countries are approaching political maturity, and that their post-independence economic experience would provide a guide for their future endeavours.

A P P E N D I C E S

APPENDIX "A"

THE ARAB ECONOMIC UNITY AGREEMENT

The Governments of: the Hashemite Kingdom of Jordan; the Tunisian Republic; the Republic of Sudan; the Republic of Iraq; the Kingdom of Saudi Arabia; the Syrian Arab Republic, the United Arab Republic; the Lebanese Republic; the United Kingdom of Libya; the Yemenite Kingdom; the Kingdom of Morocco; and the State of Kuwait,

In pursuance of their desire to organise and consolidate economic relations among the Arab League States on principles conforming with the natural and historical ties among them, and with a view to creating the best conditions for the advancement of their economies, for promoting their wealths and ensuring the welfare of their peoples, have agreed on setting up a complete unity among themselves to be achieved gradually with the speed commensurate with effecting their transfer from the present to the desired situation without detriment to their vital interests, in accordance with the following stipulations:

Chapter I

Objectives and Methods

Article 1

A complete economic unity shall be established among the Arab League States. The member states and their nationals are guaranteed the following on equal footing:

1. Freedom of movement of persons and capital;
2. Freedom of exchange of domestic and foreign goods and products;
3. Freedom of transport and transit, and of using means of transport, ports and civil airports;
4. Freedom of residence, work, employment and exercise of economic activities; and,
5. Rights of ownership, of making one's will and of inheritance.

Article 2

To realise the unity mentioned in Article (1), the contracting states shall work for accomplishing the following:

1. The Arab States should be made one customs zone subject to a single administration. Customs' tariffs,

legislations and regulations applied in these states should be standardised.

2. The Arab States should work for standardising regulations thereof.
3. Concluding collective trade agreements and payments agreements with third countries.
4. Standardising transport and transit systems.
5. Coordinating policies related to agriculture, industry, and internal trade. Economic legislations should be standardised in a manner ensuring equal terms to all nationals of the contracting countries with respect to work in agriculture, industry, and other professions.
6. (a) Coordinating legislation concerning government and municipal taxes and duties and all other taxes pertaining to agriculture, industry, trade, real estate, and capital investments in a manner ensuring equal opportunities.
(b) Avoiding double taxation and duties levied on the nationals of the contracting parties.
7. Coordinating labour and social insurance legislation.
8. The coordination of monetary and fiscal policies and all regulations thereof the contracting countries should be undertaken as a prerequisite for the standardisation of the currency.
9. Standardising the methods of the classification of statistics.
10. All necessary measures should be taken to ensure the attainment of the goals specified in Articles (1) and (2) of the Agreement.

It is, however, possible to circumvent the principle of standardisation in respect of certain circumstances and certain countries subject to the approval of the Council of Arab Economic Unity.

Chapter II

Organisation

Article 3

An organisation bearing the name of the Council of Arab Economic Unity shall be established. Its functions and terms of reference are specified in accordance with the provisions of this Agreement.

Article 4

1. The Council shall be composed of one or more full member(s) from each of the contracting parties.
2. Cairo shall be the permanent headquarters of the Council and the Council may convene in any other place it shall specify.
3. The presidency of the Council is for one year and by rotation among the contracting countries.
4. The Council takes its decisions by a two-thirds majority and each state has one vote.

Article 5

1. The Council is assisted in discharging its responsibilities by economic and administrative committees, both permanent and provisional whose functions are outlined by the Council.
2. The following permanent committees shall provisionally be established:
 - (a) The Customs Committee, to consider the technical and administrative customs affairs.
 - (b) The Monetary and Financial Committee, to undertake the handling of affairs pertaining to monetary and banking matters, taxes, duties and other financial affairs.
 - (c) The Economic Committee, to handle the affairs pertaining to agriculture, industry, trade, transport, communications, labour and social insurance.

The Council may set up other committees when it deems it necessary.

3. Each of the contracting countries shall appoint its representatives on the above-mentioned permanent committees. Each party shall have one single vote.

Article 6

1. A permanent Technical Advisory Bureau shall be established in the Council of Arab Economic Unity, composed of experts appointed by the Council, and shall function under its supervision.
2. The Technical Bureau shall undertake the study of the matters referred to it by either the Council or any of its committees. The Bureau shall submit studies and proposals ensuring harmony and coordination in matters within the Council's jurisdiction.

3. The Council shall establish a central office for statistics. The office shall collect, analyse statistics and when deemed necessary it shall publish them.

Article 7

1. The Council and its subsidiaries shall constitute one entity enjoying financial and administrative autonomy, and holding a special budget.
2. The Council shall draft its own regulations and those for its affiliated bodies.

Article 8

In the course of a period not exceeding one month from the date of putting this Agreement into force, the contracting countries shall nominate their representatives to the Council and its committees as specified in Article (5) paragraph (2) of this Agreement. The Council shall exercise its functions immediately after its formation. The Council shall then form its affiliated bodies.

Article 9

The Council shall exercise, in general, all the functions and powers specified in this Agreement and its protocols or what it shall deem necessary for ensuring its implementation. Particularly the Council shall undertake in the fields of:

1. Administration

- (a) To work towards the implementation of the provisions of this Agreement and its protocols and all the regulations and decisions issued for the purpose of the implementation of the Agreement or its protocols.
- (b) To run the committees and the affiliated bodies.
- (c) To appoint Council staff members and experts in conformity with the provisions of this Agreement.

2. Organisation and Legislation

- (a) Formulating regulations and legislations aiming at the creation of an Arab Customs Union and introducing amendments when deemed necessary.
- (b) Coordinating foreign trade policies with a view to ensuring the coordination of the region's economy vis-à-vis world economy and the attainment of the objectives of economic unity specified in this Agreement. The conclusion of trade agreements and of payments agreements with other countries shall be subject to the approval of the Council of Arab Economic Unity.

- (c) Coordinating economic development and formulating programmes for the attainment of multilateral economic development projects.
- (d) Coordinating policies for agriculture, industry, and internal trade.
- (e) Harmonising financial and monetary policies with the purpose of standardising currency.
- (f) Working out common regulations for transport and transit in the contracting countries and coordinating the relevant policies.
- (g) Drafting common legislations on labour and social security, and amendments thereto.
- (h) Coordinating legislations for taxes and duties.
- (i) Formulating all other legislations pertaining to matters stipulated in the Agreement and its protocols, deemed necessary for its realisation and implementation.
- (j) Submit a budget for the Council and its affiliates and obtain approval thereof.

Article 10

Outlays of the Council and its affiliated organs shall be covered by appropriations from common revenues. Pending the realisation of such revenues the governments shall participate to these expenditures according to quotas to be fixed by the Council.

Article 11

The Council's common revenues shall be apportioned among the governments of the contracting countries by mutual agreement on the basis of a study to be conducted by the Council prior to the implementation of the Customs Union.

Article 12

The Council shall exercise its powers under this Agreement and its protocols in accordance with resolutions to be passed therefrom and to be executed by the member countries in accordance with their constitutional rules.

Article 13

The governments of the contracting countries shall pledge not to promulgate any laws, regulations or administrative decisions contradictory to the Agreement or its protocols.

Chapter III

Transitional Provisions

Article 14

1. The implementation of this Agreement is to take place in successive stages and in the shortest possible time.
2. The Council shall upon its formation draw up a practical plan for the stages of implementation and specify the legislative, administrative and technical procedures necessary for each stage taking into consideration the protocol concerning the steps conducive to the realisation of Arab economic unity which is attached to the Agreement and constituting an integral part thereof.
3. The Council, on exercising its functions specified in this Agreement, shall take into account certain circumstances prevalent in some of the contracting countries without prejudice to the objectives of the Arab economic unity.
4. The Council, together with the contracting parties, shall carry out the procedures specified in paragraph (2) of this article according to this Agreement's provision.

Article 15

Any two or more of the contracting countries may conclude economic agreements with a view to realising under wider unity than that provided for under this Agreement.

Chapter IV

Ratification, Accession, and Withdrawal

Article 16

This Agreement shall be ratified by states signatory thereto in conformity with their respective constitutional requirements within the shortest time possible. The instruments of ratification shall be deposited with the General Secretariat of the Arab League which shall in turn prepare the minutes thereof and notify the other contracting countries.

Article 17

The Arab League member states non-signatory to this Agreement may accede thereto by notification to be submitted to the Secretary General of the Arab League who shall give a notice thereof to the other states signatory to the Agreement.

Article 18

Arab States non-members of the Arab League may accede to this Agreement subject to the approval of the contracting countries by notification to be sent to the Arab League Secretary General and a notice thereof shall consequently be transmitted to the contracting states seeking their approval.

Article 19

Any of the contracting countries may withdraw from this Agreement five years after the expiry of the transitory period. The withdrawal shall be effective one year from the date of application for withdrawal submitted to the General Secretariat of the League of Arab States.

Article 20

This Agreement shall come into force three months after the deposit of the ratification instruments by three of the signatory countries and shall be operative in each of the other countries one month after its instrument of ratification or accession is deposited.

In witness thereof the accredited representatives mentioned below put their signatures on behalf, and in the name, of their governments.

This Agreement is made in Arabic at Cairo on Monday the fifth day of Quidea, the year 1376 of the Hijra (3rd June 1957) in a single original to be deposited with the General Secretariat of the Arab League, and an authentic copy shall be transmitted to each state signatory to this Agreement on acceding thereto.

FIRST PROTOCOL ON BILATERAL ECONOMIC

AGREEMENTS WITH COUNTRIES NON-PARTIES TO THIS AGREEMENT

With reference to paragraph (4) of Article 2, and item (2) sub-paragraph (b) of Article 9 concerning institutional and legal aspects of the Agreement of Arab Economic Unity

concluded among the Arab League signatory countries on Wednesday 3rd of Moharem 1382 (the 6th of June 1962), the contracting countries have agreed that the provisions of this Agreement shall not prejudice the right of any contracting country to conclude economic bilateral agreements for extraordinary political or defensive purposes with outside parties without prejudice to the objectives of this Agreement.

SECOND PROTOCOL ON THE NECESSARY STEPS FOR THE
ATTAINMENT OF ARAB ECONOMIC UNITY

In accordance with the first paragraph of Article 4 of the Agreement of Arab Economic Unity which stipulates the execution of this Agreement in (successive) stages in the shortest time possible, the contracting countries agreed:

1. The Council of Arab Economic Unity stipulated under Article 3 of the Agreement shall be established in the course of the period specified in Article 8 of the Agreement.
2. The Council shall undertake in the course of an initial period not exceeding five years the study of the necessary steps for coordinating the economic, financial, and social policies and the attainment of the following objectives:
 - (a) Freedom of movement of persons, of work, employment, residence, ownership, making one's will and inheritance.
 - (b) Giving unrestricted and non-discriminatory freedom to the movement of transit goods irrespective of the means of transport as regards its type or nationality.
 - (c) Facilitate the exchange of Arab goods and products.
 - (d) Freedom of exercising economic activities without hampering the interests of some of the contracting states at this stage.
 - (e) Freedom of using ports and civil airports in a manner ensuring its activation and development.

The Council may recommend to the governments of the contracting countries to extend this stage for a period not exceeding five years when deemed necessary.

3. The Council shall study the necessary steps to be taken for the achievement of all objectives of economic unity in conformity with the specified stages and submit its

proposals in this respect to the governments of the contracting parties to be approved according to their respective constitutional requirements.

4. Two parties or more may agree on terminating the preparatory or any of the other stages and move directly to full-fledged economic unity.

Source: The above text is an edited version of a translation published in UNCTAD, Economic Cooperation and Integration of the Principal Legal Documents, Vol. V (Arab States), TD/B/609 Add. 1, 24 August 1976, pp. 8-14.

APPENDIX "B"

AGREEMENT ESTABLISHING THE ARAB FUND FOR
ECONOMIC AND SOCIAL DEVELOPMENT

The Governments of: The Hashemite Kingdom of Jordan; The Republic of Tunisia; the Algerian Democratic and People's Republic; The Democratic Republic of Sudan; The Republic of Iraq; The Kingdom of Saudi Arabia; The Syrian Arab Republic; The State of Kuwait; The Libyan Arab Republic; The Arab Republic of Egypt; The Yemen Arab Republic; The Republic of Lebanon; The Kingdom of Morocco; The People's Democratic Republic of Yemen; The State of the United Arab Emirates; The State of Bahrain; The State of Qatar,

Desirous of building the Arab economy on a strong foundation that will enable it to meet the requirements of economic and social development in their countries, and in order to achieve the aims of the Pact of the League of Arab States,

Have approved the text of this Agreement as adopted by the Arab Economic Council in its resolution Number 345 at its meeting held on Thursday, 18th Safar, 1388 H., (16 May 1968).

Article 1

There shall be established an Arab regional financial organisation, enjoying an independent juridical personality, called the "Arab Fund for Economic and Social Development", and having its Head Office in the City of Kuwait. The Fund may, by a decision of the Board of Governors as provided for in Article 19, establish branches and agencies in any country.

PART ONE

Purpose of the Fund

Article 2

The Fund shall participate in the financing of economic and social development projects in the Arab States and countries by:

1. Financing economic projects of an investment character by means of loans granted on easy terms to Governments, and to public or private organisations and institutions, giving preference to economic projects that are vital to the Arab entity and to joint Arab projects.

2. Encouraging, directly or indirectly, the investment of public and private capital in such a manner as to ensure the development and growth of the Arab economy.
3. Providing technical expertise and assistance in the various fields of economic environment.

PART TWO

Membership and Capital

Article 3

Members of the Fund shall be:

1. Member States of the League of Arab States and other Arab countries having subscribed to the capital of the Fund before 1 July 1968. These shall be considered as founding members.
2. Any other Arab States or countries whose accession to the Agreement shall be approved by the Board of Governors.

Article 4

The Board of Governors of the Fund may decide to accept the participation of public and private Arab financial institutions and organisations in the Arab States and countries in the capital of the Fund.

Article 5

1. The capital of this Fund shall be One Hundred Million Kuwaiti Dinars (One Kuwaiti Dinar being equal to 2.48828 grams of gold) that are convertible in convertible currencies.
2. The capital shall be divided into ten thousand shares having a value of Ten Thousand Kuwaiti Dinars each.
3. Upon signing this Agreement, the founding members shall subscribe shares of the capital of the Fund in accordance with the following schedule:

<u>State</u>	<u>Number of shares</u>
The Hashemite Kingdom of Jordan	200
The Republic of Tunisia	50
The Algerian Democratic and People's Republic	400
The Democratic Republic of the Sudan	150
The Republic of Iraq	750
The Kingdom of Saudi Arabia	1880
The Syrian Arab Republic	300
The Libyan Arab Republic	1200
The Arab Republic of Egypt	1050
The Yemen Arab Republic	50
The State of Kuwait	3000
The Republic of Lebanon	100
The Kingdom of Morocco	200
The People's Democratic Republic of Yemen	1
The State of the United Arab Emirates	500
The State of Bahrain	50
The State of Qatar	100

Article 6

Increase of Capital

The capital of the Fund may be increased on the following conditions:

1. The approval by an absolute majority of the votes cast in the case of issuing new shares for allocation to an Arab country wishing to joint the Fund.
2. The approval by a three-fourth majority of the votes cast in all other cases.
3. In case an increase is decided upon pursuant to the preceding paragraph, every member may subscribe thereto in the proportion which its shares bear to the capital and under such conditions as the Board of Governors may decide. This proportion may be increased or reduced, subject to the approval of an absolute majority of the votes cast.
4. Only members of the Fund and institutions and organisations provided for in Article 4 hereof, can subscribe for shares in an increase of capital.

Article 7

Subscription

1. Each founding member shall subscribe shares in accordance with the schedule set forth in paragraph 3 of Article 5.

The Board of Governors shall determine the share to be subscribed by other members in the manner provided for in paragraph 1 of Article 6.

2. Shares shall be issued at their nominal value.
3. The members shall pay 10 per cent of the value of the shares for which it has subscribed upon depositing the instruments of ratification of this Agreement. The members shall deposit such amount in the Fund's name with the Ministry of Finance of the State of Kuwait, which shall invest it under Government guarantee and return it together with the profits accruing therefrom to the body that the Board of Governors of the Fund shall designate at its first meeting.
4. In addition to the stipulations in Paragraph 3, the members shall pay 10 per cent of the value of the shares for which it has subscribed, upon this Agreement coming into force, pursuant to Article 40 hereof.
5. The remaining capital shall be paid up in ten equal annual instalments, the first of which shall fall due one year after the Fund shall commence its operations.
6. In case of accession of an Arab state or country to this Agreement after its coming into force, the new member shall pay on the share portion allotted to it, an amount proportionately equal to that paid by existing members on their shares.

Article 8

1. No member shall be deemed liable, by virtue of its membership, for the Fund's obligations beyond the limits set out in this Agreement.
2. Every member shall remain liable for the unpaid portion of its shares.
3. The provisions of Paragraphs 1 and 2 of this Article shall apply to the organisations and institutions provided for in Article 4.

Article 9

Disposal of Shares

Shares in the Fund may not be disposed of in any manner whatsoever, nor may their title be transferred, except to the Fund.

Article 10

Resources of the Fund

1. The Fund's resources shall consist of the capital subscribed, the reserves, and the loans raised by the Fund through the issuing of bonds or the obtaining of credits from public and private Arab institutions or from individuals or international institutions.
2. The Fund shall determine the conditions relating to bonds issue.
3. The value of the bonds issued by the Fund may not, at any time, exceed twice the amount of the capital, unless by special resolution of the Fund's Board of Governors to be adopted by a two-third majority votes.

PART THREE

Functions of the Fund

Article 11

Operations of the Fund

The Fund shall, in particular, carry out the following operations:

1. Borrow funds from internal and foreign markets and determine the guarantee necessary therefor.
2. Guarantee the securities relating to the projects wherein the Fund has invested its resources in order to facilitate their sale.
3. Buy and sell the securities issued or guaranteed by it or wherein it has invested its resources.
4. Invest surplus resources, its savings and pension funds and the like, in first class securities.
5. Carry out any other operation connected with the purposes of the Fund as provided for in Article 2.

Article 12

Guarantees

1. All lending operations undertaken by the Fund in favour of a public or private organisation or institution shall be guaranteed by the Government of the State or the country where the project is carried out.

2. The Fund is entitled, when financing a non-governmental project, to ask for special guarantees in addition to the governmental guarantees stipulated in Paragraph 1 of this Article.

Article 13

Limitations on Financing

1. The Fund shall not finance a project in the territory of any member without the permission of the government concerned.
2. The Fund shall stipulate that the proceeds of the loan be used for the purpose for which the loan was granted.
3. The Fund shall not share in the management of any project wherein it has invested its resources.
4. The Fund shall carry out its financing operations on the terms it shall deem appropriate, taking into consideration the requirements and risks of the project.
5. The Fund shall ascertain, through its technical experts, the viability of any project before financing it.
6. The Fund shall strive for the continuous investment of its resources on satisfactory terms.
7. The Fund may raise loans in any member country to finance a project after obtaining the permission of the government of that country. In case the project is to be carried out in the country of another member, the member in whose country the loan is raised shall undertake to transfer the proceeds of the loan to the country where the project is to be carried out, at the Fund's request.

Article 14

Currencies in Which Loans are Granted

The Fund shall pay the borrower the amount of the loan in the currency agreed upon by the two parties and as required for the execution of the project.

Article 15

Conversion of Currencies

The Fund shall be entitled to convert the currencies at its disposal into any currency deemed best suited for its purposes.

Article 16

Repayment of Loans

Contracts relating to the loans granted by the Fund shall provide for the methods of repayment of such loans as follows:

1. The Fund shall determine the cost of the loans granted by it, the commission, the methods of discharge of the debt, the dates of maturity, the payment, and the conditions relating thereto.
2. The loan contracts shall stipulate the currency in which payments due shall be made. The Fund shall endeavour, as far as possible, to recover its loans in the currency in which they were contracted. The borrower may, however, repay the loan in another currency subject to the approval of the Fund.
3. The Fund may modify the terms of the loan contract at the borrower's request, but without prejudice to the interest of the Fund or other members and subject to the approval of the guaranteeing government.
4. The Fund may modify the conditions of repayment of the loan.

Article 17

Prohibition of Political Activity

The Fund and the officers in charge of its management shall not interfere in political affairs. Economic and social considerations shall be the only relevant factors in the making of decisions.

PART FOUR

Organisation and Management

Article 18

Structure of the Fund

The Fund shall be composed of the Board of Governors, the Director-General Chairman of the Board of Directors, the Board of Directors, the Loan Committees, and the staff necessary to perform the duties determined by the administration of the Fund.

Article 19

Board of Governors

1. The Board of Governors shall consist of a Governor and an Alternate Governor, appointed by each member of the Fund for a period of five years, unless the member considers the replacement of either of them during the said period; they may be reappointed. The Board shall elect every year one of the Governors as its Chairman.
2. The Board of Governors shall be considered as the General Assembly of the Fund, and shall have all powers. It may delegate to the Board of Directors any of its powers, except the power to:
 - (a) Admit new members.
 - (b) Increase the capital.
 - (c) Suspend a member.
 - (d) Settle disputes over the interpretation of the provisions of this Agreement.
 - (e) Conclude agreements for the purpose of cooperation with other international organisations.
 - (f) Terminate the operations of the Fund and liquidate its assets.
 - (g) Determine the distribution of the net income of the Fund.
3. The Board of Governors shall meet once a year at least. It shall also meet whenever so requested by any three of its members having one quarter of the total voting power, or by the Board of Directors.
4. The meeting of the Board shall be valid provided a quorum is present representing no less than two-thirds of the total voting power.
5. The Board of Governors may establish the necessary procedures whereby the Board of Directors may obtain the approval of the members of the Board of Governors on a specific question without calling a meeting of the latter.
6. The Board of Governors and the Board of Directors, each within its province, may lay down such rules, instructions and regulations as may be necessary to conduct the business of the Fund.
7. The Governors and their Alternates shall carry out their duties as members of the Board of Governors without remuneration. The Fund, however, shall pay them appropriate expenses incurred in attending meetings.

8. The Board of Governors shall determine the remuneration to be paid to the members of the Board of Directors and their Alternates, as well as the salary and terms of the contract of service of the Director-General Chairman of the Board of Directors.

Article 20

Voting

1. For voting purposes at meetings of the Board of Governors, each member shall have two hundred votes, regardless of the number of shares it may hold, plus one additional vote for each share held.
2. Except as otherwise provided, all matters before the Board shall be decided by an absolute majority of votes.

Article 21

Director-General Chairman of the Board of Directors and Staff

1. The Board of Governors shall appoint a Director-General to the Fund who is not a Governor or his Alternate, nor a Director or his Alternate. In case of a temporary absence of the Director-General, the Board of Governors shall appoint a replacement for him to act on his behalf during his absence.
2. The Director-General shall preside at the meetings of the Board of Directors. He shall have no vote, save in the event of an equal division, in which case he shall have a casting vote. He may be called to attend the meetings of the Board of Governors and take part in its discussions, but shall not vote at such meetings.
3. The Director-General shall be the head of the staff of the Fund and shall be responsible for conducting all business under the supervision of the Board of Directors. He shall apply technical and administrative regulations within the Fund, and have the right to appoint and dismiss experts and staff in accordance with the regulations of the Fund.
4. The Director-General and staff owe their duty to the Fund. In the course of the conduct of business, they must not allow themselves to be influenced by any considerations other than the interest of the Fund, and they shall remain impartial in the discharge of their duties.

5. In appointing the staff, the Director-General shall pay due regard that positions be distributed to the extent possible amongst nationals of the Arab states and countries members of the Fund, provided that there shall be no departure from the principle of securing the required efficiency and expertise.

Article 22

Board of Directors

1. The Board of Directors shall be charged with all the activities of the Fund in a general manner, and shall exercise the powers delegated to it by the Board of Governors.
2. The Board of Directors shall be composed of four full-time Directors elected by the Board of Governors from among Arab citizens of recognised experience and competence. They shall be elected for a term of two years renewable.
3. Members of the Board of Directors shall be elected as follows:
 - (a) Each Governor shall nominate as candidates one Director and one Alternate Director.
 - (b) The Board of Governors shall elect from among the candidates four Directors and four Alternate Directors, by a majority of votes.
 - (c) Each Governor shall delegate to one of the elected Directors the number of votes he represents in the Board of Governors.
4. The Alternate Directors shall assist the Directors in their work and shall attend the meetings of the Board of Directors. An Alternate Director shall have the right to vote in the absence of the Director for whom he is acting.
5. The Directors and their Alternates shall continue in office until their successors are appointed. If the office of one of them becomes vacant for a maximum period of ninety days the Governors whose votes were represented by the former Director shall select a successor for the remainder of the term, provided that such selection is approved by the Board of Governors. The successor shall be in the same position as his predecessor with respect to the number of votes which he represents.
6. Meetings of the Board of Directors shall be valid provided a quorum of two-thirds of the total votes is present.
7. Resolutions of the Board of Directors shall be adopted by an absolute majority of the votes cast unless otherwise provided.

Article 23

Loan Committees

1. Loan committees shall be formed to submit the necessary reports on the projects and the adequacy of the loans requested therefor.
2. Each committee shall include an expert selected by the Governor representing the member in whose territory the project is located, and one or more members of the technical staff of the Fund appointed by the Chairman of the Board of Directors.

Article 24

Reports and Statements

The Fund shall issue an annual general report on its financial position. It may also issue a report on its activities with respect to the various projects as well as any other reports on the carrying out of its purposes. Such reports and statements shall be distributed to all members.

Article 25

Allocation of Net Income

A 10 per cent part of the annual net income of the Fund shall be allocated to the General Reserve. The Board of Governors may decide to allocate an additional amount to form a supplementary reserve. The balance shall be distributed to members in proportion to the number of shares held by them.

PART FIVE

Withdrawal - Suspension of Membership

Suspension of Operation

Article 26

Withdrawal of Members

No member shall have the right to withdraw from the Fund before the expiry of five years of membership. Withdrawal shall be by way of submitting a notice in writing to the Head Office of the Fund, expressing the member's wish to withdraw. Withdrawal shall become effective on the date such notice is received.

Article 27

Suspension of Membership

1. If a member fails to fulfill any of its obligations to the Fund, its membership may be suspended by decision of a majority of the Board of Governors. The member so suspended shall definitively cease to be a member one year from the date of suspension unless another decision is taken by a majority of votes to readmit the suspended member.
2. While under suspension a member shall not be entitled to exercise any rights under this Agreement, except the right of withdrawal.

Article 28

Rights and Obligations of Governments Ceasing to be Members

1. When a Government ceases to be a member under the provisions of Articles 26 and 27, it shall remain liable for all its obligations to the Fund, so long as any part of the loans or guarantees contracted before it ceased to be a member are outstanding; but the former member shall cease to incur any liabilities with respect to new loans or guarantees entered into by the Fund and shall cease to share either in its income or expenses.
2. When a Government ceases to be a member, the Fund shall purchase the shares of such Government and settle its accounts. The purchase price of the shares shall be the value shown by the books of the Fund or the paid up value, whichever is less.
3. The payment for shares purchased by the Fund under the preceding paragraph shall be governed by the following conditions:
 - (a) The Fund shall withhold any amount due to the Government for its shares so long as such Government or any public or private organisation or institution in its territory remains liable to the Fund. The Fund shall be entitled to lay hand on the amount withheld in settlement of outstanding loans and obligations. In any event, no amount due to a member shall be paid until at least six months after the date upon which it ceased to be a member.
 - (b) The Fund may pay to the Government for its shares a part of the amount withheld, in proportion to the rights recovered by the Fund.

- (c) If any loss is sustained by the Fund as a result of the operations undertaken by it under this Agreement and is still outstanding on the date when the Government ceased to be a member, and the amount of loss exceeds the amount of the reserve provided to be set against such loss on the aforesaid date, then such Government shall be liable to repay upon demand the amount by which the purchase price of the said Government's shares by the Fund would have been reduced, if the loss had been taken into account when the purchase price was determined.

Article 29

Suspension of the Operations of the Fund and Liquidation of its Assets

1. In an emergency the Board of Directors may temporarily suspend operations in respect of loans, guarantees and participation in projects. It shall convene the Board of Governors to an extraordinary meeting to consider the case and take a decision in this respect.
2. The Fund may suspend permanently its operations by decision of a majority of three-quarters of the votes of the Board of Governors. The Fund shall, following such a decision, forthwith cease all activities, except such operations and measures as are necessary to the realisation, conservation and preservation of its assets and property.

The Fund shall continue to exist, and all mutual rights and obligations between the Fund and its members under this Agreement shall remain standing until the final settlement of its obligations and distribution of its assets. During this time, no member may be suspended, nor may it withdraw, and no assets may be distributed to members except under the provisions of Part Five of this Agreement.

3. No distribution of the assets of the Fund may be made until all creditors' claim have been settled. Such assets shall be distributed proportionately to the shares held by each member. Distribution shall be effected in cash or other assets at such times and in such currencies as the Fund shall deem appropriate.
4. Any member receiving assets distributed by the Fund in accordance with the provisions of Part Five shall be subrogated to all the rights pertaining to such assets as the Fund enjoyed prior to their distribution.

PART SIX

Legal Status, Immunities and Privileges

Article 30

1. The Fund shall possess juridical personality and, in particular, the capacity:
 - (a) to contract;
 - (b) to acquire immovable and movable property and to dispose of same;
 - (c) to institute legal proceedings.
2. Actions shall be brought against the Fund in the courts having competent jurisdiction in the place where its Head Office is situated, and may be brought against it as well in the place where the dispute has arisen if the Fund has a branch office or an agent authorised to accept notice of process.
3. No actions shall be brought against the Fund by members or persons acting for or deriving claims from members.
4. All property and assets of the Fund shall, wherever located and by whomsoever held in the member countries, be immune from all forms of provisional measures before the delivery of final judgement against the Fund.
5. All property and assets of the Fund, wherever located and by whomsoever held in the member countries, shall be immune from search requisition, confiscation, expropriation, or any similar forms of compulsory measures by an executive or legislative authority.
6. The papers, registers and documents of the Fund, wherever located and by whomsoever held, shall be inviolable.

Article 31

Freedom of Assets from Restrictions

All property and assets of the Fund, to the extent necessary to carry out the operations provided for in this Agreement and subject to the provisions of this Agreement, shall be free from all restrictions, regulations, controls, and moratoria of any kind.

Article 32

Communications of the Fund shall be accorded by each member the same treatment that it accords to the official communications of other members.

Article 33

Immunity from Taxation in Member Countries

1. The Fund, its assets, property, income, its operations and transactions provided for in this Agreement, shall be immune from all taxation and from all customs duties. The Fund shall also be immune from the obligation of collection or payment of any tax or duty.
2. Shares of the Fund shall be immune from all taxes and duties when issued or circulated.
3. Bonds and securities issued by the Fund, as well as dividends, interest and commissions thereon and the like, by whomsoever held, shall be immune from taxation of any kind.

Article 34

Immunities and Privileges of Officers and Employees of the Fund

1. Governors and their Alternates, Directors and their Alternates, officers and employees of the Fund shall enjoy the following:
 - (a) Immunity from legal process with respect to acts performed by them in their official capacity;
 - (b) Immunity from immigration restrictions, alien registration requirements and exchange control;
 - (c) Travelling facilities;
 - (d) Immunity from taxation regarding the salaries or remunerations paid to them by the Fund.
2. In addition to the privileges and immunities accorded to the Fund and its staff under this Agreement, the Board of Governors may determine any other privileges and immunities that it may deem necessary for the achievement of the purposes of the Fund.

Article 35

Amendment of Provisions of the Agreement

1. Any member, Governor, or Director, shall be entitled to propose amendments to this Agreement, by communicating the amendment proposal to the Chairman of the Board of Governors who shall bring the proposal before the Board at the earliest opportunity, if the proposal is approved by the Board, the

Fund shall seek the opinion of all members on same. When three-fourths of the voting members have accepted the proposal, the Fund shall certify the amendment by formal communication addressed to all members. The amendment shall be registered with the Secretariat General [of the League of Arab States].

2. Notwithstanding Paragraph 1 of this Article, acceptance by all members is required in the case of any amendment modifying;
 - (a) The right to withdraw from the Fund provided in Article 26 hereof;
 - (b) The limitation of the members' liability in respect of the unpaid portion of their shares as provided in Article 8 hereof;
 - (c) An increase of the capital as authorised under Paragraph 3 of Article 6 hereof.
3. Amendments shall come into force for all members three months after the date of the formal communication issued by the Fund, unless a shorter period is fixed by the Board of Governors.

PART SEVEN

Interpretation and Arbitration

Article 36

1. It shall be within the competence of the Board of Governors to examine and settle all differences arising between any member and the Fund, or between the members themselves regarding the interpretation of the provisions of this Agreement. The decision of the Board shall be final and binding.
2. Any member may appeal against the decisions of the Board of Directors interpreting any of the provisions of this Agreement to the Board of Governors who shall give a final and binding decision on the matter in dispute. The Fund, pending the decision of the Board of Governors, may act on the basis of the decision of the Board of Directors.

Article 37

Arbitration

Whenever a disagreement arises between the Fund and a State or a country which has ceased to be a member, or between the Fund and a member during the final liquidation of the Fund,

any party may submit such disagreement to arbitration by a tribunal of three arbitrators, one appointed by the Fund, another by the second party, and the third arbitrator shall be selected by the two arbitrators.

In case the two arbitrators fail to agree on the selection of the third arbitrator, the Secretary General of the League of Arab States shall select one from among Arab jurists. The award of the arbitration tribunal shall be final and binding.

PART EIGHT

Final Provisions

Article 38

Every Government shall become member of this Fund as of the date on which it shall deposit with the Secretariat General of the League of Arab States the instruments of ratification or accession.

Article 39

Ratification, Deposit and Accession

1. This Agreement shall be ratified by the signatory Arab states and countries, in accordance with their basic laws as early as possible. The instruments of ratification shall be deposited with the Secretariat General of the League of Arab States which shall make a record of the depositing of the instruments of ratification and to notify the Arab member states and countries thereof.
2. Arab states and countries which have not signed this Agreement may accede thereto, following the approval of the Board of Governors, by addressing a notification to the Secretary General of the League of Arab States who shall notify their accession to the Arab states and countries, members of the Fund.

Article 40

This Agreement shall come into force one month after the deposit of the instruments of ratification by states whose total subscription is not less than 45 per cent of the capital stock provided for in Article 5 hereof.

Article 41

The Secretary General of the League of Arab States shall convene the first meeting of the Board of Governors.

IN WITNESS WHEREOF, the authorised delegates whose names appear below have signed this Agreement on behalf and in the name of their Governments.

Done in Cairo, on Thursday, 18th Safar 1388 H., 16 May 1968, in a single document in Arabic to be kept with the Secretariat General of the League of Arab States. A certified true copy shall be handed to each signatory or acceding state.

Source: The above text is an edited version of a translation published in UNCTAD, Economic Cooperation and Integration Among Developing Countries: Compilation of the Principal Legal Documents, Vol. V (Arab States), TD/B/609 Add. 1, 24 August 1976, pp. 73-87.

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