

Draft for CommentsTHE RELATIONS BETWEEN POPULATION, RESOURCES AND ENVIRONMENT IN
LATIN AMERICA, SPECIALLY WITH RELATION TO HUMAN SETTLEMENT1. Introduction

In the wake of the United Nations Conference on the Environment held in Stockholm during June 1972, there have been extensive discussions throughout the world about the implications of environmental problems. Questions of pollution, congestion, the destruction of physical surroundings together with resultant physical and psychological stress, emerged initially as a consequence mainly of the high levels of techno-industrial expansion in the so-called developed nations of the world. However, it is significant that the environmental difficulties confronting the developing countries should have featured quite as prominently at the Conference, and in the post-conference follow up programmes.

Such a possibility, in fact necessity, was previewed by the Secretary General of the Human Environment Conference when he stated in February 1972 that, "... there is much more to the environmental crisis than industrial pollution, and the environmental problems of poverty are no less acute and certainly more widespread than the environmental problems of affluence."^{1/}

The nations of the Third World have continued to insist that environmental problems are, in the first place, an integral element in the larger sphere of the socio-economic difficulties they have suffered for

^{1/} Human Settlements, Department of Economic and Social Affairs, United Nations, New York, Volume 1, N°3, July 1971, p.8.

The same has been stated by a demographic expert who wrote, before the Stockholm Conference, "Conviene recordar que el tema de la reunión comprende todos los aspectos de la vida humana que están sufriendo deterioro y que por lo tanto no se circunscribe simplemente a las condiciones del agua, el aire y la tierra que nos rodean. La miseria, el hambre, la vivienda, el ambiente urbano y rural deficientes, las enfermedades directamente relacionadas con las circunstancias mencionadas o con otros ambientales, todos estos hechos y muchos más, forman parte del deterioro del Medio Ambiente Humano". Dra. Lidia Herrera J., CELADE, (typescript), Santiago, 1972.



many years, and cannot be restricted to questions of physical contamination that can, in large measure, be solved by altering technical processes as in the highly industrialized countries. And secondly, they have made quite clear the fact that they have suffered from the actions of others in the sphere of environmental deterioration, socially and economically as well as physically,^{2/} and that they have lacked the resources to deal with such an accumulated range of problems.

It is necessary, to begin, ~~then~~ with the understanding that the term "human environment" has connotations much broader in Latin America than those implied in the industrialized nations. It includes, of course, many of the same sort of physical problems created by industrial expansion in the affluent countries such as pollution of air, land and sea, and the growing problems of traffic congestion and noise in overcrowded cities, although these are not so extensive generally as similar problems in the industrialized world.^{3/} These are the problems created by wealth -- however restricted the distribution of such wealth may be -- and are to be found to some degree in most countries of the world.

To these, however, the underdeveloped countries have to add the environmental problems created by poverty in which the social, cultural, political and economic elements are more significant than the purely physical. In other words, questions of environmental concern in Latin America have to be dealt with in terms of the need for social change, economic development, greater independence in national development, wider participation in political affairs, and the improvement, or in some cases the reawakening of cultural standards. Attempts to deal with environmental problems in such a context will obviously not be helped by suggestions for slowing down or stopping economic growth -- it is precisely the lack of indigenous development that is

2/ See the statement by the Brazilian delegation at the Latin American Regional Seminar on Problems of the Human Environment and Development, Statement by H.E. Ambassador Miguel A. Osorio de Almeida, Mexico City, September 6-11, 1971, p.9. This will be treated in greater detail later.

3/ In certain big cities, however, they are quite as intensive because of a lack of interest or of resources to reduce the nuisance as has been done in some cities of the affluent nations.

the root cause of many of the environmental difficulties - but by finding the means to reconcile national development with environmental goals.

The choice that faces Latin America, then, is not growth versus non-growth. Rather, it is the selection of styles of development that meet at least the basic requirements of all sectors of the population without the wasteful use of resources, and which guarantee the possibility of much greater equity of treatment both regionally and socially.

At the same time it is necessary to emphasize that the study of the environment in itself is of value in that it adds another perspective to the term "development". For the policy-maker, the planner or the research worker the study of the environment, by bringing in both the physical and socio-economic facets of the national make-up, broadens the whole concept of national development and should help to wrench the concept away from its long-term over dependence on the often simplistic economic and quantitative notions of what goals human society should be setting itself.

Finally, it should be noted, by way of explanation, that the report as an introduction to such a wide subject of discussion can do little more than touch on many of the relationships that exist among questions of population growth, human settlement, and the use of resources in Latin America. By selecting some of the more important issues in these areas, it will attempt to provide the necessary background to the discussion, in greater detail, of their environmental implications, and of the policy requirements for more satisfactory styles of development in the continent. And finally, where there is obviously a need for further research, this will be indicated throughout the report.

2. Population and Human Settlement

(a) Population growth

The close links between demographic and environmental questions are immediate and obvious. Man has had an enormous influence in changing the environment throughout history, and especially in the last two centuries, with the rapid expansion of the human species together with its technical capacity for production and destruction. One of the major themes that has emerged in the past two decades is that of the problem of a fast-growing world population which is making ever-increasing demands on the environment and the stock of available resources to support mankind.

Latin America, with among the highest population growth rates of any region in the world,^{4/} has been particularly sensitive to the claim that population pressure is one of the major reasons for the sharpening of environmental problems. Political stances have been taken by the different governments at a number of points along a line between two extremes; acceptance of the need to reduce rapid growth by specific population policies, and an outright rejection of any suggestion that population expansion should be slowed. It should also be noted that at times there are significant differences between policy statements and action at either end of the range of possible policy choices.

It is not possible here to make a detailed assessment of the correctness of either attitude, and it must be stressed that the demographic situation in Latin America is a complex one. In the first place, one cannot talk in generalized terms about the continent's population, because of the enormous

4/ This is a phenomenon which has continued at an increasing rate in recent years, as can be seen in the following table which traces the path of the fastest growing areas:

Area	1920	1930	1940	1950	1960
Eastern Asia	100	135	185	236	370
Southern "	100	128	188	287	437
U.S.S.R.	100	150	294	313	487
Africa	100	141	200	312	529
Latin America	100	135	189	301	508

Source: Taken from "La Urbanización de América Latina: Aspectos Demográficos", César Peláez, CEPAL, September 1968, p. 5. (mimeo)

It is also significant to note from this same work, that the rural population of Latin America has continued to grow most rapidly of any area in the world, despite the massive migration to the cities.

In "Urbanización y el Medio Ambiente Humano en América Latina", Secretaría General de la Organización de los Estados Americanos, México D.F., 6-11 September, 1971, p. 13, the estimate is 630 million by 2000, of which 450 million or 70 per cent will be living in towns of more than 10,000 - three times the figure for 1970 - and 47 per cent in cities of more than 500,000.

Victor Urquidí in "Latin American Demographic Growth: Political, Social and Economic Forces", a paper read at the Population Association of America New Orleans, April 26-28, 1973, p. 3, also estimates a population of about 650 million by the year 2000. This, he comments, will mean a population larger than that of Europe (without the USSR) and twice as large as the North American figure, but it will still be very small compared with the 3.5 billion inhabitants of Asia.

differences between countries not only in size but also in terms of population densities and rates and components of growth. It is true, for example, that while most Central American and Caribbean countries have relatively high density problems and some combine these with rapid growth rates, others, though suffering the former, have brought their fertility rates down to 1-2 per cent a year. In South America the situation too, is complicated. Growth rates remain high in most countries although in a few they are approaching those in the industrialized nations. To summarize the position: two countries, Argentina and Uruguay with high levels of urbanization have gone through the process of demographic transition with rates down to European levels of 1.5 and 1.2 per cent respectively in 1970. Chile is approaching a similar situation with its rates of increase falling to about 2.0 per cent; two of the largest countries, Brazil and Venezuela, have experienced rapid urban growth and economic development with a slight decline in population growth rates, though the overall rates remain high; Colombia and Perú (along with Mexico) have experienced total rates of growth similar to those of Brazil and Venezuela - between 2.9 and 3.5 per cent - and have similar levels of urbanization and economic growth, but their rates increased slightly during the 1960's; Paraguay's rates, however, leaped during the decade from under 3.0 to over 3.4 per cent, while Bolivia's experience was the same - because of decline in its very high mortality rates - although the rate at the end of the decade was only a moderate 2.5 per cent. In all parts of South America it is possible to make the general observation (which also applies to Central America and the Caribbean) that, with the fall in mortality rates, the levels of population growth depend, in great measure, on fertility rates which still remain high and that both present rates and probable future rates of growth are inversely related to the ability of each country to deal with them..

At the same time, however, densities are quite low in most countries and this has generated a belief that the continent, or at least some nations within it, needs people to populate the vast open spaces and develop and use the great richness and diversity of resources available. Moreover, as Victor Urquidí has pointed out, even a population of 650 million in the year 2000, "... does not appear beyond human experience." Such growth "... places Latin America in a different world situation. There are many in the region who

equate population to political power, or at any rate to greater influence in world affairs".^{5/} Nor can the question of frontiers be ignored when one government sees the rapid growth of population in its neighbour as a potential threat to its own integrity.

Although these may be valid - or at least, understandable - considerations at one level, other factors must also be taken into account when considering development strategies. The first is that the distribution of population is extremely uneven in many countries, with large numbers being concentrated more and more in a very few and proportionately very big metropolitan areas - usually the capitals - despite the fact that population in the rural areas continues to grow rapidly because of high natural rates of increase. The effects of the concentration of millions of people in one or two geographically restricted areas has been extremely destructive in environmental terms, while at the same time resources in the peripheral areas have been wasted or ignored.^{6/}

The other aspect of population size and growth that needs to be considered is the relationship between population size and the level of economic development. The argument often put forward that in terms of the density of people per square kilometre, Latin America is comparatively underpopulated, is also fairly meaningless in a continent where geographic and climatic conditions are so variable and large areas are in fact not capable of viable occupation - at least at present development levels. Considered in terms of the relationship between people and economic development - or, more simply, between the numbers to be fed, housed, clothed, employed and supplied with the basic social facilities - and the capacity of most societies under their present economic and social structures to do so - Latin America has more people than it can at the moment provide for.

The corollary to these facts is not only that each government should seriously consider the need for population policies and family planning - policies which, in any case, will require a long time for their beneficial effects to be felt - but also that government authorities in each country

^{5/} Ibid. footnote N°4 page 4.

^{6/} According to the Office of Science and Technology, A.I.D., their survey of 35 countries in the underdeveloped world, "... revealed a close inverse relationship in nearly all ... between human population pressure and urbanization on the one hand, and the quality of the environment on the other". "Environmental Problems in Selected Developing Countries: Preliminary Survey", Washington, July 1971, p.8 (mimeo).

should concentrate on elaborating relevant policies of economic development that will call on the abilities and skills of all its population, provide it with at least the basic necessities of life, and at the same time take into account the need to protect the physical and social environment in which the people live.

(b) Human settlement and regional problems

One aspect of the population question in Latin America, which has already been briefly mentioned, is the tendency of people to congregate into a very few great urban centres. Although levels of urbanization vary widely among the different countries - ranging from the highly urbanized societies of Argentina, Uruguay and Chile to Paraguay, Bolivia and Ecuador in South America and Haiti, Honduras and Guatemala in Central America and the Caribbean,^{7/} there is a consistent tendency everywhere for the levels to rise.

The combination of high population growth rates with a strong tendency for people to migrate from the countryside and small towns to the big metropolitan centres has resulted, in some cases, in annual growth rates of six or seven percent, which means a doubling of the metropolitan population every ten or so years.^{8/} Two features of this process of hyper-urbanization should be especially mentioned. First, it is much more acute than in the affluent nations where, although there has been a similar centralizing tendency, such a trend has not reached the same proportions as in Latin America. Here, the capitals or major centres, in many cases, account for between one-third and one-half of the population of the country, and through migration, are continuing

^{7/} See "Urbanización y el Medio Ambiente Humano ...", op. cit., Cuadro 4.

^{8/} For example, in Brazil the average annual growth of cities of more than 500,000 reached 6.2 per cent in the decade 1940-50; 7.2 per cent 1950-60; and 6.8 per cent 1960-70 compared with percentage rates for all urban areas of 5.3; 6.4; and 6.1 respectively. See George Martine and César Peláez, ECLA, Document presented in Rio de Janeiro, Brazil, April 3-7, 1972, p. 15.

to attract each year a significant part of the population into their ever-expanding boundaries.^{9/}

The second aspect of this hyperurbanization is that, unlike the wealthier nations, the process is not accompanied by an equal degree of industrial and commercial development which would allow the centre, at least economically, to absorb the flood of people from the periphery. The migrants who arrive from the countryside - or more usually, from the smaller towns and cities - have extreme difficulty in finding productive work which will provide them with the means to satisfy their basic social and physical needs for food, housing, health and education services in the big city centre.^{10/}

Neither the simplistic claim that urbanization brings in its train social and economic advancement for the population, nor the contrary argument that the large and rapidly growing cities of Latin America lead to great social problems without compensating economic advantages can be accepted as they stand.

^{9/} The Chilean National Report of the Environment Conference points out that annual growth rates for Santiago have only been 2.6 per cent compared with 2.2 per cent for Chile as a whole. However, the growth of 570,000 inhabitants in Greater Santiago between 1960 and 1970 represents almost 40 per cent of the total increase in that decade. Moreover, almost half of the city's growth resulted from the immigration of people from the rest of the country. (The figure of 2.6 per cent for Gran Santiago, however, may underestimate the growth of the urban area during the decade. According to E.C.L.A. estimates based on the National Census, the rate of increase was of the order of 3 per cent annually, with a total increase of 712,000 people. The difference undoubtedly lies in the interpretation of what constitutes the entity, Gran Santiago). Neither of the two secondary urban areas - Valparaíso/Viña del Mar and Concepción - experienced the same rates of growth. Compared with 32 per cent for Santiago province in the decade, **they achieved about 18 per cent.** See "República de Chile. Informe para la Conferencia de Naciones Unidas sobre el Medio (Ambiente) Humano", Santiago, Chile, May 1971, p.2.

^{10/} Despite the fact that, as in Bolivia, 60 per cent of the nation's industry and 55 per cent of the industrial work force may be concentrated in the capital. See "Informe Nacional de Bolivia sobre 'El Medio Humano'", Ministerio de Relaciones Exteriores y Culto, La Paz, March 1971, p.4.

In fact, the situation is much more complicated, with certain groups able to take advantage of the facilities that city offers for wider employment opportunities and greater social mobility. Others however experience little change in their social or economic position as a result of migration although they may be made much more aware of their plight simply by living in the city and seeing with much greater clarity just how glaring the differences are between the social groups. As will be explained later, this can and does lead to pressures for the improvement of their immediate problems and the resolution - however transient and partial - of the most pressing grievances.

The fact that a minority - almost entirely comprising the middle class and skilled workers - does benefit, while at the same time most of the more marginal groups still find themselves restricted, in an atmosphere apparently more advantageous and dynamic leads to a situation where socio-economic contradictions become more obvious and the paradoxes brought out into the open as consciousness of disparities develops and expectations rise.

On the actual question of income distribution in the cities, the evidence is also variable. On the one hand it is argued that the disparities are smaller in the major cities than in countries as a whole, largely because of the economic - sectoral structure of the former which tends to spread income distribution more equally.^{11/} Another point of view is that, on the whole, the strong positive relationship observed historically between development and urbanization is much weaker in Latin America. Although the relationship is not strongly significant, a direct association is found between the concentration of population and a slowing of income growth per head. In fact the distribution of income and income per head, it considers, is fairly insensitive to whatever measure of urbanization used, further it appears that the larger a city the higher the levels of unemployment - or at least open unemployment - tend to be.^{12/} The last has also been supported in another paper which, however, stresses the distinction between "open" and "disguised" unemployment, the latter being much more typical of the rural situation. Taking the former measure, the national unemployment rate for Bolivia in 1970 was 10.7 per cent and for the

^{11/} See "Economic Survey of Latin America 1971: Volume III Special Studies", ECLA, E/CN.12/935/Add. 2, June 1972, pp. 435-44.

^{12/} The Organization of American States, "Urbanización y el Medio Ambiente Humano" ... "op. cit.", p. 4, cites Simon Kuznets as saying that more resources are needed to give the same satisfaction than in less densely populated areas, concerning housing, drainage, water, intraurban transport, etc..

urban areas 15.0 per cent. The equivalent percentages for Colombia were 7.5 and 10.0; and for Chile 6.2 and 7.2 respectively.^{13/}

While methods of measurement and calculation are always a subject for debate, there is sufficient strength in the argument to support the general conclusion of the O.A.S. which confirms what ECLA and other organizations have been arguing for some years that, "... los frutos del progreso económico y de la urbanización están disponibles de preferencia para una selecta minoría urbana que incluye a los grupos de mayores ingresos y a los trabajadores sindicalizados."^{14/}

The greatest impact of the cities may, in fact, lie in the contradiction between the limitations to socio-economic mobility for many migrants and their much greater awareness of inequality. And such contradictions will become more rather than less pronounced under existing conditions as the concentration of population continues and as migrants pour into the great urban agglomerations of the continent, filling the central slum areas and contributing to the rapid growth of the 'barrios marginales', the 'tugurios', the 'callampas' or the 'favelas' that encircle the cities and account for perhaps a third of Latin America's urban population.^{15/} There is not space in this report to analyze in any great depth the reasons for the movement from national peripheries to the centres, but some lines of thinking can briefly be suggested.

First, as many writers on regional development from Myrdal, Hirschman and Perroux to authors commenting specifically on the Latin American situation such as Corraggio and Rofman have pointed out, there is a natural tendency in capitalist economies towards the gradual centralization of economic activity within a limited number of favourably located urban areas. The operation of external and other economies makes it imperative that, to optimise profits, firms should locate close to major markets, with access to all types of

^{13/} Henry Kirsch, "Employment and the Utilization of Human Resources in Latin America", ECLA, Social Development Division, November 1972, (mimeo) p. 12.

^{14/} O.A.S., *op. cit.*, p. 6.

^{15/} The rapid growth of the slums and squatter settlements is graphically illustrated by the fact, for example that between 1957 and 1969 their percentage of the total population of Lima rose from 9 to 36; of Caracas from 21 to 35 in the three years 1961-64; and of Mexico City from 14 to 46 between 1952 and 1966. See "Environmental Costs and Priorities: A Study at Different Locations and Stages of Development", Panel of Experts on Development and Environment, Geneva, 4-12 June 1971, Appendix, Table 2.

services and enjoying lower transport costs. The increasingly concentrated location of such economic activity attracts further population - the generally passive element in the process - and so the cumulative pattern so well described by Myrdal continues in motion.^{16/}

The effects are not only felt in the economic sphere however. The favoured centre also attracts to it the social, political and cultural life of the nation, leaving the smaller towns and the rural peripheries increasingly drained of these assets and ever more dependent on the capital. This helps to explain some of the non-economic reasons for the migration. Not only the middle class upper income groups who seek the wider range of social, political and cultural opportunities of the city, but also the lower middle-class, the organized labour force and the groups at the margin of society believe that they can exert more effective political pressures in the capital than in the smaller urban centres or the rural areas. The mere presence of the shantytowns on the outskirts of the city is a constant reminder to governments of whatever kind, of the needs of a rapidly growing population. Such a presence becomes even more obvious when the marginal groups - in conjunction with organized labour or not - are mobilized socially and politically to make their claims more effectively heard for housing, employment, education, health facilities, etc.

^{16/} In Latin America, moreover, the situation is worsened in many countries by the virtual absence of development in the agricultural sector. Neglect over the years, combined with the concentration of land in great holdings or in marginal minifundios, and the transference of profits to the cities to seek richer fields of investment in property speculation, construction, and the consumer goods industries, has in most countries, helped to force the peasantry, or more especially, the landless labourer off the land and into the cities. However, even where the agricultural sector has experienced rapid growth as in parts of Mexico and Venezuela, and in the Santa Cruz region of Bolivia under conditions of capitalist development, the impact on the peasantry as a whole has been negative. Highly capitalized and mechanized methods have meant that, as in the industrialized nations, entrepreneurs have been able to dispense with a large proportion of the peasant labour which had earlier worked the land under different technical and social circumstances. In this sense the negative push factors in the rural areas have under conditions of stagnation or of boom at least as important as the pull factors exerted by the supposed attractions of the city.

It seems unlikely that, without fundamental changes in policy, these cumulative tendencies towards an increasingly polarized centre-periphery pattern in the market economies that characterize most Latin American countries, will be reversed in the short - or even medium - term. In spite of the creation of ministries of regional planning, the formation of academic centres and the continued work of international bodies to bring about a more equitable distribution of population, economic activity, social facilities and political influence, the trend towards centralization and the concentration of human settlement in a few favoured locations has continued unabated.

Nor has the problem of external dependence eased the position for the governments of the continent. The incorporation of the nation-state into the international economic and political power structure has curbed the ability of national governments to act effectively in this sphere as in most others.^{17/} Many countries are prepared to welcome foreign capital on almost any condition, and it is to be expected that most overseas enterprises prefer to locate in already established centres.^{18/}

Despite the disadvantages, many policy-makers accept the need to pay a price in terms of loss of decision-making over the type of production carried out; the kind of consumption patterns created; the unbalanced

^{17/} Solon Barraclough writes, "The sovereignty of the state is seriously compromised when it comes to the important decisions affecting national, social and economic structure. Latin American nation-states are an integral part of an international political and economic structure whose center of gravity has been the United States.... The international concentration of economic and political power has proceeded so far that when it comes to the decisions that really count for national development the 'independent' but underdeveloped nation often finds its areas of decision circumscribed. Its 'sovereign power' is in some respects a formalism". See "Rural Development Strategy and Colonization", FAO/UNDP, Chiclayo, Peru, 29 November - 5 December 1971, p. 3.

^{18/} In addition they contribute only minimally to easing unemployment problems because of their capital intensive nature; they tend not to encourage the development of local skills and initiative; and finally, although many are financed at least in part through the local capital market, a large proportion of their profits is usually repatriated to the head office, and so is lost to the host country for further investment.

location of economic activity; and the ill-effects on the physical environment.^{19/} Moreover the emergence of the powerful transnational corporation has restricted even further the manoeuvring space and bargaining power of most Latin American countries.

In summary, it can be fairly safely assumed that the rapid population growth of the continent will continue, though at a gradually diminishing rate, in most countries. Moreover, without the implementation of integrated policies of development - which will involve consequent changes in social political and economic structures - such growth, combined with the strong tendency towards the centralization of human settlement, will continue to create one of the continent's most serious areas of difficulty. And such problems will be reflected precisely in the deterioration of the physical and social environment.

3. Natural Resources

Latin American governments have accepted as a general principle the need for as full, relevant and equitable a use of their resources as is possible, and which guarantees the major benefits to the countries or subregional groupings of the continent itself. Unfortunately the reality of the situation has imposed a patterns of resource use radically different from such an aim. Using the same terms of reference as were elaborated in section 2, we can say that the evolution of the centre-periphery model of development/underdevelopment has resulted in a distortion of the use of Latin American resources and of the benefits derived from their exploitation.

The most useful definition of the term 'resources' is probably that based on the traditional concept of factors of production - land, labour

^{19/} According to Maurice Strong, some of the affluent industrialized nations are now considering the transference of certain types of heavy industry to the underdeveloped nations to help reduce pollution in their own territory. See Address to the Latin American Regional Seminar in Problems of the Human Environment and Development, ST/ECLA/Conf.40/L.5, Mexico City, September 6-11, 1971, p. 11.

and capital.^{20/} Within this framework we can discuss the use of:

- (a) natural resources - including the land and its products, minerals, and products derived from the sea;
- (b) human resources - including labour, skill and initiative; and
- (c) capital resources in both the purely financial and in the material senses - plant, equipment, buildings, etc..

If we then combine the two components - questions relating to the use of the different types of resources, together with the centre-periphery model of uneven development - we can observe another aspect of the particular style of underdevelopment that has evolved in Latin America. This is manifested in the following schema incorporating all the pertinent elements.

(a) Peripheral resource use

1. Natural resources in the rural areas and smaller towns away from the centres of economic activity tend to be underutilized. Farming is often neglected, the land put to wasteful use or abandoned; forestry resources are either ignored or, if utilized, are exploited wastefully without replacement; minerals, though much more likely to be extracted, are sometimes left untouched although their presence is known, because of distance from large markets and the lack of an adequate infrastructure; marine resources too, may be ignored because of their distance from markets, although the operations of large-scale commercialized (and often foreign) fishing fleets have brought virtually all the region's actual and potential fishing grounds within range of their 'vacuum cleaning' operations and have led to protests from Latin American governments and conservationists alike. However, the general tendency in peripheral regions of the continent is for natural resources either to suffer wasteful or destructive use, or to be underutilized because of distance from markets, lack of transportation and communications facilities and lack of interest or ignorance on the part of central authorities.

^{20/} However it should be clearly understood that there is no implication here that 'labour' or 'human resources' can be measured satisfactorily in terms of the economic rentability. Neither the rigidity of the economic calculus nor the exploitative aspect of the use of labour for private profit is an acceptable concept. It is intended rather that the 'human resource' should be considered socially in terms of its ability to contribute, as the most important of all the resources, to the improvement of national living standards and, in turn, it should enjoy the social, political, economic and cultural fruits of such improvement.

It should be noted here as a corollary that when forestry, mineral or marine resources, especially, are exploited in the peripheral areas, the benefits are rarely enjoyed in the areas of their extraction. Usually, and in perfect accord with the logic of the centre-periphery model, further processing takes place either in the national centre or in the international centre - the country from which the foreign enterprise is operating.

2. Human resources. The above helps to explain why human resources are also so often underemployed in the periphery. The stagnation of much of Latin American agriculture, combined with the lack of access to the land for a considerable proportion of the peasantry has stunted opportunities in the rural areas. And this has been aggravated still further in the smaller, less urbanized countries especially by the continued high rates of population growth in the rural areas. The failure to develop a diversified economy, partly for the reasons outlined in Section 2, dealing with the forces of centralization, and partly because of the export of products in their raw state, has led, moreover, to a restriction of employment possibilities and so to high levels of unemployment and underemployment not only in farming but also in the economic activity of small market towns.

Unfortunately, even when attempts are made to decentralize economic activity, - and as A.B. Rofman has pointed out^{21/} some large-scale enterprises are sufficiently independent and footloose to have moved to peripheral locations - the highly capital-intensive operations of such firms as have shifted location have little impact on the area of relocation except perhaps in terms of polluting the immediate countryside. Similarly, when exploitation of farmland or forests is occasionally undertaken, the employment of inappropriate highly-mechanized and capital-intensive methods has the effect of driving yet more people from the land.

3. Capital resources, as might be expected, are also affected by the patterns of natural and human resource use at the periphery described above.

^{21/} A.B. Rofman, "El Fenómeno de la Concentración y Centralización Espacial en América Latina: Elementos para una Discusión", presented at the International Seminar on Regional and Urban Planning in Latin America, ILPES/ILDIS, Viña del Mar, Chile, 17-22 April, 1972.

Because of the lack of opportunities for investment in diversified development in rural and small town regions - the occasional large-scale projects which do take place involve considerable quantities of labour and capital only in the construction phase - capital is often transferred to the urban areas where the opportunities are more wide-ranging and the returns on investment much higher.

Although statistics are not easy to find, it is probably true that the peripheries of most Latin American nations have over a long period, heavily subsidized the growth of the urban centres, and especially of the metropolis; the canalization of investment finance privately and by public institutions has promoted the industrial development of the cities, but even more has provided the funds for the growth of the urban infrastructure and for the highly profitable real estate development of certain areas of the capitals. It is only in recent years that a number of central governments have begun to reverse the flow through regional development policies aiming to promote agricultural development, the decentralization of industrial activity, and rural public works schemes. Here again, however, it is difficult to estimate with much accuracy, the extent of such financial movements.

The interrelated mixture of underdevelopment and atrophy outlined here provides one half of the whole pattern and is directly and inseparably linked with the hypertrophied growth at the centre which forms the other half.

(b) Resource use at the centre

1. Natural resources at the centre are normally subject to heavy strain because of the enormous pressures of demand generated by the concentration of population, and the economic, social and other activity in the metropolis. Land is intensively used for roading, underground services, multistorey office residential blocks, housing, and densely packed commerce, industry and government administration.^{22/} Water supplies, too, come under heavy pressure for the multiple uses demanded of them, as do other physical resources.

^{22/} although much of the use, because of specialization of activity and inadequate city planning, is intensive for certain limited hours only.

even including air. Heavy demand for all these have raised costs of utilization^{23/} and, as will be pointed out later, have caused major problems of physical decay and deterioration in the big cities.

2. Human resources, however, have not been subject to the same pressures of overutilization in the centres of the continent, as in the major cities of the industrialized nations. The availability of a constant and generally increasing supply of labour as a result of migration, in combination with relatively slow rates of national economic growth - together with the transference of part of the investible surplus overseas - have meant a continual oversupply of labour - mainly unskilled - compared with the productive employment opportunities in the centre as in the periphery. Moreover, even when there is rapid growth in certain countries, much of it takes place in the 'modern' sector with its advanced technology and high capital use, which create relatively few openings for the employment of the surplus and rapidly growing population.

The result is that the more fortunate middle class groups find employment in the service sector, swelling the ranks of both private and state bureaucracies, carrying out functions which often, at best, are only marginally productive^{24/} and for which they are usually over-educated. The less fortunate, living generally in the slums or in the marginal shantytowns, who are without education or lack the basic minimum training to enter service sector activity in offices or shops, seek to create their own opportunities; they become street sellers of whatever commodity or service they can find, domestic servants for the middle class or unskilled labourers in the construction industry which, as has been pointed out, "... is especially sensitive to changes in the rhythm of economic growth and to fluctuations in public sector spending. It is a sector to which unskilled urban labour unable to find work elsewhere gravitate, and one whose labour is not easily absorbed by

^{23/} See "Environmental Costs"...

^{24/} And they are often counter-productive because the principal aim of such bureaucracies, logically enough, is to create work opportunities rather than solve problems quickly and efficiently.

other economic activities in the case of a recession in construction spending".^{25/} Or they turn to petty crime. The unionized labour force in the modern sector, as might be expected, remains fairly stable in size, offering few opportunities for the marginal groups.

3. Capital resources use, too, reflect the basic imbalance not only between the centre and the periphery, but also in the uneven use of the factors of production. As with natural resources capital is in heavy demand in the metropolis, disproportionately to meet the economic and social needs of the upper income groups living there. The heavy pressure on capital to finance investment and incomes is the obverse side of the lack of opportunities in the periphery and results in the migration of such capital - partly, as has been said, through the banking system and other financial agencies - to the centre. But in spite of this movement, demand is usually greater than supply, so forcing up costs for:

- (a) housing, real estate and industrial and office space
- (b) labour for the organized and, to some extent, privileged unionized workforce
- (c) use of capital in loans, advances and credit for commercial and private purposes
- (d) urban infrastructure^{26/} such as public transport within the metropolis and between cities in the area of growth, roading, motorways, hospitals and schools, extended water, power, sewage and drainage reticulation, etc.

Many of these, incidentally, are to serve the needs especially of the minority upper income groups, although in various cases, political pressure from the disadvantaged groups has won them concessions in the form of water and electricity services or has at times brought about the electoral defeat of local government officials responsible for unpopular policies such as slum clearance of established central communities and the enforced rehousing of the inhabitants of the destroyed shantytowns in inconvenient and expensive

^{25/} H. Kirsch, *op. cit.*, p. 17.

^{26/} See both "Urbanización y el Medio Ambiente ...", *op. cit.* pp. 3-4 and "Environmental Costs and Priorities", *op. cit.*, p. 21 ff.

housing areas far from their sources of employment and long-established contacts.

Two final comments should be made about capital resource use at the centre. First, such costs of growth are often passed on by the private sector to the community as a whole, which, in paying for the provision of basic infrastructural services, or through payment of higher prices for goods and services is, in fact, subsidizing the minority user (and especially the car owner). Secondly, it is probable that many of the inflationary pressures which plague Latin American countries are generated in the large, rapidly growing primate cities as a result of the disparity between the demand for and the supply of services.

However, it would be unrealistic not to recognize that the partial, patchwork responses to the strains and pressures of the rapidly growing cities of Latin America have kept these unwieldy entities operating even though on an extremely inefficient and inequitable basis. The relative flexibility demonstrated by urban administrators over the years has allowed the flood of migrants gradually to adjust to the circumstances of the city and make what they can of their limited chances. Although the human and economic costs are high and the environmental destruction considerable the forecasts of imminent disastrous explosion have not over the years been fulfilled. The implications of this for policy-making will be discussed later.

4. The Environment

We now have to consider the environmental implications of the patterns of development/underdevelopment outlined in the earlier sections. Two points need stating at the outset of the discussion. The first is that it will be readily apparent, in discussing environmental issues at such an early stage of research in Latin America, that the study will raise many more questions than it will be able to provide clearcut answers to. In one area, however, the issues are obvious enough. In comparison with the affluent nations, questions of a socio-economic nature will generally have to take precedence over physical problems in the thinking of Latin American policy-makers, planners and the people affected. Although this theme has been discussed earlier in

the report, it is worth emphasizing again not only that such an approach distinguishes the Third World from that of the industrialized countries where concern centres on physical pollution problems; it also has within it the potential to contribute to a new perspective of the concept of development which could result in major changes taking place in the formulation and implementation of future development strategies. This will be looked at in more detail later.

The second point to be made is an organizational one. In this section, too, the most useful way of considering the environmental issues arising out of the discussions of population growth, human settlement and resource use in Latin America will be to employ the centre-periphery model of unequal growth. Within this framework both the socio-economic (or to be more exact, the social, economic, political and cultural) and physical implications can more usefully be examined.

1. The periphery

In considering the environmental consequences of peripheral development - or underdevelopment - the physical factors are not only the more easily discernible, but also probably more readily explained. In a sense they illustrate not only the environmental problems arising out of poverty, but also the results of a type of development, if the word can be used, past and present, which has ruthlessly exploited available regional resources, extracting them without thought of replacement or conservation. Having exhausted them, it moves on to other regions, leaving the original area despoiled and either deserted or with a population lacking any but the most rudimentary means to support a subsistence life.^{27/}

The historical aspects of such patterns of underdevelopment are extremely important. Latin American countries it has been argued^{28/} are

^{27/} Examples of this form of underdevelopment can be seen in Chile's northern nitrate region, Potosi in Bolivia or in the successive rise and fall of the gold, sugar and coffee producing areas of Brazil.

^{28/} Dr. J. Kulig, "Environmental Policies for the Less Developed Countries and their General Developmental Strategy" Discussion Paper for the U.N. Expert's Panel on Environment and Development, Geneva, June 4-12, 1971, p. 3 ff..

suffering from 'development' by foreign companies and local comprador groups that in the 19th century put a premium on rapid expansion and the exploitation of resources irrespective of the physical or socio-economic consequences for the indigenous peoples. Moreover, the argument continues, the system has continued under the same set of social values during the 20th century, except that, with the evolution of technology, the adverse consequences have been so much greater.

At the same time, such exploitation by the industrialized nations has taken place without engendering equivalent internal growth and development, a feature which is especially true for the lower income and marginal social groups, and for the peripheral regions, all of which have lost heavily in the process.

The physical environmental consequences are everywhere clearly in evidence and have been well documented in various countries.^{29/} In the agricultural sector^{30/} methods of inadequate resource use combined with the movement of the ~~landowning~~ and upper income groups to the cities have led to absentee ownership, neglect of millions of hectares of good agricultural land and abandonment of other areas, or to inappropriate farming practices. Overgrazing has ruined natural pasture land and has caused erosion by wind or water; deforestation by slash and burn techniques for land clearance has been carelessly undertaken, and where the main purpose has been for commercial forestry, there have rarely been attempts made to replant the cutover areas. Again the results can be seen in the widescale erosion, the permanent denuding of hill country, the consequent silting up of rivers, and the creation of

^{29/} See the National Report of Chile, op. cit., p. 8 ff. Much of what is stated in "Informe Nacional: República Argentina", Conferencia de Naciones Unidas sobre el Medio Ambiente Humano, (mimeo), n. d., is also a commentary on the physical depredation to the Argentinian countryside of inadequate and destructive practices which continue to the present.

^{30/} A wide range of examples of types of environmental deterioration are given in "Environmental Costs and Priorities", op. cit., p. 6 ff.

conditions leading to recurrent flooding over large areas.^{31/}

Mining too, although not having the same large-scale unbalancing effects on the natural environment, has contributed its share through strip and pit mining technique to erosion, and through abandonment of old workings with their rusting plant and machinery, and their slag heaps, and to the poisoning of the land. Nor have new 'super' techniques in more recent years helped to restore the balance. Although not yet a problem in Latin America, land developers will have to be made aware of 'miracle' farming techniques involving the heavy and often indiscriminate use of chemical fertilisers which in other areas has led to clogged rivers and other water courses, causing drainage problems and requiring, where salvageable, expensive systems of clearance. At the same time the over-application of pesticides with insufficient care has resulted in the destruction of the natural predators of insects injurious to crops and animals, so causing environmental imbalance in another sphere.^{32/}

In other words, the application of methods of land use which aim for quick, short-term results, whether for purely exploitative or for apparently more 'virtuous' development goals, has led to unsettling and deterioration of the natural ecology of many agricultural, forestry, mining and marine regions. And this in turn has caused an impoverishment of the environment on a disastrous scale.

The creation of man-made poverty over a period of centuries has left much of the countryside with populations either scattered in dispersed groups or settled more densely around minifundias^{33/} on marginal lands, which in

^{31/} See National Report of Chile, *op. cit.*, p. 9, which points out that 20 million hectares or 80 per cent of the nation's agriculturally usable land is eroded to some extent, and that the rate of erosion continues at 40,000 hectares a year. The consequent silting up of rivers and ports has put various types of industrial activity in danger, reduced the value of dams, caused loss of life and the ruination of large areas of good agricultural land.

^{32/} "Environmental Costs and Priorities", *op. cit.*, p. 9 ff. also discusses agricultural mechanization and its destructive effects on forest ecosystems, and quotes the case of the Matto Grosso as a bad example of this.

^{33/} See the case of Panama where the rural population is either dispersed or "... agrupada en pequenísimos caseríos sin ningún plano propio instalados por lo general en áreas poco aptas para la agricultura, de topografía accidentada, y alejados de las principales vías de comunicación", in *Atlas de Geografía Médica*, Dra. L. Herrera, Ministerio de Salud, República de Panamá, 1970.

themselves, also contribute to problems of erosion and soil destruction. But in neither case do the rural and small centre peripheries of most Latin countries enjoy even the most rudimentary facilities for their peoples. Adequate housing, potable water, electricity, drainage, social services such as education and health facilities^{34/} are all scarce or non-existent; apart from the obvious human suffering, such conditions lead to a general debility among the population, further weakening their ability to produce enough for themselves or for others.

As one moves into the socio-economic sphere (which, as has been noted earlier, also includes cultural and political factors as well) the environmental impact of such exploitative resource use becomes less easy to define with such clarity, and one must proceed more by a series of questions rather than statements based on firmly established fact. For example it is fairly obvious that the pattern of underdevelopment described above has been responsible in large measure for the outmigration of the younger and more dynamic elements in the population, leaving behind in general the older, more conservative and less highly educated "leftover" groups, often without satisfactory means of economic support, certainly without acceptable social facilities, and, although the situation is beginning to change, still lacking sufficient knowledge and political influence to express their dissatisfaction effectively.^{35/} But to what extent have these communities and their cultures been weakened and impoverished compared with what existed before? Could it not be argued that the changes, disruptive as they might appear in the short term, might be the necessary condition for modernization and progress?

^{34/} "Si el 65% de la población total del país, es la que vive en el medio rural ubicado en pequeñas localidades que caracteriza a ésta como una población eminentemente dispersa, la misma que carece de los servicios básicos como son: de salud, educación, vivienda, agua potable, alcantarillado, transporte, etc., surge de por sí que las condiciones del medio ambiente son deficientes ...", "Breve Consideración sobre la Problemática del Medio Ambiente Humano: Caso Ecuatoriano", Junta Nacional de Planificación, Quito, Ecuador, n.d., p.9.

^{35/} See "Problemas de Población y Desarrollo en América Latina", ST/ECLA/Conf.46/L.1, Grupo de Expertos sobre el Programa de Población de la CEPAL, Santiago de Chile, 11 al 14 de diciembre de 1972, p. 33 ff. which examines the arguments over the effects of migration on local communities.

In fact, as some writers have contended, the intensified relations between town and country could be the means to the awakening of the latter. Equally the impact of new ideas and attitudes transmitted by the mass communication media is not really known. In the economic sphere, has the infiltration of new ideas led to changes in production techniques, to an improvement in land use and productivity? Or, a more complex social issue, have new values created by the closer urban-rural links altered the relationships between the campesino and his patrón? Do the less privileged social classes exercise more or less political leverage than in the days when the periphery was more isolated? If they do, what is the nature of such leverage at local and regional levels? Is there a move towards greater participation? Or have there merely been changes from one source of authority to others - for example, from the old patrón to the new such as the 'hombre-nexo' who acts as the link-man between the urban decision-making centre and market, and the countryside?^{36/}

Some answers can at least be suggested. The migration flow to the cities does not in general seem to have helped resolve the agricultural crisis that afflicts most Latin American countries. In spite of the heavy movement of people to the urban areas, rural population continues to expand at a rate of about 1.5 per cent annually throughout the region although this rises to over 2 per cent in some of the smaller, less urbanized countries. (This, however, also overgeneralizes a situation in which some frontier regions are being colonized rapidly and population is growing as a result of migration, while older areas of rural settlement are stagnating, or, in providing the new dynamic areas with agricultural labour, are actually losing population). Moreover, land remains highly concentrated in a few hands and often unworked while peasants continue without land and press onto already overcrowded and poorly worked parcelas, and the nation as a whole is obliged to import

^{36/} See Andrés Pascal, Relaciones de Poder en una Localidad Rural, ICIRA, Santiago, 1968, esp. Chapter IV.

In Chile and Cuba, under somewhat different conditions, closer links between town and country have led to the awakening of the latter. In Chile the agrarian reform, the work of the agricultural trade unions and the formation of peasant councils at local and regional levels has taken place. But this is not the norm.

foodstuffs to support rapidly growing urban populations. Agrarian reform programmes which might be expected to be the outcome of 'modernization' trends either do not exist or, except for one or two cases, are restricted to small, privileged groups working on the few model schemes that are initiated. Or they consist of schemes for the colonization of new territories which will not affect the old landholding structure.

This suggests, in turn, that in many countries social relationships have not basically been altered. Or, in others, that with changes in the role and influence of the upper income groups, intermediary groups have taken over many of the functions of the older landowning class which now lives almost wholly in the city. For the peasantry however, there has probably been little improvement in their economic and social situation. If anything, the major influence of new ideas and values may have been negative in the sense that the peasantry has been tempted to 'escape' from the unsatisfactory rural way of life to a hopefully better future in the city, rather than struggle to improve its socio-economic existence in the countryside.

However, this should not be overemphasized because both with the penetration of the mass communication media into the most remote areas, and with the constant to and fro migratory movements between rural and urban areas, the great majority of those living in peripheral areas are inevitably brought into contact with new ideas, values and styles of living, a fact which must result in attitudinal changes in the most conservative communities.

Moreover, the effects of these cultural influences are reinforced by a series of other factors, for example: the appearance of new consumer goods in the rural areas and small towns of the periphery which, because they cannot be produced there, increase the dependence on the national market; the increasing influence of national political movements emanating largely in the cities and which conflict with local traditional forms of leadership, the initiation of policies of agrarian reform which bring agricultural experts, public servants and politicians out from the cities to train, educate and try to incorporate local communities more into the main stream of national life; and the opening up of peripheral and once remote communities by roads and public transport

services which, however inadequate or decrepit, not only bring new forms of living or new types of land use (for example, for recreational purposes), but also allow people in erstwhile isolated communities to travel and communicate with much more facility.^{37/}

'Modernization' of the countryside and small towns is, then, introducing powerful new forces into once traditional and scarcely changing areas, making communities aware of different styles of life, and arousing new needs and expectations. As in the urban areas such tendencies lead to a paradoxical situation in which the contractions between the cultural demonstration effects and what is economically achievable by the majority of the people are brought more and more out into the open. Up to a point, migration - especially of the younger and more dynamic and highly qualified groups - may relieve the problem by transferring it to the urban centres, but with a continued growth of the rural population together with the continuing problem of finding adequate employment, the situation is an unstable and changeable one. There is a need here, too, for continued research into the extremely heterogeneous patterns of change taking place in the rural areas and small towns of the different Latin American countries, not only at the level of the centre-periphery relationship, but more precisely at that of the complex changes taking place among different social classes (and within them in turn) and among different economic areas.

2. The centre

As in the periphery, the physical environmental consequences of the centre-periphery pattern seem more obvious in the metropolis, possibly because they are recognizable for their similarity to those in the industrialized nations. To such problems of industrialized affluence, however, they can add those that result from poverty.

The pollution of air, land and water in cities such as Santiago, Lima, Buenos Aires, Sao Paulo and Mexico City has proved to be almost as intense as that in the metropolitan centres of the wealthy nations^{38/} not

^{37/} See for example, *El Cambio Social y la Política de Desarrollo Social en América Latina*, CEPAL, Naciones Unidas, Nueva York, E/CN.12/826/Rev. 1, 1969, pp. 107-116.

^{38/} For example, in Santiago de Chile the sulphur anhydride and dust content of the air in the city during the winter is higher than the internationally accepted levels. Car exhaust pollution, too, at times passes these permitted limits despite the low per caput levels of ownership. See *"República de Chile: Informe ..."*, op. cit., p. 18.

because of an equivalent level of industrial development and car ownership but probably because awareness of the problem is less, and pressure for controls in many cases does not exist. (This is another area in which the links between physical problems and socio-political factors would make a fruitful study).

Generally the groups directly or indirectly responsible for the pollution are those which suffer it least. Much of the industrial pollution for example is caused by factories producing goods for the upper income minorities but it is the lower income groups working there and living in the industrial areas - not the wealthy and politically influential groups living well away from such districts - which have to breathe the fumes and use the polluted water. Similarly, the privately-owned automobile which is responsible for a large part of the urban smog usually causes the most severe problems in the city centres and away from the wealthier suburbs.^{39/} Such a situation could account in part for the lack of adequate legislation, or more likely, the lack of enforcement against air, land and water pollution, against congestion, and noise caused by industry and the private car. These are some of the problems created by affluence and a form of development copied from the industrialized world to benefit a privileged minority.^{40/}

The other side of the coin shows the consequences of poverty. Rapid urbanization has been characterized by a continuous deterioration of the physical environment for an increasing proportion of Latin Americans. Much has been written on the adaptation of migrants from the periphery to city

^{39/} And it has the added side effect that the car-using minority groups who also generally control decision-making to a greater extent, are not under pressure to improve public transport services which are so often dirty, noisy and inefficient.

^{40/} In "Environmental Problems of Urban Development", E. Novaes, E. Neira and J. Van Fleet, Inter-American Development Bank, Washington, June 1971, pp. 12-13, (mimeo), the authors, commenting on transport problems, note that "... the problems seem to be inevitably determined by a consumption pattern that results more from the presence of demonstration effects than from the real acquisitive power of the population". In addition, private automobile ownership has adverse effects on public transport systems; "Under such circumstances urban transport today presents severe congestion problems and contributes extensively to air pollution". However, the authors see little chance of resolving the contradictions between a natural growth dependent on the development of the automobile industry and the problems thus created by the urban environment.

life, and about the value of the self-built *barriadas* as an indicator of such adaptation. But in sheer physical terms the lack of basic facilities, the rawness and ugliness of the shantytowns surrounding all the major cities and most of the lesser ones has exacerbated the already serious physical problems of the city. The difficulties go further, however, than a discussion of the lack of public facilities, adequate housing or open spaces. Some of the difficulties associated with the physical growth of the metropolis are clearly delineated in the National Report from Argentina to the Stockholm Conference. In the first place, the enormous size of Buenos Aires, "... constituye una realidad económica y social cuyos costos son difíciles de mitigar. Por un lado, las distancias entre la vivienda y el empleo ocasionan un considerable desperdicio de tiempo en desplazamientos; por otro, la rapidez del proceso de urbanización producido entre 1947 y 1960, y la ausencia de una acción sostenida en materia de construcción de viviendas, generaron un *habitat rudimentario* ...

Un estado de déficit crónico se ha vuelto característico. Gran parte de los habitantes metropolitanos se ven constreñidos a habituarse a interrupciones en la provisión de agua, al aislamiento por falta de líneas telefónicas, a desgastarse en interminables viajes diarios y recrearse en las riberas contaminadas.

Finalmente, la desordenada apropiación del espacio urbano, y la imposibilidad de atender simultáneamente todas las necesidades, han acrecentado de tal modo las urgencias en el dominio de los equipamientos colectivos que la generalización de los "déficits" parecería constituir hoy otro rasgo característico de la vida metropolitana.^{41/}

The absence of such physical amenities then implies an environmental deprivation deeper and more complex. The impact of pollution, congestion, noise, and the lack of privacy is also likely to affect the inhabitants of the city in a wider sense. It will limit their capacity to develop their full potential in work and to enjoy their leisure; cramped and noisy conditions will subject many of them to nervous tensions and stresses which affect them

41/ "Informe Nacional: República Argentina", op. cit. p. 5.

individually and in their familial and community relations.^{42/}

Yet it is not easy to generalize when discussing the social, economic and cultural implications of the type of physical development now taking place in the hyperurbanized centres of Latin America. Studies made of the groups moving to the cities and settling there in central city slums or in the shantytowns that ring the urban areas suggest that no hard and fast statements can be made about them socially or politically. It is still not clear to what extent migrant groups are capable, under differing circumstances, of adjusting to the distinct situation posed by city life, of participating actively in the wider society, of finding employment^{43/} or of forging new family and community ties.^{44/}

Work so far undertaken suggests that there are heterogeneous tendencies, and that levels of political, social and economic involvement will vary according to the economic and political opportunities afforded by different cities, and to the social and cultural backgrounds of the migrants. The permutations which can be derived from such combinations are obviously very wide.

But some broad observations can be made; for example it is not easy on the whole to equate urbanization in Latin America with democratic forms of government. Nor has urban growth and modernization, as was noted earlier,

^{42/} See the comment along these lines in Human Settlements, op. cit., p. 12.

^{43/} In "Volume and Characteristics of Internal Migration in Colombia", George Martine, Social Development Division, ECLA, March 20, 1972, some of these issues are closely studied in terms of the age, sex and educational characteristics of migrants into Bogotá, other cities of Colombia, and to the rural areas. The conclusions drawn from the interrelations of these factors provide a useful addition to knowledge about the socio-economic aspects of migration in Latin America.

^{44/} See "Environmental Problems of Urban Development", op. cit., p. 7, in which the authors argue that, in comparison with their rural life, city conditions represent an improvement in terms of access to employment, education and health especially and therefore deterioration in the environment is of lesser importance to migrant groups.

led to greater equality of income distribution. However, in terms of de facto power, concentrated and organized pressure groups, even among the marginal populations of the shantytowns, may be in a stronger position to wring concessions from the authorities over immediate problems such as housing, water and power supplies etc., than if they had remained in the peripheral areas.

This, though, may be the full extent of their power, and experience in various countries suggests that it is precisely such marginal groups which come under the influence of conservative and paternalistic leaders promising stability, law, order and handouts, instead of needed social, economic and political change in the nation's structure.

The more clearly social questions, too, can be answered only in a qualified way.^{45/} The responses from research among the marginal groups in the cities have been ambiguous. Some writings tend to show a picture of crumbling or at least unsteady and shifting patterns of family life with prostitution, petty crime and a brittle community spirit in evidence in the squatter settlements. This is partially supported in some national reports to the Stockholm Conference in which were noted a weakening of the family structure and the sharpening of social problems such as petty crime and drug taking.

Various countries have reported^{46/} that the 'heaping' of population into the cities as a result of rural-urban migration has created severe

^{45/} On the more general question of the relationship between urbanization and the family structure, the ECLA Experts Group have commented that, "... a pesar de la gran cantidad de literatura existente sobre este tema, se han hecho muy pocos progresos en el conocimiento de los cambios en la estructura de la familia latinoamericana, en sus diferentes formas y otros cambios sociales concomitantes en diferentes contextos nacionales".

^{46/} For more detailed examples, compare the statements made in various national reports to the Stockholm Conference, and especially:

- "Jamaica: National Report", n.d., (mimeo), p. 18.
- "Breve Consideración sobre la Problemática del Medio Ambiente Humano: Caso Ecuatoriano", op. cit., pp. 11, 17 and 18.
- "Informe Nacional de Bolivia Sobre 'El Medio Ambiente Humano'", op. cit., pp. 4-5.

strains for the family but the evidence is not absolutely clear and it may be argued that the problems faced by the individual, the family or the community are no worse than those posed by life in the rural areas.

In fact - to take the barriadas or squatter settlements as the most acute manifestation of the urban problem in Latin America - many writers have emphasized the positive qualities of the shantytowns. They represent, it is claimed, a chance to exercise self-help among groups of people who have, on the whole, adapted well to the exigencies of city life. Their desire to be self-reliant and to form a stable social entity in the larger society is usually manifested soon after they have taken the land for their settlement (admittedly the taking is usually by illegal means). They construct their own housing much more cheaply than the planners are able to, develop many of their necessary services, form their own local organizations, and apparently settle down quietly to integrate into the life of the wider society.

This is doubtless a valid description of some situations, but in the dynamic conditions of Latin American urban life, one is still left with a number of unanswered questions. How long will such quietism last in the future? The present stability could breakdown with the second generation which has been led to expect more from society. Its 'felt needs' will undoubtedly begin on a higher level of expectation and perception than those of the older migrant generation. If the younger residents born in the city are restricted in their ability to participate much more fully in social, economic and political life by the opportunities available within the larger society, they may well turn to other forms of involvement such as social and political rejection of the existing system. Or they may seek individual outlets such as crime and drug taking.^{47/}

A somewhat broader question of policy-making can also be raised here. Although, in part, it relates more directly to the following section, it is also relevant to the integrated question of population growth, urbanization, resource use and their environmental implications. It is no doubt true that

^{47/} George Martine, "Migration, Urban Marginality and Ecological Stratification," ECLA, Social Affairs Division, April 1971, p. 10, points out that, although the barriadas are still largely populated by migrants, the proportion is steadily decreasing with the growth of new generations of those born in the shantytown.

the barriadas of Latin America are a 'better than nothing' answer, especially for the policy-makers and planners - who are, in any case, presented with a fait accompli when land is taken for a squatter settlement. It is undoubtedly better than nothing for the pobladores who find a measure of satisfaction in such settlements, that the authorities have not been able to give them. And it is of value to the middle class which can continue to demand a disproportionate share of public housing allocation. But this misses the larger issue that policies of prevention through effective regional development, agrarian reform - and ~~de~~ de-industrialization - and the decentralization of economic activity would open the way to obviate such forms of growth with all their deleterious environmental consequences in the first place. Objectively, the squatter settlements represent neither prevention nor cure; they are an unplanned last resort response to unavoidable circumstance.

Although this report recognizes the very serious practical difficulties impeding the initiation of preventative policies, the question of the barriadas is raised here to remind planners and policy-makers that it exists, not in isolation, but as part of a wider and integrated network of cause and effect.^{48/} And it is only within the context of the development/underdevelopment frame of reference that answers to specific issues such as this can be sought.

Before moving on to analyze the policy implications of what has been discussed so far, we must conclude with a brief comment on some of the international features of the environmental issue. As has been pointed out, some countries of the continent have insisted that the major environmental difficulties in the world are being caused by the affluent industrialized nations and they, therefore, bear the principal responsibility for remedying such difficulties. To the developing nations falls the responsibility to achieve accelerated economic development through expanding production and evolving competitive national technologies. The positive side of such an argument is laudable. However, there is the danger in a policy that advocates the avoidance of responsibility

^{48/} Ibid., *passim*.

for environmental aims which have 'low economic leverage in low income countries'^{49/} that problems will arise and/or become more acute, and in the longer run may prove extremely expensive to cure.

Once again, it appears necessary to emphasize the need for a more unified and balanced approach to development strategies which should take account of the salient aspects of the whole question of underdevelopment and this will depend on the breadth and depth of thinking by planners and policy-makers, and by the participation of those who will be affected.

5. Policy Implications

The questions raised in the earlier sections on human settlement, resource use, and their environmental implications, in turn provide the basis for consideration of the role which government should play if serious attempts are to be made to work out policies relating to such questions.

It is usually assumed that the national state is the final arbiter on most decisions concerning questions of national development. In the first part of this section, too, this assumption has been accepted for purposes of outlining the role governments can play, and the problems they face. However, the practical realities cannot be ignored, and in the second part some comments will be made touching on the limitations confronting them. Discussion will centre, especially, on the restrictions imposed on Latin American governments by their participation in the worldwide network of international trade, aid and investment, together with other political and cultural links they may have contracted.^{50/}

^{49/} Report of the Brazilian Delegation at Mexico City, op. cit., p. 15. Such comment tends to create an arbitrary division between development and environment, as though the former were essentially to do with economic expansion and the latter an adornment, added where possible as an after-thought. Maurice Strong, in his address at Mexico City, op. cit., p. 13, stated "... there can be no contradiction in Latin America between the major targets of economic and social development and the need to introduce, into this concern, an additional dimension covering the problem of the environment". Such an approach would clarify some of the disastrous consequences of earlier forms of narrowly conceived 'development' such as "... the blind import of technology, as well as its incorporation without due consideration to the human and natural environment of the region". (p. 16).

^{50/} This is commented on in the Mexico City Seminar, op. cit., p. 9, especially with reference to the transfer of technology.

We turn now to domestic policy-making. Throughout any discussion of policy formulation and implementation one is confronted by the dichotomy between what is desirable and what is politically, administratively and financially feasible. Under the prevailing conditions of many countries this dichotomy will be widened by the obstacles created by special interest groups, the conservatism of government authorities, administrative inefficiency and the lack of adequate human and financial resources. It is within this type of framework that planners and advisers must work, providing counsel and putting forward programmes that will take account of the political reality but at the same time suggesting criteria which will allow the elaboration of selective and compatible policies on which to base unified strategies of development. The purpose of this section then, is to suggest first, some of the principal requirements for such a strategy and then to call attention to the obstacles which have made - and continue to make - the implementation of such requirements so difficult.

In trying to establish some of the criteria for the elaboration of policies based on, and incorporating, environmental considerations, a foremost necessity is that the authorities should be considering the formulation of carefully selected strategies for development at various levels - national, regional and local (and for some purposes, international so as to deal with problems over shared frontier areas, river basins, coastline, etc.). Such a selection ideally would include, among other things, policies to control and plan patterns of urban and regional growth; sectoral policies covering not only the development of agriculture, industry and the service sector, but also the types of goods and services produced; fiscal, monetary and direct control to guide the pace and scope of development; and, in the social area, income distribution policies, as well as those trying to achieve the usual range of social and welfare goals.

But policy-makers must also try to ensure that the much more integrated and balanced planning that is implicit in a development strategy incorporating physical, social, cultural and political as well as purely economic (or very often, cost accounting) criteria does not lead to the creation of more

bureaucratic institutions and procedures likely to delay still further the implementation of such measures.

It would appear that the countries of the continent have accepted in principle the recommendations of the United Nations Conference on the Environment for including environmental factors integrally within the total design of their development plans.^{51/} However, it is almost inevitable that certain fundamental problems which have hampered the effective implementation of policies in the past will recur, and perhaps with greater impact because of the greater demands of a unified style of development.

Before outlining the type of obstacles encountered in detail it may be of value to note some of the difficulties that have arisen in the past as governments have carried out policies related to demographic, regional and environmental issues. Some of the measures undertaken have included:

1. policies to encourage a reduction in rates of population increase, although these have been more talked about than implemented
2. anti-pollution legislation aimed at preventing the physical deterioration of urban and industrialized environments^{52/}
3. regional development policies which use techniques borrowed from the industrialized nations (and which, it should be added, have had only limited effects there, despite the greater human and financial resources available). These have attempted to channel population growth, and economic activity away from the present highly centralized areas into alternative

^{51/} Chile, for example, created a National Commission in July 1970 to advise the government on policies for the prevention of increasing pollution of the air, land, water and food. This was extended in April 1971 to the formation of a permanent body incorporating the Ministries of Public Works and Transport, Agriculture, and Housing and Urban Affairs. It also included representatives from the National Planning Office, the National Confederation of Municipalities and the National Commission for Scientific and Technological Research. See "República de Chile: Informe ...", op. cit., pp. 20-21.

^{52/} A brief report of the work of one such body set up by agreement among the Government of Chile, the World Health Organization, and the United Nations Development Programme in 1963, appears in "Instituto de Higiene del Trabajo y Estudio de la Contaminación Atmosférica, Santiago, Chile", World Health Organization, Geneva, 1970, 39 pp. (mimeo).

growth poles, created essentially on the basis of economic and technical criteria.

4. agrarian reform policies which have, in many cases resolved themselves into schemes for the colonization and settlement of new lands rather than the redistribution of property in a continent renowned for the unequal distribution of landownership. In only a few countries has there been a profound economic, social and political change in rural areas which has resulted from the introduction of an agrarian reform. For the rest, the reforms remain largely on the statute books, unimplemented.

5. urban reform and housing policies which have been introduced in a number of countries. It is difficult to analyze with great accuracy just how effective such policies have been, especially for example, in the sphere of housing where estimates of requirements vary widely over time and between sources.^{53/}

However, at a generalized level, it can be said that evidence of major improvements in problems of congestion, in the provision of facilities for community development, and in health and education services in the metropolitan areas of most of the Latin American countries is not readily forthcoming.

In trying to understand why many of these policies have not had the success that might have been expected from the comprehensiveness of the legislation, a number of suggestions can be put forward. First, it is possible that, in comparison with other goals, they have not weighed very heavily in the total scheme of government intentions. Development may have been considered to be a matter essentially of economic growth, the production of goods, and the raising of the gross national product rather than in terms of the distribution of goods and services to satisfy the social, cultural environmental needs of all the population. And where there are conflicts between private and community goals in the growth process it is usually the latter which lose.

^{53/} Human Settlements, July 1971, op. cit., p. 16. See also World Housing Conditions and Estimated Housing Requirements, U.N. publication, Sales N°65.N.8, p.32.

Looked at in a slightly different way, it can be said that the failures have resulted from a lack of real concern - not to mention from a real opposition - among the powerful socio-economic interest groups which also control much of the political decision-making machinery. The organizations to which advisers and planners offer their suggestions cannot be expected to adopt rational and disinterested attitudes simply on the advice of these experts. Objectivity, goodwill and consistent efficiency are not notable attributes of governmental authority and planners must take into account the enormous difficulties arising out of self-interest, ignorance and political expediency which can waylay even the best-laid schemes.

However, where there exists a desire to carry out even a limited set of development policies by government authorities, their financial, administrative and political capacity to do so may be severely limited. As was emphasized earlier, a major barrier to the rapid implementation of policy measures has been the existence of often grossly overstaffed bureaucracies whose principal aim has been to justify their existence by complicating problems rather than solving them. In terms of human and financial resources too, the government may not be able either to count on trained people to initiate and supervise the programmes, or to finance them and promote them adequately.^{54/} And finally, it may be faced by a political opposition so strong and organized that it is either not able to enact legislation or considers it not worth while or even dangerous to do so.

Assuming though, that the policies have managed to break through these obstacles and reach the stage of implementation, they often lose their value by being put into practice in isolation, as individual pieces of policy, without reference to other associated issues. Experience of policies undertaken

^{54/} Such difficulties are briefly but expressively described in "Instituto de Higiene de Trabajo ..." op. cit., pp. 23-29. Here the grave lack of doctors, engineers and technicians trained in Chile, and the difficulties encountered in transferring such experts, especially from the public sector, delayed the working of the institute and reduced its effectiveness over a period of years. Nevertheless some useful pieces of applied research were achieved.

in the fields of regional development, agrarian reform, the provision of housing and social amenities, employment and so on, shows that they have been conceived of and implemented as isolated measures with limited aims, and have not been considered as integral and interrelated parts of a larger national strategy.

Given the existing social and political structures, it is extremely unlikely that such individual policies will be elaborated in a global framework and integrated wholly into it - especially when it is considered that the industrialized nations with their greater resources and longer experience have not come within close range of such a goal. The result is that when steps are taken to remedy a particular problem which seems fairly straightforward at first appearance, its less obvious ramifications lead planners into difficulties within the system's framework.

Let us take two examples, representing environmental problems at the extremes of urban modernization and rural stagnation, both identifiable in different variations in a good many Latin American countries.

First, the crowded centres of the great urban agglomerations have experienced levels of air pollution too high to be ignored. Eventually the authorities conduct studies, pass laws, and set up regulatory mechanisms to deal with the problem. It turns out, however, that important industrial concentrations have already been established on the side of the urban area from which the prevailing winds come. Their output of fumes can be reduced to some extent but not eliminated, and their relocation would require prohibitive costs, and would be resisted by both entrepreneurs and workers. The urban public transport system too, is a major contributor to pollution, and this is even more intractable to remedy. Most of the vehicles are old and in poor condition. Transit fares are very low, and it would be difficult or politically dangerous to raise them very much in view of their importance in the budgets of the urban masses. The bus companies can function at a profit only by using old vehicles with a minimum of maintenance. Effective regulations to keep excessively polluting vehicles off the streets would paralyze the transit system, and confront the authorities with unmanageable protests. The attempts to combat air pollution by regulation, therefore, are likely at best to hold it within limits more tolerable than would be the case

without regulation. A drastic reduction in pollution would require thoroughgoing changes in the pattern of urban growth, and even in urban income distribution.

Second, certain particularly impoverished groups of cultivators on marginal lands raise goats and make charcoal to obtain a little cash income. Goat grazing and charcoal burning are destroying what little forest cover remains in the hills and causing disastrous erosion. The cultivators themselves are aware of this, but they cannot dispense with the supplementary livelihood thus obtained. Regulations prohibiting goat grazing and charcoal burning thus can be enforced only by very repressive means and at the cost of intensifying the poverty, or driving off the land, thousands of families already at the margin of subsistence. An acceptable and effective solution to the apparently straightforward problems of deforestation and soil destruction thus requires capacity on the part of the authorities to resettle or offer alternative livelihood to the families in question, and this in turn requires effective agrarian reform, employment and educational policies.

Governments, then, are not unaware of such problems but, because of a lack of capacity to confront the much broader set of problems involved in an adequate response they can do little about them except offer partial and short-term palliatives; even with the best of will, a broader response would run inevitably into the rigidities and irrationalities of the whole system.

At the same time, it must be remembered that partial policies, whether in regional development, urban or agrarian reform, or industrial development have been sufficient to keep the most urgent problems at bay, and have created conditions sufficiently flexible to allow most of the population, at some level, to adjust to the circumstances. Given such a situation, the natural - almost inevitable - tendency of governments is to avoid policy responses of a large-scale nature which might alienate powerful interest groups while not having the counter advantage of attracting immediate support from the disadvantaged sectors of society. In any case, basic changes are not likely to be felt in the short term and few governments think about the longer period, especially if it lies outside their own (often brief) tenure of office.

Accepting this reality, the adviser and planner have a difficult task in trying to reconcile the ideal of comprehensive, unified policies of physical and socio-economic development with the desire of governments not to shake the system, but at the same retain sufficient flexibility to absorb the minimal claims of those who want to improve their situation within the society as a whole.

It is for this reason that the changes that do take place are so often undertaken in such a manner as to cause the least disruption. Paternalistic concessions such as political rewards, the ignoring of land-taking by squatters - provided that it is well clear of the property of upper income groups and far enough away not to be a too-pressing reminder of a serious problem - are among means by which legislators and planners accomodate themselves and the demands of people to a system with a limited degree of room for manoeuvre.

It is understandable, too, that those in positions of authority should try to keep clear of policies that involve any but the most formal concessions to public participation. Incorporation of the mass of the population in the decision-making process would represent a challenge to the generally paternalistic and bureaucratic machinery of policy-formation and implementation. The whole question of popular participation is a complex one and can only be brought about through the education of those concerned in the policy changes. This does not imply, of course, the manipulation of people to gain their facile acceptance to the planners' schemes; just the opposite, it should mean that experts and people jointly work out methods to implement policies - or to change such policies so as to relate them more to reality. And this would require a mutual education both sides so as to change attitudes and reduce as far as possible the inevitable incomprehension and mistrust that will otherwise arise.^{55/}

^{55/} Solon Barraclough, "Rural Development Strategy ...", *op. cit.*, p. 28, referring especially to the rural situation, writes of the need for 'full campesino participation' in development policies, and continues, "... all rural development strategies will remain inadequate until the hard political decisions are taken to move directly towards development goals in spite of the powerful interest groups opposed to sharing their power and privileges with the campesinos and other hitherto powerless groups".

But for the politician, the lack of comprehension, of cooperation and even of acceptance by those supposedly being planned for, is on the whole preferable to the inevitable disruption that would be created if people were called in to participate effectively in the formulation and implementation of policy making. Participation implies a sharing of knowledge and power, a substantive alteration in the functioning of a system, and above all a change of attitudes which could prove to be a threat to existing social and political relationships and interests, and for these reasons it will be resisted by those in authority.

Nevertheless it is worth enumerating some of the more important conditions for the implementation of an integrated development strategy in Latin America, if only to obtain some idea of the gap which separates the pre-requisites from what now exists. Such conditions would include:

(a) the political determination of governments to initiate such policies, which in turn depends on the political will of the dominant social and economic groups under present circumstances

(b) the operational efficiency and organizational flexibility of the administrative machinery of government

(c) the financial capacity of government and the trained manpower available to it and

(d) the ability of planners to carry out national development strategies not only in terms of the wishes and cultural values of different social groups (which by itself may imply merely a passive acceptance of what is being offered) but also with the active - and at times, the necessarily aggressive - participation of those affected by the plans.

But although it will be obvious from what has been said earlier that such criteria will be extremely hard to achieve they will have to be kept in mind if new strategies are to be formulated. They are, in effect, essential guarantees that simplistic solutions will be less likely to be chosen in situations where ill-considered policy measures could have unforeseen and undesirable side-effects. However, in reality these are the measures more likely to be chosen by governments wary of more complex and possibly disruptive policies.

In fact, one of the chief problems facing planners is the sheer lack of information available to most authorities. Despite the considerable amount of research on the various aspects of underdevelopment in the continent, questions rather than answers dominate any discussion of the way to proceed with policy-making for a unified approach to development planning.

To take some specific examples. Regional development experts still argue over basic issues such as the factors which cause the concentration of human settlement, and whether, in fact, such concentration brings in its train more benefits than losses. They differ, too, over the methods of how such costs and benefits should be measured. This in turn leads to other queries as to the conditions under which policies of decentralized development should be implemented, agro-industrialization could be carried out, alternative patterns of human settlement in rural areas should be selected - and so on.

Obviously the answers to such questions will differ from society to society according to the type of government, the importance of the planning authorities, and the preparedness to allow public participation in local and regional projects. It is, for example, possible to conceive of a more flexible regional and urban development strategy where local communities are given a larger say in the promotion of programmes of rural agricultural, industrial and commercial development, than might be found in a policy of carefully created growth poles implanted by decision of the central government. Or, a combination of both approaches would probably lead to a more balanced form of regional development within the framework of national programming, and at the same time spread the load of decision-making and planning over a wider area.

It must be remembered, too, that despite their desire for relative stability, legislators and planners are working within a situation which is constantly changing, and which is constantly imposing new demands upon them. For example, modernization of the economy - a goal sought by all governments - will create new work opportunities for some, but more often the avenues to employment are being reduced for sizeable social and regional groups because of the very nature of new production and marketing techniques.

This, in turn raises the point that planners on the whole have had to work within a framework of economic (or private economic) values and pressures which

have dominated their plans. Social and cultural as well as physical environmental considerations would suggest, to take one example, that the utilization of more medium technology and labour intensive techniques would be more rational in many Latin American countries than the attempt to absorb and adjust to the demands of high technology, capital intensive activity.

In Mexico, for example, absorption of labour in the manufacturing sector during the decade of the sixties took place at the rate of 5.1 per cent annually. But the reason for such a high level lay, as one commentator has noted, in "... the characteristics of certain production lines such as metal-working which in Mexico (unlike certain other countries) is composed of a number of small labour intensive plants and workshops which exist alongside large modern industries such as the automotive industry. The former (composed of goods producers and industrial service establishments) seem to have absorbed the mass of the increased labour force".

He concludes that; "the probable areas for employment generating possibilities are not in the modern sectors of industry (defined according to the technology used, and not the product made ...). Yet those handicrafts, small shops and industries which do not weigh heavily in the output or overall productivity of the sector merit considerable attention in any employment oriented development programme".^{56/} In fact, in the broadest economic terms too - that is, of the relative availability of the factors of production - it would also be more sensible in many cases. As Celso Furtado has noted, one of Latin America's more obvious problems is that it is over-mechanized.

It has been assumed, up to now, that the national state is the final arbiter in decisions over national development, and the discussion has taken place within a closed system, ignoring external influence. As was pointed out earlier, this is not true for any Latin American nation. Historically, as many studies have emphasized, economic and political reliance on countries outside the continent has been a condition of daily existence. And it remains so, in an even more acute form. The politico-economic aspects of this evolution

^{56/} Henry Kirsch, op. cit., p. 12.

over time are well documented in the exploitation of indigenous natural resources by foreign companies and the transference to the investing country of a considerable part of the income derived from such exploitation; in external interference in the internal political life of many countries and in the influencing of domestic policy-making; and in the control of important sectors of the economies of most Latin American nations - at first mining and/or agriculture, later public utilities, industry, commerce, and always international trade.

These, however, are the more obvious aspects. The more subtle but at least equally significant impact of these links has been in the growth of a cultural dependence, and an imitation of the habits, customs, language and types of consumption of the affluent nations among the upper income groups of most countries in the continent. This has been reflected in the adoption of styles of economic development, especially in industrial and commercial activity, to provide goods and services modelled on those of the industrialized world - but restricted in Latin America to a small privileged group of consumers.

Apart from the high economic costs, which no underdeveloped country can afford, of providing for restricted markets, it seems patent that, on a broader level, an integrated development strategy would have to take into account both the politico-economic and the cultural aspects of such reliance. There appear to be two fundamental considerations here for the implementation of this type of strategy.

First the policy-makers should aim to ensure a much wider measure of national autonomy in decision-making - although it is recognized that the links between certain local groups and external economic, political and cultural influence will, in many cases, make this extremely difficult. And secondly they must begin to think in terms of those aspects of the development strategy which take into account the needs of all the population and not just a minority sector. Here again the attitudes of powerful interest groups will be an important - in many countries the decisive - determinant of the success of such policies. The distinction has to be made, therefore, between the requirements of national strategies on the one hand, which aim to provide for

the needs of the population as a whole in questions of production, consumption and participation, and on the other, the interests of small but influential minorities whose needs are best served by maintaining the domestic and external status quo.

To sum up, it is necessary to insist that an effective development strategy will depend upon a wide range of prerequisites, but it will, in the final analysis, have to be based on the criteria suggested by physical and socio-economic environmental needs. Among these changes in the socio-political influence of different groups in society, increased participation by all social classes, and a greater measure of national independence are probably the most crucial factors. In this sense, it might be noted, the environment serves both as the catalyst, drawing together all the strands so far discussed in this report - physical, social, political, cultural and economic - and then providing the basis for the selection of compatible development policies.

It is through the reconciliation of these various components of national life that effective strategies can be evolved. As has been emphasized earlier, the elaboration of an acceptable and viable style of development will depend, internally, on the choices made in the fields of production, distribution, consumption and participation where the needs of the population as a whole have to be given primary consideration; and a major precondition for this will be the extent to which governments are capable of taking decisions autonomously and independently of external influences.

It must be stressed that such choices are highly interdependent and a decision taken in one area will inevitably have effects in others. Contradictory choices, made in isolation, in either the external or internal spheres will therefore lead to conflict and to the weakening or breakdown of the strategy. It is essential that policy-makers and planners have as wide an understanding as possible of the linkages among the various factors and that they should be able to see how the implementation of certain policies in one area can affect other, beneficially or adversely.

It is here that the inclusion of the environmental factor, with its wideranging physical and human elements, can provide a perspective that will assist the decision-makers at least to gain a broader vision of the probable implications of any policy they choose.

6. Conclusion

Throughout, this report has tried to focus attention on a number of factors particularly relevant to the study of population and the environment in Latin America. The first, and probably most significant is that the context of underdevelopment gives to the study of the environment a depth and meaning wider than that generally understood in the industrialized nations, as the Founex Report pointed out: "It is evident that, in large measure, the kind of environmental problems that are of importance in developing countries are those that can be overcome by the process of development itself. In advanced countries it is appropriate to view development as a cause of environmental problems. Badly planned and unregulated development can have a similar result in developing countries as well. But, for the greater part, developing countries must view the relationship between development and environment in a different perspective. In their context, development becomes essentially a cure for their major environmental problems."^{57/}

To this one must add that the underdeveloped nations of Latin America have, therefore, to work out their own approaches to environmental problems according to their own circumstances, rather than to prepackaged formulas borrowed from overseas. For this reason they cannot accept environmentalism as a new fashion in development theory, with all the implications for slowing industrial growth as has been advocated in the affluent nations of the world.

As has been stressed here, the major environmental problems in the continent result from the long history of underdevelopment and unbalanced growth which has caused economic difficulties and social disruption, particularly for low income and regional peripheral groups - the marginalized classes - in society.

In trying to find the bases for relevant policies to overcome what Maurice Strong calls the 'environmental crisis' this paper has examined some of the obviously crucial factors in the previous sections. Out of this

^{57/} Maurice Strong, address to Mexico City Seminar, op. cit., pp. 9-10.

examination two facts have clearly emerged: the first is that, for the underdeveloped countries there is no inherent contradiction between environmental improvement and national development; the second, that the resolution of the apparent contradictions that may exist between them will be achieved by social and political rather than technical means.

To take the first point. Environmental concern does not demand the slowing of growth, per se, although, as has been suggested throughout, certain types of production which have little social value and use scarce resources needed in other areas should be completely closed down or diverted into lines which meet real social and physical needs; it requires development of a kind which takes into account more than purely economic considerations in providing for the wellbeing of the nation. (This does not deny, of course, that there may often be conflicts between private and public interest in interpreting the term 'wellbeing').

In terms of the physical environment such a change would imply a more careful use of resources to prevent maltreatment for short term gains; more balanced patterns of location for people and for economic activity, as well as a more balanced approach to the use of the factors of production according to their relative availability. This, in turn, leads to broader questions about the elaboration of types of production suited to the requirements and capacities of the country instead of those blindly borrowed from countries with different technological levels and social needs; the satisfaction of the consumption requirements of all the population rather than production for a privileged minority; the introduction of programmes to ensure greater participation by all the population in all aspects of the life of the nation, etc.

The social implications of present environmental problems come more clearly into focus, perhaps, if the following question is posed: Who (or which groups in society) is producing a poor environment for whom? And this subsumes a series of related questions: Who is responsible for the pollution caused by the private automobile, and for the inadequate transport services? Who benefits most from the minerals extracted from the countries of Latin America, and who suffers from the manner of their extraction and the appropriation of the returns? Who (or what pressures in society) is responsible

for the continuous stream of migration from the poor environmental conditions of the periphery to the often equally poor conditions at the centre? These are broad issues and obviously cannot be answered without a great deal more research - or the bringing together of the considerable amount of research that has been done in these areas or near to them.

It is considered here that the environmental question, because of its global nature, has the potential to bring together the socio-economic issues discussed in this report, and, in turn, link them with the physical aspects, to provide the basis for a unified strategy of development. This should allow the policy-maker and the planner the breadth of concept to approach the reality of underdevelopment and begin to suggest at least some of the answers to problems in a way that earlier, more restricted approaches have failed to do. This does not mean, however, that the authorities must implement a global strategy with all its ramifications in every branch of the economy and society - an impossible task for most governments. Rather, the environment should be employed as a basis on which they can determine the significant factors in the strategy they consider most relevant, select them for their compatibility and so evolve the style of development which is both within their administrative capacity and the political realities of the nation.

But such a potential can be translated into actuality only if environmental questions are brought fully into the scope and national development strategies. If, however, they come to be treated as something extraneous to the daily problems confronting the legislator or planner, or as merely a fashionable issue likely to compete for scarce resources with other demands of apparently greater immediate urgency, they will be either ignored, or, to satisfy national prestige - or loan and credit requirements - they will be added as little more than verbal decoration to already decided policies. (An effort to try to illustrate the dialectical relationship between the environment and national development strategies appears in diagrammatic form in Annex 1).

To conclude, it must again be stated that a report such as this, by its very nature as an introductory enquiry, raises more questions than it can provide answers for. It must be seen, then, in terms of trying to open up a complex issue for debate and discussion, and to provide a limited basis

for much more detailed research and fieldwork in the future. It is evident that many issues treated briefly in passing will have to be examined in greater depth over a period of time.

Some areas for continued work already suggest themselves; for example, the definition in clearer terms of what is meant by the environment in terms of Latin American development/underdevelopment; a historical treatment of the background causes of environmental problems; studies of the relationship between "economic" and "environmental" criteria in different national development programmes; methodological research into questions relating to the collection of statistical data and other forms of information which can assist governments in the formulation of environmental goals.

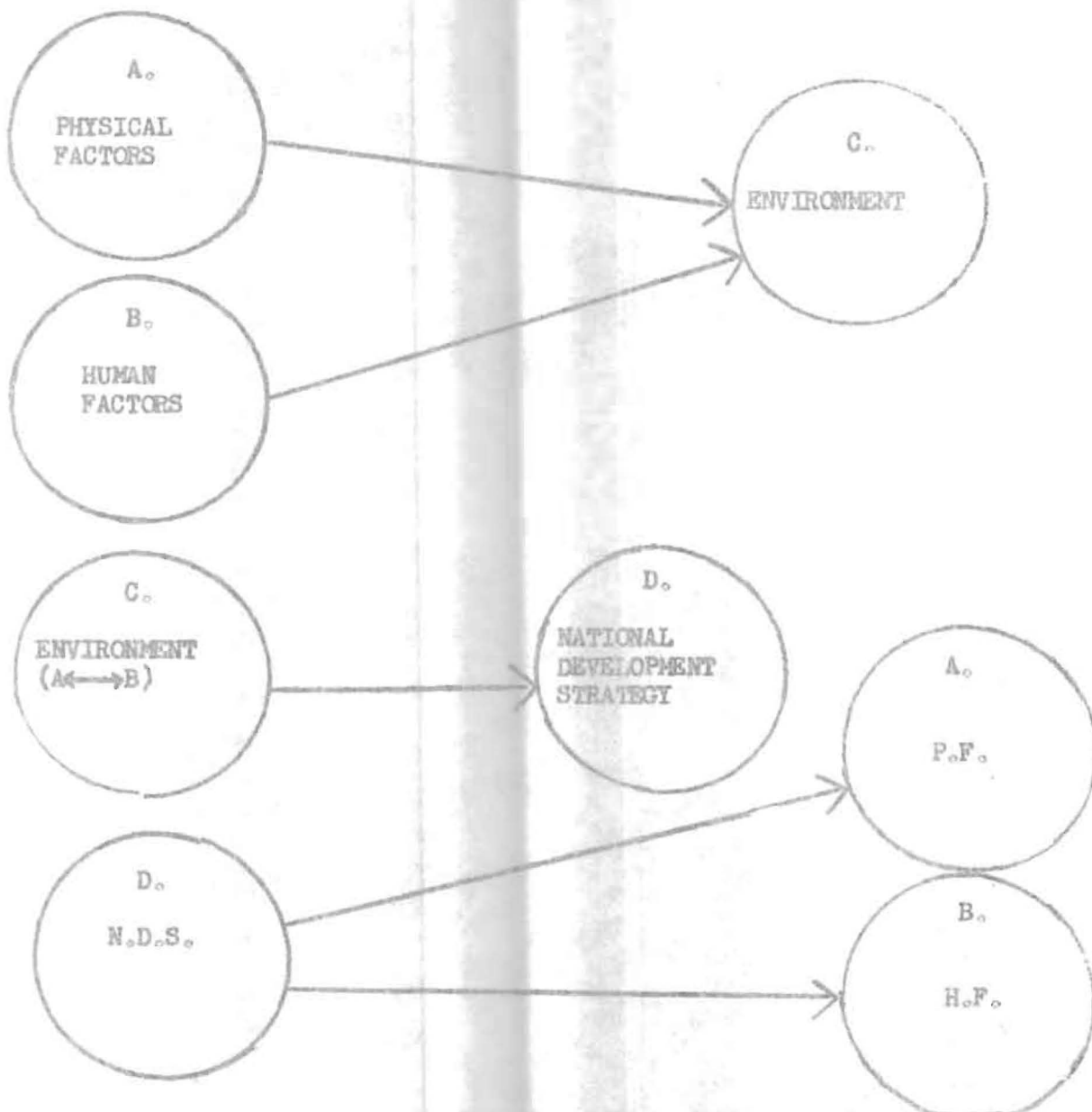
Needless to say, such a programme should call on the resources not only of the United Nations in Latin America, but should also be based on the cooperation of member governments, academic institutions, independent research bodies, and individuals working in the field, if the range of demands is to be met by an equal breadth of outlook in the research projects. And finally, it is advisable to conclude with the recognition that such work must continue over the long term if the positive results aimed at in Stockholm are to have a reasonable chance of succeeding.

THE RELATIONSHIP BETWEEN THE ENVIRONMENT AND NATIONAL DEVELOPMENT

The four factors which must be fitted together in an interrelated way to form a coherent pattern of development include:

- A. the physical factors, essentially natural resources
- B. the human factors, which include social, economic, cultural and political (as well as external relations)
- C. the environment in its totality - from which A. and B. have been extracted
- D. national development strategies

Diagrammatically these relationships can be expressed as follows:



Expressed in a more dynamic way to allow for changes in quality over time, so that with each cycle the cumulative impact of the environmental factors changes the style of national development strategy, and, in turn, the new strategy has an effect on the physical and human factors which make up the new environmental phase, we find the following patterns:

