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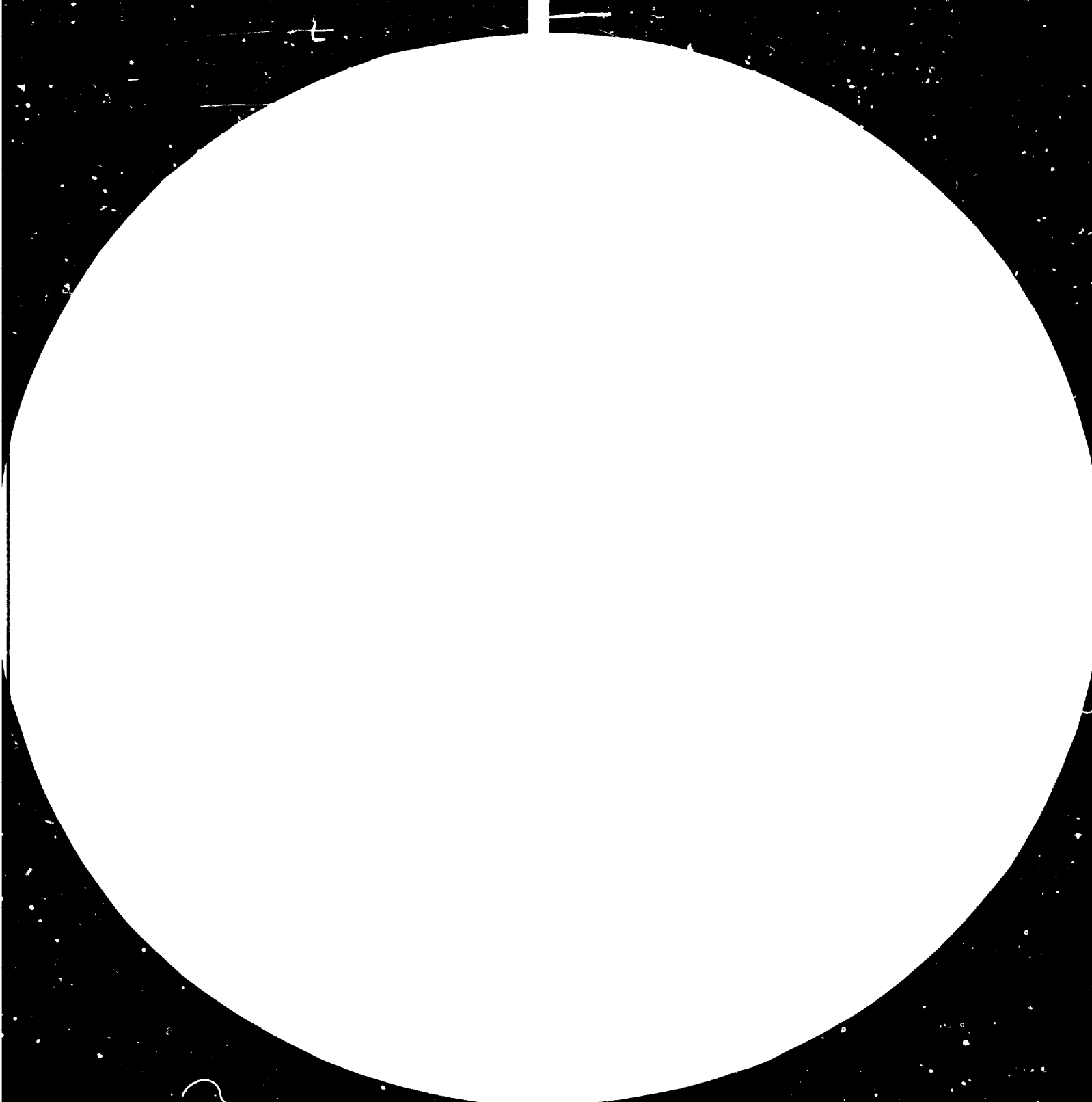
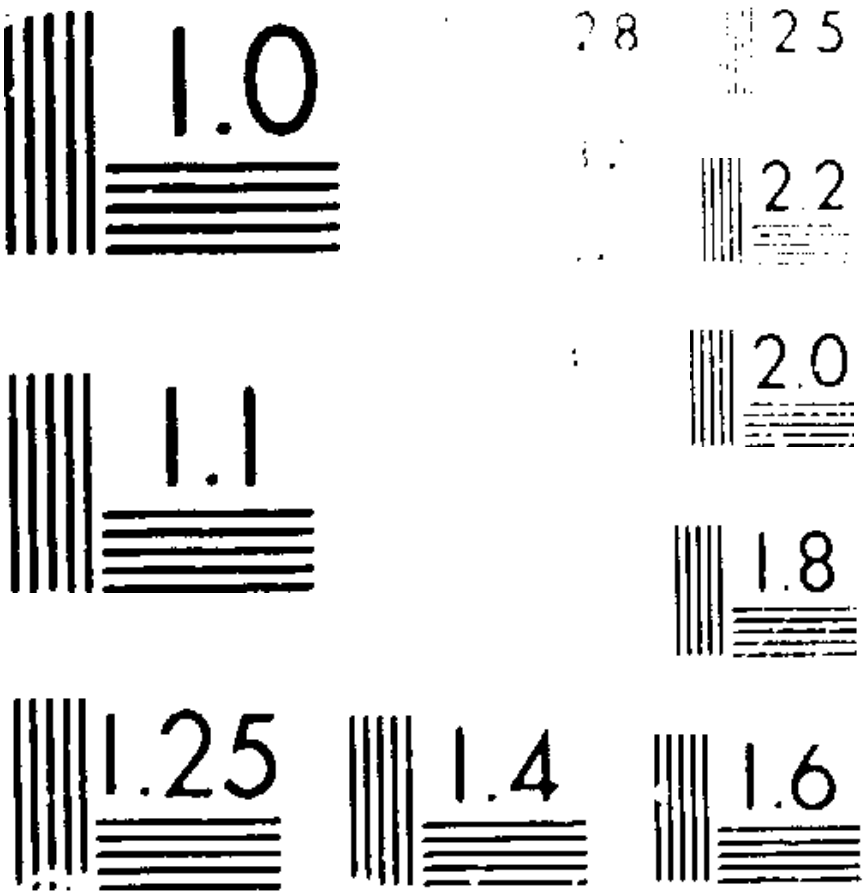
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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Distr.
LIMITED

UNIDO/IO.384
8 October 1980

ENGLISH
ORIGINAL: FRENCH

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

POPULATION, ECONOMIC DEVELOPMENT AND INDUSTRIALISATION */

Prepared by the
UNIDO Secretariat

*/ This document has been translated from an unedited original.

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INTRODUCTION

In 1976 the United Nations Industrial Development Organization (UNIDO) produced a report on the relationship between industrial development and the different demographic variables. 1/ It came shortly after two important events which profoundly influenced United Nations activities at that time:

The World Population Conference (Bucharest, August 1974);

The Second General Conference of UNIDO (Lima, March 1975).

In one respect these two conferences certainly had much the same aim, namely, to draw up a world strategy, one in the field of population (World Population Plan), the other in the field of industrialization (Lima Declaration and Plan of Action), both within the framework of the new philosophy of international relations called for under the new international economic order. Apart from this more formal aspect, one could find many other things which they had in common. The alarm sounded by certain proponents of a draconian limitation of the world's population clearly found an echo in the development of a series of theories according to which too rapid population growth imposed such burdens as to jeopardize national development, and more specifically industrial development, leading to the familiar vicious circle of poverty and growing impoverishment. Other theories claimed, on the contrary, that the rate of population growth had nothing to do with this phenomenon of stagnation, which was the direct consequence of appropriation of the world's wealth, whether at the international level (economic imperialism) or at the domestic level (social inequalities) in many States.

In the UNIDO document, therefore, an attempt was made "to analyse the influence of industrialization as a dynamic force on the laws governing the structure and spatial distribution of populations". There is no point in going over the analysis made there of the objective relationship between industrial development and demographic variables, but there are two factors which confirm the importance of this relationship.

1/ The author of the present report was also responsible for that document, which was circulated under the symbol UNIDO/IOD.13.

Although the overindustrialization of the rich countries and its possible dangers for the environment have been much criticized, and with reason, industrialization remains the one development model that is universally recognized, even if, or rather, especially if, an effort is made to develop a new version which will have fewer limitations both for mankind and for the environment.

In addition, the theory of demographic transition, which seeks to link the level of modernization of a society and the natural demographic variables (fertility, mortality), is today arousing new interest among specialists, who are applying it within a more general framework and introducing an essential new factor, the speed of the process.

The conclusions reached in the previous report drew attention to several kinds of behaviour, related to a certain extent to the family's way of life, which itself was closely dependent on the system of production, and particularly on the extent of industrialization. However, the fact that only a small proportion of the population are directly employed in the industrial sector in the developing countries greatly limited the value of comparisons within those regions; the most that could be done with certainty was to point out the variations within the rich countries and at the international level.

Mortality: This variable was sufficiently responsive to the level of development to be taken as a representative indicator of such development. A distinction should, however, be made between macro-economic data, which have been fully elaborated, and micro-economic data, which are much more dependent on the particular way the labour market is organized in each State.

Fertility: This was found to depend essentially on the wishes of the couple, who decided, whether rationally or not, on the size of their family; the relationships found were merely a reflection of families' behaviour in relation to their desire for children, often implicit and always heavily influenced by the socio-economic environment. Accordingly, any change in the socio-economic context affected the level of fertility:

Urbanization tends at first to encourage fertility, the disappearance of taboos and improvements in hygiene, and then later on the adoption of different ways of life leads to a reduction in final family size per woman;

Education has quite a considerable influence on fertility, and there is generally found to be an inverse relationship between the number of years' education the mother has had and the number of children born to her during her fertile years;

The connection with income is also typical, final family size increasing with the rise in the level of living up to a certain threshold, where the relationship is rapidly reversed; the threshold varies greatly from country to country;

Finally, the health facilities available in towns reduce the causes of mortality and sterility, but in this field the degree of inequality is very great (high concentration of facilities).

Migration: Internal migration is found to be very directly related to the lack of employment in the rural sector and to the very marked difference in disposable income between rural and urban areas. The consequences are manifold, both in terms of the numbers of people who come to swell the existing town population and in terms of the structural changes resulting from a flow of migrants which is always selective. International migration is found to be different in nature, and although income differences are a motive force, the economic and industrial policy (level of capital accumulation, amount of innovation, transfer of technology) seems to be fundamental in stimulating and maintaining international migration of workers.

After this review of past conclusions, we have again to look into the problem of the reciprocal relationship between population development and industrial development so as to allow for recent trends and to take into account the new light that different specialists have been able to throw on the situation.

The evolution of the world economy over the second half of the decade has hardly brought any changes in the relationship among States, and while the producers of sought-after raw materials (petroleum, rare metals, etc.) have made considerable extra profits, most developing countries have been very harshly affected by the rising cost of energy and of food and manufactured products, brought about by growing inflation in the industrialized

countries, which are themselves faced with obvious difficulties. Under such gloomy conditions a spectacular expansion of industrialization in the poorest regions was hardly to be expected, while the rich countries still made it their main aim to win foreign markets, and the purchasing power of the resources available for buying foreign goods, particularly investment goods, diminished from month to month. Thus, "only 10 countries account for over 70 per cent of the growth in manufactures achieved since 1966. In most other developing countries in recent years industrial growth has been minimal or non-existent". 1/

The New Delhi Conference, however, noted a series of new facts which should be taken into account in considering the effect of industry on population. Thus various trends could be seen towards industrial restructuring at the international level, particularly in branches where gains in productivity were fairly small in the developed countries (textiles, clothing, paper) and for which conditions in developing countries seemed relatively favourable. 2/

Similarly, "Empirical evidence demonstrates that the objectives of rapid industrialization and the alleviation of poverty through rural development can be complementary. Employment and incomes in rural areas can be improved through the promotion of small-scale processing enterprises based on the resources of the area and through the manufacture of consumer and producer goods based on the resources and demands of the area". 3/

At the same time, given the inertia of population trends, there has been little change in the demographic situation, although that certainly does not mean that the specialists' view of it has not changed considerably.

The world's population has increased over the past five years by some 350 million, which, when all is said and done, is rather a high figure in relation to the present total of 4.3 billion inhabitants. However, it is in

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1/ UNIDO, World Industry since 1960: Progress and Prospects (United Nations publication, Sales No. E.79.II.B.3), p. 5.

2/ This does not apply, however, to the more advanced developing countries, which have a considerable surplus available for capital-intensive industrial projects.

3/ UNIDO, op. cit., p. 12.

the distribution of this increment that there has been a new kind of development: in contrast to the recent stagnation, or even a clear downward trend, in the population of the rich countries, the continued growth in the population of the poorest regions may be seen as an extra factor tending to upset a demographic equilibrium which had been under pressure for a long time.

The growth of population policies alongside development policies has followed a fairly liberal trend. However, in view of the rather limited effectiveness of family planning, efforts have been made to speed up the introduction of "population education", in which the experts place great hopes. The natural data series show a certain stability in the phenomena, the trends previously observed in the countries continuing, without however the original objectives always being achieved. The most striking fact, however, is a certain shrinking of differentials in the rich countries, whereas in the developing countries the backwardness of statistics seriously limits knowledge of such questions.

In the field of internal migration, urban growth remains a matter of great concern. The most recent information enables a better measurement to be made of the persisting discrepancies between urban population, population with employment and population employed in the industrial sector. In the hope of stemming the constant flow towards the towns, certain projects have been designed to keep part of the non-agricultural population in the country, through integrated rural development operations based on a decentralized industrial infrastructure.

That, then, is the background to this new UNIDO document, the essential aim of which is to measure the effects of population growth on economic development, and more particularly on industrialization, and conversely the effects of development policies, and more particularly of industrialization policies, on population growth. With this prime objective in mind, an attempt has been made in the general conclusions to give a clear answer to the question of the interrelationship between industry and population.

CHAPTER I. EFFECTS OF POPULATION GROWTH ON ECONOMIC DEVELOPMENT

A concern with population policy and development policy and research into the relationship between them is a relatively recent phenomenon, which is due to a considerable change in the rate, firstly, of population growth and, secondly, of the creation of wealth.

The first signs of these upheavals appeared in western Europe during the second half of the eighteenth century, when there was a simultaneous series of "revolutions", both in ideas and in modes of production ... and in the laws of human reproduction.

What later came to be known as demographic transition, 1/ a complex process by which more effective control of mortality is followed by more effective control of fertility, influenced the history of mankind profoundly, at least as profoundly as another and more obvious phenomenon, industrialization. The growth of population and the division of labour associated with the accumulation of capital brought about an irreversible change in the ancestral ties which had hitherto governed the peoples of the region.

Later on, these various "revolutions" were partly exported to other societies, with which they had no real connection. The attempt to reproduce the same changes in other places and other circumstances led to a series of self-supporting disequilibria (close to vicious circles), described by some authors as explosive or implosive, an indication of the grave dangers created for such communities by the irrational and unregulated socio-economic relations by which they were governed from then on.

The movement from a natural equilibrium between the death rate and the birth rate, both at a high level of 40 to 50 per mil, to a new equilibrium at a much lower level of about 15 per mil has not followed the same path in the countries now called developed and in the regions that are still developing. The reluctance of fertility to decline which is characteristic of the latter - a consequence of the persistence of the old socio-economic environment - has led to a marked gap between the two variables, which is reflected in a high rate of population growth.

It has thus become essential to study the rate of population growth or decline in relation to economic development, and more particularly to one of its major components, industrialization.

1/ See previous document, UNIDO/IOD.13.

The rate of growth, or more exactly the rates of growth, of the different variables involved in the general development process are fundamental to any consideration of the place of population policies within the more general framework of development policies.

At this stage in consideration of the subject it has become essential to go right beyond the elementary stage of comparing the growth rates of the population and a macro-economic index of wealth (GDP or some other indicator). At that level one can of course say that if the number of people grows faster than the production of wealth, the inevitable result will be that the community will get poorer. However, and this is why a critical approach is so important, the converse means very little unless this apparently positive conclusion is qualified by a whole series of further considerations about the unequal distribution of wealth and different categories of people (role of urbanization, families working in the modern sector, workers in industry, etc.).

In this chapter, therefore, we shall give a brief review of the respective rates of growth of some basic variables (natural population components, internal migration, data available on development), considering not just the global and regional aspects, but also various examples of countries thought to be representative. This will show how varied the different situations are and bring out the impact of population on development, with the costs and benefits it entails.

SECTION I. Growth rates

A. Global and regional

Some very general figures will indicate the extent of the difficulties raised by population growth: between 1960 and 1980 - during the first two development decades - the world's population grew by almost 50 per cent, from 3 billion to 4.4 billion.

It is often pointed out, of course, that the increase was not evenly distributed, and while the developed regions had a net population growth of some 0.2 billion, the figure for the developing regions was 1.2 billion! A regional analysis would show that growth rates were highest in Africa and tropical Latin America, while on western and above all northern Europe the trend was towards stagnation.

The geographical distribution cannot but raise serious difficulties, given that the increased urbanization found in most developing countries over the last decade is expected to continue. The present proportion of urban population is 28 per cent in the poorest regions as against 68 per cent in the rich countries. Since there are a whole series of factors hindering the development of rural areas, the flow of migrants thus caused, combined with the high natural increase in urban areas, implies that the towns will grow excessively if remedies are not quickly found for this situation, particularly through integrated rural development.

With this in mind, the forecasts made by ILO and FAO are bound to be disturbing: by the year 2000, i.e. in a quarter of a century, the world's labour force is expected to increase by 1 billion, from 1.6 to 2.6 billion. The number of persons in agriculture, however, is only expected to increase by 0.1 million over the same time, so that the surplus will necessarily have to find employment in the secondary or tertiary sector.

Here again the different regions show rather different trends, and we may compare the increase in the number of workers in Europe (+ 35 million) or North America (+ 36 million) with the situation in Africa (+ 132 million), Latin America (+ 105 million) or southern Asia (+ 375 million).

This general picture of the world demographic problem, whether as regards numbers (inhabitants, active population, etc.), growth rates or proportion in agriculture, is strengthened if we consider the main economic factors.

Thus we may compare the unequal geographical distribution of people with the unequal distribution of income: some $9,000 of GDP per capita in North America as against less than $300 in southern Asia or east Africa, inequalities which are further enhanced by the urban-rural cleavage, since average income may vary by a ratio of 1 to 5 within the same region.

In terms of growth, too, increasing inequality seems to be constantly reinforcing the radical differences between rich and poor countries. And the established position is not going to be much altered by a few more favourable growth rates in developing regions (e.g. increased employment in manufacturing industry), since the absolute numbers of people involved are still very small.

B. National

Having given these few indications about the regions, we now have to look more closely at certain countries considered to be representative. We shall confine ourselves here to the few indicators that are most generally used, which does not at all mean that they can really be representative. Generally speaking, however, they lend themselves more to political discussion, often to the detriment of a more rational approach.

We shall thus take the natural rate of growth, with its two components, the expectation of life at birth and the rate of infant mortality, the proportion of urban population, the proportion of children under the age of 15, the percentage of the active population employed in manufacturing, and finally, despite its acknowledged limitations, and for lack of anything better, per capita GDP. This use of indicators which, when all is said and done, are not very representative is to be seen as an attempt to illustrate the underlying theoretical processes necessarily implied by such references.

Some country data (end of the 1970s)

Country	Population growth	Birth-rate	Death-rate	Expectation of life (years)	Infant mortality	Urban population	Percentage of active population in manufacturing	Per capita GDP
Morocco	3.2 %	46 %	14 %	53	133 %	38 %	8,2 %	570 $
Sudan	2.7	46	18	46	141	20	4.0	300
Indonesia	2,0	35	14	50	91	18	6.5	300
Hong Kong	1.2	18	5	72	14	92	44,4	2 590
Peru	2.8	40	12	55	80	62	12,5	830
Jamaica	2.3	30	7	69	20	41	10,8	1 150

We have also thought it advisable to give the same particulars for developed countries at different stages in their history, so as to bring out the distinctions between the processes, which can be seen more and more clearly to be different in nature.

Figures for some developed countries during their takeoff stage

Country	Population growth	Birth-rate	Death-rate	Expectation of life (years)	Urban Population	Percentage of active population in manufacturing
England						
1750	0.0 %	30 ‰	30 ‰	(30)		
1800	1.2 %	35 ‰	23 ‰	(35)		
1850	1.0 %	33 ‰	23 ‰			27 %
France						
1750	0.2 %	35 ‰	33 ‰	(30)		
1800	0.5 %	32 ‰	27 ‰	34	19 %	14 %
1850	0.4 %	27 ‰	23 ‰	42	26 %	20 %
Japan						
1900	1.4 %	35 ‰	21 ‰		16 %	
1925	1.4 %	33 ‰	19 ‰		30 %	

The rate of growth for different countries varies quite considerably within a single region, often by as much as 2 to 1. It may be said here that there is no very clear correlation between the growth rate and the level of the component variables (birth-rate, death-rate); some countries which for geographical, historical or economic reasons have quite low death-rates may nevertheless have a high natural rate of growth. The dependence of these indicators on age structures specific to each country explains in part why geographical comparisons are of little value, but it may be pointed out nevertheless that in Europe during the demographic transition phase (second half of the eighteenth century and nineteenth century) the growth rates did not exceed 1 per cent.

The consequences of this situation are clear enough: in the present state of affairs the greater part of the developing countries must expect their populations to double every quarter or third of a century. This rate of growth is scarcely compatible with the domestic economic situation in the poorest regions or with the present rules governing international co-operation.

This rather gloomy picture is confirmed by a series of facts which reinforce the existing trends:

The high level not just of infant mortality but also of another less commonly used indicator, child mortality. At present those surviving to the age of 5 represent at best three-quarters of the original strength of a given generation. Efforts to combat child mortality thus tend to increase growth rates and to impose a disproportionate burden on the State by raising the proportion of juveniles, at least for the time being.

The geographical distribution of people within a particular State is also very unequal, some regions gradually losing their inhabitants to more fortunate areas or to the big towns, which find their natural growth rate increased by migration.

All these points prove, if proof were needed, the necessity of thinking beyond growth rates and measuring structural effects, which alone can provide information on the medium-term and long-term future.

SECTION II. Costs and benefits of population changes

The present situation is essentially due, not to excess fertility, as too many studies still imply, but to the gap between the two components of natural population growth, the mortality rate and the fertility rate. This gap is considered "abnormal" (because still very recent in the history of mankind) and dangerous in its consequences by many economists, who regard it as creating disturbing problems for development. It is certainly very difficult to determine whether a population trend is desirable without reference to the general economic framework. Whereas, at certain earlier periods, numbers were considered favourable both for production (labour) and for consumption (markets), today a high rate of population growth, for the country as a whole or for the towns, seems likely to represent a serious problem not just for the people's development prospects but even for the survival of mankind. Thus once again we find that the demographic factor, far from being the primary element in any analysis or strategy, is a secondary variable, dependent on the economic situation and on the development prospects, viewed not ex post a demographic factor, but ex ante that factor, and thus necessarily outweighing it in importance.

We thus move towards the idea of an optimum, an essentially theoretical idea, taking the form either of the ideal population size in relation to a State's economic and political objectives (this is fairly rare and designed rather to influence public opinion than to be really operational) or of the compatibility of demographic and economic growth rates. This latter view of the optimum may be explicit or implicit, but in either case it has to go well beyond the crudest aggregates to take in the fundamental facts, and in particular structural trends.

A distinction has to be made between developed and developing countries, as noted in the previous sections on growth indicators. However, it should be stressed that although in the two main groups of regions the consequences are rather different, and hence the policies proposed are very different, the underlying idea is the same: to adapt the population to the economic and political situation by means of population policies acting as incentives or disincentives and endeavouring to influence the prevailing sociological pattern by more or less similar procedures, to the point that the new strategies for "population education" turn out to be just as well suited to under- or over-population, which thus has to be described as "relative".

A. Developed countries

As already noted the developed countries as a whole show a serious decline in fertility, which, if it continues, will in the long term have negative effects, despite certain benefits in the medium term.

The short-term and medium-term consequences appear favourable. The decline in the number of young persons means a reduction in the provision that has to be made for them: education, health, family allowances. While this effect is mechanical and thus easy to apprehend, the economic impact - increase in the active population, shift in households' final demand, effect on savings and investment (development of private saving, other forms of investment) - is more open to question.

The long-term consequences are always an aging and absolute weakening of the country, without any guarantee of a greater improvement in its inhabitants' well-being. They are of two kinds:

Economic:

Shortage of labour;

Aging of the active population and relative increase in the number of old persons, who represent a greater burden than the young.

Political:

Increase in State intervention in order to limit the effects of tensions arising from the pressure of social costs and the appearance of bottlenecks;

Change in the electorate, and probably in domestic and foreign policy;

Growing disparity between the numbers of people living in developed and developing regions, with implications as regards access to the available natural resources.

B. Developing countries

The low-income countries present in most cases similar demographic characteristics:

High fertility;

Lowish or declining mortality;

Accelerating population growth;

Particularly young age-distribution;

Internal and external migration.

These characteristics have several important consequences for the economies of developing countries, which have to meet the new needs created by the extra population, support a considerable burden of inactive members of the community represented mainly by young people, who often account for 40 to 45 per cent of the population, and, finally, to deal with many geographical imbalances due to domestic migration, which depopulates some regions and intensifies the process of urbanization, all these burdens having to be met in addition to the legitimate desire to bring about a substantial improvement in the situation of the existing population.

With these considerations in mind many writers have developed a series of theories on the relationship between population and economics, which are in turn reflected in the most important recent statistical studies. But the idea that comes up most often is the marginal capital-output ratio, or the extra investment necessary to get an extra unit of output, because it brings out particularly the difficulties that are likely to nullify the efforts made by many countries to develop along "modern" lines. Because of the

capital-output ratio, population growth by itself creates a burden in the form of very high annual levels of investment, which are scarcely compatible with inadequate savings, even if the capital-output ratio is probably lower than some studies suggested just a few years ago. Thus even if we assume appropriate technology and forget about infrastructural investment, which is in fact essential, the creation of additional wealth turns out to be very expensive, in terms of the amount that has to be taken every year out of a limited national income. This analysis applies of course to the poorest countries, but they are usually also the most highly populated ones with the fastest growing population. This view is shared in particular by Ashley J. Coale, who points out that in order to modernize itself faster an economy has to increase its net investment, but that although a high level of net investment is a necessary condition for rapid industrialization it is not a sufficient one. Given, however, the same conditions as regards active population and total income, the level of net investment by a population with low fertility will be greater than that by one with high fertility. Furthermore, a population with more children to support is under constant pressure to use its investment funds for purposes which are less immediately productive (literacy, health, housing).

Once again, we may suppose that the problem would become clearer if the excessively global analysis proposed also endeavoured to deal with the problems in terms of structure and dynamic trends. Thus it is quite inadequate to characterize a region by the rate of growth of its population. It is, on the contrary, essential to show the changing relationship between the different functional populations. That would establish that some needs varied in importance over time as one generation replaced another.

There are many studies on the value of the capital-output ratio which should be used to multiply the desirable future growth rate for domestic product (equal to the sum of the population growth rate and the per capita product growth rate). The high value of this ratio (ranging from 4 to over 10) is due to the heavy additional burden caused by the lack of infrastructure. This situation explains attempts at reconciling a high population growth rate with the costs entailed by economic growth; part of the solution could surely be found if more attention were paid to the so-called "informal" sector.

Apart from growth effects as such, changes in population structure also mean that economic development plans have to be adapted to meet problems which may be quite old (e.g. urban growth), but which are taking on such dimensions as to represent one of the greatest challenges that mankind is likely to be faced with in the next two decades. It should be stressed that it is not nearly enough to consider growth indices alone, as current structural changes could multiply the expected effects by a factor of 10. The following three major aspects should be noted in particular:

The extreme youth of the population, which is likely to be increased by the reduction in infant and child mortality, will mean the maintenance of very high rates of dependence, which will be still more significant if we assume economic changes implying less child labour (this would in itself considerably change the role of the child and its place in the household and encourage smaller families).

Urban growth, which of course has two causes (natural growth of the urban population and immigration), raises extremely serious problems and requires a new strategy for the location of plant and production, particularly industry. For quite apart from the incommensurable social and economic costs of urbanization on a giant scale, there is cause for concern over the development of rural areas, which are continually being drained of their youngest, best educated and most enterprising individuals.

The low productivity of an abundant and largely unskilled labour force, which suffers very serious chronic unemployment both in rural and urban areas and has a legitimate right to demand employment. In this connection it is worth pointing out the danger of arguing in terms of comparative growth rates, as the encouraging growth of employment in the productive sector is still very far short of the required level and in any case insufficient to bring about a significant change in the relative shares of different national activities. There is also the risk of an increase in rural unemployment in several areas owing to the great scarcity of new arable land.

Finally, there is one direct consequence of population growth which should not be overlooked: the growth of demand. In the specific sector of manufactured goods, certain products are found to be directly dependent on the size of the population regardless of its wealth, in which case medium and long-term forecasting is perfectly feasible.

To conclude on the relationship between urban development and trends in industrial employment, we may note the analysis made by S. H. Preston, who on the basis of regional data for the period 1950-1970 found a relationship for developing regions by which the percentage of labour in industry was equal to half the percentage of urban population. A quick decline in this ratio may be expected in due course if other industrial growth models are not applied, particularly as part of integrated development operations.

SECTION III. Population policies

Any review of population policies is bound at present to be a hazardous undertaking, since the number of countries adopting such policies, overtly or covertly, pro- or anti-natalist, has been constantly increasing since the beginning of the 1970s, and particularly in the latter half of the decade. While the reasons are clear, given the accepted thinking on the interrelationship between the population and the economy, the actual forms these various policies take, and their stated objectives, are much more complicated to analyse.

For developed countries, the decline in population growth, with all its domestic and international implications in the long term, inevitably disturbs some politicians, who, while adopting more liberal rules on the availability of contraceptives or abortion - a process which changes people's attitudes and hence cannot be reversed - also try by a complex range of supplementary economic measures to help families wishing to have more children than the prevailing sociological norm.

In the developing countries the desire to reduce a birth rate which is considered too high is manifested in official family planning programmes or toleration for the activities of private bodies, domestic or foreign. These direct attempts to influence fertility are often combined with a whole series of more or less coercive measures of a legislative nature (raising the legal age of marriage, withholding family allowances after the nth child, etc.). In all these cases we find that there are difficulties in getting the use of contraception accepted by poor populations who are not particularly conscious of the problem, and that traditional values persist, particularly as regards marriage (early marriage related to the question of dowries, large

families and major role of male children, etc.). Thus in Tunisia family planning activities seem to have had slightly less effect, in terms of births avoided, than the introduction of legislation raising the legal marriage age.

Births recorded between 1967 and 1975	1,912,000
Effect of trends in the age structure	+ 276,000
Effect of trends in nuptiality	- 156,000
Effects of trends in fertility	- 120,000

(Source: Planning Familial, Tunisia)

There can be no question of our undertaking a detailed analysis of the different policies by region and by country. Many specialized publications put out by the United Nations and international family planning associations regularly include studies on this question which are intended to be exhaustive. We can, however, provide two kinds of information which, without being original, enable one to put all the activities undertaken in the field of family planning in a more specific context.

A. Population policy measures

A classification of the different measures taken by different countries to bring their populations into line with economic reality would be a very complicated undertaking and the result could hardly be complete. We may however refer to the classification drawn up by the World Bank, which is an excellent guide. 1/

Pro-natalist measures

Use of contraceptives forbidden

Sale of contraceptives illegal

Sale of contraceptives permitted, advertising forbidden

Pro-natalist incentives

Tax allowances for children

Maternity allowances

1/ Translator's note: Translated from the French. Official English text may differ.

Family allowances

Reduced rates for public services for large families

Study grants

Laisser faire

Anti-natalist measures

Official support for voluntary family planning programmes

Assistance to private organizations

Financial facilities granted

Official family planning programme

Use of public health services

Facilities

Official family planning programme including motivation campaigns

Explicit demographic objectives

Use of mass communications, group meetings, individual visits

Population education

Official family planning programme and economic incentives

Payments for acceptance of family planning (immediate or deferred)

No maternity grants

Encouragement of late marriages

Study grants for children of small families

Reduced rights and privileges for children beyond a certain number

Social security benefits confined to small families

Discrimination in favour of small families for public housing

Reduction in the usual allowances for repeated pregnancies

Marriage restrictions

Legal age raised

Social penalties, restrictions on family welfare

Restrictions on the number of children

Authorization to have a child

Social penalties

Taxation of children

Non-voluntary control of fertility

Temporary sterilization

Forced sterilization

On the basis of this classification, the World Bank has tried to estimate the number of persons covered by this or that measure. The consolidated table drawn up gives a clear geopolitical picture of population measures. It gives a fourfold breakdown by major world region:

Number of countries concerned;

Breakdown of countries by type of policy;

Number of persons concerned;

Breakdown of persons by type of policy.

It should be noted that in order to arrive at such an over-all view one inevitably has to take the main aspect of the State's policy, in order to eliminate double counting, since the policies adopted are sometimes contradictory.

We can sum the situation up by saying that in terms of the population concerned, the developed countries break down into 30 per cent for "laisser faire", 45 per cent for official family planning programmes and 15 per cent to be classified as pro-natalist. In the developing countries a distinction has to be made between different regions. Thus in Africa and Latin America laisser faire applies to some 40 per cent of the people, whereas the figure for Asia is only 4 per cent. In the field of anti-natalist policy, on the other hand, it is in Asia that one finds the greatest incentives (28 per cent), or sometimes coercion (40 per cent), whereas in the other regions there is no action of this kind.

As regards the countries concerned, the conclusions are obviously influenced by the size of the various States. In the developed countries the position is slightly less clearcut because there is greater support for voluntary programmes. In the developing countries the differences are

more evident: strong predominance of "laisser faire" in Africa (70 per cent), strengthening of official planning policies in Latin America (78 per cent), greater liberalism in Asia, where nearly half the countries are content with a certain "laisser faire" (43 per cent).

In conclusion one can easily relate these various breakdowns to the predominant attitude towards the demographic variable: a feeling of absolute underpopulation in Africa, reasonable population growth considered desirable in Latin America and a desire to strictly limit the increase in numbers in Asia. The classification is inevitably over-simplified, the position of a developed country whose population is virtually in decline having very little in common with that of a State undergoing a population explosion, even though in this classification they appear in the same group!

B. Results and new trends

As will be shown in the next chapter, apart from a few countries where the declining birth-rate was already more or less established, the main indices are declining very slowly in the developing regions, whereas in the rich countries they are dropping fast. With the experience of the last decade (1970-1980) behind us, we have to recognize the very great difficulty of influencing human reproduction patterns merely by making contraceptives available or providing various incentives to discourage or limit births, which very often have financial implications. Family size turns out to be deeply rooted in a socio-cultural environment which carries too much weight for mere superficial measures to have much chance of influencing it. In the circumstances, only measures aimed at the very foundations and principles of this socio-cultural environment appear likely nowadays to have any appreciable effect on individual and collective behaviour.

Population education arose out of a realization by the United Nations agencies of how important it was in the modern world to educate people about such phenomena as rapid population growth, loss of population, migratory flows or urbanization. Population education seeks to help school children and adults to recognize and understand the nature, causes and consequences of demographic phenomena and their relationship with the variables of economic, social and cultural development.

BREAKDOWN OF POPULATION POLICIES BY COUNTRY AND POPULATION CONCERNED

	Total for world				Total for developed regions				Total for developing regions				Developing regions											
													Africa				Latin America				Asia				Oceana			
	Country	%	Population	%	Country	%	Population	%	Country	%	Population	%	Country	%	Population	%	Country	%	Population	%	Country	%	Population	%	Country	%	Population	%
Total	171	100	3 665 682		36	100	1 089 510		135	100	2 576 172		53	100	359 305		36	100	260 483		40	100	1 954 747		6	100	1 637	
1. Use of contraceptives forbidden	-		-		-		-		-		-		-		-		-		-		-		-		-		-	
2. Sale illegal	2	1	36 927		2	6	36 927		-		-		-		-		-		-		-		-		-		-	
3. Sale permitted, advertising illegal	2	1	24 308		2	6	24 308		-		-		-		-		-		-		-		-		-		-	
4. Pro-natalist incentives	4	2	96 546		4	11	96 546		-		-		-		-		-		-		-		-		-		-	
5. Laissez faire	71	42	635 341		8	22	327 253		63	47	307 488		37	70	134 367		8	22	102 350		17	43	70 652		1	16	119	
Pro-natalist	(13)	(8)	(373 016)		(2)	(6)	(248 079)		(11)	(8)	(125 937)		(8)	(15)	(29 119)		(2)	(6)	(95 144)		(1)	(3)	(674)		-		-	
Neutral	(53)	(31)	(243 150)		(6)	(17)	(79 774)		(47)	(35)	(163 376)		(26)	(49)	(97 192)		(6)	(17)	(6 206)		(14)	(35)	(59 589)		(1)	(16)	(119)	
Anti-natalist	(5)	(3)	(18 175)						(5)	(4)	(18 175)		(3)	(6)	(7 786)		-		-		(2)	(5)	(10 389)		-		-	
6. Official support for voluntary programme	26	15	259 018		7	19	115 265		19	14	143 753		6	11	89 059		8	22	26 914		5	13	27 780		-		-	
7. Official programme	32	19	661 162		13	36	488 611		19	14	172 551		3	6	59 338		13	36	94 098		1	3	18 332		2	33	783	
8. Official programme including a motivation campaign	31	18	615 726		-		-		31	23	615 726		7	13	76 541		7	19	37 121		14	35	501 329		3	50	735	
9. Official programme and economic incentives	1		547 368		-		-		1		547 368		-		-		-		-		1	3	547 368		-		-	
10. Reduction in benefits for later children	1		2 110		-		-		1		2 110		-		-		-		-		1	3	2 110		-		-	
11. Restriction on marriage	-		-		-		-		-		-		-		-		-		-		-		-		-		-	
12. Restriction on number of children	1		787 176		-		-		1		787 176		-		-		-		-		1	3	787 176		-		-	
13. Non-voluntary fertility control	-		-		-		-		-		-		-		-		-		-		-		-		-		-	
No reliable information	3[b]		17 796[b]		-		-		3[b]		17 796[b]		-		-		-		-		-		..		-		-	

Source: IPPF.

Since population phenomena are essentially social phenomena, educating people on the subject does not just mean teaching them about trends in the population as a whole, but showing the mutual influence between the individual from his earliest age and the population to which he belongs. The values, way of life and behaviour of each individual influence demographic trends, particularly as regards family size, marriage customs and contraceptive practices. Conversely, an understanding of demographic phenomena at the collective level affects people's system of values and hence their behaviour.

Population education consists, first of all, in the study of what is known about the family and sexuality and attitudes to them. It goes on to deal with the interrelationship between the population and its socio-economic environment, with the emphasis on analysing the links between micro-economic attitudes and macro-economic consequences.

This is, as can be seen, a very ambitious undertaking, but it nevertheless seems to be indispensable in any serious attempt to modify the socio-cultural and economic environment. Once again the fact that development trends precede population trends is of fundamental importance. One can at best hope to take complementary measures based on the age differences between the generations involved (school children - active adults) in order to encourage in the medium term the simultaneous development of favourable trends in the economic and demographic indices.

CHAPTER II. EFFECTS OF DEVELOPMENT POLICIES ON POPULATION GROWTH

The effects of development policies on population growth can be seen in two ways. In the first place, from the theoretical standpoint, the link between economics and population is generally accepted and the demographic transition is one of its main manifestations. It is even one of the arguments often used by developing countries at international conferences when stressing the importance of giving priority to development policies in order to get greater control of population trends. However, this more or less unanimous agreement is not much reflected in research; there are too few studies aimed at establishing the links between certain aspects of economic and social development and population growth.

In view of this, it is therefore necessary to approach the task of describing the most important interrelations in a roundabout way. We shall deal in turn with the different demographic phenomena in relation to representative socio-economic factors, and then try to put forward general conclusions about the links between industrialization and population growth.

SECTION I. Value of statistical data and differential analyses

There are two basic questions facing the world at present, whether in the developed regions, where declining fertility implies a declining population in the long run, or the developing regions, where the high level of mortality and fertility remains disturbing. The first concerns the problem of monitoring the indicator of the phenomenon under consideration; contrary to what some studies say, this apparently simple matter cannot really be tackled in many developing countries, owing to the lack of sufficiently long and reliable statistical series to ensure satisfactory comparability. The second, which is no doubt much more important, concerns the actual criteria for a differential analysis of demographic phenomena, which is an essential prerequisite for any action, that is to say, any implementation of a population policy in the broadest sense. Originating in developed countries, where the economic criteria for differentiating populations are more easily quantifiable and social statistics more plentiful, differential analysis is now being called in question not just as to its conclusions but as to its actual

procedures in many industrial countries, while it is still extremely difficult to apply to less prosperous countries. The main reasons for this failure seem to lie in the traditional criteria used for differentiation in the past (religion, education, activity, housing, income, etc.).

A recent United Nations report on fertility [1/] states in its introduction: "Neither the supply nor the quality of the fertility measures for a majority of the less developed countries was adequate for the study of trends; for most of them, therefore, the discussions deal with the level of fertility at the most recent date for which acceptable measures were available, in most cases around 1970". Later on it says: "It was possible to assess trends for all or a part of the post-1950 period for each of the more developed countries, for 17 of the countries of Latin America, for 5 countries of Africa and for 7 countries of Asia". Thus despite the efforts made in the field of population study, notably by the United Nations, it is estimated that for 42 per cent of the world's population there is still no basis for making reliable fertility estimates (only 35 per cent of the world's population is covered by satisfactory birth registration).

In the field of mortality there is also still a great deal of uncertainty, particularly if one wants to find out more about certain specific rates such as infrant or child mortality. We may note in this connection the swings of fashion which mean that this or that phenomenon in turn gets the attention, purely for reasons of political convenience. The result is likely to be delayed recognition of the probable increase in mortality in some regions because of the resurgence of endemic diseases [2/] and concentration of health facilities.

Thus it can be seen that judgements on demographic trends are very tentative, and it remains particularly difficult to put forward any opinion on the size of changes in this or that indicator. More seriously, one has to guard against the systematic bias that would be caused by extrapolating to the whole of a region the few data that have been recorded with some

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1/ Levels and Trends of Fertility throughout the World, 1950-1970 (United Nations publication, Sales No. E.77.XIII.2), p. 16.

2/ This opinion was voiced in particular by some participants in the African Demography Seminar held at Abidjan in January 1979 under the auspices of IFORD.

degree of reliability for one part of it. There is obviously a strong correlation between a State's degree of statistical organization, its level of development and the absolute value of its demographic indicators.

These doubts about the most important rates have various implications, particularly with regard to the determination of the natural rate of growth, which is an essential element in any consideration of the relationship between demographic policy and development policy. This rate is merely the resultant of two doubtful figures, the errors in which may offset each other, but may also reinforce each other. If we take the example of a developing country having the average indices calculated by the United Nations for developing regions as a whole and assume a 10 per cent error, which is after all a perfectly acceptable degree of uncertainty for anyone handling socio-economic statistics, the rate of growth of the population would be somewhere between 1.7 and 2.5 per cent, so that the population might double in anywhere from 40 to 25 years, a disturbingly vague figure, particularly for those responsible for local planning! In these circumstances, then, apart from the difficulty of getting figures at all, it is particularly advisable to be very cautious about using them, rather than getting too excited about an expected decline or an apparently abnormal rise.

Two other aspects of the quality of population statistics and their use should also be stressed. The first is the great uncertainty about the "time-pattern" of demographic phenomena, i.e. the rate of occurrence of a type of event, birth or death, in relation to age. Here again, and still more so, there is a great deal of uncertainty, the difference between real and declared age often being considerable, although this information is particularly necessary for anyone wishing to encourage a spacing out of births or to introduce a plan for reducing adult mortality. The second relates to the traditional classification of subjects for study and the often tricky process of estimating the indicators used. Thus there is often alleged to be a decline in fertility on the basis of the gross reproduction rate, but this completely objective situation may in fact conceal a state of affairs which could be an unpleasant surprise for a country's political leaders. In most cases a decline in fertility does not at all mean a decline in the birth-rate, and this for two quite clear reasons:

In the populations of developing regions the youth of the inhabitants, which is reflected in the size of the younger age groups, is a guarantee of a high future birth-rate, whatever the fertility index may be, simply through the presence of a large number of potential mothers; this is the "population dynamic" effect, by which a greater or lesser amount of energy is, as it were, latent in the structure of a population.

A decline in fertility is generally accompanied by a reduction in the death-rate, i.e. by the survival of more potential mothers and hence by a greater number of probable births. Here again it is essential to get the measure of reality and to replace the crude index by the net index (allowing for the death-rate) in order to get the reproduction rate for the purposes of practical consideration of the relationship between population policy and development policy.

The concern with differential analysis of population is very directly related to the need to understand demographic phenomena with a view to possible action on them. That is why efforts have continued to measure the impact of this or that socio-cultural or economic variable on fertility or mortality. It must be recognized that since the last World War these various studies in developed countries have made it possible to identify a series of differentiated behaviour patterns.

Nevertheless, there are still questions to be asked, not so much about the method as about the variables used hitherto in developed countries. As an example, we may mention the distribution of the number of children on the basis of a socio-economic classification of families from the poorest to the richest, which took the form of an upside-down "J" (this distribution has been found in France and other rich countries). Similarly, mortality was found to be very closely linked in the industrial countries with the standard of living or membership in a socio-professional category. It had of course already been noticed in the past that the variables selected duplicated each other to a certain extent, the richest people also having better education, higher incomes and more responsible jobs and living in towns. For some years, however, this type of analysis has proved a less and less useful means of discrimination, and the homogenization of behaviour implies in the long term that other criteria will have to be used in order to explain the level of the variables.

This calling in question of the methods of differential analysis seems to involve various factors, both in the developed countries, where it had been applied to some effect, and in the developing countries, where it undoubtedly still remains a preferred means of research in connection with demographic policies in the broad sense (reduction of mortality, attempts to establish a new fertility pattern).

In the industrialized countries the substantial decline in fertility means that it is no longer possible to use monetary criteria alone; psycho-sociological analyses are found to be essential, taking into account among other things the role and place of the child as a consumer good competing with other goods on the market (this makes it easier to understand the failure of pro-natalist policies based exclusively on financial advantages). Similarly, the development of a minimum of education and access to socialized medicine reduce the differences in mortality, which now tend to depend much more on differences in working conditions (alternating shifts, exacting conditions, proximity of moving machinery) within one and the same socio-professional group rather than on differences between occupations.

In the developing countries, it has to be noted first of all that even if the criteria which have proved partly ineffective in the rich regions are relevant, they cannot be wholly transposed just as they stand but require various adaptations to specific societies which are following different development paths. Certain criteria accordingly acquire special importance, such as urban growth or education, whereas others are inoperative for the time being, for lack of a subpopulation sufficiently differentiated in size and behaviour (the fact that industrialization is recent in many countries means that it is not yet possible to isolate the behaviour of the working class). One can thus envisage a range of different classifications, urbanization being a good example: an attempt should be made to distinguish different ways of life that go with living in the country (nomadic and sedentary populations, proximity of facilities, etc.) and in the town (length of residence, location within the town, occupational status, sector of activity, size of agglomeration, etc.). These are all relevant questions, which go well beyond the simple urban-rural distinction used at present, moving towards criteria based on the way of life which are adapted to the sociological reality of the communities under study.

SECTION II. Fertility trends

Although the foregoing discussion has alerted the reader to the relative nature of the information available on fertility in developing countries, we shall endeavour to present the most reliable data below.

A. Fertility in developed countries

The way fertility has moved in the rich countries is one of the most striking population trends of recent years. The phenomenon is very widespread and the data on mortality rates in 1978 confirm the decline that has been observed for less than ten years, the size of which still surprises most of those who study this field and who are responsible for population policies. Thus most of the indices for western or northern European countries are below 14 per mil, a situation which has never been observed except in times of grave crisis. In southern Europe the levels are higher - 15 to 18 per mil - but there again the decline, though slower, is certain, Italy in particular having now reached the same level as the Netherlands. The same trend is found in the eastern European countries, but the rates remain appreciably higher than those found elsewhere - 14 to 19 per mil. The developed countries in other regions of the world have an index of about 15 per mil.

This situation is confirmed by the current fertility index (setting aside the impact of differential sex and age structures in different States). However, the classification given above is called in question to some extent as a result of the disappearance of situations of relative aging taken into account by the birth-rate. Thus the non-European developed countries show the same pattern as those in western and northern Europe.

At all events, we find that the rapid decline in current fertility, which does not definitely indicate the ultimate size of the next generation, slowed up a little in 1977-1978. However, most of the industrialized countries, outside southern and eastern Europe, continue to show current indices well below the replacement level (the average number of children per woman varying in these recent years between 1.4 and 1.8).

The demographic situation found in most developed countries, which is markedly different from that in the rest of the world, is inevitably considered by some people to be disturbing if not alarming. The reasons mentioned can be classified under three main heads:

The very different trends in the industrial countries, many of which have virtually a declining population, and in the developing regions, whose populations are growing rapidly. This purely quantitative expression of the change in the world population balance takes on much more profound meaning in relation to the attempts being made to establish a new international economic order.

The possible existence of a positive correlation between demographic growth and economic growth in the rich countries. Although difficult to demonstrate objectively, this idea is often put forward in a purely ideological context.

The effects of a change in age structures, with the proportion of old persons growing and that of the young undergoing a relative and often an absolute decline. This is a situation which inevitably raises delicate questions concerning the long-term financing of pensions through redistribution, and that of the socialized medical sector.

In view of this rapid decline in fertility and its considerable medium-term and long-term implications, one ought to beware of passing hasty judgement on the nature of the phenomenon without knowing whether it is just a sudden but passing upset and will thus have no irreversible consequences, or is a much more profound change of direction which is likely to cause a lasting upheaval in the world's demographic and also economic situation.

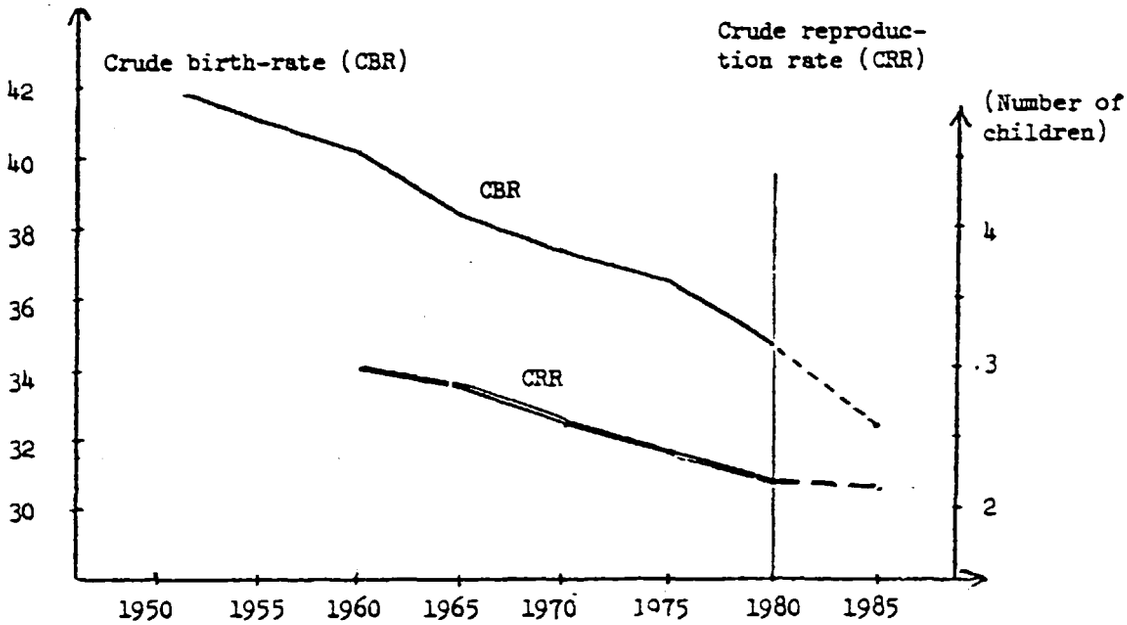
B. Fertility in developing countries

According to the most recent data available, the fertility situation in developing countries is much less clear-cut than it was at the beginning of the 1960s. Indeed, fertility indices have dropped quite considerably in some countries, particularly among the Chinese populations of eastern Asia and in certain parts of the Caribbean. Fertility is still high, however, in Africa, most of southern and western Asia and some Latin American countries. This brief survey shows that the trend towards a drop in fertility observed several years ago in a number of countries (mostly small ones - Singapore, Hong Kong, Cuba, Jamaica) seems to have been confirmed in most cases, but that the situation has changed very little in the remaining developing regions, which is after all very logical considering the extent of the problem (cultural restraints, limited means, resistance to change, slowness of demographic trends).

Recent fertility trends in developed countries

Country	Birth-rate				Total fertility rate			
	1975	1976	1977	1978	1965	1970	1975	1978
France	14.7	13.6	14.0	13.8	2.84	2.47	1.92	1.84
Norway	14.1	13.3	12.6	12.7	2.93	2.51	1.99	1.76
Netherlands	13.0	12.9	12.5	12.6	3.04	2.58	1.67	1.59
Federal Republic of Germany	9.7	9.8	9.5	9.4	2.51	2.01	1.45	1.39
United Kingdom	12.5	12.1	11.8	12.3	2.83	2.44	1.81	1.76
Sweden	12.7	12.0	11.6	11.2	2.42	1.92	1.78	1.59
Spain	18.7	18.3	18.0	-	2.95	2.86	2.76	-
Italy	14.8	13.9	13.2	12.6	2.65	2.39	2.19	-
Hungary	18.4	17.5	16.7	15.7	1.82	1.96	2.39	2.14
German Democratic Republic	10.8	11.6	13.3	13.8	2.48	2.19	1.54	1.89
USSR	18.1	18.4	18.1	-	2.46	2.39	2.41	-
United States of America	14.8	14.8	15.3	15.3	2.96	2.48	1.81	-
Australia	17.3	16.7	16.1	15.7	2.97	2.85	2.23	-
Japan	17.1	16.3	15.5	15.1	2.14	2.13	1.91	-

Source: INED.



Source: United Nations.

At all events the scarcity of time data on reproduction rates is regrettable, the information available on birth rates being highly unreliable from the theoretical standpoint, since it is strongly influenced by the structure of the population under study. In the circumstances it is not impossible to observe over a long period (two decades) a decline in the birth-rate which is not at all confirmed by a corresponding decline in the crude reproduction rate. It would even seem that in certain cases there could be a rise in the reproduction rate, as is suggested by certain remarks in a recent United Nations report. 1/

Furthermore, as we have already mentioned above, it is disturbing not to have the net reproduction rate, which would enable us (in combination with the crude rate) to measure the respective effects of the decline in fertility and the decline in mortality. We therefore give below a sample calculation making the comparison for two countries, one developed and the other developing, which are characteristics of the average situation in western Europe and west Africa.

1/ World Population Prospects as Assessed in 1973, United Nations, Population Studies, No. 60 (Sales No. E.76.XIII.4).

Comparative calculation of reproduction rates								
European country					African country			
Survival index	Fertility index	Crude births	Net births	Ages	Survival index	Fertility index	Crude births	Net births
9830	23	115	113	15-19	7538	112	560	422
9703	122	610	592	20-24	7378	324	1620	1195
9773	125	625	611	25-29	7234	356	1780	1288
9738	65	325	316	30-34	7093	329	1645	1167
9688	25	125	120	35-39	6938	263	1315	912
9611	7	35	34	40-44	6789	148	740	502
9492	1	5	5	45-49	6617	37	185	122
Crude reproduction rate: 0.898					Crude reproduction rate: 3.828			
Net reproduction rate: 0.874					Net reproduction rate: 2.736			

Note: In calculating the number of crude and net births, it should be borne in mind that the fertility rates used for a five-year period are defined in annual terms.

Source: The author.

It will be noted that while the gross reproduction rates vary greatly, in a ratio of 1:5, the net rates allowing for mortality are closer, in a ratio of 1:3. This very simple example enables one to take into account the effects of a more rapid decline in mortality up to 50 years, or even up to 35 years (the age at which births that have already occurred represent between two thirds and three quarters of final family size) than whatever rate may accompany the fertility rate. This leads towards a better realization of the potential energy contained in very high fertility indices, which have never taken full effect in the countries where they occur because of the high mortality. The future may be much darker in this field than would be implied just by the natural rate of growth.

Doubts about the available information notwithstanding, we give below the main official figures for major regions, taken from United Nations publications. 1/

Africa

The crude birth-rate is actually available for only four countries, which, moreover, are not representative of the region, so that one can only rely on estimates.

Africa	Total	East	Centre	North	South	West
1975-1980	45.7	47.4	44.2	42.0	43.2	48.5
1980-1985	44.8	46.4	44.3	40.5	41.3	47.9

Source: United Nations.

This high fertility is the result of the poor health and nutritional conditions in the region and of specific family traditions which encourage large numbers of children. 2/

Asia

The crude birth-rate is available for seven countries, one being a developed one (Japan) and the others small States which are not at all representative of the region and have rather special economic development conditions, as a result of the position they occupy in the process for the international transfer of technology.

Asia	Total	East	South	South-East	Centre South	South West
1975-1980	29.7	24.6	40.7	40.6	40.7	42.0
1980-1985	28.8	22.3	38.4	38.3	38.4	40.7

Source: United Nations.

1/ In particular, World Population Trends and Policies (United Nations publication, Sales No. E.78.XIII.3).

2/ Thus most of the calculations made since 1965 in an attempt to determine the crude reproduction rate arrive at an index around 3.

Fertility is again very high here, except in east Asia, where the lower number of births per woman dates back quite a long time but affects only a small fraction of the population (leaving aside China, for which data are not available). The crude reproduction rate estimated for a much more recent date (1970-1975) confirms the tendency shown by the crude birth-rate, namely, indices between 2.5 and 3.5, and this, it must be recognized, despite the fact that there has been birth planning in the region for some time.

Latin America

The information for this region is in general much more reliable and has quite a wide scatter because of the heterogeneity of the different States in the region. At all events, a distinction can be made between the populations living in the temperate zones and certain Caribbean islands, who have a relatively low fertility, and the other populations in the tropical and central zones, who have a high rate.

Latin America	Total	Caribbean	Central	Temperate	Tropical
1975-1980	36.1	31.9	41.6	22.8	37.0
1980-1985	35.0	31.2	40.8	21.9	35.4

Source: United Nations.

Having statistical series which are relatively long, although unequal in quality, one can observe a slow but sure decline in fertility on the basis of a decline of 0.3 to 0.5 in the crude reproduction rate over a decade (1960-1970), equivalent to an average of about one child less per woman.

C. Differential data on fertility

We have already drawn attention to the difficulty of differential studies, but we can indicate for some variables certain behaviour patterns in relation to fertility which without providing an explanation in themselves are quite representative of progressive forces. For this purpose we shall take two variables, education and urbanization, which reflect trends at the micro and macro levels towards a modernization of the system.

The analysis of fertility levels according to place of residence is fairly homogeneous whatever the region. Generally speaking, one finds a slightly lower fertility for the youngest generations of women living in towns. It should however be stressed that in the developing countries the information is always far too inadequate to support any definite assertion about the influence of this variable (in the developed countries the connection is clear, but it affects fewer and fewer families, as a result of urban migration since the end of the last war). Any attempt to find an explanation in the poorer regions comes up against the inferior quality of the data, but the rise in the age of marriage seems to be one of the fundamental elements. It should be noted that there are some exceptions to this process, particularly in Africa, where recent migrants to the towns seem to have more children, owing to better health care and a diminution of the effects of post-partum taboos, which are still very much alive in traditional rural societies. (Thus disregard of the prohibition on sexual relations during nursing of a newly-born child results in a reduction in the gap between births and thus to an increase in their number in the absence of contraceptive practices.) Furthermore, "Since most of the measures of current and past differentials are based on either the average parity of all women, or on child-woman ratios, differences in the incidence of marriage and on age at first marriage, as well as variations in marital stability, may account for the rural/urban differences". 1/

Crude final issue, rural and urban

Country	Japan	Korea	Thailand	Philippines	Bangladesh	Pakistan	Sri Lanka	Puerto Rico	Dominican Republic	Mexico
Rural	3.07	5.98	6.69	6.00	5.77	5.40	5.35	6.07	8.48	7.13
Urban	2.46	5.02	5.26	6.20	5.14	5.50	5.27	3.71	5.69	5.87
Country	Chile	Peru	Morocco	Malaysia	El Salvador	Brazil	India	Paraguay	Argentina	
Rural	6.31	6.43	7.15	6.20	7.29	6.69	5.83	7.18	3.42	
Urban	4.08	5.26	6.94	5.30	7.19	4.75	5.76	4.79	2.05	

Source: United Nations.

1/ Levels and Trends of Fertility throughout the World, 1950-1970 (United Nations publication, Sales No. E.77.XIII.2), p. 301.

At the world level, data on the influence of education on fertility are even scarcer and rarely very reliable, but some general tendencies can be discerned. In Africa there is more or less consistently a negative correlation between the level of education of the wife (more so than for the husband) and the number of children, particularly from primary school onwards; before that there is to a limited extent a positive correlation when the wife has some rudiments of education. In Asia, on the other hand, the number of children seems to depend closely on the level of education. It is true that, particularly in the eastern region, the population is one that makes considerable use of contraceptives, for which a certain level of education has always been considered essential. But here again one can find positive correlations for women with a minimum of education, who can be distinguished, for example, from illiterates. In Latin America the pattern is identical. Only the developed countries do not fit the model, since a large proportion of them, particularly western European countries and Australia, have a differential fertility distributed in relation to education according to an upside-down "U" or "J" curve, the highest fertility being found amongst the least educated women and the most highly educated (those with higher education). In other developed countries, particularly in eastern Europe, the correlation remains as a whole exclusively negative.

It is worth noting however that education - like urbanization to a certain extent - is a very complicated variable to study, because literacy programmes have not been going for very long in developing countries. Thus when one speaks of the final number of children of a woman in relation to her level of education, it has to be borne in mind that the number of women who had access to any particular qualification 40 years ago was extremely small and there is a strong presumption that they must then have belonged to the generally better-off classes. The situation today is quite different, and one cannot put educated women coming to the end of their period of fertility today on the same footing as those who will do so in 10, 20 or 30 years' time. The only alternative solution would be to compare the number of births at an equal age, but this indicator is too difficult to use, because there is a definite variation in the time patterns which makes it impossible to work seriously on anything but the final number of children (at age 45 to 50).

While the results of this inquiry into fertility are modest, we ought to say that it will shortly be possible to have very interesting comparative data as a result of the efforts being made in this field in connection with the World Fertility Survey. This survey, which is being carried out in a large number of countries, representing most situations found in the world, seeks in particular to measure the level of fertility in relation to criteria regarded as relevant (housing, education, employment, family structure, matrimonial history, attitude towards contraception, etc.). It is to be feared, none the less, that there will still be a certain vagueness about the indices, because it has been necessary to leave room for events to be recorded retrospectively.

SECTION III. Factors affecting the use of contraceptives

The factors affecting the use of contraceptives are many and ought to be organized according to a simple classification for easier treatment, but in this very complex field of the interaction of socio-educational, economic, demographic and biological factors, there can be no claim to be exhaustive or to provide a universal model. The specific details of micro-economic behaviour are still little known, and their interrelationship with macro-economic behaviour is one of the most complicated questions facing current research in the social sciences.

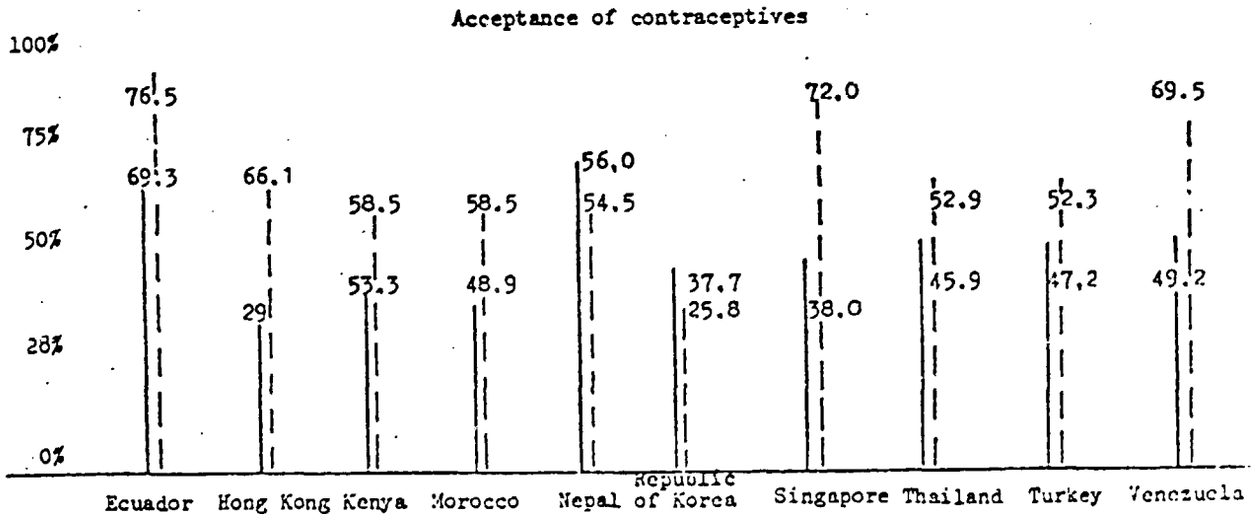
A. Biological factors

It is not the purpose of this document to go over the biology of reproduction, and hence of the different methods of contraception that have been proposed. It may be noted, however, that in this field the progress of knowledge has very direct repercussions on the actual use of contraceptives. Such progress is being made in two main directions: greater efficiency with the methods that are least trouble and a reduction in secondary effects (mini-pill, long-term pill, implant, new IUDs). An impending technical revolution with unforeseeable implications might mean that contraception was no longer voluntary for the individual but something that simply happened to him (as is the case already for the control of the major infectious diseases).

B. Demographic factors

We shall confine ourselves here to the female sex, but it is obvious that the man has a major role in this field, both as regards his demographic characteristics (age, difference in age from wife, number of wives) and his attitude to male or female contraception and the choice of the number of children. The role of the man is only just beginning to be taken into account in specialized studies.

It is clear that the success of any programme to spread the use of contraceptives depends directly on the demographic characteristics of the women concerned. Women under 30, or even 25, whose parity is low, are the prime target for any such programme. Too often in the past the statistics for women using contraceptives have included women at the end of their fertile period, for whom the consequences were very limited (in terms of the number of births avoided), despite the fact that their commitment to a method went much deeper because they were more highly motivated (feeling that they had too many children already).



Married women aged 15 to 29 as a percentage of all married women

Contraceptive users aged 15 to 29 as a proportion of all users

Similarly, the most recent United Nations information available [1/] allows one to conclude that there is a certain correlation between the method used and the age of the user, but here the role of national legislation and contraceptive distribution channels is far from being a neutral one. It can be said however that in most cases where information is available on the average age of users of the pill and the average age of users of IUDs, the former are generally younger. This can no doubt be regarded as the result of a desire to space out births to a greater or lesser extent or a final refusal to have any more (the oldest women).

Average age of married women and contraceptive users (Pill - IUD)

Country	Married women	Pill	IUD	Country	Married women	Pill	IUD
Ghana	27.0	29.6	32.1	Korea	31.7	34.0	33.2
Kenya	29.3	28.0	29.3	Philippines	30.8	29.6	29.9
Mauritius	30.7	26.8	30.2	Thailand	30.7	29.5	29.2
Tunisia	31.2	31.4	35.6	Colombia	30.9	24.6	25.9
Hong Kong	35.3	25.5	29.5	Dominican Republic	29.4	24.1	25.9
Indonesia	30.2	28.7	29.7	Mexico	30.0	27.0	28.5

Source: United Nations.

Apart from the age of the woman, the number of children still living has, as might be expected, a considerable influence on her decision to use contraceptive methods; this is an essential factor in determining the scale of a programme. Generally speaking, it can be said that the parity of users is quite high, more than four living children in Africa and more than three in the other developing regions. If allowance is made for infant and child mortality, one has to think of an average of four to six completed pregnancies.

1/ United Nations Demographic Yearbook 1970 and 1971.

Average number of living children of users (data for 1972-1973-1974)					
Country	Pill	IUD	Country	Pill	IUD
Colombia	3.3	4.0	Mexico	3.7	3.7
Ecuador	2.5	3.7	Nepal	3.4	3.3
Ghana	3.9	4.4	Philippines	4.1	4.3
India	3.4	4.4 *	Rep. of Korea	3.9	3.8
Iran	4.2	4.7 *	Dominican Rep.	2.7	3.5
Kenya	4.1	4.8	Thailand	2.6	2.9
Malaysia	3.1	4.5	Tunisia	-	4.3

* Vasectomy

Source: D. Nortman, United States Bureau of Census.

It can be seen that IUD users have more children, quite logically, since we have already seen above that they are also older. A more detailed analysis of this phenomenon on the basis of the distribution of users of a method in relation to the number of living children confirms that women with smaller families use the pill to a greater extent than those with larger families, whereas the reverse is true for IUD users.

C. Socio-educational factors

It should be pointed out, first of all, that although emphasis is generally laid on the difficulties encountered in contraceptive distribution, there are, paradoxically, fairly serious traditional methods in all developing regions with the avowed objective of avoiding pregnancy. One might therefore wonder at first sight whether enough has been put into the study of traditions and ways of using them in order to influence women more easily. Population education could do original work in this field provided close attention was given to the fertility rules and the role of the child.

Having made this preliminary point, we can concentrate on analysing the impact of socio-educational variables in relation to two particular aspects, firstly the number of children desired and secondly the use of contraceptives in relation to the level of education.

As regards the first aspect, it is a matter of finding out what women, generally married women over 15, regard as the ideal number of children. This ideal figure is not necessarily the number of children they want to have themselves nor, a fortiori, the number that they will actually have. The replies given tend to indicate a certain standard accepted at the time of the survey and could thus be regarded as a sort of social expectation of what the number ought to be, which will be the outcome of deep-seated aspirations, community pressure and the influence of the mass media. However, this indicator is closer to a current fertility index than to the number of children calculated for groups which have come to the end of their fertile period, who are in a minority among the respondents or are even left out of the sample interviewed.

Africa (1966-1973)		Asia (1968-1973)		Latin America (1964)	
Morocco	4.6	India	3.0	Brazil	2.7
Nigeria	7.3	Indonesia	4.0	Costa Rica	3.6
Sierra Leone	6.1	Iran	4.3	Mexico	4.2
Tunisia	3.4	Philippines	5.4	Venezuela	3.5
		Singapore	3.1		

We find that the figures given are fairly well below the final number of children found for the 1930-1935 generations of women. Similarly, for lack of any information about the age structure of the women investigated, it is very difficult to give any credit to information about the average number of children these same women have at the time of the survey. The most one can do is note that the two answers are similar in a large number of countries, which is, to say the least, surprising and greatly limits the conclusions one can draw from this type of analysis. This uncertainty is quite understandable when one considers the procedure adopted in most developing regions wishing to introduce a population policy: the macro-economic figures compatible with development objectives are only distantly related to micro-economic aims and desires, the study of which therefore takes second place.

As regards the second aspect, the relevance of the educational level, the link between the use of contraceptives and school attendance is quite clear. Illiterate women use modern contraceptives less often than others;

the users who are most numerous in proportion to their educational group seem to be women who have attended primary and secondary school. 1/ Beyond that the relative number of users seems to decline (in fact these are very small groups and not much is known about their specific behaviour). Once again the role of a population education programme is seen to be very important from primary school onwards, particularly if it is designed to enable the future parents to decide consciously how many children they should have and how they can achieve their goal.

D. Economic factors

In the present state of knowledge it is difficult to measure the impact of micro-economic data (income, cultivable area, degree of social protection, etc.) on contraceptive behaviour. The relevance of such an analysis would depend too much on the very doubtful possibility of measuring the role of extremely different economic systems on individuals and their families. We shall therefore confine ourselves here to a strictly macro-economic approach, which will be concerned with three aspects: 2/

There are macro-economic relations showing a positive correlation between the percentage of married women of childbearing age practising contraception and three variables: the percentage of urban population, the proportion of girls attending secondary school and the number of wireless sets per thousand inhabitants. One can also show negative correlations between the same index of users, the rate of infant mortality and the percentage of women aged 15 to 19 who are married. These different correlations express a very simple idea: the use of contraceptives is more widespread when the socio-cultural and economic level of the country is high and the weight of ancestral tradition is low. These are global conclusions, which are of course important, but are in fact much less usable than the micro-economic data discussed above.

1/ Terms relating to education of the Anglo-American type.

2/ We have drawn on the OECD publication "Une évolution des programmes de planning familial", Paris, 1972.

Human and material resources available per 10,000 inhabitants in 19 developing countries with an official population policy

	Republic of Korea	Singapore	Mauritius	Hong Kong	Iran	Thailand	Colombia	Pakistan	Egypt	Malaysia	Tunisia	Sri Lanka	Philippines	India	Kenya	Nepal	Turkey	Morocco	Indonesia	Correlation index
Doctors	4.3	6.6	2.2	4.3	1.1	1.2	4.5	1.9	4.9	2.4	1.4	2.7	7.2	2.1	1.0	0.3	4.4	0.8	0.4	.65
Midwives	2.0	9.1	1.9	1.7	0.4	1.0	-	0.1	2.7	2.5	0.3	3.3	4.0	1.3	2.2	0.1	1.7	0.1	0.5	.38
Nurses	3.8	18.4	8.9	10.5	2.3	2.1	3.7	0.7	2.1	6.1	2.9	3.4	8.1	1.2	5.3	0.2	2.4	2.2	1.2	.44
Hospital beds	5.2	38.5	40.0	35.7	11.5	9.7	23.8	3.9	21.3	38.5	23.8	30.3	13.9	6.0	13.7	1.5	19.6	14.7	6.8	.34
% of married women of reproductive age	33	25	19	50	51	10	18	6	10	14	9	7	-	11	-	-	9	3	1	X

Source: OECD.

The organization of the health system, to which the programme for mother and child welfare is often attached, is an important factor in the spread of contraceptives.

Two questions arise here, firstly the amount of human and material resources available, which is shown in the table above, and, secondly, the concentration of such resources in particular areas, especially the big towns and capitals. It is hardly possible in the circumstances to pass an objective judgement on these aspects, in the absence of differential coverage rates for administrative subdivisions.

To these quantitative factors should be added the task entrusted by the central authorities to the health service under a programme for the encouragement of contraceptive methods.

The channels for the distribution of contraceptives are also extremely important. It is one thing to convince a woman or a couple that it would be a good thing to space out births, for the greater well-being of the children and their mother, but it is quite another thing to give them easy and continuous access to contraceptives. Distribution by official bodies, hospitals, clinics, mother and child welfare centres in various parts of the country often proves inadequate because the population is too scattered. Many experiments are therefore being undertaken to develop distribution channels using the existing institutions, whether commercial (little shops which sell everything) or non-commercial (village associations, community organizations using the existing social institutions). According to the "Population Information Programme - Johns Hopkins University", 83 programmes of this type have been launched recently, in the period since 1970, and particularly since 1974. The results in most cases have turned out very encouraging. These new methods of contraceptive distribution are found to meet the requirement of accessibility, whether geographical (near the user), economic (cost nil or very low), administrative (no red tape) or informational (in Korea and Bangladesh, 70 to 80 per cent of persons asked did not know where they could get contraceptives; an intensive information campaign is thus essential). Evaluations being made in Indonesia seem to show that the rate for keeping on with the use of oral contraceptives is higher in programmes working through the community than in those working through a clinic (76.3 per cent to 65.9 per cent at the end of 12 months and 47.9 per cent to 33.1 per cent at the end of 36 months).

E. Other factors

In order to complete this study of the factors affecting the use of contraceptives, it would have been helpful to discuss the whole range of state regulations (legislation on contraception, legal organization of planning services, customs regulations) and official measures (statements by leaders, action by the mass media, state and international financing). Finally, local contraceptive production capacity, both present and future, must also have an effect, which has been little studied so far and should be looked into soon.

SECTION IV. Socio-economic factors determining mortality

A. General considerations

Mortality, too, seems to have changed very slowly during the past decade. We might quote in this connection a United Nations report which finds the following situation: "Mortality improvement registered in countries with reliable death statistics suggests that the rapid increase in life expectancy in the 1950s was not repeated in the 1960s. That finding was anticipated in those countries where the level of mortality was already low in 1960. In addition, however, there was some evidence to suggest that those developing countries which still had a moderately high mortality level at the outset of the 1960s did not experience declines during the decade as rapid as those achieved in the 1950s by other developing countries where the transition to lower mortality levels had begun earlier. At the same time, a study of intercensal changes in the age distribution of population for many less developed countries suggests that the improvement of mortality in the 1960s was below expectation". 1/ The opinion stated in the report is still relevant today, and one should perhaps lay still greater stress on the stagnation of the indices in recent years, both in the most advanced countries, where the expectation of life seems to have reached a ceiling at about 70 years, and in the least developed countries, where life expectancy is in many cases under 40 in Africa and 50 in Asia. One may even note in this connection the fears expressed by some specialists that mortality might start climbing again in some regions because of inadequate health services and a shortage of foodstuffs.

1/ World Population Prospects as Assessed in 1973, Population Studies, No. 60 (United Nations publication, Sales No. E.76.XIII.4) p. 11.

Trends in the various total national indices depend essentially on the mortality risk at different ages. We should stress here that the big gap between life expectancy in an industrial country and in a developing country is mostly due to the risk of death in early childhood (infant and child mortality). This makes it easier to understand, firstly, the ceiling reached by the most developed countries, which have practically eliminated this kind of risk and have no other possibility of improving their chances of survival except by limiting the risks run by adults and old persons (which is not what happens; see, for instance, the limited decline in the expectation of life observed in some industrial countries at the beginning of the 1970s), and, secondly, the objectives which the developing countries have to set themselves if they want to combat mortality.

Crude mortality rate for some representative countries					
Country	1960 1965	1970 1975	Country	1960 1965	1970 1975
Burundi	29.0	24.7	Honduras	20.7	14.6
Mauritius	9.7	7.7	Chile	11.9	9.2
Congo	24.7	20.8	Brazil	10.2	8.8
Egypt	18.0	14.0	Peru	15.7	11.9
Ghana	25.0	21.9	Mongolia	13.5	9.3
Senegal	24.7	23.9	Singapore	7.1	5.4
Haiti	18.5	16.3	Iran	19.6	15.6

Source: United Nations.

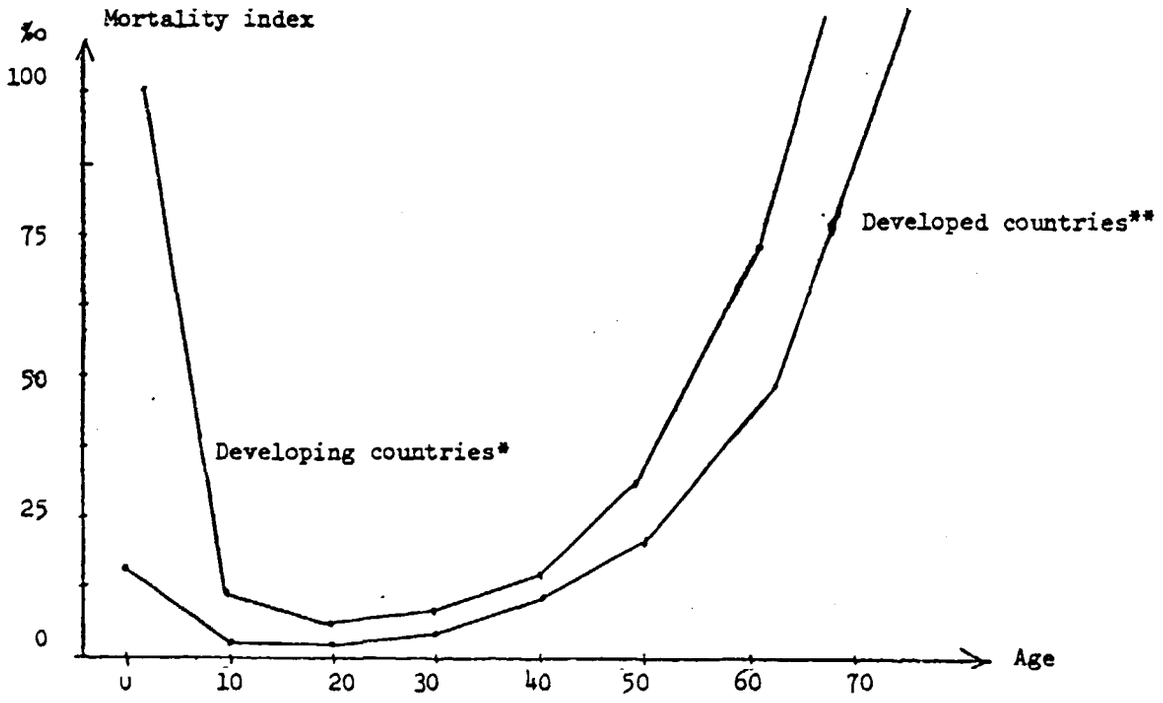
Within this general framework of the recent trends in mortality, it would be helpful to try to estimate the influence of the different variables likely to affect the level of the phenomenon. This is a difficult task, since considerably less is known about mortality today than about fertility, for two main reasons, which in fact are closely connected:

The collection of information on mortality comes up against the ineffectiveness of legal regulations which cannot replace habits as is the case with births, where failure to notify may have consequences for the family (a fine) or the child (exclusion from school).

Current political thinking puts the emphasis essentially on the number of children and the disadvantages of having too many, quite wrongly neglecting mortality. The historical tendency for politicians to switch interest from one to the other can prove very harmful, considering that a large part of the world still has very high mortality rates.

In analysing the differential data, the role of sex and age should be briefly indicated, since that is where the influence of all socio-economic variables shows itself.

The mortality time series, showing the level at each age, takes the form either of a "J", in the industrial countries, or of a "U", in the developing countries. But apart from this difference of shape, which is essentially due to the extent of infant and child mortality, we should stress the benefits of a thorough study of adult mortality, which depends essentially on the health and nutrition situation in the poorest countries, and is heavily influenced by industrialization and the way of life it entails (pace of life, consumption, accidents) in the rich countries.



* Average situation in west Africa
** Average situation in western Europe

In the same way one should also take the sex of the population into account, a variable the effects of which fluctuate much more from one country to the other. Thus one finds excess female mortality in some countries where repeated pregnancies are combined with a lower status for women, while in others male mortality is high because of the multiplication of specific risks (alcoholism, accidents). In the circumstances, although sex may be an essential element in mortality, each particular case must be considered separately.

Investigation of the impact of socio-economic variables on mortality is particularly difficult for lack of data in this field. The reasons why they are lacking are fairly clear; firstly, inadequate official registration of events (births, marriages and deaths), which does not make up for the great rarity of specific enquiries, and, secondly, the chronic unsuitability of the analytical tool used, the criteria adopted in industrial countries being quite unsuitable for the very different socio-economic systems of developing regions (average money income, socio-professional categories, educational qualifications, household).

In the circumstances, the information is very bitty, except in a few industrial countries, where the usual distinction between the urban and rural sectors is significant. In regions where the urban phenomenon is very different in nature, particularly because a complex industrial system only came into being shortly beforehand, or even subsequently, the distinction is merely a formal one.

B. Mortality in developed countries

The mortality gap between town and country has changed very considerably over time. Urban areas have been successively characterized by excess mortality due to poor hygiene, then low mortality due to the concentration of medical and health facilities, and finally by an undifferentiated mortality tending slightly towards excess because of the new stresses of the modern world. In child mortality, by contrast, the towns have a definite advantage in most developed countries, no doubt because of the lower level of education in the country.

Relative value of rural indices in relation to urban indices				
Country	Life expectancy at birth Males	Females	Mortality 1-4 years Males	Females
Finland	1.00	0.99	1.0	1.6
Hungary	0.99	0.98	1.3	1.4
Poland	0.99	0.98	1.5	1.1
Sweden	1.01	0.98	-	-
United Kingdom	-	-	1.0	0.8

Source: United Nations.

The study of mortality in relation to socio-economic variables is possible for some developed countries (United States, France, United Kingdom, Japan). One finds, however, that in most cases the information is old, because not enough attention is given to the phenomenon or because the criteria adopted are partly outmoded. Thus the category of occupation is gradually losing its importance because of a shrinking of differentials, whereas the conditions of the job could effectively replace it (alternating shifts, difficult working conditions, unhealthy environment).

On the basis of the few statistics available we can indicate the influence of the different variables. Due attention should however be given to the advantage of keeping the subject under continuous study so that current trends can be identified.

The influence of education is very clear. The gaps between persons who report only a few years' education and those who have studied for a long time are generally considerable. Thus in the United States the mortality of the white male population varies in a ratio of 100 to 81 and that of the female population in a ratio of 100 to 61. We thus find a high degree of responsiveness to the level of education but also an unequal effect for the different sexes. A certain narrowing of these gaps is to be noted with age but the generation effects cannot be measured exactly.

The study of mortality in relation to economic occupation also reveals considerable differences. A sample taken in Japan shows a variation in the ratio of 100 to 42 of the annual mortality indices for the hardest occupations (workers in the primary sector) and certain of the most advantageous branches of administration and management.

These observations show in particular that it is very tricky to use employment in industry as a distinguishing criterion in studying the phenomenon of mortality, given the extreme diversity of jobs it covers.

The analysis of mortality in relation to socio-professional category, a composite idea which covers type of employment, sector of activity and status within the occupation, and thus endeavours to define groups with homogeneous behaviour, also confirms the high degree of inequality in this field. If we take the male sex alone, we find that the degree of risk varies in a ratio of 2 to 1 in the United Kingdom and that the expectation of life at 35 varies between 32.9 and 40.9 years in France, according to a strictly stratified scale ranging from the poorest to the richest, without any marked exceptions.

Finally, if we take the level of income, we arrive at the same conclusions, the richest people having the lowest risk of mortality. However, this classification seems much less relevant, the differences are smaller and one sometimes finds bimodal distributions, reflecting a limited excess mortality for the upper quartile of the distribution.

These results turn out in the end to be quite consistent, since access to a higher situation usually implies in industrial societies long education, high income, living in town, and availability of health services. We should also stress the strong correlation between child mortality and the variables mentioned above, a further reflection of the persistence of profound inequalities in relation to mortality within developed regions.

C. Mortality in developing countries

The developing countries differ from the rich countries in that the information available relates almost exclusively to the difference between town and country. The considerable gap between the mortality levels (10-50 per cent higher in rural areas than in urban) appears to be due to a combination of factors:

Better medical and health conditions in the towns because of the concentration of facilities;

A "selection" of migrants to the town, who are generally younger, in better health and in part better educated than those who stay in the village;

An often more diversified diet.

The effect on deaths among young people is much greater than on general mortality; infant mortality can be up to three times as high and child mortality twice as high in the country as in the town. Life expectancy shows the same tendency, being strongly influenced by deaths occurring at an early age.

As far as strictly socio-economic variables are concerned, practically no conclusions can be reached because the present stage of knowledge is inadequate. At best one can note certain differences between the mortality of agricultural workers and that of workers in other sectors, which is perfectly understandable. The explanation lies in disposable money income, food consumption, education and access to health services. In general one can say that if the mortality rates are lowest for the highest socio-professional categories, the reverse is not necessarily true, since high rates are not only found amongst the poorest categories. One may also note certain generation effects, particularly for the middle categories, the oldest people being exposed to relatively higher risks than young people in the same social group.

Finally, we may refer to the conclusions of some multi-variable studies to the effect that the mortality rate is closely correlated with per capita income and health expenditure, but less obviously so with the degree of urbanization or the per capita intake of calories. 1/

Differential demographic and health data

	Infant mortality		General mortality		Hospital beds per 10,000 inhabitants	
	Urban	Rural	Urban	Rural	National	Rural
Chad	134	162	29	32	4	3
Dominican Republic	80	27	9	4	26	2
El Salvador	65	59	13	9	10	9
Honduras	-	-	15	7	13	(1)
Iran	-	-	6	7	6	(1)
Morocco	100	170	15	20	7	(1)
Pakistan	138	121	10	13	4	(1)
Panama	30	47	5	9	17	1
Senegal	197	188	10	19	7	2
Tunisia	102	95	-	-	15	4

Source: H. Correa.

1/ Study quoted in World Population Trends and Policies 1977, Monitoring Report, Volume I, Population Trends (United Nations publication, Sales No. E.78.XIII.3).

SECTION V. Factors determining internal migration

A. Difficulties connected with the gap between country and town

Everywhere and at all times people have moved from one place to another and their distribution within a region or State has changed. Nevertheless, a number of questions inevitably arise before one can tackle the causes and consequences of such migration. The main difficulties relate to:

The definition of the actual context of these movements, and in particular the often formal distinction between internal and international migration and between town and country.

The rate of growth of agglomerations.

Attention must again be drawn to the fact that our knowledge in this area is very backward. The collection of information on both internal and external migration is particularly deficient, because there are undoubtedly methodological difficulties. This phenomenon, however, can certainly be regarded as one of the biggest challenges likely to face the world during the next two decades.

While some countries place obstacles in the way of movements by people both within the country and abroad and can thus monitor them to a large extent, that is not the situation in most regions of the world, where internal movements, but also in some cases external movements, often take place completely at random, without any possibility of measuring their extent except when censuses take place. A knowledge of migratory movements is thus today very much dependent on general population censuses or operations limited to one town, but in all cases the method of collection is a very cumbersome one involving large resources. It is therefore understandable that knowledge of the subject should be inadequate in most developing countries.

The geographical definition of the context of these movements raises a number of problems, which can be indicated by means of some specific examples. Movements by individuals across a frontier are regarded as international migration, even though in fact the people concerned may belong to a

single ethnic group living on either side of the frontier, while movements from one end of the country to another are called internal migration, even though there may be fundamental socio-cultural differences; this situation is of course very common, particularly in Africa south of the Sahara.

The idea of urban migration now covers such a multiplicity of situations that it has practically lost all meaning. A fundamental distinction ought to be made with regard to the town, which should be defined rather on the basis of the social functions it performs than the number of persons it contains. If the only fact worth noting is that there are a number of people living in the same place, it can be described as an agglomeration. There are, for instance, quite sizable communities (between 10,000 and 20,000 inhabitants), particularly around the Mediterranean, which could not conceivably claim to be towns. These large villages, occupied mainly by farmers, provide only a very limited range of services, while small communities (2,000-5,000 inhabitants) may very well have all the characteristics of a town. This situation may become more complicated when there are several communities side by side within a conurbation containing both towns in the strict sense and agglomerations (shanty towns, favelas, etc.). As can be seen, one comes up against a series of substantial methodological difficulties, which undeniably undermine the conclusions of many studies on the question. To deal with the matter more fully, one should also go into the question of industrialization, a supplementary criterion which it appears essential to include in a new international classification of urbanization.

Given these limits, one can try to give a few figures to illustrate the process. In 1975, according to a United Nations estimate, the urban population represented one and a half billion people out of the four billion in the world. In developed regions, 70 per cent of people lived in towns, whereas in developing regions only 27 per cent did so. In terms of growth, there was an increase between 1970 and 1975 of 1.7 per cent in towns in rich countries, as against 4.0 per cent in the rest of the world, the indices for rural areas being -1.0 per cent and 1.7 per cent respectively.

These figures need to be expanded a little in order to show the evolution of the phenomenon and its components within each major region. It is of course very useful to consider the different rates of growth for the process, but one must be careful not to be deceived by their absolute

value, because a growth in the net balance in favour of a particular zone may be concealed behind a decline in the relative index as a result of a change in the situation arrived at in the preceding period. We find, in fact, a shrinking in rates of growth in the "urban" sector, in all regions of the world, whereas for every year since 1950 the average number of additional inhabitants in the "towns" has been constant for the developed countries, at about 13 million, and regularly increasing in the developing countries (from 16 to 28 million approximately).

Urbanization: annual numbers and rates

		1950-1960		1960-1970		1970-1975	
Area	Regions	Numbers	Rates	Numbers	Rates	Numbers	Rates
Urban	World	-	3.4	-	2,9	-	2,8
	Developed	13	2.5	13	2,1	13	1,7
	Developing	16	4.9	22	4.1	28	4,0
Rural	World	-	1.0	-	1.3	-	1.3
	Developed	- 1.2	- 0,3	- 2.6	- 0,7	- 3.6	- 1.0
	Developing	20	1.4	31	1,8	34	1.7

Source: United Nations.

The components of urban growth can also be estimated from the adjusted natural growth rates found for each region. This sort of analysis appears today to be fundamental and deserves to be taken further. It can be seen, in partial contradiction with a common view which equates "urban growth" and "urban migration", that the very rapid growth in the size of urban populations is not statistically very different from what happened in western Europe at the end of the 19th and beginning of the 20th centuries, as far as the migratory component is concerned. On the other hand, the change of scale which is so often emphasized can be clearly seen to be the result once again of natural urban growth rates which, for many reasons to be discussed below, are at least equal to the national rates, if not substantially higher.

Components of urban growth			
Region	Growth rate	Natural growth	Migration rate
Europe	1.4	0.6	0.8
Japan	2.3	1.3	1.0
Asia (south)	4.1	2.5	1.6
Latin America	4.3	2.9	1.4
Africa	4.8	2.6	2.2
Oceania	6.4	2.5	3.9

Source: United Nations.

This finding has to be qualified by two further comments. For lack of any alternative, demographers record movements of the population solely by destination. This is a handicap in measuring pressures in favour of emigration. If, moreover, the urban rates of growth attributable to population movements alone are comparable to those found during the urbanization of Europe in the last century, nevertheless, apart from the fact that the economic factors are very different, they apply to much larger populations than the developed countries had at that time.

B. Extent of the migratory phenomenon

The growth of towns in developed regions is an old phenomenon which is now coming to an end under the combined influence of the stagnation of fertility, the draining of the human reservoir formerly represented by the countryside, and new ways of life which break with the old trends towards urbanization. Thus in most developed countries over 75 per cent of the population live in towns, except in certain eastern and southern European countries, where the figure is only 60 per cent. The main attention will therefore be given to analysing the phenomenon in the developing regions, where it is acute and will continue to be so for many years.

Whatever the findings and opinions of different specialists on the urban population explosion, there is general agreement on the importance of the problem and the need to discover its main causes. There is obviously

no point in referring to the process that took place in developed countries, at least from the beginning of the modern era, as from then on towns were indissolubly linked to industrial development, 1/ whereas in developing regions the process of urbanization is evidently subject to a different set of rules, which recur in most cases.

Theories in this area have not developed much, and there continues to be a general preference for a certain number of factors and vicious circles, which it might be useful to summarize briefly:

Given a shortage of arable land, population growth is one of the basic factors which can by themselves maintain the movement towards urban areas. According to FAO, 2/ around 1960 the available area of agricultural land per male agricultural worker was 7 hectares, with considerable variations, ranging from 3.6 hectares in Asia to 12.1 in Latin America and 13.2 in Africa. But in fact, at the country level, the amount available was sometimes still lower - for example, 2.4 hectares in Nigeria, 1.1 in Indonesia and 0.6 in Egypt. Given the limited success of agricultural policies, that is undoubtedly a major difficulty, for which it is difficult to see any solution, even through the opening up of new land, which would not proceed at a rate comparable to the growth of the population. Furthermore, since any increase in productivity tends to reduce agricultural employment in relation to the development of food production (the effect may be different where production is for export), there is an increased trend towards emigration. One can thus see the importance of the strategy recommended by UNIDO of promoting integrated industry in rural areas in order to stem the flow towards the towns.

The income gap between town and country is also a major factor in the pressure on the rural candidate for emigration. Reference may be made in this connection to a recent International Labour Office study on income inequalities between the urban and rural sectors. 3/

1/ This was not necessarily the case in earlier periods, when the town could have purely administrative, political or artistic functions.

2/ Urban Unemployment in Developing Countries, P. Bairoch, International Labour Office, p. 15.

3/ Rural and Urban Income Inequalities, W. van Ginneken, International Labour Office, ISBN/92-2-101538-6.

Initial information enables one to get an idea of the level of consumption in urban households as compared with rural households, allowance being made for the price differences between the two sectors.

Relative inequality between the urban and rural sectors

Expenditure per household (or per household member *) and income per economically active person

Country		Expenditure unadjusted index	Expenditure adjusted index	Income
Indonesia *	(71)	143	119	230
Mexico	(70)	233	193	567
Pakistan	(72)	146	126	234
Tanzania	(67)	287	262	1 435
Tunisia *	(66)	219	169	387

Source: International Labour Office.

The town dweller has an undeniable advantage and can sometimes get more than twice as much as a country dweller could earn in the same time. The difference is still more marked if we take the criterion of income per active person in the household, a less useful indicator for the economist, but very relevant for someone dreaming of a new life. The attraction is so strong that the very probable danger of facing a long period of unemployment on arrival in the town does not discourage the potential migrant, who considers the risk "reasonable" in return for the hope of gain at what is often an uncertain time in the future. Furthermore, and this increases still further the theoretical expectation of high gain, the wage or family income ladder is often much easier to climb in the town than in the country (where it depends in particular on the rules governing land ownership). This situation is confirmed by the Gini indices calculated by the International Labour Office in the study mentioned above, which are systematically higher for urban areas, reflecting a greater concentration of high incomes. Mention should also be made in this context of the idea of status that often goes with a job in town and the influence it gives the person with his family who have stayed in the village or with new immigrants.

Education is also still an important factor of pressure towards emigration, being generally ill-suited to rural populations. It is found not only that the young people who have spent a few years at school are lost to the countryside (refusing to return to work in the fields), but also that this is often a deliberate policy by the family or clan, which accepts the burden of an expensive education in the town for one of its members so that he can show them his gratitude in return.

C. Effect of internal migration on development

The consequences of migration are manifold and complex and extend far beyond the scope of a document like this one; we shall therefore confine ourselves to two of the most important aspects, which are directly concerned with the number of persons and their rate of growth.

From the purely demographic point of view, the effects of internal migration in developing countries are fairly clear: there is a strengthening of the adult group (15-44 years), whereas without migration fertility should encourage the opposite trend. The balance between the sexes is also frequently upset, and a predominance of males is most often found, offset, however, by widespread excess mortality, but it is not rare to find the opposite situation. However that may be, in making comparisons between town and country it is as well to treat such differences with caution, the departure of a given group reducing its quantitative influence in the place of departure and increasing it in the place of arrival.

These age and sex structures are obviously favourable to high birth-rates and their influence is supplemented by a series of factors of a more qualitative nature working in favour of or against greater fertility. These will include in particular the reasonably satisfactory state of health of migrants, the concentration of health and medical facilities, but also the higher level of education, easier access by family planning teams and finally the impact of the mass media and other ways of life. All these variables together are reflected in the birth-rate and fertility indices given above.

The relationship between migration and industrial urban employment is a particularly interesting field of analysis, considering the very rapid growth of towns in developing regions and in particular the huge demand for employment. We shall try to sum up the situation here, stressing a few useful points relating to the structure of the labour force by main sector of activity, the relationship between trends in the total population and the industrial population, and the entry of recently arrived workers into modern or informal activities. In doing so we have mainly used the studies published by the International Labour Office on four megalopoles, Abidjan, Calcutta, Jakarta and Sao Paulo.

	Distribution of the work force by sector of economic activity											
	Abidjan 65			Abidjan 70			Sao Paulo		Jakarta		Calcutta	
Sector	$\overline{M}$	M	T	$\overline{M}$	M	T	50	70	61	71	62	69
Primary	1.9	2.0	3,9	1,9	2.0	3.9	5.5	2.0	5.2	4.2	2.5	(2.6)
Secondary	7,8	24,3	32.1	9.8	24,8	34.6	53.2	46.8	25,2	17.0	39.0	(46,7)
Tertiary	18,4	45,6	64.0	19.0	42,5	61,5	41.3	51.2	69.6	78.8	58.5	(50.7)
Total	/	/	100	/	/	100	100	100	100	100	100	100
N.B. Transport is included in the tertiary sector												
M = Modern sector, $\overline{M}$ = Non-modern or informal sector												

Source: International Labour Office.

From these urban data, the share of the secondary sector is seen to be uncertain: rising in Abidjan and Calcutta, it is declining in relative value in Sao Paulo and Jakarta. The statistics available on urban unemployment for the same period, i.e. the end of the 1960s, show (allowing for the unreliability of estimates) unemployment rates of between 10 and 20 per cent in Africa, between 5 and 15 per cent in Latin America and below 10 per cent in Asia. However, this indicator can be multiplied by two or three if we confine ourselves to the age group 15-24, which represents the majority of new arrivals. According to P. Bairoch, moreover, the urban unemployment rates that are available are usually those for the capitals; in other towns they are often higher and it is even very possible that nowadays more than one unemployed person out of two lives in a town.

Employment figures for some developing countries

	Relative share		Annual increase			
	Industry	Manufacturing sector	Total work force	Non-agricultural work force	Manufacturing work force	Urban population
Mauritius	20.7	11.5	3.26	11.1	23.7	(5.66)
Tunisia	26.0	14.9	2.30	6.6	-	4.14
Zambia	11.3	2.7	2.44	2.4	1.6	6.61
Pakistan	18.2	13.4	2.50	5.0	-	5.18
Sri Lanka	10.4	7.6	2.51	3.6	- 1.4	4.24
Philippines	15.4	11.3	2.68	1.5	3.8	4.69
Colombia	15.6	11.3	3.19	-	3.4	4.74
Jamaica	16.9	10.8	1.10	2.5	3.8	(3.31)
Venezuela	26.0	15.4	3.70	-	5.0	3.82
India	11.5	9.5	1.96	2.6	2.1	3.62

( ) data not available - rates for the region

Source: International Labour Office.

Given the growth of the town population, the trend in non-agricultural and manufacturing employment will show the extent of the problems. The question has to be approached from two complementary standpoints, the share of industrial and manufacturing employment in total employment and the annual growth of these same groups. For this purpose we take a number of representative countries at the beginning of the 1970s, none of the data for major regions being reliable enough.

From the respective rates of increase, we find a considerable difference between the growth of non-agricultural and manufacturing employment and urban growth. Given the very different numbers to which these rates apply, one should find in the long run firstly an increase in unemployment and secondly a relative decline in industrial employment, and *a fortiori* in manufacturing employment, as shown in the table above. This finding deserves to be stressed, because too many official documents handle the rates of increase without warning the reader of the pitfalls of comparing such indicators when they apply to populations which vary too much in size. The same reason explains the impressive but meaningless scores by some countries that have recently embarked on industrial development.

Employment status of the people of Jakarta for natives and migrants over the age of 10

Type	Natives	Migrants by origin	
		Rural	Urban
Total	100.00	100.00	100.00
Economically active	42.89	66.84	53.40
Unemployed	4.60	9.26	11.70
Employed	38.29	57.58	41.70
Independent	10.42	10.54	4.53
Employer	0.85	0.77	1.32
Employed	25.67	42.93	34.15
Family workers	1.12	2.83	1.13
Others	0.22	0.51	0.57
Economically inactive	57.11	33.16	46.60
Students	22.17	7.20	18.49
Others	34.94	25.96	28.11
Unemployed as a percentage of economically active	10.72	13.85	21.91

Source: International Labour Office.

Distribution of the employed population for some sectors of activity according to years since migration (Sao Paulo, 1970)

	Men				Women			
	Natives	6-10 years	2-5 years	Less than 2 years	Natives	6-10 years	2-5 years	Less than 2 years
Industry	36.7	35.2	39.6	36.3	27.9	26.5	21.6	18.0
Construction and services	8.2	12.3	13.7	19.8	9.7	7.5	5.8	4.9
Commerce	14.2	12.0	11.3	9.6	32.2	46.0	53.1	60.1
Other activities	40.9	40.5	35.4	34.3	30.2	20.0	19.5	17.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: International Labour Office.

GENERAL CONCLUSION: INDUSTRIALIZATION AND POPULATION

A. General effects of industrialization

The aim has been throughout this paper to show the relationship between development and population. This is a difficult task, because of the complexity of the phenomena and their interpenetration. It is understandable that in the circumstances it is even more difficult to isolate the more specific relations between industrialization and population, particularly in developing countries, where the growth of the secondary sector is fairly recent and remains within quite narrow limits. It seems useful, however, in conclusion, to try to bring out some essential aspects which affect more particularly this fundamental process of economic development.

In order to avoid repetition, we shall only summarize the main ideas put forward in the paper, stressing in particular the role of industrialization. For this purpose we shall adopt a classification by period of time for which the effects apply, in rising order. This is done in order to show what objectives can reasonably be set, depending on the various time-limits chosen. Obviously the most immediate effects concern the present population either seeking employment or likely to change its domicile; in the medium term it might be expected that part of the essential needs will be met, particularly as regards health; and finally in the longer term one can look forward to profounder changes in attitude which may alter the pattern of human reproduction:

> The first and most immediate effect relates to the development of employment, which is of course an acute problem both in urban and rural areas. At the present time the prospects for employment in agriculture are limited and the rapid expansion of the tertiary sector is often condemned. Only industry seems capable of providing some response to this general problem of developing countries.
>
> The second effect, which is linked to the first, relates to the need for serious thought about physical planning. It involves an industrial location policy which will help to limit in part permanent migration from the countryside to the towns. Here again industrialization can be one response to over-urbanization in developing regions. The second part of these conclusions will be devoted to this innovatory aspect of the role of industry.

The third effect covers a fairly long period of time and concerns a quite fundamental aspect which is all too seldom recognized in most studies, namely, the health of the population. The production and distribution of pharmaceutical products is sadly deficient in many developing countries, and it would not be surprising if this resulted in a higher death rate in certain limited areas. But the state of a population's health is an essential element in its capacity for economic activity; the fact that the low productivity observed in developing countries is also due to the deplorable state of health of the working population is all too often overlooked. Quite apart from the part it plays in efforts to control the main diseases, the pharmaceutical industry can also give useful support to parents who want to limit their families and who thus have a growing demand for contraceptives.

Finally, the development of industrial employment results in a change in attitudes, and in particular a change in the role of the child and thus of its place in the family. The child stops being a premature producer and becomes an absolute consumer, which means that it is viewed differently by its parents. This seems to be an important process in the reduction of the size of families (and was, incidentally, clearly observable in Europe from the 18th century onwards).

B. Effects of a rural industrial development policy

The strategy introduced to promote general development of the economy on the basis of industrial development comes up against the gap between the growth of the industrial sector, concentrated in the towns in order to take advantage of economies of scale, and the "excessive" rate of growth of the urban population, under the double influence of a high natural rate of growth and constant migration.

With this background there has been a very rapid growth in the share of a group of activities which are called "informal" but which are in fact an adaptation of traditional forms of production of a cottage-industry type to increased demand, both as regards the need for cheap manufactured products and an unsatisfied capacity for work.

Nowadays, being conscious of the limited opportunities in the modern sector and faced with a constantly growing supply of labour, specialists are turning towards this informal sector, noting that it is often very active, that it employs a high proportion of workers and thus prevents the development of intolerable unemployment and that it can very easily be developed in rural areas so that some potential migrants are encouraged to remain there.

Recent analyses have been fairly positive. For example, the case of India is cited, where 77.5 per cent of people employed in the manufacturing sector as a whole work in the "unorganized" sector and, of these 16.5 million or so people, 75 per cent live in the country. Another finding of importance concerns the fields of activity in this informal sector. As might be imagined, it meets the specific needs of the local market, which represents a large part of its usual outlet. It thus includes small enterprises specializing in weaving, clothing, woodwork, wicker work, foodstuffs, beverages and miscellaneous products (leather, metal).

This situation is confirmed in a recent UNIDO report, which offers many other examples taken from different developing regions. The authors of the report also stress the important role of small-scale industry for developing countries - a quarter of the value added in the manufacturing sector, and more than half of the workers in industry, despite a productivity in some cases below the branch average. But when considering these questions, we must nevertheless recognize the great weakness of statistics in a field which by definition lies outside the range of normal surveys whether for purposes of administration (tax) or of planning.

Now that the informal sector has been rediscovered, it seems that it could help solve some difficulties connected with the productive structures of developing countries. It is regarded in general as a means of bringing about a more reliable change in attitudes by passing through a stage of technology and organization that is intermediate between the traditional sociological environment and the modern industrial world. Great hopes are placed on this sector for encouraging people attracted by the town to stay in the country.

The modern sector, despite its relatively encouraging results, appears to be incapable of absorbing a constantly growing supply of labour, while at the same time the disincentives (inadequate supply of land) and the incentives (difference between urban and rural wages) multiply the number of potential migrants to the towns. "If the rate of growth of the active urban population was greater than that of the active rural population in all regions ... the increase in absolute terms in the number of workers was more marked for the rural labour force than for the urban labour force ... In all regions (except Latin America and the Caribbean) the rate of growth of the active agricultural population was lower than that of the active rural population, with a resulting surplus in rural areas, which has to be absorbed by other sectors of the rural economy." 1/

Proportion of rural population not employed in agriculture and employed in manufacturing			
	Rural population	Non-agricultural rural population	Manufacturing population
	Total population	Rural population	Non-agricultural rural population
Nigeria	-	6.10	49.0
Sierra Leone	-	-	-
Zambia	63.7	39.7	10.4
Brazil	44.1	-	19.4
Chile	24.0	-	24.1
Colombia	35.7	22.5	30.0
Mexico	11.3	36.6	9.6
India	80.1	26.0	38.7
Indonesia	82.6	-	24.7
Malaysia (western)	71.2	69.1	15.3
Philippines	68.2	-	34.1
Republic of Korea	58.8	19.3	30.3

Source: United Nations.

1/ Translator's note: No reference in the original.

Owing to the lack of available studies on this topic, it is difficult to describe the demographic consequences of new development policies taking greater account of the informal sector, particularly in rural areas. We can, however, list the main points on which action should be taken in the short run:

The effectiveness of the process, or, in other words, the changes observed in the departure rate (assuming the relevant data are available) before and after the establishment of informal industrial activities in the rural area. As a related question, one could try to find the minimum level of new activity beyond which changes are noticeable (the elasticity of migration with respect to new activities).

Structural changes, which should depend on the extent of residual migration, the kind of jobs offered (qualifications, sex, length of time, etc.) and the wage gap between urban and rural areas.

The main natural demographic trends (fertility, marriage rate, death-rate) in those groups which have left agriculture for the informal industrial sector. This differential analysis can be carried out very quickly on the basis of two appropriate samples. The main variables to be taken into account are the status of women, the influence of village traditions, the role and place of children, and income.

The growth of towns in the industrialized countries has taken place under the double influence of a rapid growth of productivity in agriculture and a great need of manpower for other activities concentrated in towns. Since the nature of the urbanization process is quite different in the developing countries, it is to be feared that in the long run the "advantages" of the city will be somewhat less marked. In these conditions a large proportion of possible population changes (growth, geographical distribution) will depend on the gaps between urban and rural areas and between the farming and other rural populations. To estimate the over-all effect of these developments, one can refer to any available data on small towns, which represent an intermediate situation in between the extreme indices for the countryside and the capital.

From the various points analysed a clear picture emerges of the links between population policies and development policies, particularly in the field of industry. It is then possible to consider what strategy should be applied in order to take account of the demographic factors.

If we acknowledge the impact of economic development on changes in the demographic situation, we should above all endeavour to stress UNIDO's activities in the field of industrialization. Two aspects seem to be fundamental: one is to devise measures to overcome the difficulties connected with the excessive burden of rapid population growth (the aim being to lower the level of net investment), the other is to implement policies for the decentralization of productive activities so as to lessen the serious structural imbalances which exist at present. It will be seen that these two major aspects are in fact not only mutually compatible but also complementary.