CHAPTER VII

THE EFFECT OF POPULATION GROWTH ON ECONOMIC DEVELOPMENT

It is generally accepted today that population increase is a menace to the developing world. Rapid population growth tends to retard economic development. In this chapter, the core of our discussion, we shall concentrate on the effects of population growth on per capita incomes. We shall study the three principal problems prevalent in the overpopulated countries. These problems have been created by rapid population increase. It should be pointed out here that our stress is on the problems of overpopulated areas because these areas embrace the largest number of individuals in the whole of the underdeveloped countries. The three population problems can be summarized as follows:-

(1) High birth rates result in many dependent children per adult, which retards saving and capital formation, and aggravates difficulties of educating the population.

(2) The decline in death rates and high birth rates lead to a rapid population increase, which, in turn, aggravates the shortage of capital.

(3) Excessive density of agricultural population in relation to area of cultivated land retards economic development.

We shall now analyse each problem separately in the above manner.

The age distribution of any population depends to a large extent on the course of fertility. Persistent high levels of fertility give a broad-based distribution that tapers rapidly with age. This sort of distribution is often termed as a 'heavy bottom' age structure. Persistent low levels of fertility, on the other hand, give a narrow-based distribution. If fertility is low enough, the age distribution may be broader in the shoulder than at the base.

As a result of the high levels of fertility in the underdeveloped countries of Asia, Africa and Latin America, we have the so-called broadly-based and sharply tapering age structure. In other words, because of high fertility, there are relatively more young people and fewer adults.

Deeper examinations into the age distribution reveal that the proportions of children under 15 years are approximately 50 per cent or more of the total population. This ratio is typical of most underdeveloped areas. Table 8.1A indicates that the percentage of those under 15 years in 1947 was about 40 per cent for Africa, Latin America, Near

TABLE 8.2A

ESTIMATED AGE DISTRIBUTION OF WORLD POPULATION BY REGIONS 1947

Region	Per Cent of total Population			
	Under 15 Years	15-59 Years	60 Years and over	Total
World	36	57	7	100
Africa	40	55	5	100
America:				
Northern America	28	64	11	100
Latin America	40	55	5	100
Asia:				
Near East	40	54	6	100
South Central Asia	40	56	4	100
Japan	27	66	5	100
Remaining Far East (except Asiatic USSR)	40	55	5	100
Europe:				
North West Central Europe	24	62	14	100
Southern Europe	30	59	11	100
Eastern Europe (including USSR)	34	59	7	100
Oceania:	28	62	10	100

Source:- UN, The Determinants and Consequences of Population Trends, New York, 1953, P. 144

[illegible] and most of the [illegible]. This percentage was [illegible] the same countries in annual rounds. In 1960, the estimated percentage was 35 per cent for Africa and Asia, and 34 per cent for Latin America. (Table 6.28) The same developing regions, however, had an [illegible] proportion of 38 to 39 per cent since their birth rates are comparatively lower. In 1960, the percentage was 47 per cent for Northern America, 46 for Northwest Europe, 45 for Eastern Europe, 44 for Southern Europe and 28 per cent for Oceania.

However, the proportions of persons 65 years and over are around 5 per cent in the underdeveloped countries while they are close to [illegible] per cent in the more advanced countries. Declaring at table 6.29 [illegible] persons between 15-59 years of age, the ratio of [illegible] under the economically active age is 52 per cent or more in developed countries but less than 45 per cent in underdeveloped countries. Hence, the age structures in developed areas are entirely different from those in the underdeveloped areas.

Having examined the age structures of different economies, we shall now see the impact on economic development. Theoretically, there is a shortage of manpower in the countries of Africa, Asia and America as a consequence of their "broad base age" structures. This shortage of manpower poses as a hindrance to economic development.

If the economically productive age brackets is taken as 15 to 64 years, then the proportion in this category, in undoubtedly small in the underdeveloped areas. This small proportion, then, reflects the underdeveloped state. Underdeveloped nations use productive power of the labour force, with less productive power of the labour force, a nation cannot expect to increase productivity rapidly, implying that economic development be hard to attain.

Hence, in many backward agricultural economies, children are put to work at an early age to make up for an inefficiency. Child labour, however, can be fighting the burden of widespread unemployment. Children are often employed to a considerable extent, [illegible] before the [illegible] years. In Turkey, the 1965 census showed that 6% per cent [illegible] between 10-14 years old were engaged in gainful occupation. The employment of children at this age is not, however, conducive [illegible] high standard of education, and [illegible] cannot be regarded as [illegible] solution of the economic problem. However, the [illegible] of an employed child in the income of the family is much [illegible] that of an adult worker. The high proportion of children [illegible] this results a further handicap to lower per unit [illegible] Also the employment of children, old people ordinarily [illegible] to [illegible] the full extent of their physical capacity in order to [illegible]

ESTIMATED PERCENTAGE DISTRIBUTION OF POPULATION AT VARIOUS AGES

Continent	1960			1970			1975		
	Under 15	15-59	60 and over	Under 15	15-59	60 and over	Under 15	15-59	60 and over
World	37	56	7	37	56	7	36	56	8
Africa	43	53	4	43	53	4	42	54	5
Northern America	27	61	12	26	58	14	25	55	20
Latin America	43	54	3	43	54	3	42	52	6
Asia	40	56	5	40	55	5	41	54	5
Europe	26	62	12	26	60	14	24	59	7
Oceania	30	59	11	31	57	12	31	55	14
USSR	33	59	8	31	60	9	30	59	11

Source:- UN, The Future Growth of World Population, New York, 1958, P.35

...e lack of adult manpower. In the more advanced societies, however, ...luntary or forced retirement generally precedes the loss of capacity ...ce the proportions of adult manpower are greater. The ratio of ...n engaged in economic activities is low in many underdeveloped ...ntries, especially where the position of women is still regarded much ... important at home than in economic activities. This would further ...ounts the shortage of adult manpower.

In relation to the question of manpower, we must not neglect the ...litative aspect of labour. Labour in the underdeveloped countries ...skills and aptitudes. This lack of skills, caused by absence of ...te education facilities, explains partly the low productivity and ...low progress in economic development. Many farmers are still ...ploying primitive techniques of production. To quote an observation ... by United Nations experts, "in some parts of Middle East, agricultural ...iques are no better today than they were in the times of Pharaohs."[1] ...k of skilled labour thus forms an obstacle to economic growth.

It is therefore not possible for underdeveloped countries to in...trialise for modern technology requires a skilled and literate labour ...ce. In other words, the lack of skilled manpower impedes industrial ...lopment. The workers therefore have to be trained and educated ...er to facilitate industrial growth and economic development. To ...re a supply of skilled workers, the developing countries must build ... schools and recruit more qualified teachers. Many of them, realising ... importance of education as a basis for development have already ...ested large sums in the provision of more education facilities. Their ...rts, however, are somewhat offset by a larger increase in the number of ...ldren reaching school age each year. The recent investment in educa...n in most of these countries, in other words, cannot simply cope ... the increase in children population. In India, even if the optimism ... the third Five Year Plan, in which large sums have been allocated for ...cation purposes, is fulfilled, it is estimated that, during the ...ool year 1965-66, there would still be a most 40 million children, ...n between 6 - 15 years who would not be in school. Other developing ...tries are also facing similar problem. High birth rates have made ...e it more difficult on the part of the governments concerned to ...vide adequate number of schools and teachers. Without sufficient ...cation facilities, the underdeveloped countries can never enjoy the ...its of economic development. Hence a greater investment in education ...vital to the economy.

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[1] United Nations, Measures for the Economic Development of Under-developed Countries, New York, 1951 P. 20

Moreover, high fertility has the effect of creating a greater [illegible] on consumption, which in turn, would lessen savings. In an underdeveloped area, where large families and low income levels are the characteristic features of the economy, an individual wage earner must spend a large proportion of his income on food and other necessities to support his family. Having a large family, he therefore finds little or [illegible] no opportunity at all to make any savings. Even if he happens to save, he seldom puts all his savings into productive investments, since he normally indulges in hoarding. Hence, a high level of dependency is responsible for the low level of savings in the underdeveloped economies. Moreover, high birth rates thus promote consumption at the expense of investment.

In short, high fertility causes a shortage of capital formation, a heavy burden on consumption and finally a low level of investment in underdeveloped countries.

The low level of investment often reflects the scarcity of capital which brings us to the second population problem. Facing high rates of population growth, the underdeveloped nations find it difficult to provide sufficient supply of capital for the increasing number of workers. As the amounts conserved are unable to cope with the increasing populations, the available capital, already limited in supply, would have to be divided among a larger number, thereby reducing the share of each individual person. Since each worker is now getting a smaller amount of capital, the per capita income would tend to decrease further. Rapid population growth therefore aggravates the capital shortage which in turn, would hinder economic growth.

It has been calculated that a country, having a population growth of 1 per cent annually, must save about 2 to 5 per cent of its national income. Hence, if a population increases by 2.5 per cent a year, typical of most backward economies, 5 to 12.5 per cent of national income must be saved. In contrast the present levels of saving in most underdeveloped countries are far below the required level. Table 9 gives some indications of savings in these countries. It is, thus, dubious whether they can save 12.5 per cent of their national income. And, even if we assume that they are able to do so, their per capita income would still remain unchanged. This is because of the fact that the required levels mentioned are aimed to prevent and not to raise, the existing standards of living from falling.

In view of the population threat and existing low living standards, a country must save a greater portion of its national income before it can raise its per capita income. United Nations experts have estimated that "with an annual population of 1 per cent, required savings would be 13 per cent for underdeveloped countries."[2] Since the average annual rate of

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2. United Nations, The Determinant and Consequences of Population Trends, New York, 1953 P.278

TABLE 9

NET DOMESTIC SAVING AS PERCENTAGE OF NATIONAL INCOME, 1949

REGION	PERCENTAGE
Latin America	8
Middle East, including Egypt	6
Africa, excluding Egypt	5
South Central Asia	5
Far East, excluding Japan	3

Source:- Meier and Baldwin; Economic Development, P. 305

population increase is 2.5 per cent, more than 20 per cent of national income would have to be invested for the purpose of attaining a higher level of income per capita. "Japanese savings from 1900 - 1940 - one fifth of national income, according to Clark, and Tuley estimated that investment from 1900 - 1940 varied between 10-17 per cent of national income transformed in the course of approximately seventy years from a backward, agricultural country to the industrial leader of the Far East. Spengler apparently Japan was able to develop industrially because it sold and, invested and spent wisely."3

We shall next come to the last population problem, that is the excessive density of agricultural population in relation to the area cultivated land. Excessive density implies that each worker would have a smaller acreage of land as more new workers are added to the land. With additional workers, the law of diminishing returns may then begin to operate. This explains the low productivity of labour per man or head. Excessive density therefore not rise economic development.

In the following discussion, we shall elaborate the effects of excessive population density in the underdeveloped countries.

In certain countries the population densities are considerably more than that reported for Europe at the beginning of its economic development. India, for example, had 118 persons per square kilometre in 1955, whereas France, 49 and England, 49 persons per square kilometre at the end of eighteenth century. Moreover, Ceylon has about 156 persons and Taiwan, 257 persons per square kilometre (Table 1.1) With rapid rates of population growth the population densities in these developing areas are expected to increase further. From table 10.2, the population density for South East Asia is likely to increase from 36 persons in 1960, to 58-62 on 1975, and to 83-122 persons per square kilometres in 2000. Similar tendency is assumed to happen elsewhere.

We have thus seen that an underdeveloped economy generally has a very dense agricultural population. As a result, each farmer would only have the opportunity to cultivate a small piece of land. According Table 10.3 each worker has about 0.3 of an acre of arable land in Puerto Rico and Jamaica, where density are 652.6 and 545.4 persons per square mile, respectively. In Egypt, each worker possesses similar acreage of land. The small size of farmer is not economical. It limites the application of those improved techniques which are of doubtful value

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3 Ibid P.280

TABLE 10.1

POPULATION GROWTH AND DENSITY

Area	Annual Rate of increase 1953-56	Population density 1956 (per square kilometer)
Africa:		
Egypt	2.3	24
Libya	1.2	1
Union of South Africa	1.8	11
Belgian Congo	1.8	5
Cape Verde Islands	3.3	44
Portuguese Guinea	3.4	15
Mauritius	3.3	305
Rhodesia	2.7	6
Nyasaland	3.1	14
Swaziland	-	-
North America		
Canada	2.7	2
United States	1.8	21
Central America		
Costa Rico	3.9	19
El Salvador	3.4	113
Guatemala	3.1	31
Mexico	2.9	16

TABLE 10.1

Area	Annual Rate of Increase 1952-56	Population density 1956 (per square kilometer)
South America:		
Argentina	1.9	7
Colombia	2.2	11
Chile	2.6	9
Paraguay	2.9	4
Venezuela	3.1	7
Brazil	2.4	7
Asia:		
Burma	1.4	29
Ceylon	2.5	126
China	2.3	64
Taiwan	3.6	257
India	1.3	116
Indonesia	1.8	36
Israel	3.5	38
Japan	1.3	243
Malaya	3.1	48
Philippines	1.9	74
Europe:		
Italy	0.8	180

TABLE 10.1

Area	Annual Rate of Increase 1953-58	Population density 1956 (per square kilometre)
Ireland	0.5	41
France	0.8	79
United Kingdom	0.4	211
Australia	2.3	1

Source:- UN, Demographic Yearbook, 1957, New York, 1958

TABLE 10.2

POPULATION DENSITY AND RATES OF POPULATION GROWTH

Region	Area (1000 km)	Density (persons per km)		
		1950	1975	2000
Australia and New Zealand	7970	1.3	2	2.3
Southern Africa	2840	4.9	8.9	12-18
Pacific Islands	585	5.0	9	15
Tropical South America	13700	6.2	11-12	18-277
South America Temperate	4160	6.5	10	12-24
Middle Africa	21600	6.6	9-11	13-21
Northern Africa	5820	7.3	12-13	19-28
Northern America	21500	7.8	11	13-15
USSR	22300	8.1	12	15-18
South West Asia	5550	11	19-21	28-41
Central America	2510	14	27-29	444-66
South East Asia	4490	38	58-62	83-122
East Asia (without Japan)	11500	52	77-83	110-163
Northern and Eastern Europe	2250	59	66-68	70-83
Caribean	236	69	106-115	153-223

TABLE 10.2

POPULATION DENSITY AND RATES OF POPULATION GROWTH

Region	Area (1000 km)	Density (persons per km)		
		1950	1975	2000
Southern Europe	1680	79	95-100	105-129
Central South Asia	5140	91	132-143	190-280
Central Europe	1010	130	149-154	158-188
Japan & Ryukyu Island	372	225	296-315	536-427

Source: UN, The Future Growth of World Population, New York, p. 25

TABLE 10.3

MAN-LAND RATIOS IN [illegible] COUNTRIES

Country	Crude Density in Number of inhabitants per square mile	Arable Land in Acres per Capita
United States	54.6	5.0
Canada	5.2	6.6
Argentina	18.2	4.1
Uruguay	36.4	2.0
Mexico	39.0	1.7
Puerto Rico	652.6	0.3
Jamaica	345.8	0.3
Australia	2.6	5.5
New Zealand	20.8	0.6
United Kingdom	637.0	0.4
Denmark	267.8	1.6
Netherlands	852.8	0.2
France	202.8	1.2
Poland	221.0	1.7
Yugoslavia	176.8	1.2
Bulgaria	176.8	1.4
Spain	148.2	1.7
USSR	26.0	2.7
Egypt	57.2	0.3
Gold Coast	52.0	3.3

TABLE 10.3

MAN-LAND RATIOS IN [illegible]

Country	Crude Density in Number of inhabitants per Square mile	Arable Land in Acres per Capita
Kenya	26.0	0.7
India	299.0	0.9
Malaya	117.0	1.0
Philippines	187.2	0.5
China	156.0	0.5
Japan	618.8	0.2

Source: UN, FAO, Yearbook 1954, vol. III, part I, 531, Greenwald The McGraw-Hill Dictionary of Modern Economics.

unless they are used in operations on a larger scale. Moreover, the relative abundance of labour, encourages the use of labour intensive methods of cultivation. In some cases, the workers, even practising most laborious methods, are unable to keep themselves occupied on their little patches of land and spend a large part of each year in forced idleness. Excessive density of agricultural population thus causes low productivity and hinders economic development.

Population pressure, in addition, sometimes leads to over-cropping and soil exhaustion or to the utilisation of lands, which are not suitable for the production of crops, and which deteriorate under the plough. In Haiti, farmers are constantly clearing new fields to keep pace with their growing numbers. They have even stripped hillsides of their protective forest cover, thereby giving an allowance for soil erosion. Soil erosion, in turn, would create a shrinkage of the principal resources on which population depends for its livelihood. Rapid population increase is thus a threat to economic development.

Overcrowding of farm lands, we should remember, occurs not only in areas where land is relatively scarce but also where land is still abundant in relation to population. In Latin America, although large regions of interior remain uninhabited, the density of agricultural population in cultivated areas is generally high about 200 per square mile. Africa, which ranks as one of the most sparsely settled continents has a higher density of agricultural population in certain places than Latin America. For instance, the narrow valley of the Nile, an important agricultural area of Egypt, has 1600 persons per square mile. Thus, the mere existence of unoccupied land does not mean that there is no problem in making room for more agricultural workers. The problems are:

(1) Much of the land are unsuitable for farming and are also inaccessible. Such types of land are thus of little importance for agricultural purposes.

(2) Large capital investments are needed to bring them under cultivation, if ever they are abundant in supply.

(3) Certain technical knowledge is also required.

(4) The cost of transporting the farmers and their families, and of establishing new homes for them, may be considerable.

(5) Migration from other regions may not be possible because of legal restrictions.

(6) Locations may not be attractive because of their climate, unsafe to health, or an unsavoury social and political environment.

In view of the number of problems, which farmers have to encounter in opening up new lands, they rather prefer to stay in the already crowded areas. Thus, agricultural population continues to grow in dense populated areas. As density increases, the average productivity per worker would fall, resulting therefore in low income per capita.

With regards to the study of population pressure, one must not ignore the concept of disguised unemployment or hidden employment, even though the concept is not so widely accepted as it used to be about ten years ago.[1]

In brief, 'disguised unemployment is a situation in which, even with unchanged techniques of agriculture, a large part of the population engaged in agriculture could be removed, without reducing agricultural output. The given output, in other words, could be obtained with a smaller labour force. And, if with better techniques, more labour could be taken out, without reducing output. This situation arises from the fact that the resources of the family, such land and capital, are too small to keep all working members of the family fully employed, throughout the year, and that there exists no opportunity for directing a part of the supply away into other occupations at appropriate times. It thus denotes a condition in which a number of people are working on farms or small plots, contributing virtually nothing to output, but subsisting on a share of their family's real income. In the case of disguised unemployment, there is no possibility of personal identification. We cannot point to any person and say he is unemployed in disguise. The people may all be occupied and no one may consider himself idle. Yet, the fact remains that certain number of the labour force could be dispensed with, without making any change in the volume of output. In technical terms, marginalproductivity of labour, over a wide range is zero or even negative (meaning that by removing some, farm output could actually be increased). Disguised unemployment cannot be easily measured. United Nations experts, however, were able to estimate the surplus agricultural labour for Egypt in 1937 as one-half of the total farm population. For India, Pakistan, parts of Philippines and Indonesia, it is assumed that the surplus cannot be less than 20 to 25 per cent.

Rapid population increase thus presents many-sided effects. High fertility has created a shortage of manpower and promoted consumption at the expense of savings. The shortage of capital would also be aggravated with rates of population growth, in addition, cause high densities of agricultural population. We can simply say that population increase has adverse effects on the various factors or production - labour, capital and land. All these effects, in turn, tends to retard economic development.

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[1] Myint,H. op.cit., P.86