

Problems of Human Resources in Brazil

Robert N. DANNEMANN¹

General demographic aspects

A developing country

BRAZIL'S demographic structure, like that of nearly all the Latin American countries, is generally characteristic of a developing region: (a) extremely rapid population growth; (b) very young population; (c) preponderance of agricultural population living in precarious health and productivity conditions; (d) large proportion of young persons in the labour force; (e) high rate of illiteracy and low average rate of school attendance.

The importance of these unfavourable elements is heightened by the fact that they have a direct influence on the mobilisation and composition of the labour force, that is, on that part of the national human potential which participates directly in production. In countries where the population is increasing rapidly and where there is a shortage of capital, this sector of the population represents the principal economic asset on which plans for development must be based. In this connection, Harbison and Myers state: "Capital, natural resources, foreign aid, and international trade, of course, play important roles in economic growth, but none is more important than manpower. . . . All studies of development recognise the importance of the human factor. . . ." ²

In countries that are in the process of economic development, the human aspects of manpower are of paramount importance and the effective integration of the human element into the social processes of

¹ Director of Division of Social Investigations and Studies, National Commercial Apprenticeship Service, Rio de Janeiro.

During the present year the *International Labour Review* has published the following articles on questions relating to human resources in Brazil: A. B. ARÁOZ: "Manpower and employment in Brazil", Vol. 93, No. 4, Apr. 1966, and Manuel DIÉGUES JUNIOR: "Urban employment in Brazil", Vol. 93, No. 6, June 1955.

² Frederick HARBISON and Charles A. MYERS: *Education, manpower and economic growth* (New York, Toronto, London, McGraw-Hill Book Company, 1964), p. v.

production demands the solution not only of many technical questions, but also of a whole series of problems relating to education, health, nutrition, housing, etc. Labour productivity ceases to be a matter of the internal economy of enterprises, and is projected into the field of social realities.

A vicious circle is thus created: on the one hand, low standards of living make it impossible to mobilise manpower productively and, on the other, deficient working conditions and low output impede any general improvement of the situation. More attention, more resources and more assistance should be devoted to this human potential, so that it may become both the origin and the objective of economic and social development. In developing countries economic and social development must be considered always as one and indivisible.

Special characteristics of Brazil

Some explanations may facilitate understanding of the demographic indices used in this article. Brazil covers an area of 8.5 million square kilometres.¹ Within this vast territory, cultural variations are perhaps greater than anywhere else in the region. There are very marked economic and social contrasts: in some cases extremely poor rural areas are found, paradoxically, side by side with areas where there is a high degree of industrial and urban development. Some of the industrial regions in the South have the highest incomes per head in Latin America; in the northern forests and the semi-arid zones of the North-East the level are among the lowest in the world (less than \$100). Table I, showing the distribution of economic activity in 1962, provides an interesting example of these regional contrasts.

There are other regional contrasts: shortly before the 1960 census, 70 per cent. of children aged between 7 and 11 attended school in the South, whereas in the North the rate was hardly 35 per cent.; about 56 per cent. of the country's primary schools were in the South where, according to the same census, the majority of the urban population lived (50.8 per cent.); in the North-East, the population was predominantly rural (66.2 per cent.).

These examples illustrate some of the facts which must always be borne in mind. It should be remembered also that certain indices for Brazil as a whole do not, in themselves, throw much light on the country's social and cultural particularities. In so far as possible, we shall give the over-all indices with certain specific regional indications, although the absence of complete, adequate and comparable statistics constitutes a permanent difficulty.

¹ That is, about 40 per cent. of the area of Latin America.

TABLE I. DISTRIBUTION OF INDUSTRIAL ACTIVITY BY REGIONS, 1962

Region	Number of industrial establishments	Personnel employed ¹	Remuneration (in millions of cruzeiros) ²	Value of production (in millions of cruzeiros) ³
North	680	18 975	3 300	31 000
North-East . . .	5 423	151 932	20 400	205 700
East	10 526	531 399	129 200	894 300
South	24 036	1 275 855	331 200	2 635 200
East-Central . .	917	14 183	2 200	24 300
Whole country .	41 582	1 992 344	486 300	3 790 500

Source: *Anuário Estatístico do Brasil, 1965.*

¹ Total includes 80 per cent. employees. ² Total includes 65 per cent. wages. ³ Exchange rate in 1962 was \$U.S. 1=475 cruzeiros.

Demographic growth

First, it should be noted that the population of Brazil is growing very rapidly indeed (3.05 per cent.), faster than the general average for Latin America which, nevertheless, has the highest growth rate in the world (2.6 per cent.). According to the last national census (1960), Brazil had 71 million inhabitants. At the end of 1965 the population was estimated at 82 million, and it is anticipated that by 1975 it will have reached 110 million. At the present time, it may be said that the population of Brazil represents 34 per cent. of the Latin American population and 50 per cent. of the population of South America.

This demographic growth is the result of the reduced mortality rate and relatively constant birth rate. From 1920 to 1940 the national censuses showed a birth rate of 44 per thousand and a death rate of 25.3 per thousand, giving a surplus of 18.7 per thousand, whereas in the period 1940-50 these rates were respectively 43.5, 19.7 and 23.8 per thousand. The 1950-60 surplus was 30.5 per thousand so that it is to be supposed that the rates were more favourable during the period, particularly the mortality rate.¹ Nevertheless, Brazil may be considered, in accordance with Professor Giorgio Mortara's findings, as one of the Latin American countries with very high birth and death rates, i.e. more than 42 and 15 per thousand, respectively.² The regional contrasts to which we have already referred are even more acute in this field: "Whereas the mortality

¹ The preliminary demographic data provided by the 1960 national census do not give the birth and death rates for the period 1950-60 or make it possible to calculate them.

² See *Situação social da América Latina* (Rio de Janeiro, Centro Latino Americano de Pesquisas em Ciências Sociais, 1965), pp. 21 and 24.

rate in 1959 hardly reached 9.8 per thousand in São Paulo and 11.6 per thousand in Rio de Janeiro, in the large urban centres of the North-East the rates were 18.9 per thousand for Recife (Pernambuco) and 16.3 per thousand for Salvador (Bahia). In the South of the country, in state capitals such as Curitiba (Paraná), a rate of 17 per thousand was registered during the same period." It is noted, however, that the mortality rate is in all cases falling.¹

As a result life expectation is increasing and this is, of course, related to improvement of living conditions, which in turn depends directly upon urban and industrial development.

Urban and rural populations

Insufficient attention has been paid to a very interesting and significant increase in urban population which occurred in the interval between the two national censuses (1950 and 1960). Whereas in 1950, 64 per cent. of the population lived in rural areas and 36 per cent. in the towns, these proportions had by 1960 changed to 55 per cent. and 45 per cent. respectively.

This statistical confirmation of the increased migration of inhabitants towards the urban centres, which might generally be considered as a good augury, must be interpreted in the light of the fact that in Brazil any centre with more than 2,000 inhabitants is defined as "urban" —a not very accurate criterion, since the majority of localities covered by it lack those conditions created by urbanisation and industrialisation that make it possible to absorb the migrating populations. Some of them are, in fact, villages in which the living and working conditions continue to be precarious.

On the other hand, this 9 per cent. increase in the urban population must be considered from the regional point of view, since in spite of the over-all figures, large regions of the country register an absolute majority of rural inhabitants living in poverty conditions, in a state of chronic unemployment and reduced productivity² owing to the concentration of the land in large estates, so that monoculture is practised over extensive areas and the labour system is almost feudal.

If the data for the two typical regions of the country are compared (on the basis of the population over 10 years of age), it will be seen that there are certain specific aspects of this general and statistically confirmed

¹ See *Situação social da América Latina*, op. cit., p. 25. This publication also states that "mortality statistics have for a long time been considered as one of the most valuable elements for the assessment of the living conditions of human groups" (p. 22). According to the above-mentioned findings by Mortara, "mortality statistics for most Latin American countries contain serious errors" (p. 23).

² In 1950 the rural population over 10 years of age (58 per cent.) contributed only 27 per cent. of the national product.

phenomenon, since in the South the rural population represented 46 per cent. of the total in 1960, as against 64 per cent. in the North-East. In addition, owing to the high degree of urban and industrial development in the South in the years 1950 to 1960, this region has absorbed large numbers of migrants from agricultural and less developed areas.

A young population

It should be noted also that Brazil has an extremely young population: more than 53 per cent. of the country's inhabitants are under 19 years of age.¹ In addition, the 0-14 year age-group increased by nearly 1 per cent. in the interval between the two national censuses.

The most important aspect of this factor is the greater participation by children and young persons in the national labour force, since poverty on the one hand, and lack of schools on the other, lowers the age at which young people enter employment.

In 1950, 20 per cent. of Brazilian youth in the 10-14 age-group, and 51 per cent. of those in the 15-19 age-group, were employed, mainly in agriculture. These are significant indices, which mean that in 1950, 23.5 per cent. of the economically active population consisted of young people in the 10-19 year age-group.²

Problems of education

Two additional factors throw light on this problem in Brazil: (1) the illiteracy rate which, in 1950, in the same 10-19 age-group, was about 52 per cent.; (2) according to a U.N.E.S.C.O. estimate, the average duration of attendance at school (which is far from being general) was two to three years only.³

¹ This is general in Latin America. Youthful population is a general characteristic of developing areas; for example in Latin America the under 15-age-group accounts, on an average, for about 40 per cent. of the population, whereas in industrialised countries such as the United Kingdom, France and Sweden, the proportion of the same age-group does not exceed 22.5 per cent.

² In 1950 the economically active population in Brazil was 17 million, i.e. approximately 32.6 per cent. of the total population. In 1960 the figures were 22.7 million and 31.9 per cent. respectively. The percentage drop in the economically active population was the result of the proportional increase in the younger age-group (0-14 years).

³ U.N.E.S.C.O.: *La situación educativa en América latina. La enseñanza primaria: estado, problemas, perspectivas* (Paris, 1960). The data refer in a general way to the present situation in Latin America. Comparison with the United States and Canada, where children attend school for eight to nine years, shows how serious is the underdevelopment in this field in Latin America. Inadequate education plays as important a role in the reduction of work capacity as do lack of proper food and bad sanitary conditions. Héctor Correa (*The economics of human resources* (The Hague, Drukkerij Pasmans, 1962)), states, for example, that 4 per cent. of the increase in the United States non-agricultural gross national product between 1909 and 1949 may be attributed to improvement of the health conditions of workers, and 5 per cent. to the improvement of education.

As a rule, this national particularity, namely that almost one-quarter of the economically active population consists of young persons whose education is extremely elementary, passes unnoticed in the formulation of employment policies and in criticism of national labour productivity. Nevertheless, this is an aspect of chronic underemployment, which may well be defined as work performed in conditions of low individual productivity.

The cultural divergencies already mentioned are noted also in the field of education in Brazil. As pointed out at the commencement of this article, more than one-half the country's primary schools are located in the South. In 1958 the national average of school attendance for the 7-11 year age-group was 54 per cent. and it was estimated that of 100 children enrolled in the first year, only 30 reached the third year. While 70 per cent. of children were attending school in the South, the percentage was only 35 in the North-West and 36 in the North-East.

Although the general illiteracy rate is still high, it is considerably weighted by the rates for the poorest regions, which are not necessarily the most highly populated. Table II provides an eloquent comparison.

TABLE II. ILLITERACY AMONG POPULATION
OVER 10 YEARS OF AGE, 1960

(in thousands)

Region and age group	Population	Illiterates: number and percentage
North-east:		
10-19 years	3 655	2 181 (59.7)
over 19 years	6 973	4 264 (61.2)
South:		
10-19 years	5 269	880 (16.7)
over 19 years	10 825	2 269 (20.9)

It may therefore be concluded that with a very rapidly increasing population, mainly rural, living in poor health and nutritional conditions—a population which, moreover, is extremely young and of which a large proportion begins to be employed at an early age, thus swelling a very inadequately educated labour force—Brazil is faced with extremely serious problems in regard to the mobilisation of its human resources for economic and social development.

Economically active population

Figures on the economically active population (see table III) are important for two main reasons: first they show that, illogically (seeing that economic development depends fundamentally upon the growth of the industrial sector), employment in that sector appears to have

decreased relatively, which would appear to indicate low or inadequate capacity to absorb manpower; second, because in the developing countries, where the industrial sector is not planned with a view to employment objectives, the rural inhabitants who migrate to the cities and do not take up tertiary occupations merely swell the ranks of the urban unemployed and, above all, of those who are underemployed in a very varied range of unspecified urban occupations, to say nothing of the other group not included in the economically active population and defined as "domestic workers". In addition, it should be noted, in connection with migration to urban centres, that the construction industries which employ the large majority of unskilled workers, did not show any appreciable rise in intake between 1950 and 1960.

TABLE III. CHANGES IN THE DISTRIBUTION OF POPULATION AGED 10 YEARS AND OVER, BY ACTIVITY, 1950 TO 1960

Field of activity	Distribution		Change 1950 to 1960
	1950	1960	
Agriculture	27.04	23.99	-3.05
Mining and quarrying	1.32	1.18	-0.14
Manufacturing	4.40	4.25	-0.15
Construction	1.60	1.61	+0.01
Retail trading	2.62	3.12	+0.50
Transport, storage and communications . . .	1.91	2.23	+0.32
Services	4.58	5.60	+1.02
Others	3.35	4.48	+1.13
Active population . . .	46.82	46.46	-0.36
Economically inactive population, school-children and unremunerated domestic workers .	53.18	53.54	+0.36
Population aged 10 years and over . . .	100.00	100.00	—

Another comparison could be based not on the extent to which the industrial sector is represented in the economically active population, but on the increase in the number of persons employed in that sector in relation to the increase in urban population. In the period under examination (1950-60) it is noted that, as far as manufacturing and construction are concerned, the increase in employment was considerably less than that in urban population (2.5 as against 5.4 per cent.). For the purposes of comparison, a series of correlated and supplementary observations would have to be made of the urbanisation and industrialisation processes, on the assumption that there is not necessarily any direct relationship between

increased industrial employment and an increase in urban population. For example technological progress, by substituting machines for men, may increase industrial capacity without necessarily increasing employment in industry, whereas the urban population may continue to grow as a result of industrial expansion. However, in the present elementary technological conditions in the industrial sector in Brazil, the comparison does serve to show how limited the employment capacity of that sector is.

Necessary reforms

The foregoing are, in our view, the main general aspects of the demographic situation to which reference must be made within the limits of this article in order to bridge, to some extent, the well-known gaps in the available statistics.

It is clear that radical reforms are urgently needed in the social and economic organisation of rural life, and that economic activities in urban areas must be planned, so as ensure more rapid and a adequate growth and bring about a change in the present unhappy situation described above. Obviously, no easy or quiet solutions will be forthcoming, particularly in regard to agrarian reform, owing to the many private interests involved. This, however, does not make the need for solutions less urgent or less compelling.

We are convinced that in a country with Brazil's demographic structure it is essential, if disaster is to be avoided, not to underestimate the seriousness of employment problems with all their economic, social and political repercussions on the country's development.

What are the principal problems which these demographic characteristics create in the formulation of an employment policy for Brazil?

Employment policy

In every country, whether it be industrialised or in the process of industrialisation, the purpose of an employment policy is to place as many persons as possible in regular work—performed in normal conditions and adequately paid and which, in so far as possible, will correspond to the inclinations and aptitudes of the workers concerned.¹

The strategy of such a policy concerns principally countries which are in the process of industrialisation since these are processes of economic development which do not necessarily imply a social solution of the employment problem. As mentioned above, technical modernisation may increase economic production without increasing the number of jobs.

¹ This is an objective difficult to achieve in view of the fact that in Brazil a large proportion of young workers have not been adequately educated. It is therefore absolutely essential, in any development plan or programme, to equate work with education.

In many economic development programmes, insufficient attention is paid to employment objectives, it being assumed that higher employment will follow automatically as a by-product of economic growth.

In an I.L.O. report drawn up by a group of experts presided over by Roberto Campos, at present Minister for Planning in Brazil, it is recognised that there may be some conflict between the objectives of increased employment opportunities and of rapid economic development, but it is stated that such "conflicts are not always or everywhere operative. Moreover, where they exist, they can often be eased by appropriate policies and can eventually be eliminated once the level of investment becomes adequate for the maintenance of full employment."¹ Technically speaking, therefore, the question we now have to examine is the formulation of an effective employment policy in which the level of investment is adequate to maintain full employment.

Employment opportunities

The Brazilian Government's 1964-66 Plan of Action estimates that 1.1 million new jobs must be created in the country to meet the annual demands of the labour market. Another serious aspect of the situation is the state of chronic underemployment of the labour force, particularly in rural areas—and a similar situation prevails throughout Latin America.

We have not sufficient systematically processed statistics to enable us to evaluate or interpret these problems accurately.

The unemployment is structural in nature since there is a general availability of manpower as a result of the exceptionally rapid population growth and, at the same time, inadequate economic development: the opportunities of employment do not absorb all the inhabitants who each year reach the age of employment. The poorer the country or the region, of course, the lower will be the age at which young people are incorporated into the labour force.

In some Latin American countries, including Brazil, the problem of structural unemployment appears to have been aggravated when the economic policy was revised, particularly on account of the strict programmes of currency stabilisation. In such cases, the increase in unemployment becomes incidental and is always considered as a necessary and transitory phenomenon which will continue until stabilisation is achieved. In our view, the present increase in unemployment in Brazil is due to the rigid anti-inflationary policy adopted in the country during recent years. Once the present difficulties—regarded by the Government as transitory and necessary for currency stabilisation—have been overcome, it is to be hoped that there will be an immediate resumption of development at a regular

¹ I.L.O.: *Employment objectives in economic development*. Report of a meeting of experts. Studies and Reports, New Series, No. 62 (Geneva, 1961), p. 2.

and adequate rhythm so that the country will be able, within a reasonable time limit, to solve the problem of the annual short-fall of 1 million new jobs referred to in the Government's Plan of Action and thus remedy the present rise in unemployment.

As we know, the basic objectives of an employment policy are: (i) to increase employment opportunities and (ii) to reduce underemployment. The whole problem of employment is affected by three main factors: (a) production variations—both seasonal and cyclical¹; (b) structural changes and technological progress within the system of production; (c) inadequate economic development.

This last point, of course, is particularly applicable in Brazil. In the above-mentioned report of the experts convened by the I.L.O. in 1961 to examine and discuss the problem of employment as it is affected by economic development, some conclusions were reached on the question of inadequate development, and fundamental ideas for the solution of the resulting employment problems were put forward. In a word, the report in question confirms the generally held opinion that shortage of employment opportunities is due mainly to shortage of capital. The objective should be to increase investments and use existing and imported capital to better advantage.

In addition, in order to meet these demands in countries which are in the process of industrialisation, investment should not be based, as in the developed countries, on the adoption of the most advanced technology, but rather on a policy which will permit investment mainly in projects calling for more manpower than would be appropriate if there were no unemployment or underemployment.²

Participation by the State

In view of the shortage of capital in the less developed countries, impoverished as they are by the monopoly policy of international trade, to the point where savings have become almost a myth, it is evident that immense importance attaches to direct participation by the State in the national economy: through its basic, public and industrial services it can stimulate the creation and expansion of enterprises, help to speed up development and strengthen the national capital.³

¹ Seasonal variations or intervals between harvests, very common in agriculture; cyclical variations governed by the state of markets, or the cycles imposed by the capitalist system of production.

² For further interesting observations on the same subject see summary of the above-mentioned report: "Employment objectives in economic development", in *International Labour Review*, Vol. LXXXIV, No. 5, Nov. 1961, p. 394. In the examination of this question, the three essential considerations are: specific branch of industry, international competition, and national security.

³ In 1960 the State in Brazil provided the capital for more than 38 per cent. of the permanent investments.

In the formulation of an employment policy, the creation of new employment opportunities is not the only consideration: the policy should also aim at reducing underemployment, which is a particularly serious problem in the less developed countries or regions, especially in the primary sector of the economy.

Shorter working hours than the normal, and low output ¹, are characteristics of underemployment. In our view, it follows from these two circumstances that (a) the underemployed person works shorter hours and produces less for reasons beyond his control and which have nothing to do with his capacity; (b) he is capable of working and producing more and desires to do so; (c) he endeavours to obtain employment in his free time whenever an opportunity occurs.

The problem of agriculture

In the greater part of Brazil, as in the rest of Latin America, agriculture is divided, in its economic and social organisation, into two very definite sectors: on the one hand, there are the large private estates where extensive areas are given over to monoculture and where farm labourers and tenant farmers are exploited, and on the other, there are the smallholdings where the economy is at subsistence level. Under these systems, with their primitive administration, it is impossible to use the whole of the available manpower, and full use is not even made of that part of it that is employed.

This question of full utilisation of rural manpower is aggravated by seasonal fluctuations. The most seriously affected are the landless workers and the smallholders whose state of permanent and increasing poverty obliges them to seek work in the towns—and there they have to compete for the limited number of jobs available in industries that are only in their infancy. It may therefore be said that rural underemployment implies urban unemployment and underemployment.

In Latin America about 60 per cent. of the inhabitants are engaged in agriculture, but the majority, as in Brazil, do not receive a wage and work under a system that is almost one of servitude.² Moreover 1.2 per cent. of Latin American landowners possess 70 per cent. of the continent's agricultural land, which means an immense concentration in great landed estates or, rather, a concentration of the economic and political power—a crying injustice in regard to the social distribution of land. In addition,

¹ Owing to maladjustment to the tasks performed, impossibility of complete utilisation of individual capacity, or precarious conditions of the enterprise itself.

² In view of the large proportion of young persons contributing to national production, it should be noted that as a rule young people work as unpaid family workers, that is they participate in the collective family wage which is indicated as a unit in the work contract. In urban employment, 90 per cent. of young persons are "employed"; but they are not always duly registered as such.

15 of the 20 Latin American countries depend almost entirely on the export of a single product: coffee in Brazil and Colombia; tin in Bolivia; sugar in Cuba; petroleum in Venezuela and copper in Chile—to cite only the most representative examples.

Training the labour force

The demographic and socio-economic conditions of the developing countries and of the less developed regions which constitute more than half of Brazil (conditions we have described above) give rise to two different, but related, problems: (i) a surplus of unskilled manpower and (ii) a shortage of trained, qualified workers.

The surplus of unskilled manpower, which reaches disquieting proportions in the urban zones, is due to a number of causes, namely—

- (a) migration of rural inhabitants to urban centres in search of better living and employment conditions;
- (b) a high proportion of young persons in the labour force;
- (c) unplanned industrial development attracting handicraftsmen and home-industry workers at a greater rate than they can be absorbed;
- (d) urban development outstripping industrial development, that is greater increase of the urban population in general than of the industrial population in particular;
- (e) the higher level of education required for employment in tertiary occupations (commerce, banking, insurance, public administration, etc.), so that it is difficult to incorporate unemployed industrial manpower into the tertiary sector;
- (f) the lower demand for labour, resulting from increased productivity in certain sectors.

The shortage of qualified manpower is felt at all levels of the social organisation of production: from the workshop to the director's office; from the tradesman to the professional. This shortage is aggravated by the above-mentioned lack of basic education, which also makes the adoption of new production techniques difficult.

Viewing this same question from another angle, we are again confronted with a vicious circle: on the one hand, the rudimentary and nearly always precarious organisation of private and public undertakings makes it impossible to evaluate adequately and fully the need for skilled workers, whereas on the other, there must be prior training of technical personnel if the organisation in question is to be improved.

There is an acute shortage of technical and university-level professional workers. Secondary education (which, apart from its purpose of providing a technical education, is also a stepping-stone to the university) is rare and expensive in Brazil so that only a small minority—as

a rule from the wealthiest classes—have had sufficient education to enable them to occupy posts demanding higher qualifications or to enter university.¹

Secondary education

According to data published by the Statistics Service of the Ministry of Education and Culture, the numbers of pupils enrolled in secondary schools in 1964 were as follows²: in regular secondary schools, 1,368,177; in technical schools, 349,150 (270,036 in the commercial branch, 68,819 in the industrial branch and 10,295 in the agricultural branch); in teacher-training schools, 175,379—a total of 1,892,724. This distribution is eloquent and reveals: (a) the disproportionate number of pupils in the humanities sector (a reflection of the social prestige which academic training confers) in a relatively poor country with a low level of education, and (b) the small number of pupils taking industrial and agricultural courses—which is illogical in a country where there are immense agricultural areas in the North-East, West-Central and extreme South and extensive industrialisation in the most densely populated area of the South.

However, the most serious problem revealed by this distribution is that of the training of technical personnel at the middle and university levels. In 1964 only 10 per cent. of the population between 10 and 19 years of age, or 23 per cent. of the 15-19 age-group were enrolled in secondary schools. As we know, one of the objectives of national plans for economic and social development is to increase the number of skilled personnel, especially at the middle level. According to Harbison, the rate of increase in skilled workers should be greater than the rate of increase in general manpower since the rate of economic and social development of a country will always depend on its reserves of trained workers (human capital).³

Vocational training

Special systems of vocational training are obviously an extremely important element in the formulation of employment policies, or rather,

¹ The number of secondary schools in Brazil is completely inadequate: in 1964 there were 5,473, of which more than 60 per cent. were private.

² In Brazil secondary education is divided into two cycles: the first (four years) is devoted to general and basic education in the respective subjects, and the second (three years) covers specific subjects. Secondary education is provided for pupils aged 12 to 18. Some girls who have completed the first half of secondary education endeavour to enter for the second half of the teacher-training course (training of primary school teachers).

³ The available data on the present situation in regard to secondary education are not very satisfactory, but it should be noted that during the period 1960-64 there was a 155 per cent. increase in the total number of pupils enrolled. There were two other favourable factors: the number of pupils in the industrial branch increased by 264 per cent., and there was a 187 per cent. increase of those training as teachers. This last point is important because only a minority of primary-school teachers have had any specialised training.

in the mobilisation of human resources, in a country with Brazil's demographic and socio-economic characteristics, where there is a shortage of educational facilities and a low level of education. In passing, we would recall a remark made by Oliveira Brito, Member of Parliament, when as Brazilian Minister for Education and Culture he presented the Government's 1961 Programme: "It is astonishing to find that the nation can live and develop on such a meagre educational diet."¹

SENAI and SENAC

When the industrialisation of Brazil began to be intensified 20 years ago, and it was found that the education system could not meet the increasing demands for trained personnel, the employers proposed that they should participate directly in vocational training plans. Special legislation was passed and, in agreement with the federal Government, powers were delegated to the national confederations of industry and commerce for the creation of schools of apprenticeship throughout the national territory. The idea was first put into practice by the National Industrial Apprenticeship Service (SENAI, 1942) and then by the National Commercial Apprenticeship Service (SENAC, 1946). These two great vocational training institutes are financed by monthly contributions paid as an obligation by the industrial and commercial undertakings respectively. They are intended primarily for the training of young workers, although further training and specialisation courses for adults already in service are also promoted.

The respective apprenticeship regulations require industrial and commercial undertakings to employ a certain quota of young workers aged 14 to 18, and to enrol them in the SENAI or SENAC schools. Enrolment of adult workers is optional.

SENAI and SENAC have now acquired very valuable experience in the field of technical education and they are an excellent example of private initiative collaborating in the solution of national problems. Other similar institutions have been created in other Latin America countries.²

¹ In Brazil, as in the rest of Latin America, the number of pupils enrolled has considerably increased. Nevertheless, there are still serious problems of repetition of classes, absenteeism and evasion which reduce the school output and directly hinder economic and social development. In so far as basic education is concerned it is considered that a child must complete at least four years of primary schooling if the financial and educative investment (cost per pupil) is not to be lost. As we have already mentioned above, the average duration of primary school attendance in Brazil is two to three years only.

² In 1964 SENAI was training 25,200 apprentices in its apprenticeship schools, and 65,000 were being given in-service training; SENAC had 12,000 apprentices all in its schools. SENAI enrolled approximately 23,800 adult workers and SENAC 41,600 in their accelerated training courses for adult workers. These figures are not included in the secondary school data given above.

Importance of vocational training

The essential relationship between these special systems of vocational training and the educational and labour situation we have examined is that in Brazil, a country with a shortage of schools and a low level of education, vocational training should not be understood simply as a means of obtaining an industrial undertaking's desired economic output, of merely preparing the young worker to perform the operations required of him.

With 23.5 per cent. of the economically active population in the 10-19 age-groups and inadequately educated, Brazil should obviously adopt, in the field of vocational training, a special philosophy and a special methodology, different from those applied in the developed countries where young people beginning to work at 15 or 16 have had eight or nine years' schooling.

In the conditions prevailing in Brazil, vocational training must be understood in a broader, higher sense, particularly where adolescents are concerned. It must take on an integral character and be concerned not only with the technical training of the worker but also with the general education of the citizen and with the development of the individual personality. For this reason, our laws governing industrial and commercial apprenticeship have for more than 20 years stipulated that apprenticeship shall include "the study of the subjects necessary for the general education of the worker as well as any practical training that can be given".

This interpretation of Brazil's legislation, which has been applied since 1942, is now recognised in a practical manner in the I.L.O.'s Vocational Training Recommendation, 1962, and it is explicitly included in the U.N.E.S.C.O. Recommendation (1962) on Technical Education and Training.

We will give again here the conclusions we reached on the occasion of a previous study, after perusal of the two documents in question¹:

We live in a world of rapid and substantial scientific and technological progress, in which the various fields of knowledge and of activity are increasingly inter-related and inter-dependent and in which labour is being gradually simplified. From this we can deduce two facts which may appear paradoxical at first sight, but which can be reconciled if present social realities are observed objectively, namely: (i) vocational training is becoming more important than it was considered formerly to be in a world in which humanistic culture predominated; (ii) vocational training is becoming more general and less specialised. *Employment opportunities are being increasingly diversified, while basic knowledge and education are becoming universal.* Greater flexibility is required to meet the occupational mobility which increases as economic activities expand—or, rather, which prevents the worker from being tied to a particular occupation as a result of too rigid specialisation or, above all, of too early specialisation.

¹ Robert N. DANNEMANN: *Mobilização de recursos humanos* (Rio de Janeiro, Departamento Nacional do SENAC, October 1964) (mimeographed).

Any specialisation found to be indispensable or desirable from the point of view of the social organisation of labour should be preceded by the widest possible general preparation of the worker so that he may know what are the opportunities open to him that will enable him to reconcile the interests of the community with his own inclinations and aptitudes.

In reality, the concept of vocational training is becoming so general and indispensable that, without losing sight of its special character and purpose, it is now considered a very valuable instrument of education, particularly in view of the shortage of schools, of the high proportion of young persons in the economically active population, and of the imperative need for a better trained labour force.

Vocational training and general employment policy

In concluding this article, we would draw attention to what we consider to be another important factor in the fuller understanding of vocational training and of its relationship to the national employment policy. We refer to a proposal made by the author as a member of the Brazilian delegation to the Seventh Conference of American States Members of the International Labour Organisation (Buenos Aires, 1961), the content of which is still valid today.

We said then that the common objective of economic development in all the countries of Latin America is industrialisation—the basis of Western capitalist society—and that the introduction of systematic vocational training for industry therefore demanded serious attention and almost all of the available national and international resources.

From the strictly economic point of view, this was understandable; since industrial undertakings constitute the very basis of economic development, it is clear that in the field of vocational training priority had to be given to industrial manpower. Nevertheless, considered from the demographic and educative¹ viewpoints, there is a need for substantial revision and a different approach.

Obviously, industrial development leads to the development of systems for the distribution of goods, for the provision of services, including those of the public administration. One result is that the number of persons engaged in tertiary occupations is tending to increase—a tendency observed in both developed countries and countries in the process of industrialisation.

In the United States, for example, the economically active population is distributed as follows: in 1910, 32 per cent. were engaged in rural occupations, 31 per cent. in industry and 37 per cent. in tertiary occupations; in 1950, the proportions were 12.2 per cent., 34.7 per cent. and

¹ From the demographic and educative viewpoints, development acquires a social aspect; the human element and human living conditions are essential considerations.

50.5 per cent. respectively, with 2.6 per cent. in miscellaneous occupations; in 1960 the figures were 7.3 per cent., 32.2 per cent., 59.8 per cent. and 0.7 per cent. respectively.¹

The same tendency is noted in Brazil, where the economically active population has been distributed as follows: in 1940, 64 per cent. in rural occupations, 12.2 per cent. in industry and 23.8 per cent. in tertiary occupations; in 1950, 57.8 per cent., 15.6 per cent. and 26.6 per cent. respectively; in 1960, 51.7 per cent., 15.1 per cent. and 33.2 per cent. respectively.²

From the point of view of the general problem of employment, therefore, it will be seen that there is a definite increase in the number of persons employed in tertiary occupations and this is a situation to which national governments and international organisations should pay more attention; more resources should be made available for vocational training in this, as in the industrial sector. The labour force employed in tertiary occupations today represents, quantitatively, an important human group to which more consideration should be given.

On the other hand, from the educative and essentially qualitative point of view, tertiary occupations offer an important field for the application of the principles of vocational training, for a number of what appear to us to be very valid reasons, namely: (a) for the effective performance of tasks in the tertiary field, development of the personality is generally required and not only manual ability; (b) persons engaged in these activities are usually required to deal with problems of social interaction and human relations and not of the processing of materials; (c) for this same reason, employment in tertiary occupations implies a need for adjustment of attitudes, and in so far as the application of techniques is concerned, there is more need for intelligence than for sensory and motor abilities—which means, basically, that a higher level of education is required.

It must be admitted that training for tertiary occupations is extremely complex: its structure and aims come within the field of education, but its value is tested and confirmed later in the field of labour.

Conclusions

To understand the Brazilian situation it is necessary to have some knowledge of the diversity of social and cultural conditions prevailing over this vast country. The forests of the North, the semi-arid North-East, the agrarian West and industrial South do not only differ geographically; culturally, they are different worlds.

¹ The "miscellaneous occupations" include those that are "inadequately described" and persons seeking employment for the first time.

² *Anuário Estatístico do Brasil*, 1965.

Industrial development in Brazil has been relatively intense. Although it has been geographically uneven (great concentration in the South) and economically unsystematic (lack of planning), the industrial development over the past 20 years has undoubtedly had an influence on the country's political, economic and social history, and has accentuated the regional contrasts to which we have referred above.

In spite of this industrial development and of the urbanisation processes of the last decade, Brazil's demographic and social structure remains on the whole typical of Latin America, that is, of the less developed regions: very marked growth of an extremely young population living and working mainly in agricultural areas; high rate of illiteracy, low level of education, and low productivity.

The extraordinarily rapid demographic growth creates a rising demand for employment; but this is insufficient owing to inadequate development, based very largely on an agrarian system of extensive, monoculture estates, run on primitive lines and employing servile labour. On the other hand, the industrial expansion, intense but incipient only, is not sufficient to absorb the surplus unskilled manpower which each year invades the urban labour market. In these structural conditions, unemployment and underemployment are inevitable.

In addition, the low educational level and the shortage of schools impede the training of technical and university-level personnel adequate in both numbers and standards to achieve greater economic progress and the accumulation of national human capital.

There is an urgent need for radical reform of the economic and social organisation of agricultural production; with better distribution of the land and its products, almost two-thirds of the country could be reclaimed for cultivation. As we have said, these are proposals not easily put into practice in view of the many powerful economic and political interests involved. In the meantime, we are faced with an undeniable fact: only by the settlement of the agricultural population and the stimulation of production through outright ownership of land and of its products will it be possible effectively to continue formulating regional programmes for technical and social assistance based on increase of the rural workers' output and improvement of the health and educational conditions of his family.

It would not be too fanciful to believe that with improved living and working conditions in rural areas it might be possible to halt the demographic growth and its unfavourable effects. In our view, this indirect result might be achieved through duly planned industrial and urban development.

The promotion of industrialisation according to regional needs and possibilities will certainly be the primary objective in the planning of the country's industrial activities. It will be possible to adopt measures that will be a real incentive, such as the recent law under which any industrial

investment made through the Office for the Development of the North-East (SUDENE) may be deducted from the taxes of the enterprise concerned.

Another necessary measure will be a prior and complete survey of the industries to be promoted in each region, bearing in mind, particularly in the North and North-East, that investment must be related to demographic and socio-economic conditions; preference should be given to projects which will absorb a larger labour force.

The State should assume responsibility for direct investment in the basic, industrial services, particularly power production, in order to create an infrastructure that will facilitate and stimulate private industries. The Government's activities in this field should be considered within the framework of the national or regional plans for economic and social development.

In a country that is short of capital and in which investment policy aims at more adequate utilisation of national capital and encouragement of foreign investors, other economic, commercial and financial measures will have to be adopted to encourage quicker and broader development and the diversification of industry. However, although such measures are urgent, they are not more important than the implementation of a social policy for the betterment of our human resources.

In view of the serious situation in regard to education, even in the urban centres, and its repercussions on the other aspects of development, any plans for the economic and social development of Brazil should pay special attention to the country's educational system as one of its most important social and economic problems.

In countries with Brazil's demographic and social characteristics, education cannot continue to be orientated mainly towards the humanities in accordance with the European tradition, or be considered as an end in itself. It is becoming increasingly necessary to make it utilitarian and to define it not only as a preparation for life but also as a preparation for work.

In these circumstances, the role played by the vocational training institutions already mentioned, such as SENAI and SENAC, becomes extremely important since they give both guidance and training to young persons already at work. Although these are eminently utilitarian systems, Brazilian legislation has stipulated that their educative activities must be given an integral character and aim at the training of the worker, the citizen and the individual.

The methods adopted under these systems should be revised and brought up to date so that more and better results may be achieved and so that the qualitative and quantitative social needs of our time may be met. The apprentices enrolled by SENAI and SENAC (102,000 adolescents in 1964) are only a small proportion of the present, and increasing, labour force.

These systems of vocational training should be incorporated into national development plans, and in particular into national plans for education, and due consideration should be given to their flexibility and to the varied range of occupations they cover. Such integration would facilitate the adaptation of these systems to the organisational patterns of regular education and so enable the apprentice to complete and, above all, to continue his studies.

Finally, and again on the question of integration, the great increase in tertiary occupations as a result of industrialisation must not be lost sight of; a larger and larger proportion of the labour force is being absorbed in these occupations, and the authorities concerned with vocational training should therefore pay at least as much attention to them as to the industrial sector. In conclusion, we would emphasise the technical and educational aspects of preparation for tertiary occupations since vocational training for this sector is extremely complex: its structure and objectives come within the field of education but its value is tested and confirmed later in the field of labour.
