Long-Term Planning of Employment in the Hungarian People's Republic

by

János Timar

In the following pages Mr. Timar, Head of the Department for Manpower Planning of the Hungarian National Planning Office, describes the methods and hypotheses adopted for long-term manpower planning in Hungary and outlines some of the conclusions which the preliminary computations of the Hungarian twenty-year economic plan appear to justify regarding the future evolution of employment. In this latter connection the author deals successively with population and manpower trends in general; the employment of women, the young and older persons; and the changing distribution of manpower between agriculture and the non-agricultural branches of the economy. The article concludes with a summary comparative statement of the manpower situation in 1960 and 1980.

IN a planned economy ¹ the purposeful development of economic and social life takes place on the basis of national economic plans.² In Hungary, as in the other socialist countries, such plans have been drawn up for some time, generally for annual and fiveyear periods ³; but the ever-accelerating pace of scientific and technological development, and the complexity, rising volume and rapid rate of growth of production, demand scientifically well-

² The "economic plan" is in reality a uniform, integrated system of plans which not only sets targets for individual industries and for total production —as well as the means of attaining them—but also determines and coordinates the quantifiable and economically significant objectives of society as a whole—as well as the means of achieving them.

³ The first economic plan was formulated in Hungary for the period 1947-50.

¹ The term " planned economy " is used here to denote an organic whole. Its essential parts are, on the one hand, economic plans laying the foundations for a balanced development of the economy and, on the other, the means and measures by which these plans can be carried into effect through the public ownership of the means of production. Thus, the drawing up of economic plans is a necessary—but by no means a sufficient—condition of the system of planned economy in the sense in which the term is used in this article : the other essential condition is the existence of a whole complex of means, measures and methods ensuring fulfilment of the plans.

founded foresight covering a longer period than has hitherto been necessary. In addition, a superior international division of labour, which is steadily increasing in importance, can also be obtained only on the basis of long-term plans. These are the factors that led Hungary in 1960—with the other socialist countries—to undertake the preparation of a twenty-year plan for the period 1960 to 1980.¹

The main aim of long-term planning is to lay the scientific foundations for the country's economic policy; to draw up a politicoeconomic framework that will ensure rapid and continuing development with optimum efficiency. Long-term planning is no substitute for short-term planning, but a foundation for it: indeed, the purpose of each short-term plan is to give specific and detailed form to the general programme set out in the long-term plan and to provide the basis for practical measures to be taken at all levels to carry it into effect.

Manpower planning is an essential part of economic planning. In a planned economy manpower resources ² can be allocated purposefully and used efficiently. The immediate aim of planning is to achieve a balance between manpower resources and requirements for the country as a whole and regionally, and both quantitatively and qualitatively. (Qualitative balance entails considerations of age and sex, as well as level of qualifications.)

The principal method of manpower planning consists in drawing up the manpower balance.³ It is with the aid of this balance that manpower resources are accounted for, and forecast manpower requirements—based on the production, development and pro-

² By "manpower resources" we mean the total "able-bodied population". In planning and statistical practice the "able-bodied population" includes the "population of working age" and "people employed beyond the working age". The former comprises women of 14-55 and men of 14-60 years of age; the latter includes women over 55 and men over 60, who at a given point of time or in a given period pursue a gainful occupation.

⁸ The manpower balance is in fact a complex system of balances, containing information on the following points :

(1) the continued schooling or entry into the labour force of young people reaching working age (14 years);

(2) the employment of young people completing their studies and seeking jobs for the first time;

(3) the manpower requirements of individual economic branches; changes in employment; natural waste (deaths, retirement, disablement); movements between branches, and between households and employment;

¹ Plans relating to individual fields of economic development had been drawn up even earlier. In Hungary long-term plans relating to certain restricted fields were first drawn up at the beginning of the fifties. The twentyyear long-term plan now being elaborated, however, embraces the entire social and economic development of the country, integrating and co-ordinating all its diverse aspects.

ductivity targets of the economic plan—are confronted with manpower resources.

The role and importance of manpower planning vary with the length of the planning period. For shorter periods it is at the concluding stage of economic planning and of plan variants that the importance of the manpower balance is greatest. With the aid of the balance, it can be ascertained at this stage whether the planned development of the economy—or rather its manpower demand—satisfactorily ensures the employment of the population in comparison with the level of the preceding year and taking into account changes in the supply of manpower. Thus the manpower balance influences the next plan variant ; but at the same time it enables practical measures to be taken to maintain the equilibrium of the manpower situation.

In long-term planning the importance of manpower planning increases and its role changes. Over a period of 15 to 20 years we may choose within relatively broad limits what branches of production to develop and what kind of technology to use for the purpose; how the service sectors should expand; how high the level of social services should be, and so forth.

The "social production cycle" of manpower, however, is some 15 to 25 years depending on the degree of education and qualification.¹ It is therefore possible to establish, within relatively safe margins of error, the quantity and quality (by sex, age and level of skill) of the manpower—the basic and most important factor of production—that can be reckoned with over the period of the longterm plan. In this way we obtain one of the most important initial data for the long-term plan, one that has a considerable if not decisive influence on the formulation of the whole economic plan.

In long-term planning, therefore, the emphasis of manpower planning shifts to the initial, foundation stage of planning. In the process not only is a forecast made of manpower resources—which, in the demographic sense, can essentially be taken as given—but a preliminary, hypothetical plan must also be worked out for the use of manpower. On the basis of possible manpower resources, estimates must be made of the possible volume and composition of manpower requirements in individual branches of the economy;

(5) indicators of the level of employment.

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⁽⁴⁾ the total manpower demand (requirements resulting from changes in employment, natural waste and social mobility combined);

The manpower balance as a whole, consisting of several partial balances, gives information on all these items by sex, summary age groups and qualifications.

¹ The minimum age of employment is set by law at 14 years. In the majority of cases, however, young people take a job only at the age of 16 to 17, after completing their studies.

this, too, constitutes one of the starting points for the long-term plan as a whole.

This phase by no means brings long-term manpower planning to a conclusion. In the continuous process of economic planning the demand for manpower resulting from the development plans of the various branches of the economy must be adjusted to the available supply of manpower shown by the manpower balance. This adjustment may imply either changes in manpower utilisation (and in its allocation to the different branches) or the modification of production, technological development or investment targets, or both.

It is as a result of this complex process of successive and interlinked changes that both the plan for the national economy as a whole and the long-term manpower plan finally take shape.

In this article we shall give a brief survey of the problems of long-term manpower planning in Hungary—as regards both methodology and content—based on experience gathered up to the present in the process of planning.¹ The long-term indicators cited, as well as many of the ideas expressed, are no more than a reflection of the author's opinion and may be changed as planning progresses. Owing to limitations of space, we have had to disregard many questions and to deal with others only incidentally. It is hoped, however, that the reader will nevertheless obtain some idea of the long-term concept of employment policy and manpower development and allocation in Hungary and of the planning methods on which they are based.

The Planning Method in Outline

In this section we shall outline the general scheme of the planning method and discuss the methodology, computations and hypotheses governing the details examined in the later parts of the article.

Planning takes place essentially by successive stages, as outlined in the following paragraphs :

(1) The starting point for the long-term employment plan is a forecast of manpower resources. This implies, first of all, determin-

¹ The elaboration of the long-term plan, as well as that of shorter-term plans, is directed in Hungary by the National Planning Office. At the beginning of the elaboration of the long-term plan, the Planning Office worked out hypothetical initial data on the basis of which, relying on the co-operation of 18 committees, including more than 1,500 scientific and technical experts, it drew up the first draft of the economic plan. The detailed checking of the individual important development targets is now under way and preparatory measures are in hand. In this task the ministries and the scientific institutions engaged in applied science each have their designated role to play.

ing by demographic methods the probable total population, the population of working age and its composition by age and sex.

(2) Another component of manpower resources is the group of persons still employed after the age of retirement.¹ How the number of such people is likely to evolve can be forecast by analysing the relations between aging and economic activity.

(3) The sum of the population of working age and of those employed beyond that age gives a figure for total manpower resources, the allocation of which means the planning of employment proper. In the manpower balance the manpower resources are divided into two major groups: active earners and those not employed.²

(4) Those of working age but not employed are broken down in the balance into : students, pensioners, disabled persons and others not employed. As regards these groups the following remarks can be made :

- (a) The probable number of students over 14 years of age can be derived from skilled manpower requirements and from the long-term plan for public education.
- (b) The negligible number of pensioners of working age and of disabled persons can be relatively safely worked out from empirical figures.
- (c) Of the "others not employed", the number of men can be equally exactly estimated, as men of working age—discounting the categories of those not employed already mentioned—are almost all to be found in the ranks of active earners.³
- (d) Women of working age but not employed (homemakers) constitute and will continue to constitute one of the major reserves of manpower. Their number cannot be estimated in the same way as that of men, but can be established only indirectly in a later phase of planning.

⁸ It should be taken into account that unemployment was virtually eliminated in Hungary in the earliest stage of planning, i.e. between 1947 and 1950. Since then the employment situation has been characterised rather by a manpower shortage—especially as regards male manpower.

¹ The population over working age comprises women over 54 and men over 59. This age limit, except in agriculture and some special occupations, corresponds to the normal age of retirement.

² Pensioners, people living on their income, i.e. "inactive earners", are listed among those "not employed". "Active earners" include workers and employees living on wages and salaries, and self-employed persons and members of their families working with them, even if these are unpaid. This term therefore differs from the expression "economically active population" only by excluding possible unemployed persons.

(5) The next stage in planning—so far as the situation in Hungary is concerned—is to fix the probable use of manpower in agriculture. Agriculture has played, and will continue to play in the next few decades, the part of a manpower reserve for other branches of the economy. If the planned utilisation of male manpower in agriculture is deducted from the total number of male earners as determined in steps (1) to (4) above, we obtain the total number of male earners available for the non-agricultural branches.

(6) In order to establish the total number of non-agricultural earners, the first step is to determine the hypothetical distribution of earners by branches of the economy—from actual figures, the analysis of international statistics and hypothetical development concepts.

(7) In the next stage the optimum ratios of women employed must be established taking into account the physiological and occupational (skill) requirements of certain jobs and job sites and the extent to which women will be able to meet them by 1980.

(8) Starting from the absolute figure for the total number of males employed, considering the distribution ratios of total employment by branches of the economy and the optimal female employment ratios of the individual branches, the absolute figures for total employment can be computed by branch and sex.

(9) By deducting the number of all women employed and that of women of working age but not employed (previously computed) from the total female labour supply, we get the probable number of other women of working age not employed. This figure should be examined from the point of view of how realistic the planned level of female employment can be considered, taking into account the probable effect of other factors limiting the employment of women.

This planning procedure enables us to compute all the data necessary for the employment plan. The individual stages cannot, however, be mechanically followed in the order in which they are listed above, since with some of the computing stages we must start from assumptions the numerical verification of which can be made only at some later stage of computation.

The scheme of long-term employment planning outlined above, therefore, does not imply a mechanical sequence of stages each built upon the preceding one. The conclusions reached at each stage of planning have a feedback effect on the figures established at an earlier stage, which will then have to be modified accordingly. In practice, therefore, the formulation of even a single variant entails working out several variants, i.e. calculating in detail the various components of the plan. It is by means of these variants that the results of the individual stages of planning can be coordinated so that the long-term manpower plan of the economy can at last be set up.

It should be mentioned that in every detail and every phase of long-term planning the method of international comparison is widely used. The data for 24 countries grouped according to the size of national income per head have been analysed. We examined how the level of employment, its distribution by branches and the qualification of workers change over time and—depending on the degree of economic development—as compared with each other. This system of comparison provided a basis for or a method of checking the long-term concepts and targets for the employment of the population of Hungary.¹

DEMOGRAPHIC DEVELOPMENTS AND THE MANPOWER SITUATION

The starting point for manpower planning is a forecast of the size of the population and its composition by sex and age as a function of demographic processes (births, deaths, migration).

Hungarian demographic experts work on the hypothesis of a further decline in mortality rates.² By 1980 life expectancy at birth will have increased by another three years and will be about 70 years. As a result the population will be nearly 2.5 per cent. larger in 1980 than it would be if the mortality rate remained unchanged.

While the mortality rate can be computed by relatively reliable methods, the reliability of forecasts of birth rates is smaller. This does not imply, however, that it is impossible to work out forecasts based on sound assumptions and which can be used in long-term planning.

The birth rate in Hungary has been continuously declining for a long time : since 1960 it has fluctuated between the very low figures of 14 and 15 per thousand. Among the causes of this situa-

¹ These comparative international tables have been omitted from the present article. Table I in the appendix, however, shows how we have used international data.

² Two methods have been employed in these computations. The first, starting with life expectancies according to the 1958 Hungarian mortality table, was to choose, from the 40 mortality tables elaborated by the United Nations, the table most characteristic of the probable mortality in Hungary. The second, analytical, method was to extrapolate the actual mortality figures with the aid of what is known as a corrected hyperbola. In the population forecast the arithmetical mean of the two estimates thus obtained was used.

tion special mention may be made of urbanisation, the rising standard of living, a significant increase of the level of education, changes in the pattern of the economy and the resultant social mobility. Between now and 1980, however, a number of factors conducive to an increase in the birth rate will also be at work : the stabilisation of the social restratification, the levelling out of family income distribution, a significant development in the organised care of children by the State, and so on. Some of the phenomena mentioned earlier, however, will still put a curb on births. The long-term plan, therefore, allows for only a gradual and slight improvement in the birth rate, which may exceed 15 per thousand by 1980.¹

On the whole demographic experts at present expect the population of Hungary to grow from 10 million in 1960 to about 10.8 million in $1980.^2$

It must be pointed out that changes in fertility would not have any significant effect on manpower resources during the next 20 years, for the cohorts born now and in the following years will apart from a negligible minority—still be students in 1980. Changes in the fertility rate might have some effect, however, on the standard of living, because society would have to provide for a smaller or a bigger population. The possible effect of this is again negligible over a period of 20 years.³

If demographic development is as expected, the proportion of the population aged 0-13 years will decline from 23.7 per cent. in 1960 to 20 per cent. in 1980 : that of the population aged over 55 (women) and 60 (men) will rise from 17.1 to 21 per cent. ; and the proportion of the population of working age will remain fairly constant. The balance between the two sexes will continue to improve, especially in the population of working age, as full strength new generations of men replace the aging cohorts thinned out by war losses. Thus the proportion of women is decreasing while that of men is increasing, and this potentially augments manpower resources.

¹ More specifically the assumed improvement in the birth rate implies that the number of live births per 10,000 women of child-bearing age (15-49 years), as computed with the aid of age-specific birth rates, will rise from 526 in 1962 to 606 in 1980.

² Demographers have ignored the balance of external migration, as emigration and immigration are negligible in Hungary under normal conditions.

³ An earlier population forecast assuming a higher birth rate had shown nearly half a million more young people than the above forecast. This would increase the burden of maintenance by the employed population by 8 to 12 per cent. at most. Since the long-term plan has the objective of increasing the national income more than threefold this additional burden would be insignificant.

PRECONDITIONS FOR INCREASING THE EMPLOYMENT OF WOMEN

When analysing the employment of women we start from the principle that the drawing of women into socially organised labour is an essential precondition for their emancipation. By socially organised labour is meant the working process outside the closed circle of the family, and organised throughout the whole of society.

In Hungary we adopted the principle of the social and economic emancipation of women and have set ourselves the future task of making it complete. Our endeavour meets with the entire approval of women—especially of the younger generations—who have no desire to pass their lives as homemakers but on the contrary want to have an independent occupation.

For economic reasons also, we have set ourselves the aim of further increasing as far as possible the number (and consequently the ratio) of active women in the economy. This will raise the level of employment of the population and, together with the increase in productivity, will result in a rising standard of living.

This does not imply, however, that women should be employed regardless of circumstances. Above all, it must be remembered that certain groups of jobs are better suited to one sex than to the other because of physiological differences. The emancipation of women, therefore, must not be conceived of as an attempt to get as many women into employment as there are men. As technologies advance and conditions of labour change, the ratio of women to men in employment will also change. For investigations into the employment of women we use two methods. The Hungarian Institute of Labour Hygiene is engaged in analysing the working conditions of several thousand occupations. In the process it examines separately the degree to which present working conditions and—in co-operation with technical and economic experts-those likely to result from long-term technological development make individual jobs suitable for women, old people or disabled persons. From these analyses we know to what kind of jobs it is expedient to direct women and to what extent it is possible to increase the proportion of women in certain jobs.

But, to increase the employment ratio of women, more is needed than an investigation of working conditions. The possibility of such an increase depends on the planned growth of manpower in the individual branches, the additional general demand for manpower ¹ and the possibility of meeting skill and qualification requirements.

¹ Compensation for natural decrease through disablement, death, retirement and social mobility.

In regard to the first condition it must be pointed out that the smaller the future manpower increase in any particular branch the more difficult it will be to change the established ratio of women employed in it.

Before the ratio of female employment can be increased more women must be trained. The relative figures cannot be considered low even today : in 1959 the ratio of girl students in higher education was 24.3 per cent. in Great Britain, 26.3 in the Federal Republic of Germany, 31.7 in Sweden, and 38 in Hungary. In spite of this, in higher education—and especially in several fields of skilled manpower training—the ratio of women can be further increased. And so, as a result of investigation conducted at the workplace itself and with the aid of vocational consultations and guidance, we can gradually increase the ratio of women in every suitable trade and occupation. The investigations so far carried out point to the conclusion that the ratio of women can be increased by 1980 in lower and secondary education and training from the present 25 per cent. to 35-38 per cent. and in higher education from 38 to 42-44 per cent.

In this manner young girls completing their studies will be appropriately trained for the jobs suited for them.

From analysis of these and other factors an estimate can be made of the ratio and the number of women in employment in 1980. But before this figure can be adopted for planning purposes, the question of household work must also be considered. When a significantly increasing number of women have been drawn into organised social labour they must not be left carrying a double load, namely the work done in the factory or office as well as the work in the family and the household. Therefore, as women are drawn into the labour force, they must be relieved of a major part of the work connected with raising children and with the household.

We can refer here only briefly to the possible solutions. Medical and sociological investigations connected with the long-term plan show that infant care is best undertaken, both from the medical and the educational points of view, by mothers. In the long-term plan, therefore, we reckon that the capacity of infant nurseries need not be very greatly enlarged but that the present fully paid maternity leave of five months for working women must gradually be raised to one year. For children over one year of age we intend to develop a broad system of kindergartens and day nurseries to enable working mothers to place their children in them, if they wish to, for the whole time they are working.

In addition, measures for the mechanisation of household work, the development of public catering and the expansion of household services such as laundering and cleaning will not only facilitate the employment of women but lead to a higher standard of living. On the basis of all these assumptions and investigations it can be envisaged that the proportion of women in all employment categories will rise from nearly 35 per cent. in 1960 to between 40 and 42 per cent. in 1980. This would mean that the number of women in non-agricultural employment would double in 20 years and that nearly half of the new recruits to employment would be women. While, in 1960, 55 per cent. of women of working age (except students) were active earners, by 1980 the figure would exceed 76 per cent.

A specific problem of economic efficiency arises in connection with the increasing employment of women—namely whether the organisation by society of the care of children and of a large part of household work will not involve a greater labour input or social cost than the rise in the national income to be expected from that increased employment. It is therefore necessary to examine how much labour can be saved by socially organising the care of children and household work and what is the relation between the national income generated by the women to be drawn into the labour force and the costs of establishing (and maintaining) the institutions that must be provided before they can be employed—costs which come out of national income.

We calculate that when these tasks are organised on a large scale nearly 2.5 million fewer people will be needed to carry them out in 1980 than if they were still done on a small scale by each family for itself. At the same time, the surplus value added by the women who can be drawn into the labour force is several thousand million forints more than the cost of providing the preconditions that will ensure the planned increase in the number of female workers.

And even in 1980 there will be more than 600,000 women of working age in households. Apart from the women on maternity leave, they will include women with many children, the sick, the disabled, and those living far from places of work, who presumably do not wish to work or whose induction into the labour force would be otherwise inexpedient or unreasonable.

THE EMPLOYMENT OF YOUNG PERSONS

Developments in science, technology, and society as a whole steadily increase the demands made on the abilities, education and training of the young people entering the labour force. International data show that the economically more developed countries can provide their younger generation with better educational and professional qualifications than can the less developed ones. For example in 1958 in France and the Benelux countries 31.3 per cent. of the population aged 15 to 19 years were still learning, while in the Mediterranean countries of Europe the percentage of such students was only 12.3.

In Hungary in 1949, during the initial stage of our rapid industrial development, 13.9 per cent. of the young people 15 to 19 years of age had been to secondary school ; in 1960 the figure was already 32 per cent.¹ But even such an increased percentage does not meet the growing requirements. The long-term plan therefore aims at an extraordinary extension of education and vocational training. The development of education is based on the planned manpower needs of the economy. In this paper we do not deal with the problems of planning the demand for qualified manpower or with those arising in connection with education, but touch only upon the effects they have on the employment of the population. From this point of view it is most important to establish how many of the young people reaching working age (14 years) will continue their studies and how many will go to work, at what age and with what qualifications.

In 1960, the start of the twenty-year long-term plan, more than 24 per cent. of the young people between 14 and 24 years of age (about 380,000) were continuing their studies. The ratio of those going in for higher studies varied significantly from one age cohort to another. With those of 14 to 15 years of age it was 64 per cent., with those of 16 to 17 it was 44 per cent. and with those of 18 to 24 it was 7 per cent. According to the planned needs of qualified manpower and of education, the total number, the ratio and the age composition of the group of young people continuing their studies will change considerably during the 20 years until 1980. The number of students aged between 18 and 24 will rise to something like double the 1960 figure. Secondary education will become practically universal after 1970, so that in the second decade of the long-term plan about 90 per cent. of the population aged 14 to 17 and nearly 20 per cent. of those aged 18 to 24 will be studying. For the whole population aged 14 to 24, the ratio will increase from 24.2 per cent. in 1960 to about 44 to 45 per cent. in 1980.

This process naturally reduces by several hundred thousands the number of young people that can be reckoned on in the longterm employment plan. But it also ensures that young people

¹ The data on students relate only to full-time studies. In the school year 1960-61 the number of students of evening and correspondence courses was 85,000 at the secondary level and 10,500 at the higher education level. By 1980 the former number will decrease (though no computation of the exact number is yet available) while the latter will increase to between 50,000 and 60,000.

entering the labour force for the first time will apply for work after completion of their studies at an age and with education and professional qualifications that will guarantee their smooth initiation into employment, because their physical and intellectual powers as well as their qualifications will match the increasing demand for skilled manpower.

AGING AND EMPLOYMENT

The average life expectation has been increasing for a considerable time. The postponement of chronological and biological aging steadily raises the average upper limit of employment; consequently the number of persons claiming employment after having reached the upper limit of working age as defined by social and planning norms is increasing. The pension system, which enables workers reaching a certain age to leave the economically active population, is having the opposite effect.

Although the range of persons entitled to pension and (even more) the amount of the pension and its purchasing power will increase in the future, at the same time other changes will take place that will presumably strengthen the tendency of older people to remain in employment. Beside subjective factors, these include changes in the general conditions of work (especially the increasing intellectual content of work), significant improvement of physical working conditions and a considerable decline in hours of work. It is in the interest of society that the available manpower resources, including the older people capable of work, should be utilised better and to an extent that they still generate more national income than they consume.

From an analysis of the present employment of old people it may be concluded that in future more people will remain in employment during the first five years after the present retirement age than is now the case, while in the next five-year age group the employment rate will decrease considerably. The labour force participation rate of older women is much lower today than that of older men. Since, according to our assumptions, the total number and the ratio of economically active women will increase, the ratio of earners must rise also among older women. Significant changes are to be expected in the distribution of older workers among the various branches of employment. The great disparity between agriculture and the other branches of the economy will greatly diminish.

On the whole, the proportion of older earners will be less than 10.7 per cent. in 1980 : the absolute number, however, owing to the

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considerable increase of the older population, will grow by about 12 to 13 per cent.

The present extent of the employment of older people and that planned for the future seem to be quite normal by international comparison. At present, in the majority of developed countries, the ratio of the economically active population aged 65 years and over to all economically active persons is 4 to 5 per cent. for men and 2.5 to 3.5 per cent. for women. In Hungary at the end of 1960 the ratio of active earners of 65 years and over to all active earners was 4 per cent. for men and about 2 per cent. for women. By 1980 this ratio will have remained on the whole constant for men but will have increased to 2.5 to 3.0 per cent. for women. Thus neither the present nor the future proportions differ markedly from those in the developed countries today.

THE MANPOWER DEMAND OF AGRICULTURE

The social and economic developments of the last 150 years have brought about basic changes in the occupational pattern of every developed country of today. One of the characteristic features of this change has been the considerable decrease in the proportion—and in most cases in the absolute number—of agricultural earners. In Hungary the percentage of agricultural earners in 1930 was still 54.1 and their number exceeded 2.2 million ; by 1962 the figures had fallen to 34 per cent. and less than 1.6 million respectively.

These changes are partly the result of the development of the social division of labour, which has repeatedly transferred tasks from agriculture to other branches of the economy. Moreover, the possibility of increasing production is, because of natural conditions, more limited in agriculture than in industry, and the demand for agricultural products does not increase so rapidly as that for industrial goods. Thus, both the development of the social division of labour and the increase of agricultural productivity reduce the demand for manpower in agriculture.

To absorb the manpower released from agriculture, industry and the other non-agricultural branches of the economy must provide more jobs. It is therefore an important task of long-term manpower planning to assess the future manpower needs of agriculture correctly and to provide useful employment in other branches of the economy for the manpower released from agriculture. Consequently, the first step is to establish the future manpower demands of agriculture, in conformity with the production and technological development targets. We have computed the number of active earners in Hungarian agriculture in 1980 in two ways. The first method calculated the manpower needs of the production planned : depending on variations in the pattern of production and technical changes, in 1980 our agriculture will need from 700,000 to 1 million persons.

But we have also made use of a demographic analysis of the present agricultural labour force to judge if there is a limit to the permissible decrease of the labour force in agriculture over a period of 20 years, and, if so, what kind of limit it is. Analysing the distribution of employment by age and sex we have determined how the number and distribution of earners will evolve in the coming decades under various assumptions for young people entering the labour force and for migration. The fact has been taken into account that a considerable proportion of the children of peasant families will, even at the beginning, learn a trade or get schooling such that they will leave agriculture to seek employment for the first time in industry or in some other non-agricultural branch of the economy. The drift from agriculture shows characteristic variations according to age and sex. We started from the premise that a significant growth in the volume of agricultural production and the technological development assumed can be secured only if no unfavourable changes of major importance in the composition by age and sex of active agricultural earners set in before 1980.

The calculations have led to the conclusion that, should the number of agricultural earners sink from 1,700,000 in 1960 to less than 800,000 to 900,000 by 1980, the new age distribution of earners would be considerably worse than the present one and the proportion of women, especially older women, would increase. This would hamper the technological development of agriculture and the considerable increase in the productivity of labour that this would lead to. Our investigations have led us to the conclusion that the number of agricultural earners required in 1980 will be about 800,000.

On these assumptions, the absolute figures for employment in agriculture would decrease between 1960 and 1980 by about 44 to 46 per cent. and its proportion within total employment would fall from 36.4 per cent. in 1960 to about 15 per cent. The decline in the number and proportion of active earners is somewhat quicker than the changes experienced in this country in the last 15 years and quicker even than the changes having taken place or now occurring in some industrially developed countries. Thus, for example, in Sweden it took 30 years (from 1930 to 1960) for the proportion of agricultural earners to decrease to a similar extent from 36 per cent. to 14 per cent. In the United States the proportion of agricultural earners fell from 38 to 19 per cent. in 40 years (1900-1940).¹ Our experience indicates, however, that when the mechanisation of agriculture and changes in the pattern of production are carried out in harmony with the manpower requirements of the non-agricultural branches there is a chance of accelerating such changes in the occupational distribution as will support social and economic development.

Of those already mentioned, a reduction of the influence of the seasons on agricultural work must as far as possible be kept in view. To avoid peak workloads is most important. In recent years satisfactory results have been achieved : the summer harvesting of grain was formerly the biggest task in Hungary, but with mechanisation we have almost succeeded in totally abolishing this summer peak workload. In the coming years attention must be concentrated mainly on the mechanisation of spring planting and of autumn harvesting, so as to spread the manpower needs of agriculture still more evenly over the year. A further important task is to compensate for the dead season of winter by the organisation of some additional occupation of a different kind.

THE MANPOWER UTILISATION OF NON-AGRICULTURAL BRANCHES

To compute the possible manpower needs of economic branches other than agriculture, the changes in the inter-industry pattern of employment must first be forecast. Data of historical statistics enable us to make a survey of the changes that have taken place and also to draw general conclusions that should be valid for the period ahead of us.

Table I (appendix) shows that, with the progress of socioeconomic development, the proportion of earners in industry, agriculture and construction taken together—the basic productive activities—is steadily declining, while the proportion in transportation, trade and servicing activities is increasing. A comparison of these data with national income per head shows that there is a close connection between the diminishing proportion of people employed in the basic productive branches (and consequently the growing proportion in other branches) and the growth of national income per head through the development of the productivity of " live labour ". The higher the level of productivity and the resulting amount of national income per head, the more it is possible and necessary to reduce the proportion of employment in the basic productive branches and to increase that in the servicing branches.

¹I.L.O.: Employment Objectives and Policies, Report I, Preparatory Technical Conference on Employment Policy, Geneva, September-October 1963 (Geneva, 1963), table I-4, pp. 12-14.

Here, too, international data used for comparison should be analysed very concretely and in great detail. It certainly does not follow from what has been said above that the employment patterns of countries with the same national income per head should be approximately the same.

In such comparisons the differences in statistical classification must also be allowed for. In the employment statistics of the United States, for example, the repairing of vehicles and other repairing and fitting activities, and also hotels and boarding houses, are classified as "servicing". The number of people employed in these fields in 1950 was nearly 2 million and accounted for more than 3 per cent. of total employment. The first two of these categories are classified in Hungarian statistics as industry, the latter as trade. United States statistics also show a high figure for "liberal professions" in the "servicing" branch. In Hungary the majority of these, above all the technical intellectuals, will appear in the employment figures of industry and the other productive branches.

These factors explain why, within the servicing branches, although the targets for the ratio to all earners have been set lower for 1980 than they are today (or were) in the most developed countries, Hungarian proportions will be larger in certain important fields. This is shown in the table below.

HUNGARY: PROPORTION OF PEOPLE EMPLOYED IN CULTURAL AND PUBLIC HEALTH ACTIVITIES AS A PERCENTAGE OF TOTAL EMPLOYMENT

16.1	17.0	23.4
2.0	2.2	5.7
3.4	3.9	6.4
5.4	6.1	12.1
1	2.0 3.4 5.4	16.1 17.0 2.0 2.2 3.4 3.9 5.4 6.1

¹According to the targets of the Second Five-Year Plan. ²According to the detailed computations referred to in the present paper. ³ Service activities other than transport and trade.

EMPLOYMENT IN HUNGARY, 1960-80

The Hungarian long-term employment plan was drawn up in the form of a manpower balance by means of the methods and computational procedures outlined above and on the basis of assumptions borne out by investigations. Two of its summary tables as well as a table of employment indicators are reproduced in the appendix (see tables II, III and IV).

In conclusion, we must repeat that this article is but an interim report on the long-term planning of manpower now being carried on in the Hungarian People's Republic. Work at present in progress with the aid of a wide panel of scientific workers and practical experts includes the detailed checking of some of the more important objectives, the definition of what conditions are necessary for their realisation and the checking of figures. Because of the special character of manpower, this is work not only for economists and technical experts but also for demographers, sociologists, psychologists, and specialists in other related branches.

When the final long-term employment plan of Hungary takes shape, this will mean only that one stage of planning has been concluded and that the next one is starting. The latter, perhaps, will consider not only the period up to 1980 but also the perspective for some years beyond that; it will make use of the experience already gathered and of the fresh achievements of science and technology to promote even more effectively than its predecessor the most rapid social and economic progress of Hungary.

TABLE I. DISTRIBUTION OF LABOUR FORCE BY INDUSTRY IN SELECTED COUNTRIES

(Percentages)

				A. Total labour force=100					B. Earners in non-agricultural branches=100						
Country ¹		Period			ricultu ndustry nstructi	re, , on	5	ervicin pranche	g 6	co	Industry and nstructi	y ion	9	Servicin branche	g s
	I	II	III	I	II	III	I	II	III	I	II	III	I	п	III
Annual national income per head above \$800:															
1. United States	1870 1901 1901 ² 1910 1881 1890 1900 ²	1940 1931 ² 1936 ² 1933 ² 1940 1931 1930 1930 ²	1956 1959 1959 1954 1950 1959 1950 1950	75 72 56 60 75 63 79 69	54 58 54 58 65 53 66 61	53 50 53 54 61 56 59 60	25 28 44 40 25 37 21 31	46 42 46 42 35 47 34 39	47 50 47 46 39 44 41 40	47 51 39 44 52 57 66 46	43 37 38 44 51 50 56 43	40 43 44 47 52 54 51 47	53 49 61 56 48 43 34 54	57 63 62 56 49 50 44 57	60 57 56 53 48 46 49 53
Annual national income per head between \$400 and \$800:															
9. Denmark10. France11. Belgium12. Federal Republic of Germany13. Eastern Germany14. Czechoslovakia15. U.S.S.R.16. Austria	1890 1866 1910 ² 1882 1882 1921 —	1930 1936 1930 1939 1939 1930 1930 1939 1930	1955 1957 1958 1957 1959 1958 1959 1951	72 77 68 80 80 80 	62 67 68 68 74 74 65	56 59 63 66 73 69 69	28 23 32 20 20 20 20 	38 33 34 32 32 26 26 35	44 41 37 34 27 31 31	48 53 60 65 65 65 65 	44 48 58 57 57 58 48 49	43 49 51 56 58 61 50 55	52 47 40 35 35 35 	56 52 42 43 43 42 52 51	57 51 49 44 42 39 50 45
Annual national income per head under \$400:											-				
17. Italy	1881 1921 1920 1920 — 1910 ²	1936 1931 1930 1930 ² 1930 1934 1940	1958 1950 1960 1957 1956 1956 1950	83 82 78 74 	77 82 77 70 86 88 73	65 80 71 64 86 83 73	17 18 22 26 	23 18 23 30 14 12 27	35 20 29 36 14 17 27	61 50 45 44 51	56 49 48 41 33 40 42	50 54 54 40 55 52 48	39 50 55 56 49	44 51 52 59 67 60 58	50 46 46 60 45 48 52

Sources : Year Book of Labour Statistics, 1959 (Geneva, I.L.O., 1959); "The World's Working Population ", in International Labour Review, Vol. LXXIII, Nos. 2 and 5, Feb. and May 1956, and Vol. LXXIV, No. 2, Aug. 1956; Migrations professionnelles (Paris, 1957); and the statistical yearbooks of the countries listed.

¹ Countries are classified on the basis of 1955 national income per head. ² For these years, the sources indicated that for 1 to 4 per cent. of the labour force the branch of economic activity was unknown. In order not to complicate the table this relatively negligible group was proportionally distributed.

			1960	<u></u>		1980	
	Category	Men	Women	Total	Men	Women	Total
	I. Manpower Resources		(Thousands)			(Thousands)	
1.	Population of working age	3 010	2 920	5 930	3 361	3 024	6 385
2.	Active earners over working age	287	206	493	300	245	545
3.	of which : agricultural	183	120	303	. 85	75	160
4.	non-agricultural	104	86	190	215	170	385
5.	Able-bodied population, total	3 297	3 1 2 6	6 423	3 661	3 269	6 9 3 0
	II. Utilisation of Manpower (a) Active Earners						
6.	Industry	849	481	1 330	1 200	735	1 935
7.	Construction	212	28	240	333	50	383
8.	Transport	238	49	287	395	95	490
9.	Trade	154	168	322	220	360	580
10.	Other	439	294	733	604	676	1 280
10a.	of which : education, culture and health	90	156	246	206	455	661
11.	Non-agricultural branches, total	1 892	1 020	2 912	2 752	1 916	4 658
12.	Agriculture	1 059	617	1 676	470	330	800
13.	Active earners, total	2 951	1 637	4 588	3 222	2 246	5 468
14.	Population of working age but not employed	346	1 489	1 835	439	1 023	1 462
15.	Able-bodied population, total	3 297	3 126	6 423	3 661	3 269	6 930
	(b) Population of Working Age but Not Employed						
16.	Students over 14 years of age	224	155	379	335	315	650
17.	Pensioners	34	23	57	42	32	74
18.	Disabled	42	50	92	42	50	92
19.	Others not employed ¹	46	1 261	1 307	20	626	646
20.	Population of working age but not employed, total	346	1 489	1 835	439	1 023	1 462
	III. Computations					·	
21.	Total population	4 842	5 179	10 021	5 312	5 532	10 844
22.	of which : active earners	2 951	1 637	4 588	3 222	2 246	5 468
23.	not employed	1 891	3 542	5 433	2 090	3 286	5 376
	Breakdown of Persons Not Employed						
24.	Young people under working age	1 225	1 1 57	2 382	1 104	1 0 3 8	2 1 4 2
25.	Students of working age	224	155	379	335	315	650
26.	Disabled of working age	42	50	92	42	50	92
27.	Others of working age but not employed	46	1 261	1 307	20	626	646
28.	Pensioners, total.	218	207	425	477	825	1 302
29.	Economically not active, over working age	136	712	848	112	432	544
	Persons not employed, total	1 891	3 542	5 433	2 090	3 286	5 376
				0.00	~ 370	2 - 00	2 2/0

TABLE II. SUMMARY MANPOWER BALANCE AT 31 DECEMBER 1960 AND 1980

¹ In 1960 the number of men of working age just in the process of changing jobs at the ideal date of the balance and thus, because of the method of the statistical survey, not contained in the records of enterprises and institutions amounted to about 25,000. They are living on the wages due for the period of notice; as a matter of fact they should be shown among active earners. Because of the special role played by the manpower balance in planning, however, the number of people changing jobs is shown among those not employed, as - though receiving wages-they do not participate in the generation of national income. Naturally, this kind of grouping is a methodological detail which could be solved also in some other way if only we know the criteria of grouping.

In 1960 a further 21,000 men are among those of working age and not employed. They are young boys over the lower limit of working age-14 years in statistical and planning practice - who at the ideal date of the balance have completed the compulsory eight years of schooling but do not continue their studies and have not yet taken jobs either. Except for a negligible figure, they are 14-15 years of age living in households and dependent on their parents.

TABLE III. SUMMARY MANPOWER BALANCE AT 31 DECEMBER 1960 AND 1980 (Percentages)

	· ·		Distribution by category and use Distribution by s					on by sea	oy sex				
	Category and use		1960			1980			1960			1980	,
1		Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
	I Manhower Resources												
1.	Population of working age	91.3	93.4	92.3	91.8	92.5	92.1	50.8	49.2	100.0	52.6	47.4	100.0
2.	Active earners over working age	8.7	6.6	7.7	8.2	7.5	7.9	58.2	41.8	100.0	56.9	43.1	100.0
3.	of which : agricultural	5.5	3.8	4.7	2.3	2.3	2.3	60.4	39.6	100.0	53.1	46.9	100.0
4.	non-agricultural	3.2	2.8	3.0	5.9	5.2	5.6	54.7	45.3	100.0	55.8	44.2	100.0
5.	Able-bodied population, total	100.0	100.0	100.0	100.0	100.0	100.0	51.3	48.7	100.0	52.8	47.2	100.0
	II. Utilisation of Manpower												
	(a) Active Earners												
6.	Industry	28.7	29.4	29.0	37.3	32.7	35.4	63.8	36.2	100.0	61.3	38.7	100.0
7.	Construction	7.2	1.7	5.2	10.3	2.2	7.0	88.3	11.7	100.0	86.9	13.1	100.0
8.	Transport	8.1	3.0	6.3	12.3	4.2	9.0	82.9	17.1	100.0	80.6	19.4	100.0
9.	Trade	5.2	10.2	7.0	6.8	16.1	10.6	47.8	52.2	100.0	38.0	62.0	100.0
10.	Other	14.9	18.0	16.1	18.7	30.2	23.4	59.9	40.1	100.0	47.1	52.9	100.0
10a	. of which : education, culture and health	3.1	9.5	5,4	6.4	20.2	12.1	36.6	63.4	100.0	31.1	68.9	100.0
11.	Non-agricultural branches, total	64.1	62.3	63.5	85.4	85.3	85.4	65.0	35.0	100.0	58.9	41.1	100.0
12.	Agriculture	35.9	37.7	36.5	14.6	14.7	14.6	63.2	36.8	100.0	58.8	41.2	100.0
13.	Active earners, total	100.0	100.0	100.0	100.0	100.0	100.0	64.3	35.7	100.0	58.9	41.1	100.0
14.	Population of working age but not employed	10.5	47.6	28.6	12.0	31.3	21.1	18.9	81.1	100.0	30.0	70.0	100.0
15.	Able-bodied population, total	100.0	100.0	100.0	100.0	100.0	100.0	51.3	48.7	100.0	52.8	47.2	100.0
	(b) Population of Working Age but Not Employed												
16.	Students over 14 years of age	64.7	10.4	20.7	76.3	30.8	44.5	59.1	40.9	100.0	51.6	48.4	100.0
17.	Pensioners	9.8	1.5	3.1	9.6	3.1	5.1	59.6	40.4	100.0	56.8	43.2	100.0
18.	Disabled	12.1	3.3	5.0	9.6	4.9	6.3	45.7	54.3	100.0	45.7	54.3	100.0
19.	Others not employed $1 \ldots \ldots \ldots \ldots \ldots \ldots$	13.4	84.8	71.2	4.5	61.2	44.1	3.5	96.5	100.0	3.1	96.9	100.0
20.	Population of working age but not employed, total	100.0	100.0	100.0	100.0	100.0	100.0	18.9	81.1	100.0	30.0	70.0	100.0
	III. Computations												
21.	Total population	100.0	100.0	100.0	100.0	100.0	100.0	48.3	51.7	100.0	49.1	50.9	100.0
22.	of which : active earners	60.9	31.6	45.8	60.6	40.7	50.4	64.3	35.7	100.0	58.9	41.1	100.0
23.	not employed	39.1	68.4	54.2	39.4	59.3	49.6	34.8	65.2	100.0	38.9	61.1	100.0
	Breakdown of Persons Not Employed							· · · ·					
24.	Young people under working age	64.8	32.7	43.8	52.8	31.6	39.9	51.4	48.6	100.0	51.6	48.4	100.0
25.	Students of working age	11.8	4.4	7.0	16.1	9.6	12.1	59.1	40.9	100.0	51.6	48.4	100.0
26.	Disabled of working age	2.2	1.4	1.7	2.0	1.5	1.7	45.7	54.3	100.0	45.7	54.3	100.0
27.	Others of working age but not employed	2.4	35.6	24.1	1.0	19.1	12.0	3.5	96.5	100.0	3.1	96.9	100.0
28.	Pensioners, total	11.5	5.8	7.8	22.8	25.0	24.2	51.3	48.7	100.0	36.6	63.4	100.0
29.	Economically not active, over working age	7.3	20.1	15.6	5.3	13.2	10.1	16.0	84.0	100.0	20.6	79.4	100.0
30.	Persons not employed, total	100.0	100.0	100.0	100.0	100.0	100.0	34.8	65.2	100.0	38.9	61.1	100.0

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¹ See table II.

Indicator	Formula 1		1960		1980			
indical Ok	romina -	Men	Women	Total	Men	Women	Total	
Active earners as percentage of able-bodied population	$\frac{13}{5}$	98.6	52.4	71.4	88.0	68.8	79.0	
Active earners of working age as percentage of total population of working age	$\frac{(13-2)}{1}$	88.6	49.0	69.1	86.8	72.8	77.2	
Active earners of working age and students as per- centage of total population of working age	$\frac{(13+16-2)}{1}$	95.9	54.4	75.5	96.9	76.4	87.4	
Active earners over working age as percentage of total population over working age		47.2	18.7	28.8	35.4	16.7	23.6	
Active earners over working age as percentage of all active earners	$\frac{2}{13}$	9.7	12.6	10.7	9.3	10.9	9.7	
Dependants (including pensioners) per 100 active earners	$rac{23}{22} imes100$	61.1	216.1	118.5	64.8	146.5	98.3	
Dependants (excluding pensioners) per 100 active earners	$\frac{(23-28)}{22} \times 100$	56.7	203.8	110.9	50.1	109.8	74.5	
Dependants per 100 earners (active and pensioners)	$rac{(23-28)}{22+28} imes$ 100	52.8	180.9	101.2	43.7	80.2	60.2	
Dependants under working age per 100 active earners	$\frac{24}{22} \times 100$	41.5	70.6	52.0	34.2	46.2	39.2	
Dependants of working age (excluding pensioners) per 100 active earners	$\frac{(16+\bar{18}+19)}{22}$ × 100	10.6	89.5	38.6	12.3	44.1	25.4	
Dependants over working age (excluding pensioners) per 100 active earners	$\frac{29}{22} \times 100$	4.6	43.5	18.5	3.5	19.2	9.9	

TABLE IV. EMPLOYMENT INDICATORS 1960 AND 1980

¹ The figures refer to the lines of table II.

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