

Planning human resources: methods, experiences and practices

Second edition

Olivier Bertrand

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Fundamentals of educational planning

The booklets in this series are written primarily for two types of clientele: those engaged in educational planning and administration, in developing as well as developed countries; and others, less specialized, such as senior government officials and policy-makers who seek a more general understanding of educational planning and of how it is related to overall national development. They are intended to be of use either for private study or in formal training programmes.

Since this series was launched in 1967, practices and concepts of educational planning have undergone substantial change. Many of the assumptions which underlay earlier attempts to rationalize the process of educational development have been criticized or abandoned. Even if rigid mandatory centralized planning has now clearly proven to be inappropriate, this does not mean that all forms of planning have been dispensed with. On the contrary, the need for collecting data, evaluating the efficiency of existing programmes, undertaking a wide range of studies, exploring the future and fostering broad debate on these bases to guide educational policy and decision-making has become even more acute than before. One cannot make sensible policy choices without assessing the present situation, specifying the goals to be reached, marshalling the means to attain them and monitoring what has been accomplished. Hence planning is also a way to organize learning: by mapping, targeting, acting and correcting.

The scope of educational planning has been broadened. In addition to the formal system of education, it is now applied to all other important educational efforts in non-formal settings. Attention to the growth and expansion of education systems is being complemented and sometimes even replaced by a growing concern for the quality of the entire educational process and for the control of its results. Finally, planners and administrators have become more and more aware of the importance of implementation strategies and of the role of different regulatory mechanisms in this respect: the choice of

financing methods, the examination and certification procedures or various other regulation and incentive structures. The concern of planners is twofold: to reach a better understanding of the validity of education in its own empirically observed specific dimensions and to help in defining appropriate strategies for change.

The purpose of these booklets includes monitoring the evolution and change in educational policies and their effect upon educational planning requirements; highlighting current issues of educational planning and analyzing them in the context of their historical and societal setting; and disseminating methodologies of planning which can be applied in the context of both the developed and the developing countries.

For policy-making and planning, vicarious experience is a potent source of learning: the problems others face, the objectives they seek, the routes they try, the results they arrive at and the unintended results they produce are worth analysis.

In order to help the Institute identify the real up-to-date issues in educational planning and policy-making in different parts of the world, an Editorial Board has been appointed, composed of two general editors and associate editors from different regions, all professionals of high repute in their own field. At the first meeting of this new Editorial Board in January 1990, its members identified key topics to be covered in the coming issues under the following headings:

1. Education and development.
2. Equity considerations.
3. Quality of education.
4. Structure, administration and management of education.
5. Curriculum.
6. Cost and financing of education.
7. Planning techniques and approaches.
8. Information systems, monitoring and evaluation.

The series has been carefully planned but no attempt has been made to avoid differences or even contradictions in the views expressed by the authors. The Institute itself does not wish to impose any official doctrine. Thus, while the views are the responsibility of

the authors and may not always be shared by UNESCO or the IIEP, they warrant attention in the international forum of ideas. Indeed, one of the purposes of this series is to reflect a diversity of experience and opinions by giving different authors from a wide range of backgrounds and disciplines the opportunity of expressing their views on changing theories and practices in educational planning.

One of the subjects which have figured most prominently in discussions in the field of educational planning is the extent to which the development of education should and can be planned in the light of the needs of the labour market. In actual fact, it is becoming less a matter of developing education strictly in accordance with employment needs, if only because it is increasingly difficult to estimate such needs. Thus planning is now more concerned with the functioning of the labour market and its transition from school to work, in order to guide the development of education systems. Nevertheless, there are many countries which also seek to define their policy in the light of various indications of the probable evolution of the economy in the medium and long terms.

To take stock of methods of planning human resources, the Institute asked Olivier Bertrand, of the French *Centre d'études et de recherches sur les qualifications* (CEREQ), to prepare a booklet on this topic. The present edition is an update of that booklet, which takes into account the latest methodological developments. In a very clear and concise manner, the author reviews previous methods of forecasting and analyzing training requirements before describing present-day procedures in industrialized countries, where, although it is not always admitted, recourse is still had to planning. From all these experiences, Olivier Bertrand draws a number of important conclusions concerning a possible pragmatic approach which can be adapted to different contexts. The Institute wishes to thank him for his excellent and lucid contribution to the series.

Gudmund Hernes
Director, IIEP

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Preface

Should the education system be developed in such a way as to match the needs of the economy and the labour market? That is a question which quite a number of human resources planners have been asking themselves for a long time, without finding a completely satisfactory answer.

The so-called 'manpower planning', which advocated a strict matching of training to employment, fell short of expectations in many respects. Much criticized from a theoretical point of view by reason of its simplified assumptions concerning determinants of job structures and the relations between education and employment, the method served mainly to justify the very rapid increase in the number of enrolments at the post-primary and post-secondary levels; but it contributed little to slowing down or channelling this increase when it became necessary to do so. The rate-of-return analysis often proposed as an alternative also raises theoretical and technical problems. In any case, this latter method gives only an *a posteriori* evaluation of the effectiveness of a given education policy, and can provide no indication of the state of the labour market and the evolution of the rate of returns in the future.

The difficulty of forecasting employment by level of qualification and specializations is further aggravated in industrialized countries by the acceleration of technical changes which affect very many jobs and sometimes radically modify the corresponding qualifications and skills required. In developing countries, it is the uncertainty surrounding the economy and the repayment of debt which make any attempt at forecasting hazardous. Must we conclude that no attempt should be made to forecast the future and plan human resources? Obviously not. It takes many years to train a senior scientist or a high-level administrator, and anything now done, or left undone, can have serious future consequences. Furthermore, the number of young people who enter the labour market every year in developing

Preface

countries is, in many cases, so great in relation to the total population of working age that the authorities cannot avoid giving thought in advance to the question of how these young people are going to fit into working life. As these two examples show, planning is bound to continue exploring the future; and it must also set up mechanisms of evaluation and research so as to control the quality of training, and to keep an eye on how people who have successfully completed such training fit into the working world and on how the skills required for various occupations change. Educational strategies place more and more emphasis on the quality of training which is conducive to a greater adaptability of manpower, the permanent updating of skills through various out-of-school education programmes, and flexibility in the organization of training systems.

The first version of this booklet, published in 1992, was used to train generations of educational planners. Some 10 years later, the conclusions reached in this work are still valid. The Institute asked Olivier Bertrand to carry out an update of the challenges identified by planners and the methods used in the planning of human resources.

His long experience in developing countries, and subsequently in the *Centre d'études et de recherches sur les qualifications* (CEREQ) (Centre for studies and research on qualifications) in France, makes Olivier Bertrand well qualified to describe both traditional methods and new procedures where human resources planning is concerned, and to deduce the lessons to be learned from what has been done in this field. The approach which he suggests, i.e. combining prospective studies and qualitative analysis, will be of interest to human resources planners in the relevant ministries of both developing and industrialized countries.

Françoise Caillods
Co-General Editor

Contents

Preface	9
Introduction	13
I. Traditional planning methods	15
1. Educational planning based on the manpower approach and the logic of matching training to employment	16
2. Two alternative approaches to the evaluation of training needs and priorities	26
3. Approaches based on the evaluation of the efficiency of the training system	28
II. Recent trends in human resources planning	39
1. Forecasting and prospective studies concerning employment and skills	39
2. Qualitative analysis of work and training content	48
III. The lessons of experience	61
1. Human resources planning today	61
References	117

Introduction

It is evident that the purpose of education and training, in the widest sense, is not merely to prepare young people for employment. Education must first and foremost help to develop the individual's personality and enable him or her to fit into society. It should also, as far as possible, help to provide equality of opportunity. But this does not mean that it doesn't take into account the occupational future of young people. This aspect is of prime importance in establishing the direction to be taken by occupational training. In most countries, this is an increasingly pressing need, and criticism is frequently levelled at the inadequate matching of training to economic requirements, especially in cases where unemployment among qualified workers co-exists with a shortage of skilled manpower.

Such criticism is widely expressed not only by the general public, but also by the media, employers' representatives, and sometimes the public authorities, who demand that training be more closely matched to employment. But is this possible? If so, how? The analysis of the respective experiences of very different countries in recent decades points to the need for considerable prudence. The problems involved have been more thoroughly grasped, but this has led to a heightened awareness of their complexity and difficulty. At the present time there is no completely satisfactory answer to the question of whether it is possible to predict training needs stemming from technical and economic changes and to plan (or give direction to) the training system accordingly. Some authorities even wonder whether this should be done, for liberalism and the free play of market forces are nowadays much in fashion, such that the very idea of planning may seem outdated.

What follows makes no claim to provide a miraculous solution to these problems. Its purpose is to take stock of what has been learned from recent trends, mostly in advanced industrial countries, and to clarify practical experience in relation to theoretical analyses. It is intended, in particular, for those responsible for the orientation and

*Planning human resources:
methods, experiences and practices*

management of training systems subsequent to the period of compulsory education, in developing countries or in countries where planning is centralized and a fresh start is being made; in both cases, what they want to know is to what extent the experiences of industrialized countries can be transposed to their own context.

Consequently, this monograph is written more from the standpoint of the public authorities and initial training than from the standpoint of employers and further training. It is slanted mainly on aspects of planning relating to the relationships between training and employment, leaving aside other aspects such as costs, funding, the provision of premises, and teacher training.

A review of existing methods of forecasting and an analysis of training needs in their historical and national context in *Chapter I* is followed in *Chapter II* by some examples of recent experiences. *Chapter III* attempts to draw conclusions from these experiences and suggests possible steps of a pragmatic approach, adaptable to different contexts, to the establishment of a permanent planning process incorporating the follow-up of results.

I. Traditional planning methods

Where training-employment relations are concerned, theory and practice have evolved along the following lines:

- With effect from the 1940s, the adoption of a centralized planning system in what was then the Soviet Union, and the aim to meet the manpower needs of industry led the authorities to extend planning to include the evaluation of the manpower requirements of the economy and to relate these requirements to the output of the education system. This was the emergence of the 'manpower approach', which was adopted in the 1950s by the satellite countries of Eastern Europe which took the Soviet system as their model.
- Towards the late 1950s and the early 1960s, renewed concern with the problem of development and the realization of the role of education aroused the interest of various countries and international organizations in a form of planning which incorporated the correlation of employment and education as a development factor. More or less elaborated versions of the manpower approach were experimentally adopted by OECD countries in the Mediterranean area and Latin America, by industrialized countries such as France, and by developing countries including India and Pakistan. All these countries shared the same concern: to ensure the supply of manpower (and in particular skilled manpower) necessary for their growth.
- In the late 1960s and early 1970s, this approach lost favour. There were several reasons for this. Liberal economists in Anglo-Saxon countries criticized the manpower approach for its lack of theoretical justification, and proposed an alternative approach. Planning specialists also realized the shortcomings of the manpower approach.
- At the same time, the economic context changed radically with the advent of the crisis in the late 1970s. In industrialized countries, the problem was no longer meeting manpower requirements, but

*Planning human resources:
methods, experiences and practices*

copied with unemployment. Generally speaking, planning fell out of fashion as a result of the changed political climate and forecasts that had often proved erroneous. Developing countries, on their part, encountered difficulties in forecasting training-employment relations due to lack of data and shortage of resources, and they perceived the political obstacles that were created by such a form of planning.

For all these reasons, the manpower approach as an instrument of forecasting and planning was abandoned practically everywhere, but without being really replaced by anything else. Nowadays a more pragmatic and reserved view is generally taken. Attempts at forecasting are confined more to a given sectoral or regional level. The trend is towards obtaining more reliable and useful information, and the improvement of instruments able to provide better short-term guidance and a better management of the training system.

Nevertheless, specialists continue to question the utility and validity of forecasts – or rather prospects – concerning employment and occupations. Many countries do indeed still make such forecasts, but in another context and along a different line of thought.

After analyzing experiences based on the manpower approach, this first part reviews some alternative approaches.

1. Educational planning based on the manpower approach and the logic of matching training to employment

This approach is well known and critical literature on the subject is abundant. It may nevertheless be worth while reviewing a number of experiences in order to show their diversity and to learn lessons from them which are still applicable. The reader who is pressed for time may prefer to pass directly on to the next chapter.

The principle of the approach

This approach stems from the idea that “educational plans must be established in the light of economic and social development objectives” (Parnes, 1962). It supposes that it is possible to estimate future manpower (and particularly skilled manpower) needs on the basis of assumptions concerning the evolution of the economy and its occupational structure. These needs can then be set against the expected output of the training system in order to bring the two as closely into line as possible. The approach comprises the following stages:

- (a) It starts from economic projections, up to a given future date, of the level of national production and its breakdown by sectors or branches of activity. It makes assumptions as to the evolution of productivity in each sector, thus giving estimates of the number of people employed.
- (b) The next step is to estimate the breakdown of these numbers by occupations, occupational categories, or socio-occupational categories. To do this it is necessary to know the present structure by sector and to estimate how this structure will change over the period in question. The application of these structural coefficients to the estimated numbers per sector gives the breakdown of numbers by sector and by occupation. The recapitulation of all the sectors gives an estimate of the total employment available (or number of jobs on offer) by occupation for the final year of the period.
- (c) To meet this available employment (or manpower demand), it is then necessary to estimate the manpower resources which will be available at that time. These resources are drawn from:
 - (i) the numbers at present employed, making allowance for deaths, retirements and, if possible, occupational mobility;
 - (ii) the expected output of the training system over the whole period from start to finish.

The addition of these two components gives an estimate of the manpower which will be available in the final year of the period to fill the jobs offered by employers.

*Planning human resources:
methods, experiences and practices*

Potential job offers or manpower needs	Manpower resources or availability
=	=
Jobs corresponding to economic forecasts by occupation/skill	'Residual' manpower (after deduction of retirements + deaths) + predictable output of training system

- (d) All that remains to be done is to set these estimated needs of the economy against the predictable resources so as to produce a balance-sheet of shortfalls and surpluses, and establish the training policy accordingly.

This approach raises fundamental problems, to which subsequent reference will be made. It also raises problems of application, such as:

- The *duration* of the period under consideration. In a planning process, this duration is often equated with the duration of the overall economic development plan, which is usually 4 or 5 years. But this creates a problem in so far as it takes much longer than that to put an education policy into effect and for it to produce results. It takes about 10 years to establish guidelines, make the necessary capital investments, train teachers, complete a stage of education or training, and introduce the trained individuals into the labour market.
- The *level of detail* of the analyses relating to occupational structure. The desire for detailed forecasts is not merely a complicating factor; it also clashes with the fact that there are considerable possibilities of substitution among specializations or levels of training that are close to one another. Selecting a level of detail also means selecting a system of classification of occupations.
- The *methods and assumptions* adopted for forecasting numbers and occupational structures.

Below are some examples of the use of this approach, showing how these problems have been solved in countries whose contexts differ.

The experience of socialist countries

The former Soviet Union is the most typical example of manpower and educational planning.

- It was part of an overall process of directive planning covering all sectors of economic activity and imposed on all production units.
- This process involved a mechanical matching of all those who left the education system to the recruitment needs of business and industry. These needs were evaluated by the business and industrial undertakings themselves, by reference to planned production goals and the application of technical coefficients. The planning authorities then added together the needs of these undertakings to evaluate national needs.
- In the case of the former USSR, the logic of the matching was reinforced by the fact that it was the planning authorities who decided upon the allocation of qualification-holders to each unit of production. Furthermore, the country's brand of socialism did not recognize the existence of a labour market (or of a product market either) and hence took no account of workers' freedom of mobility apart from factors provided for by the planning system.

It is interesting to note that Hungary, which was the first socialist country to set the example of economic reform, distanced itself from this model as far back as the 1960s. The planning authorities took critical stock of the Soviet model adopted in the 1950s. Firstly, the five-year period initially set (because it corresponded to the normal planning period) was considered too short – and this was also recognized by the USSR, where the period was extended to 15 or 20 years.

Subsequently, voluntary planning based on the extrapolation of the high growth rate during the early years of industrialization often resulted in unrealistic forecasts. This trend was intensified by the fact that in formulating their plans, state undertakings proceeded in accordance with their own logic and tended to boost their forecasted requirements in proportion to the shortage of skilled manpower.

*Planning human resources:
methods, experiences and practices*

This assessment led the Hungarian authorities in the 1960s to set up a system based on a rather different approach to that used in the previous decade. The new system merely involved the mechanical matching of educational output to manpower needs. It adopted a comprehensive socio-economic approach covering a long period (15-20 years) and was largely based on demographic data to avoid imbalance between the long-term trends displayed by the education system, the economy and society. Hungary thus shifted from rigid, directive planning to more flexible and indicative planning. This approach was subsequently used in a number of developing countries.

With the fall of socialism, however, planning based on the manpower approach fell into disrepute in the countries of Central and Eastern Europe. As will be discussed below, their thinking then turned from strictly applied planning to forecasting of the relationship between employment and education.

The work of the OECD

This international organization, most of whose members are developed countries, gave thought in 1960, or thereabouts, to the role of education in economic growth (Parnes, 1962). It sought to evaluate appropriate levels of educational development corresponding to the economic and social objectives of a number of what may be called 'semi-developed' countries. Initially, six Mediterranean countries were selected: Spain, Greece, Italy, Portugal, Turkey and Yugoslavia. Teams of specialists were formed in each of these countries and assigned the task of preparing detailed plans covering a long period up till 1975.

The main difference by comparison with the experience of socialist countries which had planned economies was that these were countries with a market economy. Consequently the task consisted principally of estimating predictable manpower shortfalls and the investments required to cope with them.

Part of the value of this experience was that it was followed some years later by an evaluation making it possible to compare the initial forecasts with what actually happened. The evaluation comprised, in particular, *analyses of sensitivity* revealing the margin of error

committed in the various assumptions made. It was observed that the greatest errors concerned the overall economic growth rate. This pointed to the probability that the difficulties encountered were essentially those of any economic forecast and were not specific to training-employment relations.

The French experience

French planning, as introduced after the war to speed up reconstruction, was of a flexible and indicative nature and lay in a mixed economy operating in accordance with market forces, and hence in a very different context from that of planning in socialist countries with a centralized planning system. Initially geared towards material production, it gradually embraced human resources, because a considerable part of the training system was in the hands of the State, which had to decide what direction to give it. This planning developed against a background of growth, the concern being to meet those skilled manpower requirements which were considered important (Goy, 1978).

The 1960s and 1970s witnessed a gradual refinement of the methodology used. The econometric models that served as the basis for forecasting and analysis of occupational structures were fine-tuned. Most importantly, an attempt was made to assess manpower requirements in order to take into account the need to replace those leaving the workforce due to retirement or death.

This methodological progress was accompanied, however, by a change in the understanding of the task. There was notably greater scepticism regarding the possibility of planning education-employment balances in a market economy that was increasingly open to the outside world, particularly at a time when skilled labour was becoming plentiful. The oil crises of the 1970s led to general questioning of the validity of projections and theoretical advances pointed to the uncertainties and sensitivity of forecasting. “There was a gradual shift from an approach based on the ‘needs’ of the economy to a firmly trend-based perspective (extrapolation of past trends and analysis of their consequences)” (Goy, 1978: 120).

*Planning human resources:
methods, experiences and practices*

Attempts to apply the manpower approach to the Third World

Below is an example of a country that wished to engage in planning, but in the context of a developing market economy.

The case of India

India's attempt at planning began at about the same time as that of France and displayed some of the same characteristics. Indeed, the starting point was a desire for planning as a means of dealing with shortages, yet in a free-market system that rendered such planning indicative rather than directive in nature. However, the context was completely different: India was an immense country at a fairly low level of development, in which the central government had more of a co-ordinating role over its 22 states and nine territories than any real power (particularly where education was concerned).

This experience was characterized initially by the priority given to high-level scientific and technical manpower (engineers, doctors, agronomists, teachers, etc.). Other categories have been more or less neglected, firstly because of lack of data and also because they raise no problem of shortage. Indian planners have always regarded shortage as more prejudicial than surplus (Verma, 1985).

Another feature where India is concerned is the vast size of the country and the fact that a large share of responsibility is borne by 22 states and nine territories. The central government co-ordinates rather than exercises real controlling authority. This partly explains why manpower forecasts have had only a limited impact on educational policies. For the same reasons, the central government does not always have access to the detailed data necessary for practical planning.

The evaluation of the Indian experience has revealed in particular that most forecasts of manpower needs have been over-estimates, firstly because estimates of economic growth have themselves been over-optimistic, and secondly because specialists tended to boost manpower requirements in their own respective fields. Furthermore, jobs which, according to the planners, should have been filled by

skilled personnel have actually been filled by personnel who do not possess the skills theoretically required but who are paid less. This is the consequence of not taking remuneration into account in planning.

Another limiting factor, recognized *a posteriori*, is that manpower planning has not made allowance for occupational or social mobility. The lack of reliable statistics on occupational structures has been a considerable handicap in this respect. We will return to the use of forecasting in various countries in *Chapter II*.

Evaluation of the manpower approach

Several conclusions can be drawn from these experiences.

Firstly, recourse to the manpower approach largely depends on the socio-political context in which it is adopted: whether the system is planned or market-controlled, and whether there is a shortage or a surplus of manpower.

From a methodological point of view, apart from the difficulties of application and the inflexions noted in this account, the manpower approach raises at least three fundamental problems:

- The basic idea is to compare future manpower recruitment with the output of the training system. But this does not make sufficient allowance for the fact that a proportion (a very high proportion in some countries) of recruitment is accounted for not by the output of the training system, but by mobility; that is to say by people who were previously in a different job, unemployed or inactive. So a distinction must be made between the most elementary form of manpower approach, which takes no account of these phenomena, and the form which attempts to evaluate mobility at least.
- Another criticism is that the manpower approach takes no account of the conditions under which manpower supply is actually matched to manpower demand, in particular where remuneration is concerned. It is assumed that objective requirements exist, and in order for them all to be met, it only requires training the corresponding number of people.

*Planning human resources:
methods, experiences and practices*

A few examples suffice to show that this is not so. For instance in many developing countries, the training of a large number of agricultural technicians has not in itself remedied shortages in this speciality; the remuneration of this category of personnel is not sufficiently attractive to compensate for the difficult working conditions (remote location and lack of material comfort) and the negative image of this occupation by comparison with others. There is no point in training specialists if they refuse to work in the speciality for which they have been trained. Similarly in many industrialized countries, blue-collar jobs are held in low esteem, and though training facilities have been created or expanded in areas such as the building industry and sheet metal work, not enough people take advantage of them.

These examples alone show that the education system is often unfairly criticized for its inability to meet the needs of the economy. If training is to be better matched to employment, the matching must not be one-way; both sides of the balance must be adjusted.

We find this idea at another level too. Assuming that the difficulties just mentioned have been circumnavigated, the question remains as to how to define the correspondence between a type and level of training and an occupation. In the first place, such a correspondence cannot be rigid, for there are several types of training which provide access to almost all occupations, and almost all types of training open the way to several occupations. This is the principle of replaceability already referred to in the case of Hungary.

Medicine and a few other regulated professions such as architecture and law, which require a specific formal qualification, are exceptions. But engineering is not; some (and in certain cases many) of those who are classed as engineers do not possess the corresponding formal qualification, while a substantial proportion of people who do are not engaged in engineering; they may occupy financial, sales or management posts. The same applies, *mutatis mutandis*, even more so to people employed in the commercial sector.

It should be noted that this correspondence between training and occupation varies according to supply and demand, and also according to salary level, all of which may vary from one time and place to

another. Employers have a wide margin of adaptation. If they find secretaries on the market who have received higher education, they will often give them preference; if they can only find candidates who have not completed their secondary education, they will make do with them. Can the level of training required of a secretary be defined objectively?

The same reasoning could apply to specialities in the tertiary sector. A case in point is that of banks, which in many countries recruit their future senior employees without much regard for the speciality for which they have been trained; what matters more to them is the *level* of training. A certain degree of non-differentiation is also found in many areas in the tertiary sector, and to some extent also in some areas of industry.

Variations from one time to another in a given country are just as marked when we compare one country with another. The type and level of training judged necessary for a given job depend not only on the structure of the training system and how advanced it is, but also on how the social system recognizes the level of training in question.

The comparison by the OECD of levels of economic and educational development follows the same lines as this analysis, confirming that factors of demand alone are insufficient to steer the development of an education system; factors of supply must also be taken into account in the analysis.

This being so, one may doubt the existence of objective needs of the economy and question the idea that planning should consist of matching training to those needs. Again, the matching cannot be a one-way process.

Despite these criticisms, the matching idea remains firmly rooted in many people's minds, for it gives the reassuring impression that technical solutions can be found to the problem of training-employment relations.

In order to pass final judgement on the validity of the manpower approach, we still have to see what the possible alternative approaches are.

*Planning human resources:
methods, experiences and practices*

2. Two alternative approaches to the evaluation of training needs and priorities

The manpower approach is not the only approach to human resources planning. Others have been adopted or have been proposed. Some of them adhere to the idea of matching; others follow a different line of reasoning, based on the evaluation of the effectiveness of training as an instrument for orienting it.

Questioning employers

This is not really a method, and would not even be worth mentioning if it were not so frequently resorted to. It is simply a practice, and the simplest of all; it consists merely of asking business and industrial undertakings what their training needs are. In an overall planning perspective, there are three major objections to it:

- Firms are usually uncertain of what the future holds in store, and they rarely make medium-term forecasts. Even more rarely do such forecasts relate to employment and manpower. The evaluations they can offer are therefore liable to be completely groundless and unrealistic.
- The estimates are also liable to be biased if the firms questioned feel that their replies will have a practical outcome, for example on the allocation of manpower. If the manpower concerned is scarce, they will tend to over-estimate their needs.
- The overall planning problem cannot be addressed by questioning employers. The mechanical totalling of the requirements of firms and production units cannot provide the manpower data demanded by an attempt at long-term planning. "The economy is a complicated living organism which undergoes constant changes: some elements of the system die away and are replaced by new elements. Existing organizations can hardly be expected to forecast their own destruction; on the contrary, they are generally unaware that their survival and future development may depend on a radical transformation of their production profile, their structure and work. Beyond these considerations, aggregation

of the needs of existing enterprises excludes the ‘new born’ firms from the planning” (Timár, 1990: 54).

While questioning employers cannot provide a quantitative forecast of the number of people to be trained, it is nevertheless an essential component of the qualitative analysis of the content and evolution of jobs and of the assessment of the functioning of the labour market.

Reference to social demand

This approach makes no claim to be scientific, but implicitly or explicitly it plays an important role in establishing educational guidelines.

The preceding analyses may raise a question briefly referred to at the outset: Can and should the development of training be determined solely by economic needs? At first sight, the answer is simple: Purely vocational training should be determined by economic needs, and general education by what might be called social needs.

In actual fact, the problem is more complex. Firstly because educational development obviously depends on available economic resources. Secondly because the borderline between vocational training and general education is tenuous. The two are closely interlinked; the development of vocational training depends on that of general education; conversely, an extension of the latter which did not lead to any training with a specific goal would be very liable to create problems. Lastly, it may be noted that particularly – but not exclusively – in various Third World countries, vocational training programmes often have a social goal. Not knowing how to keep young people occupied and not knowing what jobs to train them for, the authorities shunt them into vocational training courses without any specific objective. This practice is questionable in view of the acute shortage of resources of the countries concerned.

If, instead of regarding the question from the theoretical and methodological point of view, we consider the practical conditions under which educational decisions are made, it has to be recognized that while the decision-makers are faced with the extremely difficult

*Planning human resources:
methods, experiences and practices*

task of evaluating economic needs, they are also subjected to social pressure which usually takes the form of a demand for more education. Unlike the former task, this social demand is fairly amenable to planning.

This being so, the authorities may be tempted to base their decisions more on the latter approach, which moreover appears perfectly democratic at first sight. But on closer inspection it is seen to be far from democratic. Experience shows that it enables the most privileged social categories to benefit most from education.

The conclusion must be that taking social demand into account is not a scientific and objective way of estimating training needs, though it is an essential factor which has to be borne in mind by planners in so far as planning is not an academic desk-top exercise but a largely political process of reconciling conflicting interests and priorities (Klees, 1989).

3. Approaches based on the evaluation of the efficiency of the training system

The approaches analyzed so far have been aimed at predicting future trends in order to make a quantified estimate of training requirements. Another approach is to evaluate the functioning of the education system *a posteriori*. This approach can take two forms. The first aims to evaluate the benefits of training in accordance with an economic calculation similar to that applicable to physical investment. The second consists of examining the position on the labour market of those who have been trained, and how closely the jobs they hold correspond to the type of training they have received.

Both these forms of approach may be considered as methods of at least steering the training system in the right direction by successive corrections, if not actually forecasting its output. Some examples of their application are given below.

*Economic efficiency: cost-benefit analysis,
or analysis of the return on investment*

This has been proposed mainly by neo-classical economists, many of them Anglo-Saxon (Blaug, 1968; Psacharopoulos and Woodhall, 1985). It stems from a criticism of the manpower approach relating in particular to the fact that the latter takes no account of remuneration. The idea is to seek a better economic basis for establishing training-employment relations. The advocates of the cost-benefit approach find this basis in the theory of human capital, according to which education and training are an economically worthwhile investment from the standpoint of both the individual and the nation. The approach lies in an economic perspective, with emphasis on the mechanisms of natural regulation which operate on the labour market through wages and incomes.

In this perspective, when individuals choose a course of action they implicitly analyze what it is going to cost them and what benefit they will derive from it. For instance if a young person decides to continue his or her studies, say at a university, the cost of doing so can be measured in terms of fees, and especially in terms of opportunity costs; that is to say the loss of earnings resulting from not having entered remunerative employment instead of attending a university.

On the other hand, a person who attends a university can hope to enjoy a higher income for the whole of his or her working life, which will more than compensate for the initial loss of earnings. Taking into account the interest rates applicable to these different periods of active life, it is possible to establish a balance-sheet in terms of return on investment.

This analysis can be transposed from the individual level to the community level, provided it is accepted that individual remuneration is equivalent to the benefit the community derives from the individual's activity. In this way one could evaluate the cost and benefit to a country of different types of training or their future development. There is, however, a difference in the way the calculation is made, in so far as the community usually bears all or part of the cost of education. This implies that continuing education beyond the normal

*Planning human resources:
methods, experiences and practices*

compulsory period must logically be more profitable for individuals than for the community.

A series of studies covering some 50 countries at various stages of development was conducted, notably by Psacharopoulos (1993). The latter drew a certain number of conclusions, which may be summarized as follows:

- The return to education at all levels is generally higher than the return to capital investment.
- The return is highest for primary education; it then declines as the educational level rises.
- Individuals receive a greater return than does society, particularly in the case of higher education, which constitutes grounds for having individuals bear more of the cost of higher education.
- The return to education remains stable as countries develop and education remains an attractive investment.

These conclusions are now disputed. A study of 10 Asian countries, based on a different interpretation of the data, found no confirmation of them whatsoever and suggested that the social return to education was low in countries such as India, Pakistan and the Philippines, which have a surplus of educated labour with respect to their level of economic development. The author concluded from this analysis that studying rates of return was not a reliable enough method to ground decisions on investment in education, owing to the inadequacy of the data and the role of non-economic factors (Bennel, 1998).

Finally, a recent study of the relationship between education and economic growth in 16 emerging countries offers yet another insight. The study concludes that economic growth is faster when secondary and higher education reach a larger share of the population, using the examples of Chile, Malaysia and Thailand (UNESCO/OECD, 2003).

Although these studies apparently obtain conflicting results as to the respective roles of the various educational levels, they allow us to draw at least two general conclusions:

- There is probably a threshold level – corresponding perhaps to the lower secondary level or to pupils having at least eight years of basic education – at which education becomes an important factor in economic takeoff. In any case, however, countries that have reached the stage of broadening access to education at this level have generally more or less achieved universal enrolment in the early years of basic education. In addition, a certain balance between levels remains desirable, if only to avoid exacerbating social disparities.
- All the studies regard investment in education as generally beneficial.

This approach has the great merit of highlighting the role of the income factor in adjusting training to employment, and hence of filling an important gap in the manpower approach. It could be used more for analyzing, for example, the question of the shortage of teachers in relation to the increase in salaries required to make the profession more attractive.

Though it generally gives only broad indications concerning major types of education, it is commonly employed, at least implicitly, in connection with the work and the decisions of funding organizations such as the World Bank, which are naturally concerned with the question of return on investments. Nevertheless, it is open to controversy and raises problems (Klees, 1989):

- It necessitates a great deal of data on incomes, which is not always available.
- Based as it is on a purely economic analysis, it gives a somewhat schematic picture of reality, leaving out the lessons of contemporary sociology. To assume that income differences are linked exclusively to investment in education is to overlook the complexity of the relationships between education and social and family background. Some economists recognize this and adopt more or less arbitrary assumptions to assess the weight of factors other than education in income differences (Klees, 1989).

Similarly, the identification of individual income and social utility may be contested. The fact that in Third World countries people who

*Planning human resources:
methods, experiences and practices*

have received higher education often find relatively highly paid jobs in the civil service does not prove that this training and these jobs are economically justified, but rather that they are sustained by social pressure.

Furthermore, assuming that cost-benefit analysis does indeed reflect the existing relationships between training and income, it tells us nothing about how these relationships may change in the future. But training must be planned sufficiently far ahead, and the balance of factors can change over this period of time. Many newly independent countries started off with a serious shortage of skilled manpower to fill the senior posts previously held by expatriates. But there were few such jobs, and the shortage of qualified personnel soon became a surplus. When, at the outset, people saw the advantages enjoyed by those holding such jobs, demands and expectations were created which could not be satisfied, and the result was frustration. The cost-benefit approach could not have prevented this from happening.

*Analysis of the circumstances of trainees' transition from
school to work, and their subsequent follow-up*

For some time past, an increasing number of countries have realized that there is little point in trying to forecast and plan training requirements without knowing the outcome; that is to say what becomes of the young people who are trained, how they enter the working world, and the relationships between the training they have received and the jobs they hold.

This knowledge can be acquired in several ways. The choice of method depends firstly on precisely what one wants to know, and also on the financial resources available and the practical means of pinpointing and questioning the population groups concerned – these means being tied in with the institutional context. Where the content of the questions is concerned, a distinction may be made between purely factual surveys analyzing young people's circumstances and experience, and surveys intended to reveal their attitudes and motivations, notably vis-à-vis educational and vocational guidance.

Survey methods may be distinguished as follows:

- Observation over a period of time (the panel method), consisting of questioning the same individuals several times over a period which may vary, but which is usually fairly long. This method lends itself well to attempts to establish the relationships between family and social characteristics, the subject's educational record, and his or her occupational history. But it means having recourse to specialized field workers, it can cover only small samples, and it does not produce results for some time.
- Surveys of transition from school to work, covering people who have left the education and training system at a specific time and stage. These surveys, taking training establishments as their starting point, facilitate contacts with young people, make it easier to define the scope of the survey by selecting specific types of training, and produce rapid results. Their drawback lies in the fragmentation of the field on which they are based. They do not make it possible to compare different training streams and isolate each survey from the context of the labour market.
- Retrospective surveys (tracer studies) attempt to identify former students after a certain lapse of time, not on the basis of their studies, but in another context – usually their occupational environment. The questions they are asked try to trace both their educational and their occupational history. The difficulty is to identify a homogeneous population group and establish a link with its educational past. Doing so also raises the problem of the reliability of the respondent's memory.

Below are some examples of surveys conducted in different countries and contexts, and which have different objectives.

Surveys of the International Institute for Educational Planning (IIEP)

The IIEP has repeatedly taken the initiative of conducting surveys on the transition from school to work.

From 1978 to 1984, with the co-operation of 21 countries, the Institute undertook surveys of higher education in order to gain better

*Planning human resources:
methods, experiences and practices*

understanding of its interactions with socio-economic development, identify imbalances and shed light on the factors that determine entrance into higher education. To analyze the demand for higher education, integration into the working population and the functioning of the labour market, three methods were used:

- The method that brought the most valuable results involved a longitudinal study of a group of university students, graduates and employers. However, this entailed remaining in contact with the same individuals over a number of years and a long interval before survey results were obtained.
- The simplest method was to work with census data. However, this required that the relevant data be available.
- The easiest method to implement was analysis of past trends regarding school-to-work transition via a survey of a sample of university students, graduates and employers. The problem here was how to obtain accurate answers when individuals were asked to reconstruct events that had occurred many years ago.

The individuals in the sample filled out closed questionnaires, which were supplemented, in some cases, by direct interviews. The questions sought to elicit both factual information and opinions on their preferences in education and employment. These opinions had to be interpreted with caution.

The survey results led to a number of conclusions of potential interest to planners on the determining factors in demand for higher education and on the school-to-work transition.

In addition, the IIEP conducted a series of surveys of companies and their employees which, with the follow-up studies, have the common feature of providing an *a posteriori* analysis of the output of the education system at various levels.

France's observatory of the transition to working life

In the early 1970s, when France was still engaged in comprehensive planning of relationships between education and jobs, it was recognized that planners did not have data on the situation of

young people on completion of their training and on the real conditions under which they joined the working population. This concern was subsequently intensified by the increase in youth unemployment.

It was therefore decided to set up a permanent national system to observe entries into the labour force. This entailed observation, over a sufficiently long period, of the annual streams of graduates from all levels and types of education. The sample had to be large enough to allow evaluation of job opportunities available on completion of an educational level or stream, or within a given geographic region.

This system consists of two components:

- An exhaustive survey conducted by public and private secondary schools via the postal service. Results are subjected to a first stage of processing and analysis by the educational administration.
- In the last few years, a second survey has been periodically performed by the Centre for Study and Research on Qualifications (CEREQ) on a sample of graduating students several years after they leave the education system. The latest such survey, conducted in spring 2001, covered a sample of 55,000 young people out of the 750,000 who graduated in 1998 from all levels and types of education and training. The survey involved sending out 170,000 letters, as well as telephone contacts with 135,000 young people through 150 telephone interviewers. On average, each interview lasted 20 minutes.

This second series of surveys is intended to provide information on the various steps in the process of individuals' integration into the labour force by studying all the situations – employment, unemployment, training – through which they pass during this period. This analysis, over a longer period, supplements and often changes the picture that emerges from the initial survey: Some educational tracks can lead to an immediate job, but one that is insecure and badly paid, while others bring results more slowly but are, in the end, more satisfying (CEREQ, 2001).

The experience of Tunisia

Using the French system described above as a model, Tunisia has carried out several series of surveys of graduates of higher education and vocational training since 1989.

The first survey of vocational training, conducted by post, was limited to a single region and a single type of training. The following year, a survey covered young people who had graduated a year earlier from all training centres. Individuals were asked to complete a questionnaire and return it by post. The rate of response was 65 per cent for the pilot survey, and 52 per cent for the comprehensive survey. To ensure a representative sample, interviews were arranged to reach those who had not responded to the surveys. The questionnaire contained five types of questions:

- Questions to be answered by all respondents. These identified the person, the type of training received and his or her employment situation. They served as a filter to determine which of the following series of situation-specific questions would be asked.
- Those with a job were asked to identify the nature of their employment and describe how they had found it.
- A separate set of questions were asked of the unemployed.
- A third set of questions was used for those who had not yet joined the working population.
- Finally, all respondents were asked questions relating to continuing education.

The data was processed and analyzed by the regional vocational training bureaux, but it was also planned to have training institutions fill out questionnaires. At the same time, other surveys were conducted within training centres and companies so as to obtain their own assessments of the training provided.

At the same time, another series of surveys covered graduates from higher education, particularly holders of a masters or engineering degree from universities located in Tunis. To take into account the fact that integration into the job market is a long process, the surveys were concerned with the period lasting from 2½ to 4½ years after

these individuals took their degrees. The surveys were conducted by interview using a questionnaire structured around three main subject areas: identification of the socio-economic circumstances of graduates' families, education, and a detailed account of jobs and situations with respect to the labour market over the entire period of observation of the school-to-work transition process (Plassard and Ben Sedrine, 1998).

The population to be studied was reconstructed from lists of names provided by educational institutions. A uniform sampling rate of 25 per cent and subsequently 30 per cent was applied to each cohort. Survey staff succeeded in interviewing over 70 per cent of degree-holders in this sample. Some were missed owing to the difficulty of obtaining correct addresses, but outright refusal to answer the interviewers was very rare.

Conclusions

Surveys on school-to-work transition are now conducted regularly in most European countries. Different procedures and methods are used: In Germany, for example, observations are mainly concerned with those leaving the 'dual apprenticeship' system, while in the United Kingdom surveys cover a given age bracket rather than a specific type of training. However, those working in this field in different countries co-ordinate their efforts within the framework of a European network.

Many studies have been conducted in developing countries, often on the initiative of the World Bank, who considers these surveys a means of assessing the effectiveness of education systems. The approach taken often resembles that adopted by the IIEP in the studies described above, as the aim is not simply to collect factual data, but also to analyze the motivations of young people. These studies are not always carried through to completion, however, and do not always receive support from governments, who may sometimes be reluctant to disseminate results which would give a negative image of the way the education system in their country works.

II. Recent trends in human resources planning

1. *Forecasting and prospective studies concerning employment and skills*

Hardly any countries today practise the type of planning described in *Chapter I*, in which a deliberate effort is made as a part of a comprehensive economic planning process to achieve a certain balance between education and jobs based, among other things, on forecasts of manpower needs. Such methods are being abandoned due to both the methodological difficulties described in *Chapter I* and the increasing uncertainty that hangs over modern economies as a result of globalization, which is making countries increasingly interdependent. At the same time, the failure of the centrally-planned socialist economies and the ascendancy of free-market economic ideology have combined to discredit the very concept of planning (a point to which we will return in the conclusion).

At this point, we should recall some conceptual distinctions (Godet, 1983):

A projection is the protraction in the future of a past trend in accordance with certain assumptions of extrapolation or deviation. A projection is not a forecast unless it involves a probability.

A forecast is the assessment, made with a certain degree of confidence in its probability, of what will happen between now and a given future date. The assessment is usually quantified, based on past data, and subject to certain assumptions.

An exploratory prospection is a picture of future possibilities, that is to say scenarios that are not improbable in the light of the determining factors that have shaped the past and in the light of the comparison of projects contemplated. Each scenario (a set of coherent

*Planning human resources:
methods, experiences and practices*

assumptions) can be assessed quantitatively, that is to say it can be transformed into a forecast.

Planning consists of conceiving a desired future, as well as mobilizing the means of achieving it. It is therefore a *normative prospection*. The classic error, which occurs all too often, is to confuse forecasting with planning by equating a wrong forecast with what is merely a deviation from objectives.

Many developed countries regularly produce forecasts or prospective studies concerning employment, occupations and their relationship to education. Such studies follow, to some extent, the rationale of the manpower approach analyzed in *Chapter I*. However, as we will demonstrate, their methodology saves them from the most serious criticisms raised in that chapter regarding the understanding of educational planning as a process geared towards satisfying projected manpower requirements. Rather they are undertaken for the different purposes defined as follows:

- either to establish a decision-support framework at the public policy-making level to study the conditions under which change in employment structures could be made consistent with that of the education system, which presupposes two processes that are partly autonomous and partly interdependent;
- or to inform university students, guidance counsellors, employers and the public of employment prospects in order to guide their individual decisions and thus help balance supply and demand.

The former function seems to predominate in Germany and France, while the latter prevails in the United States of America (USA), the Netherlands and many other countries. A French study of the experiences of various countries published in 2002 offered three further observations:

- The method adopted by the OECD during the 1960s is still the most widely used, but it would be advisable to look for alternative methods and to undertake Europe-wide studies.

- The approaches studied are based on a single central institution, whereas France now prefers a networking approach involving various institutions.
- Forecasting studies are quantitative, yet it is also important to produce qualitative studies.

Taking these observations into account, this chapter will discuss regional and sectoral studies, while the following chapter will address qualitative approaches. Several references are also made to one-off studies conducted in developing countries. Unlike developed countries, these do not have the institutions and resources needed for regular forecasting studies, and hence often call on outside expertise.

National forecasting systems

The USA

The situation of this country is diametrically opposed to those discussed in *Chapter I*. The *USA* relies on market mechanisms and individual decisions, and responsibility for education is highly decentralized. It is felt, however, that if the market is to function properly, all those concerned must be well-informed, which means providing them with information on job prospects. For this reason, the *USA* was one of the first countries to produce scenarios of future trends concerning employment and occupations in connection with education and training. The Department of Labor's Bureau of Labor Statistics, which is allocated substantial resources, uses a macroeconomic model to turn out regular forecasts displaying the following characteristics:

- The period covered is approximately 10 years (projections published in 2001 are valid for the period up to 2010) and projections are updated regularly.
- An enormous volume of data is processed, with a highly detailed breakdown by economic sector and by occupation (projections are made for 698 occupations for the period 2000 to 2010).
- Macro-economic changes are the subject of scenarios relating to broad socio-economic trends. Changes in occupational structures are not only calculated by models; they are the subject

*Planning human resources:
methods, experiences and practices*

- of reasoned assumptions made by experts on the basis of qualitative studies and in consultation with professionals possessing practical experience. The projection of this structure takes account of factors such as technical change, forms and practices of production, and market demand.
- The forecasts do not solely involve the breakdown of employment by sector and by occupation. They are also concerned with the evolution of the labour market and the composition of manpower (the rising proportion of women and ethnic minorities).
 - Results are very widely distributed, notably over the Internet (www.bls.gov) but also via two publications which are fundamental tools for academic and career guidance: the 'Occupational outlook handbook' and the 'Career guide to industries'. Projections are frequently debated, and these debates may have a national, or even international impact. Interpretations of the data are, at times, contradictory. Some commentators emphasize the growth rate, in which case the focus is often on the most highly-skilled occupations (e.g. in computer science). Others place more importance on the total number employed, in which case the increase in absolute value is often viewed in terms of jobs that require fewer qualifications (e.g. in sales) but that make up a much larger proportion of the labour market.

To sum up, the *USA* produces highly elaborate and detailed forecasts on jobs and occupations with indications concerning education. However, they do not use them directly as planning instruments. Rather these forecasts serve as a source of information underpinning the social debate and made available to all interested parties. Matters are very different in Europe.

European countries

In *France*, after the period of disillusionment with planning mentioned in *Chapter I*, private-sector organizations produced ad hoc studies of future trends in employment and education. These studies used much the same methodology as those described above, but with far less ample resources and more aggregate data.

In 1991, a government mission on future-oriented studies of occupations and qualifications concluded that this type of research is useful, but that the required information and expertise were scattered among several organizations. It proposed a co-operative structure that would allow for the pooling of resources in this field. These suggestions were not adopted, but a working group on this subject held further meetings in 2002 and revived the idea of collaboration among several institutions using different methods.

In *Germany*, responsibility for education lies with the states (*Länder*), meaning that centralized planning would have been precluded in any event. Nonetheless, a manpower approach based on the OECD model was used in the 1960s. This approach was subsequently abandoned as a planning instrument, not only due to methodological objections but also because it seemed incompatible with individuals' free choice of educational specialization and career.

This did not prevent the development of forecasting studies, which were produced not only by the Institute for Employment Research (IAB), but also by other bodies (academic and private). These studies use a variety of methodologies while attempting to avoid the traditional manpower approach model, criticized for its lack of attention to the real levers of adjustment between education and employment. The studies consider broad functional categories rather than specific occupations and strive to factor in social demand, substitution between labour categories and the fact that students in higher education choose their subjects of study more according to their own preferences than to available jobs.

An assessment of the first experiments conducted in the 1980s offered some interesting conclusions:¹

- The validity of forecasts did not seem to depend on the complexity of the methods used.
1. The new context has a number of implications for forecasting, some of which will be discussed in the conclusion.

*Planning human resources:
methods, experiences and practices*

- Forecasts concerning highly-skilled labour appeared more reliable than those for less-skilled labour.
- Forecasts proved to be accurate concerning the factors and direction of change, in particular for broad aggregates, whereas at a finer level of disaggregation, more serious errors were found.

Nevertheless, forecasts are not considered reliable enough to be used to inform the public. Another concern is that massive public acceptance of their conclusions will reverse the outcomes – a fear that seems not to be shared by most other countries where forecasts are generally not known to the public and where they appear to have little impact.

In the *United Kingdom*, forecasts have been made regularly by the Institute of Employment Research at the University of Warwick. However, they have been very little used and have merely served as a basis for debate on the adjustment between education and employment and as a signal to draw the attention of decision-makers.

A study of the countries of *Central Europe* conducted within the framework of the European Union's Leonardo Programme concluded that these countries would be well-advised to begin producing the same type of forecasts as in Western Europe. However, this requires both the political willingness to do so and the necessary data, which were not always present or available.

Examples of studies in developing countries

This section provides brief descriptions of three ad hoc but fairly elaborate studies based on the manpower approach.

In *Algeria*, a first long-term study with forecasts to 1990 was carried out in 1973 by an international mission along the lines of the Hungarian experience. Starting with rough source data – owing to the lack of statistical information – the study called extensively on the authors' judgement and on international comparisons to give an overall picture of the comparative development of employment and the education system. It suggested that the growth rates posted by the education system and the observed shortages would not continue for

long and that it would be advisable to reorient educational policy (in favour of the lower levels and scientific and technical training).

In 1985, estimates made by the Planning Ministry and based on a rationale of matching educational output to manpower requirements were discussed with outside consultants. The subject was revived *circa* 2000, but in a very different spirit. Emphasis was placed on the need for longer-term research, thus requiring the mobilization and co-ordination of the various actors involved.

In *Sudan*, econometric methods were used to produce forecasts for the years 1976-1981, particularly for higher qualifications. The methodology used for these forecasts has received detailed commentary (Abegaz, 1994).

In *Côte d'Ivoire*, the *Office national de la formation professionnelle* (National Vocational Training Bureau) began to investigate the relationship between education and employment in the 1960s by carrying out surveys on the labour force. These surveys were used as the basis for forecasting studies on employment and education in the modern sector over the 1982-1990 period. This research served to illustrate some of the problems that arise in a developing country such as Côte d'Ivoire:

- Taking into account the modern sector alone results in a deeply flawed picture of the overall employment situation. However, the traditional and informal sectors reason very differently when it comes to education.
- When the modern economy is not highly developed, the public sector is the main employer of those with formal qualifications.
- There was likely to be a serious shortfall in employment opportunities for persons holding post-secondary diplomas where the modern economy was under-developed.
- Problems of adjustment between education and employment are at least as qualitative as they are quantitative.

These experiences highlight the importance of the political factor. Indeed, not only is all forecasting work (projections of demographic growth, expected economic growth, the unemployment rate, economic

activity of women and so on) based on highly sensitive assumptions, but the usefulness of these studies depends at least as much on the interest shown by the government as on their scientific value.

Regional studies

One shortcoming of national forecasting concerning the education-employment relationship is that such forecasts are often rather abstract, disconnected from the socio-economic environment and far removed from the decision-making sphere. As may be expected, this is especially true of countries in which responsibility for education is decentralized. With the inception of decentralization in France in the 1980s, the regional aspect took on increased importance and regional forecasting systems were implemented. We will return to these in the final part.

Sectoral studies

Another example of a French experience is that of prospective study contracts, initiated *circa* 1990. These are contracts concluded between the central government, vocational organizations and trade unions to allow public services and educational, career guidance and job placement institutions to anticipate changes and to orient their policies and decisions accordingly. From 1989 to 2000, 45 studies were made of a great variety of occupational fields, most of them representing economic sector activities as well as some occupational groups.

The methodology adopted varies with the organizations that conducted the studies. However, it always includes three components: analysis of the sector; development of scenarios for the future based on an analysis of the factors of change; and the definition of action plans. All the studies have both a quantitative and a qualitative aspect (nature of jobs and skills required) but only a few contain quantitative forecasts. Let us take the example of the first of these studies, which was carried out in 1989 and focused on the large-scale food retailing sector.

This study included three supplementary approaches: a synthesis of all the statistical data on employment, labour and training in the sector; surveys of a sample of companies; and surveys taken in certain other countries in order to allow cross-country comparisons. Cross-checking of these elements made it possible to arrive at an initial diagnosis of the current situation from the standpoint of the structure and activity of the sector, employment, the characteristics of the labour force and initial and continuing education. The study paid particular attention to analyzing workforce turnover (very high in this sector) and recruitment methods, examining which skills employers required for various types of jobs. Job types were also analyzed in order to define the most characteristic profiles.

After consultation with experts and with representatives of the food retailing sector, hypotheses were formulated as to the six-year activity trend in the sector, its distribution according to the main types of business and productivity. From these hypotheses, sets of projections were produced concerning the growth of employment and recruitment and their breakdown by level of qualification and education. Finally, the identification of three factors of change (socio-demographic, technological and economic) made it possible to suggest future trends affecting corporate strategy, the structure of qualifications and the management of the labour force. This analysis led, among other things, to a number of conclusions as to the orientation of training, particularly that of further training provided by companies.

In view of the diversity of the objectives assigned to the prospective study contracts and of the stakeholders who are supposed to benefit from this research, it is difficult to estimate the impact of studies of this kind. It may be pointed out that, in this case, the attempt to quantify forecasts did not fully satisfy the corporate directors, who would have preferred quantitative targets to be used to match educational output to manpower requirements, which, as we saw above, is not realistic. However, this attempt helped to spotlight the role of the various factors that determine future trends, some of which depend on companies themselves. Above all, the involvement of stakeholders (employers and trade unions) made it possible to reach a measure of consensus on the diagnosis and to clarify issues and responsibilities.

2. *Qualitative analysis of work and training content*

The foregoing analyses are purely quantitative; they concern the number of people to be trained per level and type of training, and how many of them enter which jobs. Where initial and further vocational training are concerned, it is equally necessary to define training objectives in terms of content, adopting for that purpose a purely qualitative approach. We shall review the essentials of this approach before describing some national experiences.

From work analysis to education

Work analysis is mostly done in large companies where it may serve any of several purposes: the study of working conditions (human engineering); the organization and assignment of employees to posts in accordance with their abilities; and, most importantly, the classification of these posts in order to determine salary scales. In the last two cases, the various methods of job evaluation used by consulting firms or by companies themselves generally consist in defining a number of criteria, for example the degree of responsibility and autonomy in a post, the number and complexity of the tasks to be carried out, etc. A weighting is then assigned to each criterion, making it possible to attribute a certain number of points to a post and to classify it within a job category.

This approach raises several problems. Indeed, to what extent is it possible to make an objective assessment of something as subjective as the degree of responsibility or autonomy? *A fortiori*, what justification can be given for the weighting of the different criteria? Does the problem consist in assessing a particular job or the person who holds it at a given moment, in the knowledge that this person may change jobs? The answer to these questions depends on the specific context of the company and particularly on the balance of power between employers and employees, as employee representatives want classifications to be associated with individuals and their personal qualities rather than with their temporary job.

Training must be designed so that trainees are capable of holding certain types of jobs. It is therefore essential to analyze the abilities required for this. The approach here is rather different from the previous one, but it raises some of the same questions: Is it necessary to start from an analysis of specific jobs and the skills they require? In that case, how can job requirements be expressed in terms of the skills that must be imparted through training? Or is it possible to define these skills without going through the work analysis stage? And who is competent to assume this responsibility?

To address these questions, we will describe four stages in the process of work analysis, followed by the problem of anticipating trends and that of translating all this into training objectives. We will conclude with some examples of the approaches taken in various countries.

Four stages in the analysis of work and training content

- (a) The first stage is the determination of training content either according to expert authority or simply according to tradition without regard for any direct connection with the working world. This obviously creates a risk that the training thus defined will bear very little relation to the occupation of those who have received it for several reasons. The working world is constantly changing; experts have only a partial view of it – perhaps they are familiar with only one firm, whereas in fact things are much more diverse. Expertise is often the transposition of knowledge from one context to another, as, for example, when foreign experts reproduce training schemes from their own countries in developing countries where the technology, the conditions of production and the organization of labour are different.
- (b) It is therefore necessary to bring occupation into the picture. This can be done merely by asking employers what skills are required to perform a given job. But it must be borne in mind that they do not always have a first-hand knowledge of the actual work done by their employees, and they are

liable to lack objectivity and exaggerate the demands made by this or that job.

An apparently more rigorous approach is to analyze jobs in terms of the activities they involve and deduce the skills required to perform those activities and the training programmes that will inculcate those skills. This was the approach adopted in Algeria in the early 1970s when institutes of technology were set up as an immediate and practical response to the urgent needs of the economy.

This approach encounters several difficulties. Firstly, it assumes that job content can be translated into terms of knowledge, know-how and behaviour patterns. This calls for collaboration between job analysts and educational psychologists. But the latter are faced with the fact that little is known of the mental processes by which an individual mobilizes his abilities and brings what he has learned into play in order to perform a given task.

Moreover, apart from further training meeting very specific objectives, a job-centred approach comes up against objections already made in connection with the matching approach: a given course of training does not lead to one single job, and a given job is made accessible by several different courses of training. All the more so if account is taken of the fact that job contents are changing ever more rapidly and that training must henceforward be aimed not so much at a specific job as to a working life which will demand an increasing degree of versatility and mobility.

- (c) These considerations can lead to a third stage, which is the definition of training objectives in function not of a particular job and a specific skill, but of a group of jobs and a diversified activity.

This could, in particular, lead to an attempt to identify occupational families or groups, which could be constituted in three ways. They could group job circumstances which are homogeneous in respect of the way they fit into the productive system (i.e. into the activities of business or industrial undertakings), but they would be liable to be heterogeneous in respect of job content and level of skill.

The second way is to group together, on the basis of the analysis of job content, those which are common to different job circumstances, even though they may lie in very different sectors and individual firms. The third way is to observe the career paths of individuals, and group together the successive jobs which an individual can hold if he has received a given type of training.

These approaches, which correspond to different lines of reasoning, can lead to different results; for in actual fact, occupational mobility is determined just as much by wages, opportunity and working conditions as by job content. In the first case, more weight is given to mobility between one firm and another where a given type of job is concerned; in the second case, precedence is given to the eventuality of mobility between different types of jobs within the same firm. This latter case is more frequent in Japan, whereas the former case predominates in Western countries.

These approaches directed towards versatility are more appropriate than the previous ones in so far as they correspond more closely to recent trends in the organization of labour and lead to less narrow courses of training. Problems nevertheless subsist, firstly to the extent that versatility involves at least an approximate knowledge of the occupational circumstances with which an individual may be faced in the future. And the future looks increasingly changeable and uncertain. Furthermore, too great an extension of the field of training would clearly be liable to entail a dispersion and a dilution of knowledge and skills.

- (d) It is on the basis of this analysis that a number of training specialists give *transferability of skills* preference over training for versatility. This means training for a specific type of occupation, but with the inclusion of components that will enable the trainee him-/herself to transfer what he/she has learned to a different context or a different technology. In mechanical engineering, for example, it is not possible to train a person in all types of machining and the use of all machine tools, but an attempt can be made to ensure that the training given on one machine can easily

*Planning human resources:
methods, experiences and practices*

be adapted to another. Similarly, in the banking profession one cannot expect a beginner to be familiar with the very many products a bank offers nowadays; but he can be taught the basic principles underlying all of them, and this will enable him to get to know each of them more easily.

Anticipating future trends

Here, again, an important distinction must be made. A training course intended to address immediate and specific needs, which is often the case in a corporate context, can be organized primarily on the basis of the current situation. When it is a question of setting up or adjusting a programme of initial training, however, it is necessary to consider future implications for the education system and to train learners for a sufficiently long period. It therefore becomes necessary to consider that the jobs for which trainees are being prepared will undergo significant changes in the future.

There is no scientific method that can provide easy answers to this. Rather, it is necessary to correlate a mass of information and opinions and to synthesize these through the exercise of judgement. This mainly involves trying to identify factors that will probably affect future trends. In this respect, the first thing that usually comes to mind is technical change, particularly the role of the new information and communication technologies (ICTs). These technologies certainly play a very important role in modern economies, both as work in themselves and as tools for performing other work. However, this is not the only factor that comes into play. According to the occupational field considered, other factors such as company organization, heightened competition and globalization may also be relevant.

To understand and appreciate the roles of these factors, it is useful to compare the viewpoints of experts, employer representatives and especially those exercising various corporate responsibilities. We have seen that the latter are rarely in a position to quantify their future needs for qualified personnel, but they must be able to explain how various factors influence change in both jobs and the qualifications required of their staff and give indications as to the direction of change. The most technologically advanced companies should be approached

first. However, bearing in mind that education must be able to satisfy requirements in the relatively long term, it will be necessary to consider to what extent they are representative of the future.

Synthesizing the opinions thus collected should allow those who perform this kind of study to consolidate them and to make their judgement. They will be led to circumscribe the range of possibilities and show that *the future is not determined, but that it depends largely on the role played by the protagonists themselves* – notably employers. They will, no doubt, also be led to *relativize training needs and skill requirements*, and to show that they can be satisfied differently depending on company policies and contexts. The sectoral study of the retail trade provided an example of this.

Some European examples

Four European countries with very different traditions and institutions will be used as examples:

- France and Portugal, where training is traditionally one of the core responsibilities of the state.
- Germany, where vocational training is primarily the joint responsibility of employers and organizations representing employees.
- The United Kingdom, where a highly fragmented system of vocational training has recently been replaced by an innovative national system called the National Vocational Qualifications.

Many countries have followed these models, particularly that of the United Kingdom, which has given rise to a good deal of controversy. The paragraphs below provide a brief description of the institutional framework in each case, as well as the methods and instruments used.

In the early 1970s, *France* set out to develop an instrument to provide better information on the relationship between education and employment, thus improving its planning system. This project was an ambitious one, as the instrument in question – the *Répertoire français des emplois* (French job directory) – was supposed to meet simultaneously the need for information on employment, the need for

*Planning human resources:
methods, experiences and practices*

career guidance and placement, and the need for training, by providing precise definitions of the tasks performed. On the basis of observation of 10,000 job situations, the directory described 800 characteristic situations, or 'standard jobs' (*emplois-types*). Jobs were analyzed primarily in terms of the function performed by the job-holder; the production process to which the job contributed; the job-holder's relationships with documents, equipment and people; his or her degree of responsibility and autonomy; and the observed and desired profile of job-holders.

The *Répertoire* was deliberately limited to analysis of the characteristic features of the occupation and made no claim to draw any conclusions from this as to the knowledge and skills required for the job, as it was felt that these aspects could not be assessed objectively. It left to training managers the task of interpreting the observational data with a view to drawing conclusions about the knowledge, skills and know-how required, and hence about the content of the training needed for each type of job (see below).

This instrument was supposed to be updated regularly so that trends over time could be analyzed, but as it was a very elaborate and costly system, the update was never performed. It was open to criticism, because without the updates it offered an overly static and limited picture of employment, focusing as it did on individual situations observed at a given time. However, the methodology based on the 'standard job' concept served as a model for many activities related to the management of employment and continuing education. Today, analysis of training needs is based on more selective studies limited to certain areas of activity.

In the late 1990s, *Portugal* set up a system to identify occupational profiles and training requirements. It is partly based on the *Répertoire français des emplois*, seeks to build on that experience and pursues equally ambitious objectives, since it is intended to serve simultaneously as the foundation for developing initial and further training programmes, for skills evaluation and certification, and for career information and guidance. It goes further than the *Répertoire* in several ways: it takes an approach geared towards forecasting, it places jobs in their context, and it includes an analysis of the skills required to hold a given job. It

also has some points in common with sector studies, as the job market is divided up by sectors of activity, and the dynamic aspects of each sector are analyzed.

Each study includes an analysis of the sector, a description of the main occupational profiles found therein, the skills they require, methods of recruiting and managing the labour force, and an analysis of the factors likely to influence all these aspects. When this analysis is matched up with the types and quantity of training available, it becomes possible to draw conclusions about training requirements.

As of the end of 2002, this system was still under development, with the participation of employers, labour representatives and training organizations. Twenty-two occupational sectors had been studied and 236 job profiles defined.

In contrast to the preceding cases, *Germany* has no permanent national system for analyzing jobs and qualifications that serves a number of different objectives. However, the Federal Institute for Vocational Training (BIBB) conducts in-depth studies on trends in qualifications and skills as and when requested to do so by management and labour organizations, when the latter are preparing for an update or reform of the various occupational fields covered by apprenticeship.

Until the late 1980s, the *United Kingdom* was characterized by the absence of nationally recognized degrees, the lack of clarity and unity of its vocational training system, and the low skill level of much of the labour force. To address these shortcomings, to bring training closer to the real conditions obtaining on the labour market, and to facilitate access to training for adults, England and Scotland established the elaborate systems known as the National Vocational Qualifications, which may be characterized as follows:

- Training is defined in terms of occupational objectives to be attained rather than in terms of conditions for access, duration of training or type of institution attended.
- The occupational objectives refer to skills or the ability to perform a specific occupation rather than to theoretical knowledge.

*Planning human resources:
methods, experiences and practices*

- These skills are specified in a number of modules, which are grouped in families and classified in several levels. They can be evaluated independently and by various means, not necessarily in training institutions but also in a business context.

This system required a considerable initial investment to define skills, a task performed by specialized occupational organizations under the responsibility of a National Council of Vocational Qualifications. Skills are defined independently of their context (i.e. the company, working unit and individual job), and they may be common to several types of jobs and sectors of activity (which can be conducive to job mobility).

The approach was extended to initial vocational training, with the idea of making such training better suited to the requirements of businesses. A number of countries – Australia and New Zealand, but also some African and Latin American countries – have taken it as a model (Bertrand, 1997).

Translation into training objectives and content

Once occupational tasks and activities and the ways they are likely to change have been identified, the subject of training objectives and content raises at least three types of questions:

- The question that should be (but is by no means always) tackled first, and which stems specifically from the planning of training-employment relations, is how jobs corresponding to the evolution of occupational activities are to be filled. Will an attempt be made to adapt people already in those jobs to changed conditions? Will those who hold other jobs be transferred or promoted? Will newly-trained young people be recruited? The consequences where initial training is concerned are quite different in each case. The analysis is all the more complex in that while jobs frequently change, they rarely disappear altogether, nor do completely new jobs often come into being.
- It is solely in function of this initial diagnosis that the question arises of creating new courses of training or modifying existing courses. It is then necessary to undertake (unless it has been

initiated directly, as in the British case) a psycho-educational type of analysis, in which the components of the job analysis are interpreted in terms of competencies, skills, knowledge and untapped potential.

- At this stage, a classic question arises where training is concerned: To what extent should training have a specific occupational objective, and to what extent should it be of a general nature, aimed primarily at developing the individual's general abilities? We shall revert to this question later; an overall answer cannot be given, for differences in context have to be allowed for. We shall confine ourselves here to reporting the experiences of several countries.

Methodologies of analysis are tending to shift from the study of tasks to the study of skills and abilities, and the skills and abilities in which firms in the modern sector are interested are no longer what they were. Nowadays, employers are interested less in technical knowledge and know-how than in behaviour-related skills: the ability to analyze, to engage in rational discussion, to work as one of a group, to show evidence of creativity, adaptability, autonomy and a sense of responsibility. These elements are given prominence in work currently in progress on the forward-looking management of human resources.

This trend poses several problems. The first stems from the fact that while job analysis and the analysis of technical knowledge is amenable to quite well identified and recognized methodologies, the analysis of these new abilities is more difficult, for it covers more subjective and less clearly defined elements. And these are the skills and abilities most sought after on the labour market.

In this context, one may wonder whether there may be a tendency for responsibility for the initial training system, which falls upon the public authorities, to be shifted on to employers, who will, to an increasing extent, be better able to define and develop the skills and abilities they require. Moreover, the gap between employers and the public authorities in this respect is liable to widen; for while the demands of the former are less clear-cut, they are even more difficult to meet, the more so since most education systems do not customarily

*Planning human resources:
methods, experiences and practices*

pay much attention to the development of behaviour patterns which are nowadays considered desirable.

This analysis raises a final question: the connection between quantitative planning, which has received most attention in previous Chapters, and qualitative planning, which is the subject of this one. Both are necessary, but they are not always closely linked. This leads to a closer consideration not only of planning methods, but also of the institutional mechanisms and practical conditions surrounding their application. This is the subject of the final part.

In *France*, vocational training certification is the exclusive responsibility of the Ministry of Education. It involves a formalized procedure which has changed over the past few years. Various government departments and representatives of the social partners concerned meet in advisory committees and participate in this procedure. After having decided in principle on the expediency of creating or modifying a certificate, these committees (or small groups within them) first define a frame of reference of the occupational activities for which the training in question provides preparation. This frame of reference is often based on descriptions of standard occupations taken from the French job directory.

Then, with a more active participation of teachers, the frame of reference of the certificate defines the skills and abilities which its holder is expected to possess. This definition takes account of how the candidate proves his worth and the criteria on which he will be assessed. This is an important innovation, heralding the transition to teaching by objectives, as compared to the traditional system which was concerned essentially with the acquisition of knowledge that was not necessarily of any real use.

In a final stage, these frames of reference are translated into a set of regulations governing certification, followed by training content and pedagogic recommendations. It should be pointed out that the definition of an occupational profile does not preclude great importance being attached to general education and to the development of the ability to think for one's self and to adapt to circumstances.

In *Germany*, there is more to it than consultation with the partners and consideration of their opinion. Certifications and vocational training programmes are defined by joint agreement among representatives of employers and trade unions in groups headed by the Federal Institute of Vocational Training (BIBB), which also consults the regions (*Länder*), which are responsible for the teaching component of training, while employers provide the essentials of apprenticeship. These different forms of concerted action necessitate numerous meetings of various committees, as well as the participation of experts. The end result is a set of training regulations defining what subjects are to be taught, and the knowledge and know-how to be inculcated. The latest regulations place increasing emphasis on the integration of theory and practice and on key skills. They acknowledge the abilities which trainees must acquire to plan, perform and control a task autonomously.

In the *United Kingdom*, where the National Vocational Qualifications are concerned and in the light of the form of analysis and evaluation which they involve, there is no real problem of 'translation'. The analyses, grouped in modules, already define the skills and abilities required to perform a given task. It is precisely these abilities that are evaluated, not knowledge and know-how. They are evaluated by people with on-the-job experience rather than educators.

This is the most extreme example of training and evaluation directed towards a practical and specific occupational objective. The approach is criticized by some educators, who consider that too much emphasis is placed on practical know-how and not enough on the broader, and sometimes more abstract, understanding required by the intelligent exercise of an activity; it does not leave enough scope for adaptability and does not pave the way for advancement. Its advocates reply that on the one hand they are thinking increasingly in terms of the complementarity of the modules and of their interconnections, and on the other hand work is in progress to bring the curricula of technical schools in line with the modules of occupational skills.

*Planning human resources:
methods, experiences and practices*

In the *United Kingdom*, the approach used for the National Vocational Qualifications does not involve translation as these qualifications are already defined in terms of modules that, in turn, define the objective of a training programme: the acquisition of a demonstrable skill. The documents comprise three components:

- definition of the capabilities needed to exercise an occupation;
- skills and knowledge required for this occupation;
- performance criteria for evaluation of these capabilities.

The British approach is attractive in its apparent simplicity and its flexibility, notably from the standpoint of the evaluation and certification procedures for the general public as well as its focus on directly satisfying the needs of companies. The approach has occasioned considerable controversy, however, as it raises a number of issues, including the following:

- Preparing and updating a complete inventory of skills requires considerable investment, which not all countries can afford, and the resulting tool is likely to be very rigid.
- Does this method place excessive emphasis on demonstrable practical skills to the detriment of the more general, and sometimes more abstract, understanding required to perform a job intelligently? And, as such, does it prepare people sufficiently for career development?
- Is there a risk that evaluation procedures – including those of employers – will be overly lax?

III. The lessons of experience

The experiences reviewed in *Chapter I* show that planning is not an exact science and that there are no ready-made solutions to the problems posed by forecasting. Furthermore, the divergences between what is forecast and what actually happens are not solely due to methodological inadequacies, but more to the difficulties encountered when it comes to taking action.

What conclusions can be drawn from this? Can one confine one's self to criticism and scepticism? That is the easy way out often proposed by outside observers and theorists; but those responsible for the planning and administration of education and training are faced with difficult practical problems which have to be solved. They cannot afford not to make decisions, especially in the least developed countries, where these matters are of particular urgency and difficulty by reason of the shortage of resources of all kinds.

There is no simple answer, no universal solution. Planning is not a pure technique, but rather an art of pragmatic adaptation to circumstances. And circumstances vary considerably from one country to another.

After analyzing the factors on which planning depends, and especially the transition from objectives to achievements, the following chapter suggests an approach, stages of implementation, and priorities.

1. Human resources planning today

The shortcomings of forecasting have exposed it to a certain amount of facile criticism, and the idea of planning may seem somewhat outmoded in the light of the prevailing liberal interpretation of a market economy and the collapse of centrally planned socialist economies.

*Planning human resources:
methods, experiences and practices*

Is the scepticism surrounding planning likely to be more marked in developing countries which are more dependent on the outside world and which, faced with inadequate data and lack of resources and expertise, are more aware of how unrealistic many previous attempts at planning have been?

Though the validity of quantified forecasts is open to question, this may be regarded as a question of circumstances rather than of principle; we shall revert to it later.

In any case, bearing in mind that educational decisions are necessarily binding for a fairly long period ahead, and that such decisions have many and complex consequences, some form of planning is seen to be necessary.

Planning does not necessarily mean the adoption of an authoritarian and centralized system embracing all economic activity. It may simply mean adopting rational priorities and making coherent decisions that are binding for the future. Decisions of this kind are, in any case, essential when it comes to financing the construction of schools, creating new streams and recruiting teachers – who quite often will spend their whole working life in the teaching profession. These decisions are indissociable from a consideration of what is to become of those who are educated and/or trained, even if their future cannot be accurately charted. Planning should be regarded not so much as a technique as a permanent process.

Differing circumstances

There is no single approach to planning. Allowance must be made for differences between national contexts and between types of education and training.

Differences between national contexts

These are linked either with the level of development of the country concerned or with its political and education system.

The level of development: the need for human resources planning in the Third World. The need for some form of planning is even greater in developing countries for several reasons. Firstly because their available resources are more limited, and it is important for priorities to be established. But also – and this point is not sufficiently emphasized – because the circumstances of most developing countries are different from those of industrialized countries. Their population growth is much higher, which means that the flow of young people joining the active population every year is proportionally higher in relation to the existing number of people of working age, and that young people account for a significantly higher proportion of recruitment (see, for example, *Figure 1*). The planning of this flow of young people should therefore be given higher priority than in industrialized countries.

This difference is further accentuated by two phenomena:

- The rate of growth in school attendance often outstrips the population growth rate; this is logical in that the least developed countries wish to make up for lost time and try to achieve 100 per cent school enrolment. But this trend has repercussions on other levels of education and exerts a social pressure which – at the secondary, and especially at higher levels – can give rise to growth rates which are out of proportion to the absorption capacity of the economy.
- This is all the more so since the size of the modern sector (which is often the only sector which recruits young people holding formal qualifications) is usually very limited, while job prospects in the public sector are restricted by a shortage of budgetary resources.

If, for example, the situation of an ‘old’ country is compared to that of a ‘young’ country, it can be seen that in the former the inflow of young people amounts to only 3.5 per cent of the working population, while in the latter it represents not only 7.3 per cent of the total working population but also 17 per cent of total employment in the modern sector, which is the sector best able to absorb educated young people.

The combination of these phenomena carries much more *serious risks of imbalance in developing countries* than in industrialized

countries. A certain amount of planning is essential to anticipate and avoid these risks.

But, it may be objected, is it not also much more difficult? Are not the shortage of information and skills, the weakness of administrative structures, and many countries' dependence on the outside world making it more difficult to control trends – factors which reduce planning to a hollow theoretical notion?

Unquestionably, these difficulties are real, which is why it is essential to take stock of what is necessary and possible, and deduce priorities for action adapted to each particular context. There are also factors which make it easier to forecast and plan training-employment relations in developing countries. The under-development of the modern sector makes it easier to identify and analyze. In some countries, the investigation of a few firms suffices to give an outline of the existing situation and potential needs.

Different political and education systems

As noted in *Chapter I*, the attempt to match training to employment is more coherent in a centrally planned system than in a market economy. In the extreme case, a real matching would involve an integral planning of supply and demand, and notably a compulsory directing into the jobs of young people under training. This approach is falling out of favour at a time when almost all countries are turning towards a market economy. This realignment creates difficult problems in some countries, for an education and training system is a complex entity as a result of a set of historical and cultural traditions. It is not possible to sweep away the past and disrupt everything in a short space of time; there must be a transition stage, and it may be tricky to negotiate.

But the market economy can operate in extremely varied institutional frameworks. The difference lies particularly in the degree of *decentralization*.

Lastly, the role of planning necessarily differs depending on training systems and structures. An initial distinction must be made

between countries in which education is mainly public and those (such as the USA, India and the Philippines) where *private institutions* play an important part. Obviously, planning is more important in a public system in which the state is responsible not only for management, but also for financing. Conversely, when education and training are largely in private hands, planning has lower priority. It is also more difficult, because the state has less power of action. But all the same it cannot completely neglect to give direction to a field that is so essential to economic and social development. It has indirect means of encouragement, such as tax exemptions, subsidies for priority schools or subject areas, and quality control, if only by reserving the exclusive right to grant certification.

The particular role of planning for different types of training

The problem of planning does not arise in the same terms in the case of general, technical higher education and vocational training.

Technical education, as the French see it, is not designed to prepare young people for specific jobs; at most it is an initial orientation, normally complemented by training of a more vocational type. Its planning, like that of general education, is based mainly on the reconciliation of social demand on the one hand, and financial resources and pedagogic factors on the other. Social demand may be evaluated in relation to demography (the number of children of school age) and to the flow of pupils from one level to another, which has a certain inertia and is therefore fairly easy to evaluate. The main thing is to predict the intake at the beginning of each level of education.

But planning must not overlook outflows of school leavers to higher education, vocational training, and finally the labour market. As has already been noted, though there is no direct and precise link with employment, there is an overall relationship between the level of educational development and the level of socio-economic development. It is true that educational supply is fairly independent of educational demand, and that there is a certain latitude with regard to the level of education corresponding to a given category of

*Planning human resources:
methods, experiences and practices*

employment. But there is a limit to this latitude, and allowance must be made for pupils' job expectations, even if they are vague.

This analysis is all the more applicable with all the more reason to *higher education*. Though it is not necessarily of a vocational nature, higher education nevertheless normally leads to a job. It is also the most costly level of education. Its planning is therefore particularly necessary. Three special features must be taken into account:

- Higher education is the level of education that requires the most time to bear fruit given the time required to design the curriculum, build and equip premises, and recruit teachers – all before one can begin to deliver instruction to students. One must therefore plan a considerable time ahead; longer than the five years covered by most plans.
- Generally speaking, the higher the level of education or training, the greater the mobility of workers. For instance, the labour market for graduates of higher educational establishments is generally national and is beginning to be international. Thus regional and local planning are of limited value in this case. On the contrary, it would be desirable for small countries with few resources to pool their efforts and plan how to meet their needs through a joint agreement. But the nationalism of young nations has prevented much progress from being made along these lines so far.
- Many countries have a tradition of university independence. This can run counter to the demands of national planning. It is normal for the university to be completely independent in respect of its internal management and teaching, but it should recognize planning imperatives when it is a question of co-ordination with the capacities and needs of the economy.

The planning of vocational training, whether in school or not, should correspond more closely to specific and local needs than the planning of other levels of education and training. In many developing countries, what is called 'technical education' should be regarded rather as vocational training, which should be planned in the light of job opportunities. But the question is complicated by the fact that training for jobs in industry is usually public, while training for jobs in

the tertiary sector is private, because it is less costly and hence more financially worthwhile.

The evaluation of needs and employment opportunities is necessary in both cases, but more so in the former, since the financial repercussions are greater. Where the private sector is concerned, questions of flow control and resource allocation arise differently, for control can only be exercised indirectly by informing families and schools of job opportunities, checking state examinations when private schools prepare pupils for them, official acceptance (supposing a control) of certain types of private training, or recognition of the quality of certain schools, possibly in liaison with a system of subsidies subject to conditions of quality.

In a country like the USA, it is an accepted fact that regulation is exercised by the market. In developing countries, it is to be feared that the conditions of a satisfactory functioning of the market (fully informed protagonists and conformity to the rules of fair competition) are less well met. Complete *laissez-faire* is not desirable, for it can lead to abuses, but the planning of the sector is not easy, for it encounters social pressure.

Institutions, the organization of planning and individuals

The situation varies greatly from one country to another where the responsibility for, and organization of, planning are concerned. These situations reflect the historic and cultural heritage of each country.

There is no ideal model for the organization of planning; here, again, adaptation to the context is necessary. What is clear is that ministries of education usually do not have the vocation, competence or motivation to establish a form of planning which takes into account employment opportunities. In view of the many subjects covered, and especially of the many different points of view arising from the planning of vocational education and training, some kind of concerted effort is essential. It should lie, as far as possible, at different levels:

*Planning human resources:
methods, experiences and practices*

- At the national level, of course. When a ministry of planning exists, it should be the normal forum of consultation. Otherwise, there should be an ad hoc structure which is able to meet regularly, enjoying sufficient prestige and operating permanently, independently of successive plans.
- But national consultation is not enough. The establishment of a closer training-employment relation must take into account the practical realities of the government apparatus on the one hand, and the labour market on the other. Everything depends on the size of the country, the degree of decentralization, and the way the government apparatus works. There is always a risk that the setting up of schools and universities may be subject to political pressures (see below), and it is desirable for them to be counterbalanced by a sufficient presence of employers.
- This presence is also desirable within training schools and universities, for example on their governing boards. Failing this, mechanisms should be provided to ensure a link between employers and educational establishments.

Essential though it may be, consultation is not planning; it is only one aspect of planning. Planning proper involves the gathering of a wide range of information, followed by its consolidation, the definition of the options and orientations open to the decision-makers, and finally the monitoring and evaluation of the results. The Ministry of Education usually gathers and processes data which comes within its own orbit (enrolments and pupil flow), and, where applicable, makes related projections. But it cannot see things in a sufficiently broad perspective, nor does it have the time or the capability of assuming all these responsibilities. The Ministry of Planning should be in a better position to do so, but it risks being submerged in routine work and being unable to give sufficient attention to certain in-depth analyses.

For this reason, it is important to arrange for varied and complementary resources to be pooled in order to handle both the technical and political aspects of planning. Where the technical aspects are concerned, four solutions come to mind: universities, consultants, ad hoc bodies, and independent expertise. In under-developed countries with few resources, having recourse to universities should, in principle, be an excellent solution. It is economical, and can also

encourage the universities to give a practical slant to their work, providing, in addition, an analysis from a variety of angles. But this line of action may run counter to academic traditions, which are not always easy to override.

A recent trend observed in very different countries consists of creating 'observatories' which serve a more modest purpose than that of traditional planning systems. Instead of centralizing the responsibilities involved in a planning process in a single large, ponderous institution, the aim is to assemble information possessed by different stakeholders and to co-ordinate their thinking within a streamlined organization.

This organization may be set up at either regional or country level. Decentralization in the 1980s in France led to the creation of regional 'observatories' of employment and training (*observatoires régionaux de l'emploi et de la formation*, OREF). The aim was to link the various bodies concerned by these problems within a network in order to lay the groundwork for decisions concerning training. More specifically, they are responsible for providing a macroeconomic framework for the analysis of employment trends, co-ordinating forecasting with the national authorities and organizing sectoral studies with management and labour.

This approach has also been taken at national level in less advanced countries, where it is particularly important to pool scarce resources and to co-ordinate the actors involved. One example is Togo, where a project for an observatory of vocational training requirements was financed by the World Bank. This is also the approach adopted, with the collaboration of the European Training Foundation, in a number of north African and Middle-Eastern countries. Algeria, for example, has made plans to establish an 'observatory of employment and training' to assist the training sector. The primary aim of this observatory will be to stimulate debate in order to ask the right questions instead of claiming to provide ready-made solutions.

Many developing countries continue to have recourse to outside expertise. There are serious objections to this solution. If the main difficulties of human resources planning are not technical but socio-

*Planning human resources:
methods, experiences and practices*

political and administrative (see below), it is essential for the greatest possible number of national authorities to be involved and to assume their responsibilities with full knowledge of the facts. All the more so since the educational role of this process is just as important as the conclusions to which it leads. Having this work done by foreigners means relinquishing all the benefit to be derived from it and creates a dependence on foreign expertise. Hence the importance of training national planning specialists.

That said, other forms of institutional assistance can be very useful and are provided by various international bodies, often under regional programmes. The aim of such assistance is not to mount direct operational actions, but rather to provide methodological information and to train senior officials to contribute to the institution-building process. This is the case for various IIEP programmes, the activities of the Turin-based European Training Foundation in the Mediterranean countries, and those of the European Commission for vocational training in the countries of Central and Eastern Europe (Leonardo Programme).

The socio-political dimension of planning

Here, again, the problem of planning lies not so much in defining objectives as in translating them into action (Caillods, 1991). In both cases one is faced with the motivations and interests (often conflicting) of many different partners: political leaders, senior decision-makers, the education authorities, teachers and their unions, businesses and trade organizations, trade unions, and students and their families. Their points of view and the pressures they exert are likely to affect both the definition of planning objectives and their attainment.

Political leaders may have ideological or simply electoral fish to fry. The idea of the democratization of education and the resolve to raise the standard of education are to be found in very different political contexts. They have played, and still play, an important role in the definition of broad educational trends. In many countries which have recently become independent, they are linked with a desire to replace expatriate manpower, which still plays an important part in the senior ranks of the private sector. While this desire is perfectly

legitimate, it is not always easy to evaluate objectively the advantages and drawbacks of maintaining this foreign presence, or of replacing it.

In many countries the planning process has been hindered or distorted because it held political options in question or because it raised taboo subjects. Prospective studies can point to the probable persistence of a high level of unemployment – which is not easy to accept – and raise the demographic problem – which many governments have for long past refused to take into consideration – or the activity of women, which can also be a sensitive issue in countries where the tradition is for them to stay at home and not go out to work.

With vocational training more particularly in mind, Moura Castro and Cabral de Andrade (1990: 349) make a ruthless diagnosis which could be more widely applicable to *education and training authorities* in general: “Most of the criticism directed against vocational training results from the chronic tendency of trainers to work at cross-purposes with trainees and their potential employers ... We wanted administrators to respond to social needs, but this is not how the real world operates. The logic of decisions has to be understood from within bureaucracies. The rules of the game are defined inside organizations. The outside world conditions and constrains but does not determine the incentive systems that influence administrators.”

This overall criticism of the administration deserves to be narrowed down to levels of responsibility and stages of planning. At the top level of *responsibility for training*, if major decisions affecting the broad lines of the structure of the training and higher education system are made in accordance with the internal logic of the system rather than the external needs of the economy, there are good reasons why this is so.

The practical consequences of all the lines of action decided upon depend in large part on the *local authorities* and on those *responsible for the schools themselves*. It often happens that despite directives from higher authorities, the streaming of pupils and the examination pass rate remain unchanged, because the authorities are

*Planning human resources:
methods, experiences and practices*

conservative and because those who set the examinations and decide upon pupil streaming do not easily change their ways of doing things and their own criteria, which are not necessarily those of the planners.

The slow pace at which vocational training meets changed economic needs – which is often deplored, sometimes excessively so – can have at least two explanations.

- The time required for consultation between the parties concerned and the implementation of new curricula and new methods; in France, it takes about two years to define a new certificate and bring it into effect; in Germany, where a consensus has to be reached between the social partners, it can take up to 10 years.
- When vocational training is provided at school by teachers having the status of civil servants, they are appointed for life, and this necessarily limits the possibilities of reshaping training courses.

Here other protagonists come on the scene: *teachers*. They play a two-fold role in the definition and implementation of planning objectives: firstly as members of a professional body possessing a status and defending their interests, and sometimes an ideology, through the intermediary of their unions; and secondly as teachers proper, whose customary teaching practice may or may not correspond to the broad lines which the authorities believe education should take. Consideration of the interests of the teaching profession can influence decisions concerning the creation or elimination of certain courses of training or certain types of training establishments.

These same teachers, most of whom believe in an ideology of democratization, often have individual elitist tendencies. They obviously prefer working with good pupils and are not always prepared to give weaker ones the extra attention they need. They naturally tend to place value on abstract academic knowledge at the expense of practical know-how and manual activities. All these factors have a considerable, even if indirect, influence on the values transmitted by the school and on vocational guidance.

Reference has already been made to the need to bring employers into the picture in defining training needs and objectives. But it must

also be borne in mind that they generally have only a short-term idea of their training requirements. What is more, this idea may be distorted by the prevailing economic situation. In a period of crisis, recruitment is cut to a minimum and only the most urgent requirements (often corresponding to the most highly skilled jobs) are met. By contrast, in a period of growth or full employment, recruitment expands in scope, exceeding immediate needs and constituting reserves of skills.

It would be a mistake to suppose that companies all take the same view of their training needs and expectations. There may be considerable differences between on the one hand small firms, which usually seek immediately usable manpower for a specific job, which supposes previous specialized training, and on the other large companies, which often recruit personnel capable of taking on a variety of jobs; such companies are more aware that, nowadays, no training can prepare a person for employment for the rest of his life. The former companies expect training to turn out a 'finished product', and the latter expect a 'semi-finished product'; they will handle additional training and adaptation to the job themselves, all the more easily in that they have more resources for doing so than small firms.

There can be another distinction between types of industries and companies. Traditionally, banks place prime importance on the level of initial training and the adaptability of the staff they recruit. They take care of vocational training themselves. Industries involving a high degree of technicality (e.g. mechanical or electrical engineering) need personnel possessing specific theoretical grounding and occupational knowledge; they are therefore interested in good vocational training schools. On the other hand, sectors such as the textile and clothing industries (at least in cases where traditional technologies are used) mainly need workers possessing little skill but sound practical know-how. So training schools are of little use to such industries, and they can make do with very short courses of training. For most craftsmen, apprenticeship is still the best way of familiarizing themselves with the job and learning a traditional craft or trade.

*Planning human resources:
methods, experiences and practices*

So one may expect to encounter a diversity of opinions – for each of which there may be a sound basis – which have to be analyzed. The problem is further complicated when firms are represented by trade organizations whose officers are not always the most competent interlocutors, for they may have lost contact with the realities of production.

When they have a voice in training orientations, *workers' trade unions* often have a stance contrary to that of employers. It may be a question of essentially ideological standpoints, such as the fear of exploitation and the take-over of power by capitalism, as has been the case among certain teachers. But it may also be a question of an analysis of the conception of training that diverges from that of employers. Many companies may favour a short-term view and a minimum level of skill to meet specific needs. By contrast, trade unions are concerned with the long-term interests of workers and the development of their potential, so as to give them opportunities of advancement. They therefore tend to be more demanding where the level of training is concerned; in Germany, for example, the unions want business training to last at least three years, while employers would, in many cases, settle for two years.

The aspirations of *young people and their families* obviously depend on the socio-cultural context. Resistance to education in traditional rural areas is doubtless rare nowadays, but it still exists with regard to girls. Moreover, the segregation to which girls are subjected when it comes to vocational guidance in the area of certain careers is, without doubt, an almost universal phenomenon.

But, as mentioned in connection with social demand, an increasingly important role is played by the pressure of demand for more and more education and training. No doubt it could be said that this pressure is stronger in proportion as the social status and level of education of the parents are higher, as is the case where social demand is concerned. The most privileged social classes are the most aware of the profitability of investment in education, and they are the best placed to bring effective pressure to bear on the authorities, while it is

difficult for underprivileged people and those living in isolated regions to make their voice heard.

To sum up, human resources planning is more than just a technique, and even the best-laid plans can fail to get off the ground unless:

- Sufficient account is taken of the conflicts of interest and the potential inertia and bias inherent in any training system. The necessary consultation already referred to may help, but it is not always enough. There are instances where a political resolve is necessary to override certain interests.
- Effective administrative arrangements are set up to enable the orientations decided upon to be put into effect and the results to be evaluated. We shall revert to this point.

The technical requirements of planning: the data needed

The practical possibilities of planning do not depend solely on the context and on technical considerations of the choice of methods. They depend just as much on the data available, the sources from which they can be obtained, and how they are structured and presented. This is one of the main obstacles encountered by developing countries which lack information systems and reliable material prior to making a diagnosis.

Data

Planning training-employment relations requires, so far as is possible, three types of data: on the training flow, on employment and the labour market, and on the transition from school to work.

(i) Training flows

We are concerned here not with numbers, but with outflows. In the education system, these correspond to pupils who leave school at the end of a stage of education, as well as those who drop out during a stage of education. Any education authority should be capable of completing the classic table showing, grade by grade, the rates of promotion to the next grade, repetition and drop-out.

*Planning human resources:
methods, experiences and practices*

The data thus gathered on the output of the education system are necessary, but not sufficient, if we are concerned with the flow of school leavers entering the labour market. It is the net output flow that has to be quantified, or at least evaluated; that is to say, the flow after deduction of:

- re-entries at higher levels of the education system;
- periods spent in other forms of public or private training;
- so far as possible, the proportion of school leavers (mainly girls) who do not seek employment and who, for statistical purposes, are considered as inactive.

(ii) Information on employment and the labour market

Comprehensive planning should ideally have access to information on:

- The breakdown of employment by sector of economic activity: where the analysis of changes and forecasts is concerned, this approach is necessary because it is usually incorporated in macro-economic models. It is also at this level that it is easier to establish the link with technical and economic changes.
- The breakdown of employment by occupations and levels of skill, which is almost unavoidable, since the structure by sector tells us nothing of this subject.
- The composition of manpower by age (which affects the need for replacements), by sex (which can be related to the level of activity), by nationality (in so far as the national policy is to replace expatriate executives by nationals), and by type of training received.
- Occupational mobility. This comprises three components of equal significance:
 - Geographical mobility has to be taken into account only if there exist geographical imbalances constituting an important factor in the planning problem.
 - Changing employers without changing occupations is a significant indicator of the state of the labour market, but the net result is zero where recruitment on the basis of skills is concerned.

- Changing occupations, which usually carries little weight (except in certain countries where it affects teachers, for example), and especially promotion, play a much more important role in the estimation of the needs and the absorption capacities of the economy. There is sometimes a tendency to overlook the fact that a considerable proportion of the recruitment of executive and skilled personnel is accounted for by the promotion of individuals in lower grades and not by school leavers who have attained the required level. This is particularly true in the case of supervisory personnel in industry and the service sector.
- Lastly, income is an important factor in understanding how the labour market works, what motivates young people in their choice of job, and also, where applicable, in the analysis of rates of return.

(iii) The transition from school to work

This information relates to the circumstances under which school leavers enter the labour market (the kind of training they have received and the jobs they enter), and also the circumstances under which employers recruit different types of manpower for different types of jobs.

This is, of course, what should be known ideally. But all the information does not have equal priority, nor can it be obtained with the same degree of accuracy. Everything depends on how sophisticated the planning process is and on the sources available. In many cases, one has to settle for estimates.

Sources of information

- (a) Calculation of the number of pupils enrolled in school doesn't prove too problematic, as the pupils are easy to identify and lie in a clearly defined context.

Complications arise in passing from one stage of education or one sub-system to another, and especially when it is necessary to record the outputs of other training systems (run by the ministries of

*Planning human resources:
methods, experiences and practices*

agriculture, health, labour, etc.) and calculate the net outputs from one system to another. The government departments concerned do not always have the data, and adjustments have to be made. Further complications arise when part of the training is provided by employers who are reluctant to give information about their activities.

- (b) It is very much more difficult to gather and analyze data on employment and the labour market. The reality that has to be grasped is much more complex and intangible, the information to be gathered is more varied, and the sources pose problems of reliability and coherence. Most of the sources lie outside the field of training and correspond to a different goal, and it may be necessary to seek additional specific information.

The primary source of information is obviously the *population census* in so far as it is exhaustive and provides data that can be cross-checked and cannot easily be found elsewhere (age, sex, nationality, level of education, and occupation). Of course, the real coverage and the quality of the responses may not be quite satisfactory. But the main problem is the interval between one census and the next, which means that the information available is often outdated.

A second statistical source is to be found in *administrative records* (of the Social Security Department, for example). This is potentially the best source of information in so far as it is permanent and can be regularly followed up. In developing countries, difficulties tend to arise as a result of gaps in the records and delays in updating them, and lack of communication between one department and another. Nevertheless, an improvement of these records and of their conditions of use is a line of investigation worth exploring.

A third source of information can be provided by *regular administrative surveys*. They may be conducted either among businesses (by the Ministry of Labour for example), or among a sample of individuals (which is generally the responsibility of the Office of Statistics). One has to know the purpose of such surveys, the type of information they make available, and the quality and representativity of the responses.

Where *employment in the public sector* is concerned, the budget gives information on jobs, but it does not give a true picture if some of the jobs budgeted for are not actually filled, or if a high proportion of the personnel is seconded to other posts.

It may be necessary to seek details of the numbers employed in the ministries or departments concerned.

There remains the difficult problem of employment in the ‘*informal*’ or ‘*unstructured*’ sector, of which much less is usually known. This point will be dealt with.

In contrast to the foregoing, information on entry to the labour market is not obtained from permanent and independent sources. It is gathered through specific surveys which, as was seen in *Chapter I*, attempt to evaluate the efficiency of the education and training system and possibly the factors governing the motivation and vocational choice of young people.

Organizing the data: the problem of classification

It is not sufficient to gather data; it must be assembled in usable form. This is not a problem where the number of pupils enrolled in schools is concerned, but it is when it comes to breaking down these numbers by type of training, and even more so when jobs and skills have to be analyzed. The data must fit into a system of classification or nomenclature.

Training is usually classified *by level* and *by speciality*. Looked at purely from an educational angle, in terms of numbers or the evaluation of the level of training of the population, the classification *by level* simply reflects the structure of the training system. If, as is the case here, we are concerned with the level of skill in relation to the job, we come up against the ambiguity of the notion of level of skill. Does it mean the skill of the individual (determined by the training received), or the skill required by the job (determined by the nature of the job)? As has been seen, the two do not necessarily coincide, and this was one of the major difficulties encountered in seeking to establish an automatic link between training and employment.

*Planning human resources:
methods, experiences and practices*

The UNESCO international classification, which is based on training, relates simply to stages of education: primary, lower secondary, upper secondary, etc. The French classification is designed at one and the same time for analyzing the highest level of training and for facilitating relationships with employment. From this point of view, and in the light of the general level of education, the reference to primary education has no justification. There are six levels; the lowest corresponds to all education below the lower secondary stage, the second to lower secondary education, the third to upper secondary education, the fourth to two years of higher education, and the fifth and sixth (often lumped together) to higher education. Many countries use similar classifications based firmly on level of education.

Other classifications, by contrast, attempt to relate to both level of education and vocational skill. For example the European classification, which comprises five levels, defines its second level in terms of both a form of access (compulsory schooling and technical or vocational training) and a type of activity: possession of the requisite skill for a specific activity, together with proficiency in the use of the instruments and techniques necessary for the exercise of that activity.

A classification based on this principle would be ideal if it made it possible both to gather and to analyze employment data and to be used as a training planning instrument, which is indeed its objective. But it creates different problems. Firstly, it goes along with the idea of matching training to employment, and hence raises all the difficulties inherent in that idea which were explained in *Chapter I*. Is the theoretical correspondence it assumes between category of employment and level of training borne out in practice? Can this type of classification serve as a basis for gathering data on employment? If it is a question not of recording observed facts but of planning, who is to decide on the level?

It must not be forgotten that data gathering is primarily the business of statisticians, whose concerns are not the same as those of planners and whose conception of systems of classification is very likely to differ.

For statisticians, information on employment is quite often confined to the numbers of employed and unemployed people and the identification of the sector in which they are active. It is quite easy – especially if the information is provided by employers – to discover how many people are employed, for example, in the timber trade and industry. But that tells us nothing about the nature of their work. Yet an analysis by sector or branch of activity is necessary in order to investigate and forecast employment, for it is only at the sectoral level that it is possible to examine the relation between overall economic data, technical data characterizing each sector, and individual data. But for planning purposes, the number of sectors can be confined to ten, or thereabouts.

It is the classification of occupations that relates most closely to the range of levels of skill and training specialties in which planners are interested. But an occupation is a complex and multidimensional reality; it can be defined in relation to the nature of the work performed, the competence of the person who performs it, the working environment, the status and the social image of the activity in question, and the individual characteristics of the worker.

Statisticians may be interested to varying degrees in one or another of these dimensions. Since the information can be analyzed on the basis of names of occupations (there are thousands of them, and their meanings are not always precise and consistent), statisticians have established classifications. But no system of classification can satisfactorily take all these dimensions into account. Every system is tied more or less explicitly to criteria corresponding to one or another of them, and the end result is usually a compromise.

The most widely used nomenclature of occupations is the Standard ILO's International Standard Classification of Occupations (ISCO) which is designed to facilitate comparisons and exchanges of information and to serve as a model for countries wishing to establish or revise their own classification. It is tied to two criteria: the nature of the job (a category of jobs involving very similar kinds of work corresponding to an occupation) and the skill, defined as the ability to perform the job.

*Planning human resources:
methods, experiences and practices*

The skill can be defined in terms of two dimensions: the level (degree of complexity) and specialization. The level relates to the level of training as defined in the UNESCO classification, it being understood that it is not always acquired through a formally recognized course of training.

This new classification is seen to be close to those already mentioned which were designed for planning purposes. Consequently it has the advantages and limitations of the latter. In many countries, especially developing countries, this is the classification on which national occupational classifications are based.

Two conclusions may be drawn from this analysis:

- While consultation between statisticians and planners is highly desirable, it is unlikely that the latter can impose their conception of job nomenclatures. There is every likelihood that the concerns of statisticians will prevail, and in most countries they seem to give preference to the ILO classification, possibly in a modified or adapted version; it has the merit of lending itself to international comparisons.
- Since no classification can satisfactorily take into account all the dimensions of employment, which is a multiform reality, it is preferable to try to pin down the reality by cross-tabulating several variables. Two cross-tabulations interest the educational planner:
 - Firstly, the cross-tabulation of the occupation, which tells us more about the job than about the person who holds it, and the training the person in the job has received. This information is normally contained in the census, and much more rarely in the results of other surveys; but ad hoc surveys covering small samples can provide sufficient approximations. In this way it should be possible to obtain more reliable and less ambiguous information than by using a single nomenclature compiled in such a way that it assumes a matching of these variables.
 - Another variable, not mentioned so far, is the individual status of the worker: is he/she a salaried employee, an employer, or a self-employed person? This information can be

incorporated in the nomenclature of occupations (the entire French nomenclature is built around these socio-occupational categories). It can also be classified separately if it is considered, for example, that the occupation and the status should be analyzed separately and that an electrician, for instance, is still an electrician whether he is an employee or self-employed. Whatever the solution adopted, this information is of value for planning purposes, especially in developing countries, where it can be assumed that a self-employed person belongs to the 'informal' sector, which means that his/her profile and training requirements are very different from those of salaried employees.

Improving the information system

Planning, as we see it, must be a permanent process, and hence must be backed as far as possible by a permanent system of information and not merely by one-off surveys conducted to meet intermittent needs. Such surveys are costly and produce less satisfactory results; each survey calls for careful preparation, and there is a risk of discontinuity and non-comparability of data from one survey to the next. But it is essential to be able to situate information on a time scale and to capitalize on it, and that demands continuity. However, such a system can only be set up gradually.

- It should be possible to deduce information on the outflow of the education system from the educational statistics regularly compiled by the Ministry of Education. A knowledge of all the outflows of the entire education and training system and the evaluation of net flows raise more difficult problems of co-ordination among the departments responsible.
- The desired information on employment and the labour market is not always available. In developing countries, existing statistics are sometimes criticized for being unreliable, heterogeneous, or too difficult to get hold of. The tendency in such cases is to sweep away what already exists and conduct ad hoc surveys which are expected to answer all the questions that arise; but these surveys are often over-ambitious and their results are not

*Planning human resources:
methods, experiences and practices*

put to good use. Before initiating a new survey, which is liable to be costly and time-consuming, one should make sure that:

- The use of existing data based on a critical analysis would not suffice to answer the questions which arise.
- The objectives set and the information required are sufficiently accurately defined. Before launching a survey, it is necessary to know what use is to be made of its results. One must avoid falling into the frequent error of accumulating a mass of information only to discover that much of it is not essential.
- The necessary resources are available for processing the data gathered. There have been cases of large-scale surveys whose results have remained unused because of the lack of data-processing facilities.

The most economical way of solving this problem is to have recourse to administrative sources, at the same time improving their quality. Here, again, the problem is primarily one of co-ordination between the responsible departments; they must be persuaded to open their files and allow their contents to be used for planning purposes.

In the field with which we are concerned, even the best statistics are liable to be inadequate. There is no substitute for a practical knowledge of companies and the practices of employers, especially when it is not simply a matter of observing and recording, but of analyzing trends. Direct investigations among employers are therefore indispensable for complementing and clarifying statistics through more descriptive elements. Such investigations can even partially replace statistics when the latter are seriously inadequate and when the modern economy is so weak and undiversified that a few direct investigations can suffice to give a rough picture of the situation.

The suggested survey cannot be conducted simply by mailing a questionnaire, to which employers may respond incompletely or capriciously and whose objective they may not understand. It supposes an interview conducted by specially trained personnel. Naturally, the questionnaire should be administered to a sample which, if not

statistically representative (which would no doubt require too many people to be questioned) is as diversified as possible so as to allow for the range of circumstances that may be encountered.

So far, only firms in the modern sector have been considered. But in many developing countries not many people are employed in this sector; perhaps less than in the 'informal' sector. A knowledge of the latter raises several questions. Why give it attention? How can it be defined? How can it be studied? From the standpoint of an overall view of the problem and the establishment of employment policies, a knowledge of this sector is obviously essential. From the standpoint of the planning of training, its utility is questionable, in so far as this sector accounts for very little manpower possessing formal qualifications such as those acquired as a result of higher education and technical or vocational training – except when there begins to be a surplus of graduates who cannot find jobs.

The informal sector is usually investigated by means of surveys, often more qualitative than quantitative, whose objectives go beyond the mere identification of the people concerned and of their training and skills. The Tunisian experience shows that it is possible to have quite a good estimate of employment in the informal sector on the basis of surveys among households (surveys concerning employment, for instance). To enumerate the jobs, it suffices to cross-tabulate a certain number of variables such as the sector and the size of the company.

All these indications point to the importance of presenting the data in such a way as to be able to diagnose the existing situation. Furthermore, the data must constitute a coherent and usable whole. This is the aim of employment and training observatories, which bring together different types of information stemming from various bodies.

The stages of a planning process

Having stressed the specific nature of particular situations, it is difficult to propose a generally applicable approach. At most, some principles of action can be formulated and an attempt can be made to

*Planning human resources:
methods, experiences and practices*

establish an order of priorities. In the case of developing countries in particular, several pitfalls have to be avoided:

- The first is to conclude, on the basis of a critical assessment of available data and resources, that any kind of planning, and *a fortiori* any kind of anticipation, is impossible.
- The second (which may well follow the first) stems from the setting of over-ambitious objectives with regard to surveys, studies, and/or systems of organization, carrying the risk that these objectives will not be able to be attained, or will take so long to attain that any action will be paralyzed.
- The third pitfall is to have a technical study undertaken (possibly having recourse to outside expertise) which it is assumed will provide a complete solution to the problem.

These approaches are not considered suitable because if planning is to serve its purpose, it must be a permanent but gradual process directly taken in hand by those responsible, who cannot expect a miracle solution from external sources, but who must not be discouraged either by the lack of resources.

To every circumstance of available resources and information there corresponds an appropriate line of action. It should always be possible to make a start on the basis of approximate estimates and to refine them gradually as and when new elements become available – provided a critical eye is kept on intermediate results and proper use is made of them.

Evaluation and quality take priority

Before venturing to predict a necessarily uncertain future, it is perhaps more urgently necessary, and probably less difficult, to have a better knowledge of the present. Many countries have only a vague idea of how the training system works, apart from how many teachers it employs and how many pupils are enrolled. The evaluation of the training system is a necessity in itself, however it is undertaken. But it can also be seen as a necessary accompaniment to planning. It can be envisaged in various forms.

- Internal evaluation can relate to the level of knowledge and abilities acquired, or to efficiency in terms of the ratio of numbers enrolled to numbers trained (affected by grade repetitions and dropouts), or again to costs. We are not directly concerned here with these elements of evaluation; it should nevertheless be pointed out that all too often planning is based only on quantitative elements and takes insufficient account of qualitative data. Too often, the expansion of education is at the expense of quality, and progress is only apparent; in actual fact, an increase in enrolments can conceal what is really a regression.

The effects of such a trend necessarily manifest themselves when it comes to external evaluation, for training of inadequate quality can have an adverse effect on the entry into working life of those who receive it.

The utility of setting up a training evaluation system which is not based solely on formal criteria such as examinations which assess mainly knowledge, but rather on an evaluation of the abilities actually acquired, cannot be over-emphasized. Here, again, and notably in the case of vocational training, there should be collaboration with the business community.

- External evaluation is based primarily on the circumstances of entry to the labour market and has recourse to surveys of the kind already described. It is not necessary at the outset to have large-scale observation facilities in order to gain an initial idea of the situation. To begin with, a study can be made of small population samples, giving priority to training courses of questionable efficacy and which create the most urgent problems.

The surveys cannot always be conducted by mail, and it is doubtless worthwhile decentralizing them so as to be nearer the respondents; but if so, it is essential to ensure that the questionnaires and survey methods are homogeneous if the results are to be usable.

A combination of quantitative and qualitative approaches

One of the difficulties involved in human resources planning stems from the compartmenting of approaches. There is a considerable difference between, on the one hand, a quantitative macro-economic approach familiar to statisticians, economists and planners, which gives an overall picture, but one which is based on abstract data that is not always significant and does not truly reflect real situations and the problems they pose; and, on the other hand, the practical but limited knowledge which field workers have of their immediate environment, though they cannot see things in a broad perspective.

There is frequently another gap separating the administrative authorities from the world of business and productive activities. The negative view which the former take of the latter, and vice versa, is usually attributable to ignorance.

Proper planning demands that these gaps be narrowed, not only through more concerted efforts, but also by a pluridisciplinary approach involving a better knowledge of real circumstances. This should be easier in proportion as the country concerned is small (or as the approach is regional) and as the economy is less advanced and hence less complex. For this reason it is suggested that one and the same approach to employers be adopted, not only provide qualitative information, but also to complement and enhance quantitative information, or even replace statistics if they are lacking.

These considerations raise the question of the utility of job analysis for the purpose of planning training. Is the systematic compilation of a job directory indispensable? In most cases, the answer is 'no', if only by reason of the excessive investment it requires in terms of competent personnel, money and time. Moreover, as has been seen, there is a growing need for general training not confined to preparation for specific jobs.

Nevertheless, field investigations are worth undertaking, firstly in order to introduce and develop training content better matched to the changing needs of the economy, and also because they are the best way of making the administrative authorities and instructors

understand those needs, especially when they can be involved in the process. Given that job content is very similar from one country to another, it should be possible to use existing material (such as the French job directory) as a yardstick for testing some of these analyses in the field. These tests can be confined to the most significant functions, and a more consolidated approach can be adopted so as to highlight immediately the types of ability really mobilized in the national context. These qualitative analyses in the field should be placed in a dynamic perspective while an attempt is being made to analyze factors of change and deduce the most probable trends.

From the concept of needs to the concept of manpower utilization

The critical analysis of the manpower approach showed that it is difficult to speak of the economy's 'needs' in respect of skilled manpower, constituting an intangible entity, given the possibilities of interchangeability and recruitment alternatives. This being so, it must also be clear that the economy cannot absorb any Tom, Dick or Harry and that the degree of flexibility is not infinite. It is therefore essential to take account of job opportunities and priority requirements, but from the angle of manpower utilization and the demands of the economy in the light of the practical circumstances of the labour market, and in particular:

- the interchangeability of different skills;
- the varying degrees to which young people find jobs attractive in terms of remuneration, conditions of employment, and working conditions;
- alternative sources of recruitment: initial training, internal promotion, people holding other jobs, etc.

As far as possible, this last point should be expressed in terms of quantitative estimates.

Constructing simple flow models

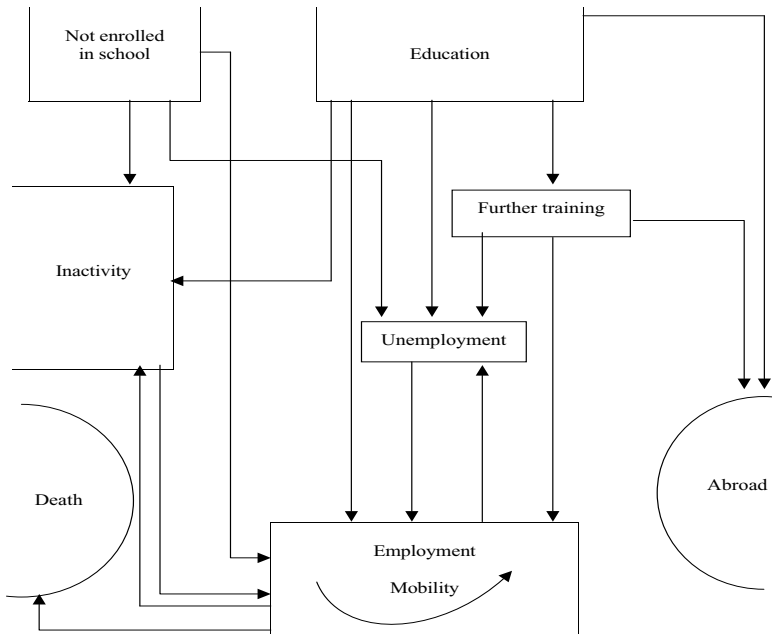
These estimates can take the form of a simplified model of recruitment flows; not only straight from training school but from

*Planning human resources:
methods, experiences and practices*

other sources too. This model, shown in *Figure 1*, has the advantage of giving an overall picture, but it is not sufficient. It should, if possible, be elaborated in several ways:

- In the form of sub-models corresponding more closely to the reality of major sectors. In developing countries, there may be at least three such sub-models: the public sector, the modern private sector and the informal sector. That of the public sector is based mainly on recruitment from the education system (possibly after a period spent abroad) and on internal promotion; the other elements (unemployment and inactivity) can be neglected. The opposite is likely to be true for the traditional and informal sector, which can recruit young people who have no training. Only the modern commercial sector has recourse to the whole range of recruitment flows.
- However useful they may be as background material, models of this type, which are limited to the total number, are not sufficient for purposes of educational planning, which requires that skills associated with training and occupation be taken into account. The ideal would be to construct a similar model for each skill or even each category of occupation, but this would be excessively laborious. It would, however, be worth trying for at least three major categories which occupy a distinct space on such a chart: senior executives (which have to be more precisely defined, but must be specific to each national context); middle-grade executives; and skilled workers and employees for whom lengthy vocational training is normally required.

Figure 1. Simplified model of recruitment flows



Note: The arrows indicate the main flows; the diagram can be adapted to the national context by ignoring the smallest flows.

For developing countries which lack data, the chart has to be simplified. However, in so doing, two problems can be encountered:

- How can all these factors be quantified? This brings us back to the subject of sources referred to above. Only the most advanced countries possess adequate statistical facilities to quantify to some degree of accuracy each of the flows shown on this type of chart – the equivalent of the training-employment relationship referred to previously. Where other countries are concerned, it should always be possible to estimate orders of magnitude, even if only

*Planning human resources:
methods, experiences and practices*

from data intermittently obtained from a few investigations among employers and from information provided by employment and population specialists. The calculation of these estimates can provide a useful opportunity of comparing different sources and of exchanging views among leading authorities in various fields. It is always preferable to make estimates of this kind, however approximate they are, rather than neglect the different flows of mobility and settle for an artificial assumption of the matching of initial training to recruitment. Of course, these estimates are intended only for planners, and must not be circulated as they stand, for they could be wrongly interpreted or be the target of facile criticism. But they must always be subject to revision as and when more and better information becomes available.

- Assuming that the model is produced, it will initially depict only the existing situation, and that is not enough for planning purposes. This situation must be projected into the future.

Future projection of the flow chart

In most contexts it should be possible to find a middle road between the naive adoption of quantified forecasts and the pure and simple rejection of any depiction of the future. Where the future structure of employment is concerned, the following conclusions may be drawn from the critical analysis of past experiences:

- *Forecasting is much more uncertain in some fields than in others.* This is true of demography, which to a large extent determines:
 - The size of the future active population. Those who will constitute this population in 10 or 15 years' time have already been born. For the older people, the breakdown by skills has already been estimated. It is easy to apply coefficients to this population, enabling allowance to be made for deaths and retirements during the period.
 - The intake of the education system. Since the inertia of the system is considerable, it is possible to forecast the number of pupils enrolled fairly reliably on the basis of estimates of social demand. It should be noted that such forecasts are, in

any case, essential in order to programme the construction of schools and the training of teachers.

From these forecasts of school enrolments may be deduced estimates of outputs by type of training. Adding these estimates to those concerning the residual active population gives an initial picture of the population that can hold future jobs (setting aside, for the time being, questions of mobility).

Needs in respect of the recruitment of teachers by broad categories can easily be deduced from the forecasts of school enrolments. In many developing countries these teacher requirements account for a very large proportion of the job opportunities of the education system at the highest levels, since the education system meets its own needs largely through a closed circuit. Relating these elements of information one with another reveals important facts about future training-employment relations where formal educational qualifications are concerned.

Consideration of the case of teachers raises the question of the public sector in general, or rather the government service, for whether business and industrial enterprises are public or private they must obey a different logic from that of government departments. The most characteristic feature of a low level of development is the relative preponderance of civil service jobs. In many cases they account for the great majority of highly skilled jobs, especially those held by graduates of higher educational establishments. It is important to bear in mind that:

- As has been seen, it is precisely to these jobs that the concept of matching is most applicable.
- The government sector should lend itself better to forecasting, with less uncertainty than the private sector. Firstly, by far the principal employer is usually the Ministry of Education. As has been seen, given the inertia of the system, the forecasting of the number of pupils enrolled raises the fewest difficulties. It is easy to deduce teacher requirements from it, except in cases where the high mobility of teachers is an unknown quantity. If the main

outlet of education is teaching, it is at least an element that should be fairly easy to plan.

The rest of the public sector is still concentrated on a few categories which it should be possible to identify, and in respect of which estimates can be made. It should also be possible to make overall estimates of the capacity of the state budget to finance the jobs of civil servants; that capacity is tied in with the national product and can scarcely be increased, but it is affected by the same uncertainties.

- *Forecasts concerning skills and occupations should preferably relate to large aggregates.* To allow for interchangeability and avoid gearing down assumptions and calculations, it is advisable to deal with the evolution of a small number of sectors and skills.
- Rather than claim to predict the future with some degree of accuracy, this exercise should be aimed at *limiting the field of possibilities, using sets of assumptions establishing 'brackets'*. These assumptions should be simple, even simplistic, but must be explained and, as far as possible, justified. They may relate to an extreme situation or to international comparisons, or they may be extrapolations of observed trends.
 - As has been seen, employment forecasts used to be based as a rule on assumptions of economic growth that were often wildly optimistic because they were 'official'. This was a major source of error. If this type of forecast cannot be avoided, it is advisable to adopt parallel alternative assumptions relating to growth rates actually observed in the country in question or elsewhere. The transition from economic growth to the growth of employment involves assumptions concerning productivity. This is often an unfamiliar aspect, and forecasts are very uncertain; but to postulate that no gain in productivity will occur would be an extreme and unrealistic assumption, for it would suppose a stagnation and a lack of competitiveness of the economy. If no economic forecasts are available (in particular because the period under consideration is too long), it is still possible to make reasoned assumptions as to the evolution of employment by sector in relation to observed trends and

international comparisons, and taking account of national priorities and potentialities.

- The structure of employment by occupation within each sector changes very slowly, and its variations do not greatly affect the general trend, which is more sensitive to the growth rate and to the sectoral distribution of employment. It is therefore not unreasonable to take as a starting point the conservative assumption that the employment structure will remain unchanged. From that point another assumption can be made: that levels of skill and the proportion of employees in supervisory grades will improve in relation to standard jobs and international comparisons. It is difficult to suggest structural norms, at least for industry and most of the service sector, but the assumption is valid for sectors such as health (a given number of doctors and paramedical personnel per 100,000 inhabitants) and education (a given number of pupils per teacher).
- With regard to available resources to fill future jobs, a first series of assumptions relates to the ageing of the existing active population. In the medium term, mortality can be neglected; over a longer period, mortality tables can be consulted. The impact of retirements is easy to estimate; if the normal retirement age is taken as 65, a simplified assumption is that in 10 years all those who are now 55 or over will have stopped working; this supposes an estimate of the present structure by age and by major occupational categories.
- Occupational mobility is much more difficult to estimate, for it depends on a variety of factors, some of which are unpredictable. Forecasts can hardly be made in this case, but the assumptions that can be made have the merit of raising problems such as the causes of high mobility in this or that sector and how to remedy them. The simplest assumption is naturally that the degree of mobility initially observed or estimated will not change.
- The other component of resources is the outflow of the training system, and this can also be the subject of contrasting

*Planning human resources:
methods, experiences and practices*

assumptions: extrapolation of the present flow or of growth trends, anticipation of social demand, etc.

- The proportion of school leavers who do not enter the labour market is a point not to be overlooked; this proportion may not be insignificant in cases where many women do not seek remunerative employment. The assumptions that can be made regarding the level of activity of girls can take into account the level of education, which is doubtless the most determining factor; the more educated women are, the more of them enter the labour market.
- After the estimation of the volume of jobs to be filled and the resources available subject to certain assumptions, the essential question of comparison arises. At this stage, to make anticipatory assumptions concerning the matching of types and levels of training to occupational categories would be to fall into the trap whose existence has already been pointed out. But the comparison of these data can be instructive. In particular, it can enable extreme or improbable situations to be detected. For example if the number of graduates of higher educational establishments was seen to be at least equal to that of executive jobs, it would mean either that there was no longer any possibility of promotion for those below graduate level, or that some graduates would have to settle for lower-level jobs. Is this acceptable? Doubts will also arise if the assumptions made lead to a disruption of the structures and balances of existing occupations, for example by relentlessly raising the level of training for a group of occupations.
- *The results must be tested for coherence in order to verify their validity.* Their coherence may relate to the balance between levels of training, groups of occupations, sectoral and overall analysis, or the foreseeable situation of the country concerned and countries that have attained a comparable level of development. There are no rules to be followed; it is a matter of judgement and experience.

Another series of coherence tests concerns the relation between the quantitative prospects of flow trends and the data on which these

prospects depend. In the light of the real circumstances of young people's vocational choices, their motivation, their remuneration, their conditions of employment and working conditions, are the assumptions made likely to be correct?

- This need for an overall view does not mean that forecasting, and planning based on it, must systematically cover all skills in equal detail. The example of Japan shows that major orientations and priorities (for instance the priority given to training in electronics and information technology more than 20 years ago) can be more effective than detailed planning.

In countries whose economy is still not very diversified, it is usually possible to define *practical priorities* where training is concerned. Three priorities can safely be suggested for such countries:

- The maintenance of electrical and mechanical installations, vehicles, and equipment of various kinds corresponds to a permanent requirement that can provide work for a large body of skilled manpower.
- Management is wider in scope than accountancy, and the efficiency of many structures depends on it: industrial and business firms, agricultural co-operatives, and so on. Management training courses are varied and lie at different levels.
- Agriculture is the major problem in most of the least developed countries, but the skills required for its development depend more on the socio-economic and institutional context.
- By combining these different approaches, irrespective of data and structures, *it is always possible to establish future scenarios whose function is more instructive than predictive*. Bringing together those responsible for the different areas concerned to discuss these scenarios will bring out some of the questions which will require standpoints to be adopted or further information to be sought, thereby making it possible to establish the bases of a policy.

Incorporating training planning in an overall human resources policy

This policy should take into consideration not only the education and training system as a whole, but also matters relating to employment, the entry of young people into working life, the mobilization of manpower, and salaries. It should be formulated in terms of alternatives; in many cases, there is no single solution to the problem of the 'needs' of the economy where skills are concerned. Choices can be made between initial and further training, national training and training abroad, the extension of existing training courses and the creation of new ones, and different types of training.

In developing countries, a training policy must necessarily make allowance for adjustments intended to limit budgetary expenditure while stimulating growth, to give impetus to the development of small businesses and the informal sector, to encourage self-employment and the formation of companies, and to facilitate reconversions. In more advanced countries, care must be taken to ensure the coherence of training policies and social policies aimed in particular at combating the exclusion of the most highly skilled young people. The challenge presented by modern economies based on the intensification of competition and recourse to new technologies is not so much the need to train highly skilled manpower, which is in increasing demand, as to avoid leaving out of the mainstream of the economy those who have taken the trouble to adapt to prevailing circumstances.

Incorporating ways and means of action in planning

There is scarcely any need to emphasize the fact that a policy – it matters little if it takes the form of a plan – *is not confined to the definition of objectives*. More important, and also more difficult, is *the definition of ways and means of action*. What can be done to overcome the inertia and rigidity within and without the training system, as described in the previous chapter? How can financial resources be found? What can be done to make the administrative apparatus a factor of development and not a hindrance?

More specifically, an overall policy should encompass:

- A programming of financial resources over a period of several years, not just the current financial year.
- A form of financing. There are only three possible sources of financing: the state, businesses, and private individuals. Most countries already squeeze as much out of the state as they can. Businesses readily contribute to training costs if they see such a contribution as a productive investment. But they cannot be expected to pay too heavily, otherwise their competitiveness would be at risk. In some countries, the duration and quality of education largely depend on a substantial contribution from private individuals; but this should not be allowed to aggravate inequalities.
- The creation of new training courses or the revision of existing ones.
- The availability of premises, teachers, instructors and teaching materials.
- Just as importantly, mechanisms by which pupils, students and their families can be informed of the training choices available and encouraged to follow courses judged appropriate.
- Arrangements enabling teachers and education and training administrators to help in attaining objectives; for example with regard to the number of candidates allowed to sit competitive examinations, the definition of teaching standards and objectives, and evaluation procedures. In many countries the educational and environmental initiatives of the most dynamic teachers are hampered by a niggling bureaucracy. On the contrary, the status and conditions of employment of teachers should be such that their initiatives are motivated and rewarded.
- Measures that can be taken outside the training system to encourage employers to adopt policies relating to recruitment, personnel management, salaries and further training which tie in with the overall policy laid down.
- Provisions enabling these national policy lines to be applied at the local level (school mapping).

Uniting and linking national and local policies

In this context, the objective should be to maximize the process of decentralization and of co-operation with employers (as we have seen in this chapter).

Having emphasized the idea that planning is as much concerned with the implementation of policies as with their formulation, an important question remains: Will young people follow the career paths indicated by forecasts, by national priorities or by their own interest? This raises both a fundamental issue (to what extent should they be completely free to decide, or should they be at least encouraged to follow certain paths?) and some technical problems (how should information and guidance be provided?).

These questions are arousing renewed interest today, notably as a consequence of the OECD's research on the school-to-work transition (OECD, 2000) and on the work it conducted in 2003 in various member countries (Grubb, 2002). This research has revealed the diversity of philosophies that underpin the provision of information and counselling on academic and occupational matters as well as the organization of such services. However, it has also demonstrated the need in most countries for increased resources, reorganization and modernization of these services. This is a necessary condition for more efficient education systems that are open to the private sector and the working world. It is also a means of avoiding the frustration experienced by the many young people who, due to a lack of information and counselling, have followed a career path that has made them difficult to employ or failed to give them satisfaction.

The training system has to be adaptable

Even if the work of evaluation and forecasting referred to above has been properly done, there remains a substantial margin of uncertainty, and the weight of socio-economic and administrative factors still has to be reckoned with. More efficient planning is not enough; it should go hand in hand with a greater adaptability of the training system. This has a two-fold advantage: For the economy, the adaptability of manpower is the response to unpredictability. For

individuals, no specialized training can nowadays suffice as a preparation for a career, and mobility is an increasingly frequent demand.

This adaptability can be regarded from several angles:

- The adaptability of the structures and curricula of initial training, which naturally concerns educators and instructors themselves.
- Closer relations between the school and the firm which participates with it in the training process.
- The assignment of a more important role to further training.

Adaptability of structures and curricula

The rigidity of training systems may stem just as much from the status of the schools themselves as from the structure and curricula of the training courses. It raises three closely interrelated problems:

- The *structure and type of training establishment*; whether it is a public or private school, a training centre, or a company training scheme.
 - The training courses and their *occupational orientation*.
 - The curricula and the degree of *specialization*.
- (i) *Structure and type of establishment*: Structure is less of a problem in higher education than in vocational training. Long ago, an article, which has since become a classic, called vocational training schools to account and judged them incapable of meeting the changing needs of the economy, especially in developing countries (Foster, 1965). Being part of the education system, the vocational training school is indeed liable to operate in closed circuit and have difficulty in developing to meet external demands. It is more costly than general education. In Third World countries, whose modern sector is largely undeveloped, there is very little demand for the type of skills it produces, and those who hold formal qualifications tend to prefer office jobs to manual work.

These drawbacks may be even more pronounced when education and training are in the hands of a centralized government which has

the monopoly of certification, which employs only teachers having the status of civil servants (see below) and which uses vocational training to cope with the social consequences of unemployment. The World Bank nowadays takes a poor view of state-run vocational training systems that are too wide-ranging, badly funded, rigid, and of mediocre quality (Middleton, Ziderman and Adams, 1990).

The opposite solution is to allow companies or specialized centres run by industry to handle vocational training. But this solution has its drawbacks too. The firms concerned (see below) naturally tend to meet their specific needs or to give precedence to know-how directly related to the job rather than to more general abilities. This is not necessarily in the best interests of the individuals concerned, for it may restrict their possibilities of advancement; nor is it in the interests of the economy, which needs wide-ranging skills to an increasing extent. In developing countries there are usually very few firms which are able and willing to take responsibility for training in depth, especially when the launching of new activities is involved. Furthermore, the existence of a large number of autonomous training centres raises problems of co-ordination, which are often unsatisfactorily solved.

Training systems operating mainly under the responsibility of employers' trade organizations, such as SENAI in Brazil, avoid most of these drawbacks and are perhaps the most satisfactory intermediate solution. Set up and run by private companies, they are funded by a levy on wages and are considerably decentralized so as to be adaptable to local needs.

The worst drawbacks of centralized training systems can also be attenuated, for example, by allowing a certain margin of adaptability to the institutions responsible for administering the curricula. This is done in Germany, where although certifications resulting from training are defined in accordance with very cumbersome centralized procedures, the actual training is provided by companies which are well placed (at least the largest and most modern of them are) to ensure that it is adapted to constantly changing circumstances. Other forms of employer-related training will be referred to below.

In any event, here, again, there is no ideal solution applicable to all countries, for the effectiveness of each system depends on the national cultural context. The much-vaunted efficacy of vocational training in Germany and Japan is not solely due to the fact that it is mainly provided by companies. Two other essential factors are involved. Firstly, firms in these two countries have a special conception of their responsibility where training is concerned. In Germany, this is attributable to a long-standing tradition; in Japan, it corresponds to a policy of investment in human resources in conjunction with the custom of life-long employment in large companies. Secondly, it should be noted that vocational training comes *after* a sound general education. In Germany, a growing proportion of trainees have already received 13 years of general education (and the rest 10 or 11 years); in Japan, more than 90 per cent of young people have completed a total of 12 years of general, and sometimes technical education. Obviously the transposition of the practices of these two countries to very different contexts (weak basic training, high mobility of workers, and limited involvement of companies) would not necessarily produce identical results, but that does not mean that the idea is to be rejected.

- (ii) *Occupational orientation:* With regard to the extent to which training is occupationally oriented, it is worth recalling the contrast between training systems (in schools or in companies) designed to lead rapidly to proficiency in a given occupation – and which exist even in advanced industrial countries like Austria and the Netherlands – and education of a more general nature, with the occupational training usually following completion of secondary education and taken care of by the individual companies, as in the USA and Japan. The planning problem obviously arises differently in the two cases. The second leaves more scope for subsequent choice and determines it less rigidly. But it supposes a high level of scholastic achievement (with the corresponding costs) and should require firms to commit themselves to playing their part in the training process.

The question of occupational orientation also arises at the level of higher education, and poses a controversial problem which needs to be examined more thoroughly. Is the role of higher education primarily to produce cultivated individuals capable of performing a

variety of jobs, or is it to train them specifically for occupations? The former role corresponds to the classic conception of the university. The latter corresponds more to the present-day quest for efficiency on the part of governments and the public authorities. This quest may be considered more legitimate and realistic in the case of short training courses than in the case of long ones. In any case, considering the uncertainties of the evaluation of needs and the adaptability and open-mindedness required of executives nowadays, training cannot be very heavily occupation-oriented at the level of higher education.

The policy adopted by a number of developing countries of giving an occupational slant to their secondary education has been referred to in the present chapter.

- (iii) *Specialization*: Assuming that the education system comprises some kind of vocational training, the question arises as to how specialized that training is. The more specialized the training, the more difficult it is for the trainee to adapt to a job other than that for which he/she has been trained. This is a point in favour of wide-ranging training. Furthermore, recent trends in the organization of labour are inclined to throw doubt on the Taylorist tradition of the division of labour (i.e. the rigid organization of work and allocation of tasks). Workers and employees are, to an increasing extent, required to be capable of an overall understanding of an ever more complex environment and to perform a variety of tasks relating to various techniques and functions within the organization. Consequently the modern economy relies less and less on purely technical training for traditional occupations calling mainly for specific know-how.

This prospect leads to giving priority to the development of basic abilities: written and spoken expression and the analysis and solution of problems. At the same time, this ensures adaptability to a variety of situations and unpredictable eventualities.

Specialization has the most drawbacks when it is decided upon at an early stage and takes the form of training courses whose sole outcome is a particular job. The drawbacks become apparent when the corresponding jobs are not available, or when those who have

been trained are not disposed to enter them. Such specialization is also likely to be costly as it is more difficult to match resources to the number of people under training when the training is fragmented. Various more flexible alternatives can be envisaged:

- Gradual specialization stemming from a common core. In Germany, for instance, vocational training in metalworking involves specialization in two stages. The first year is common to all trainees, the second year comprises a specialization in two streams, and not until the third year does definitive specialization leading to specific occupations emerge. Along the same lines, following a common basic training, additional training may be left to local initiative, involving close conjunction between local authorities and employers. Departing from its highly centralized tradition, France adopted this approach in the early 1980s.
- A second solution is to establish a single common core of training corresponding to basic subjects and ensuring a minimum of homogeneity among courses of training. Each region or training establishment is then free to establish the additional components of curricula corresponding to the specific needs of the region or of local employers. This supposes close collaboration with the latter.
- Yet another solution is to be found in modular curricula, which can be assembled in different ways and different orders, giving a wide variety of combinations. This system is very widespread in Anglo-Saxon countries, and strongly advocated by the International Labour Office; it is also commonly encountered at the level of higher education in other countries.
- Another factor of flexibility stems from gradual streaming within the training system in order to try to prevent certain courses of training leading to a dead end. The German system is a good example. Most young people follow vocational training courses normally leading to employment as skilled blue-collar workers or white-collar employees. But from that stage onwards it is always possible to continue or resume a course of training leading to higher formal qualifications, up to the level of engineer or senior executive. This system has three advantages: it makes the training system more flexible in relation to the labour market; it leads no individual into a dead-end situation; and it is a factor of

*Planning human resources:
methods, experiences and practices*

social homogeneity in that it breaks down the divisions that exist between the 'elite' and the operatives in other systems, which incidentally function in parallel in Germanic countries.

Adaptability through lifelong learning

Initial training can neither fully satisfy the needs of individuals, few of whom will exercise the same activity throughout their lives, nor those of the labour market and society, which are continually changing. This self-evident fact has become increasingly clear as the content of jobs changes ever more quickly owing to changes in technology, economic structures and organizations and to globalization. At the same time, most employees are being asked to adapt constantly to changes in their economic activity and often in their job.

For this reason, there is growing awareness of the need for lifelong learning. This notion is the subject of an abundant literature and countless statements of intent, although the impact of the latter has been fairly limited thus far. If the principle of expansion of continuing education is to be implemented, it will be necessary to resolve a series of questions which can be mentioned only briefly here: How can employers, employees and the population at large be encouraged so that the greatest possible number benefit from such training? Who should organize it? Who should finance it? How should it be recognized and rewarded?

These questions are interrelated. First of all it must be agreed in principle that further training must be to the advantage of both employers and workers, and that, as far as possible, it should involve all of the latter. In practice, this is far from being the case; executives receive further training more often than employees possessing the least skills. Generally speaking, the more further training one has had, the more one wants, and vice versa, so that training the least skilled workers means breaking out of a vicious circle by creating an incentive for those who could benefit from it. This incentive can be the possibility of finding a better job, earning more money, or changing jobs if the present one is threatened.

If the principle of the common interest of further training is accepted, there should be no exclusivity, and all the parties concerned – companies, schools, private bodies – must find their place on a possibly competitive market. This kind of action does not lend itself well to highly directive planning, but rather to a policy defining broad lines, orientations and incentives. Such a policy must, in particular, seek a balance between the benefits that further training brings to employers and workers. Employers alone will benefit if the company provides training specific to its own activity which, far from preparing the worker for changing circumstances, tends to tie him to his present employer. If the workers alone benefit from further training, it is because the training was provided either for their convenience or to prepare them for their departure, in which case the employer will have made an investment from which others – and perhaps his/her competitors – will benefit.

These problems can best be settled by social consultation. For the workers, it is important for the training to lead to a recognition of what they have learned outside the company they work for. On this subject, we should point out the fairly recent trend in several countries, notably the European countries following in the footsteps of Canada, to try to recognize and reward not only skills acquired through continuing education regardless of the relationship to their occupation, but also those acquired through work experience. Recognition of such attainments can be useful to individuals, allowing them either to go back to school or to enhance their value in the eyes of employers and the labour market in a way that boosts their career and/or compensation. One of the methods used for this purpose consists of defining a framework allowing individuals to fill out a skills portfolio stating their experience and skills and providing the evidence thereof.

This promising approach has often remained at the experimental stage and is not easy to scale up. It requires considerable work on the part of individuals who must draw up a portfolio and subject it to critical analysis. Moreover, it runs counter to the traditions of the education system which in many countries tends to give greater weight to recognition of academic attainments, if only because the latter are easier to evaluate. To this end it is important to make provision for the loss associated with a possible departure at the end of the training

course. At the same time, a number of firms are beginning to realize that it is not necessarily in their interests to bind workers by training them too specifically; if a crisis occurs, it is better for the latter to be able to reconvert. In other words, it is increasingly apparent that the further training policy must be incorporated in an overall employment policy.

Similarly, a sharing of costs between employers and workers (an agreement that part of the training will take place outside working hours) would seem to be a solution to the problem of financing. The state can require firms to pay a contribution – for example a percentage of the wage bill – but it is important that this should not be seen as an additional tax and that firms are really convinced that training is a productive investment for them.

In various countries, there is an observable tendency to establish links between initial and further training, training at school and in the company, individual effort and the contribution of employers. Some employers encourage their staff to attend training courses leading to technical or university diplomas and enter into agreements with educational establishments so that these objectives may be attained, taking account of occupational experience and alternating theoretical and practical instruction.

The adaptability of the teaching profession

Training schools can adapt to circumstances only if their teachers themselves are able to cope with changing training requirements and hence changing curricula. This problem scarcely arises in general education, where curricular changes make no great demands on teachers. In vocational training, however, changes in techniques and in the economy can entail not only a radical transformation of knowledge and know-how, but also important modifications in the distribution of subject matter among teachers. The problem is a crucial one in countries and institutions where training takes place in school and where teachers have the status of civil servants and enjoy life-long security of employment. What is to be done if there is no longer any need for woodworking instructors but many more teachers of information technology are required? Conversions between such dissimilar specialities are unlikely. In such a situation there is little

point in making detailed forecasts of needs if there is no way of adapting the training system accordingly.

This problem does not arise in countries like the USA, where all that has to be done is to terminate the contract of teachers who are no longer needed. In many countries there is a trend, especially where higher education and vocational training are concerned, towards arrangements enabling regular teachers permanently working in the school to be employed simultaneously with instructors taken on for a specific purpose and often drawn from outside firms which are their principal employers. All kinds of arrangement are possible, especially those involving part-time work, and are being developed. They doubtless represent the most satisfactory compromise, bearing in mind the fact that instructors from the world of business and industry are not necessarily any better than others, but assuming that their more practical experience will complement the instruction given by professional teachers who are better trained in teaching techniques.

This is one of the reasons why co-operation between schools and employers should be developed.

Co-operation between schools and employers

Consulting employers or their representatives on training needs is one thing (as we have seen above); bringing business and industry into the training process is another. They may be brought in several ways.

The best-known way is that favoured in Germany, Austria and Switzerland. It is called the 'dual system', and consists of alternating periods of instruction (at least one day a week) with periods at work. In Denmark, the consecutive periods last several months. This system brings training into line with employment. Firstly, in so far as the curricula are, to a certain extent, flexible, it allows latitude for firms to adapt training to real conditions of employment. It gives young people practical experience of the world of business and industry. Lastly, it makes it easier for young people to fit into working life and helps to reduce unemployment among them, because firms usually recruit from among trainees.

*Planning human resources:
methods, experiences and practices*

The dual system is also instructive: firstly because it helps to create incentive for training (the trainees know that they have a better chance of getting a job if they have proved their ability); secondly because it offers the possibility of comparing and mutually complementing theory and practice. An increasing number of countries are seeking to adopt the practice of alternation.

But for alternation to be a reality there must be a real and close link between classroom training and training on the job; this is not always so in the dual system, insofar as the two institutions concerned are completely separate and their co-operation depends largely on the willingness of both of them. Furthermore, the trainees must be properly handled by the company in which they work; the stages of advancement of training and the results to be achieved must be defined, and assistance must be provided by competent and motivated tutors. The company must consider its contribution to this training not as a burden to be borne, but as a long-term investment and a natural responsibility. This is the traditional Germanic way of regarding it. It is much less likely to be seen in that way in a country like France, where the development of alternation is a declared objective of trade organizations and a few large firms, but where it is not certain that the majority of companies are prepared to adopt the system.

Without going as far as alternation proper, attempts are being made in a number of countries to develop in-company training courses with similar objectives, especially at the level of higher education and management training. But this raises the problem of the intake capacity of the companies or employers' organizations concerned. The limit of this capacity can indeed soon be reached, and with it that of the possibilities of providing the trainees with practical experience on the job without interfering with the operation of the company or organization concerned. One of the conditions necessary for the solution of the problem is the spread-over of courses, which supposes flexibility on the part of the training bodies; it is up to them to adapt to the host organizations, and not vice versa.

Another advantage of co-operation between the school and the employer is that it helps to solve the problem of the equipment required for vocational training. With accelerating technical progress it has

become practically impossible for training schools to have access to modern equipment and machinery working under real production conditions, because such equipment is costly and soon becomes obsolescent. There are three possible solutions to this problem.

The first is to send the trainees on an in-company on-the-job course; but this does not always solve the problem, for some items of equipment are too complex and costly to be entrusted to temporary trainees. The second is to use equipment that simulates the operation of real production machinery, but which is not the real thing and therefore is less costly. The third is to persuade the firm to make equipment available, possibly in the framework of a wider co-operation involving the assistance of instructors and making it possible to train personnel for very specific purposes.

Co-operation between schools and employers can incorporate various forms of mutual exchanges; the company can make equipment and instructors available, but the school too can provide instructors. It can also carry out research, experiments or trials which many companies, especially small ones, do not have the resources to undertake themselves.

This kind of co-operation can also be seen to hold considerable potential as well as posing a number of problems. These problems arise even more acutely in developing countries where only a small number of firms are capable of providing training and where there are very few competent senior staff available to supervise trainees. But that is no reason to neglect the exploration of this type of solution, for the gap between the world of training and the world of employment is often greater in such countries than in industrialized countries, so it is all the more important to bridge that gap.

If this lengthy account were to be summed up in a few words, the following points should to be highlighted:

- Some form of planning is indispensable to give direction to and manage the complex but essential system constituted by all the activities involved in education and training. But it is indispensable

*Planning human resources:
methods, experiences and practices*

- to varying degrees and under very variable conditions from one national context to another.
- Our conception of this planning has changed considerably over the past 20 years or so. Nowadays it is not so much a question of quantifying what has to be attained up to a specific future date as of analyzing possible trends and their socio-political, financial, technical and administrative implications in order to establish targets and ways and means of attaining them.
 - At a time when the future is becoming increasingly uncertain and there is a growing awareness of the difficulty of translating plans into achievements, the major concern must be to establish a reactive system more adaptable to change, and to define the corresponding mechanisms and methods.
 - This conception involves, in particular, a greater decentralization of decision-making and a more concerted effort by the numerous partners concerned in the choice of lines of approach and the implementation of ways and means.

The function of planning is notably to facilitate consultation which should help to anticipate the future more accurately and enable more effective adjustments to be made; it will also ensure cohesion between major orientations, decentralized decisions, and achievements through the regular evaluation of results.

New technologies and globalization

In education, as in many other fields, recent literature is dominated by two topics: the impact of the new information and communication technologies and that of globalization. These two subjects are interrelated in several ways: New communication technologies are an important factor driving globalization and, conversely, it is due to globalization that these technologies have spread so quickly. These developments have three types of consequences for the problems addressed in this volume.

- (a) First of all, it is clear that globalization and new technologies are contributing to the intensification of competition at all levels: between countries, between companies and between individuals. Competitiveness – again at all these levels – is not based solely

on the cost of labour, which would give the advantage to the poorest, but at least as much on qualifications, which means that training is increasingly crucial. While new technologies tend to eliminate the simple, repetitive tasks usually carried out by unskilled labour, well-educated personnel are vital to the production of innovative, high-quality goods and services that have high added-value and are competitive on the market. Moreover, the more rapid turnover of technologies means that skills become obsolete more quickly, making it all the more necessary that lifelong learning, which is mentioned elsewhere in this volume, become a widespread practice.

Heightened competition and the restructuring which it entails also have other, more negative effects. These trends are, to some degree, responsible for increased unemployment in many countries and in particular for the development of atypical forms of employment, characterized by flexibility, instability and uncertainty. These changes are first felt in terms of employment, but may also have indirect effects on training. Increased instability and job mobility can dissuade the private sector from investing in training, as can the risk of losing employees to other employers (ILO, 1998).

An overall trend towards increased disparities between countries and between individuals is already visible, and, in a context of free competition, may well become stronger. This disparity may affect training, employment and incomes simultaneously.

- (b) This raises the problem of the growing interdependence of economies, policies and cultures. As a result of globalization and interdependence, countries are no longer sheltered from international fluctuations and have decreasing control over their growth rates, with all that this entails for budgetary resources in particular. With regard to the subject of this volume, this context only increases the uncertainties concerning the future and the difficulty of forecasting.

Interdependence also means that almost all countries are subject to the influence of major international trends which are currently moving in the direction of a reduced role for the state, liberalization and the

*Planning human resources:
methods, experiences and practices*

freer play of market mechanisms, privatization and decentralization. This influence can be diffused to the extent that it results simply from discussions and meetings between representatives of different countries, for example within certain international organizations. In its minimal form, it may be regarded simply as the effect of fashionable ideas. It can also, however, take on a much more concrete form when it is tied to financial or technical aid, as countries may be required or pressured to adopt such measures as a condition for receiving aid.

The role of the central government may be reduced as a result of either limits on government resources or deliberate political choice. It may be assumed that the analyses contained in this work run counter to this trend as they assume that government will play an important role. However, two important distinctions should be made:

- Although a certain number of policy guidelines and decisions must be co-ordinated at national level, they need not all come under the central government. It is advisable to delegate many of them to the provinces, regions, districts and municipalities. Thus, we should speak of the role of government in general rather than that of the state.
- Maintaining, or even strengthening, the role of government can be compatible with limiting its scope of action. This is the current conception of governance, which implies that authorities generally, and the state in particular, play primarily a role of guidance, leadership and co-ordination, but are not necessarily responsible for implementing policy orientations.

From one country to the next, a broad range of stated policy leanings and practices that follow this trend to varying degrees can be observed. In education, a trend towards privatization might result from political decisions or from limits on central government resources. This can lead to encouraging the privatization of certain segments of the education sector and the expansion of private provision. More often, particularly in Great Britain and the USA as well as in the countries under their influence, market mechanisms play a stronger role in school management: Schools have increased responsibility for their own management and fundraising, funding may

be allocated in proportion to growth in their student bodies, and competition may be encouraged.

- (c) The use of new technologies in education and training is undoubtedly growing, but it is possible to adopt several different points of view on the pace of this growth. On the one hand, one might expect a boom in learning through new technologies, particularly over the Internet (e-learning), in initial and particularly continuing education. This could have several consequences. The learning process, becoming more informal and virtual, would be decreasingly subject to any form of institutional control on student numbers, flows, and the forecasting of these factors. The content of education would increasingly be based on a competitive and market-oriented approach, which would open the door to internationalization and possibly to global domination by multinational firms, at least in certain fields. Under these conditions, a planning process couched in national terms and focused on forecasting and guidance of pupils as to the educational institutions they will attend would lose much of its meaning.

Although this scenario has, in fact, begun to come true in certain countries and in certain very specific fields, it is possible to take a far more conservative and opposing view. Proponents would first point out that the less developed countries are still very poorly equipped with new technologies and are likely to remain so for a long time. The real risk is rather a deepening of the digital divide between countries and between social categories. Second, traditional education systems – that is, systems based mainly on the physical presence of pupils and students who will subsequently enter the labour market in educational institutions requiring substantial investment for which provision must be made – may be expected to survive for many years. Finally, it may be assumed that the education sector, which is often marked by conservatism and plays a vital role in the transmission of cultures, will display the strongest resistance to globalization.

There is probably some truth to both of these arguments. The first cannot be wholly neglected, even if it were destined to play only

*Planning human resources:
methods, experiences and practices*

a marginal role and become a reality only in the long term. This is a further illustration of the central idea of this volume: In the field under consideration, there are no universal truths or final answers, but rather an ongoing process that must be approached in a spirit of open-mindedness, pragmatism and constant adaptability.

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