

Planning human resources: methods, experiences and practices

Olivier Bertrand

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Foreword

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 specialised, 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 rationalise the process of educational development have been criticised or abandoned. If rigid mandatory centralised planning has now clearly proven to be inappropriate however, all forms of planning have not been banished. 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.

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 educational 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

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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 purposes of these booklets include monitoring the evolution and change in educational policies and their effect upon educational planning requirements; highlighting current issues of educational planning and analysing 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.

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 five associate editors from different regions, all professionals of high repute in their 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.
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.

One or two associate editors correspond to each heading.

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 to express 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 this booklet. In a very clear and concise manner, the author reviews previous methods of forecasting and analysing 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 adopted to different contexts. The Institute wishes to thank him for his excellent and lucid contribution to the series.

Jacques Hallak
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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 long past, 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 the 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 the debt which makes any attempt at forecasting hazardous. Must we conclude that no attempt should be made to

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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 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, keep an eye on how people who have successfully completed such training fit into the working world, and how the skills required for various occupations change. Educational strategies place more and more emphasis on the quality of training conducive to a greater adaptability of manpower, the permanent updating of skills through various out-of-school educational programmes, and flexibility in the organization of training systems.

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, 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 of the series

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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 leaves the occupational future of young people out of account. 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 coexists 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, and 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, so 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 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 the extent to which 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.

Part one, reviewing existing methods of forecasting and analysing training needs in their historical and national context, is followed in *Part two* by some examples of recent experiences. *Part two* attempts to draw conclusions from these experiences and suggests the possible steps of a pragmatic approach, adaptable to different contexts, to the establishment of a permanent planning process incorporating the follow-up of results.

Part one

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 incorporating the correlation of employment and education as a development factor. More or less rehashed 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 especially 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, too, 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 coping 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 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 analysing experiences based on the manpower approach, this first part reviews some alternative approaches.

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

This approach is well known and the 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 in a hurry may prefer to pass on directly to *Chapter II*.

1. 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 two 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.

Potential job offer 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 four or five years. But this creates a problem, in so far as it takes much longer than that to put an educational policy into effect and for it to produce results. It takes about ten years to establish guidelines, make the necessary capital investments, train teachers, complete a stage of education or training, and bring the trained individuals on to 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 (this point will be reverted to in *Chapter VII*, pp. 116-127).
- 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.

2. The experience of socialist countries with planned economies¹

The former Soviet Union is the most typical example of manpower and education planning. It was part of an overall process of *directive* planning covering all sectors of economic activity and imposed on all production units.

1. In the case of the former USSR, see Ivanov: *Skilled manpower planning, forecasting and training in the USSR* in Youdi and Hinchcliffe (1985). In the case of Hungary, see Timár (1990).

- 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 long ago 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.

This stocktaking led the Hungarian authorities to establish in the 1960s a planning system based on quite different principles from those of the simple mechanical matching of the 1950s. It involved an overall socio-economic approach covering a long period: 15 to 20 years. This approach was not conceived as a mere series of calculations performed by technocrats sitting in their offices. As described by Professor Timár, who was responsible for

its adoption in the sixties, it involves in-depth concerted efforts by specialists in different subject areas and representatives of different fields of activity. Moreover it is in this collaboration, and the realization of the problems facing the various planning authorities, that the value of the system lies, rather than in the forecasted figures which it produces. In other words, it departs from the mechanical approach of an imperative form of planning and comes closer to a more flexible and indicative instrument.

3. The work of 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 to 1975.

The main difference by comparison with the experience of socialist countries with 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.

4. The French experience²

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 slanted on 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, in *Commissariat Général du Plan*, 1978).

In the 1960s and 1970s, the methodology was progressively refined.

- The econometric models on which forecasts were based were improved; the projection model called Fifi which gave only one picture of the final year, without path tracking, was replaced by a multisectoral DMS model giving a variety of scenarios and showing the paths to be followed before the end of the period.
- Occupational structures were analysed with effect from 1965 with reference to the statistical data provided by two censuses and extrapolation of the trends observed, after corrections based on the indications of commissions for each sector of industry. With effect from 1968 an annual survey was conducted among employers in order to analyse the structure and evolution of employment in greater detail. These data, combined with the overall survey of the employment situation and the census, provided a more wide-ranging analysis of occupational trends for the plan prepared in 1975.

2. See the various documents setting forth the plan; also Ahamad and Blaug (1973), and Youdi and Hinchliffe (1985).

- It was also with effect from 1965 that the evaluation of manpower requirements attempted to take account of the need for replacements to compensate for deaths and retirements. It was not possible to take mobility into account until 1975, when data on the occupational changes of a sample of the population over a five-year period had become available.

These methodological improvements were paralleled by a more sceptical view of forecasting, whose uncertainties and weaknesses had become more apparent as knowledge of the subject developed. This resulted in a departure from the initial conception of planning.

In the 1960s and 1970s, "the simple and optimistic problem formulation of the early plans was eroded as more (and more accurate) information became available. Phenomena formerly considered as parasitic, but marginal to the analysis of the problem, assumed such importance that they challenged the validity of the analysis as a whole. (This explains) the gradual transition from an approach based on the *needs* of the economy to a resolutely trend-based approach based on (the continuation of past trends and the analysis of their consequences)". (Goy, in *Commissariat Général du Plan*, 1978).

At the methodological level, this changed view resulted in particular in a reduction of the period of forecasting; after having attempted to cover a long period (1962-75), the only valid planning approach, estimates were confined to the period covered by each plan. These considerations, along with the changing economic and political context, finally led to the pure and simple abandonment of this type of planning and even forecasting, at least by official bodies. More recent work will be dealt with in *Chapter IV*.

5. The applications of the manpower approach in the Third World

The manpower approach has many applications in the Third World, though its value and quality vary considerably. We shall confine ourselves to a few significant examples.

(a) *The case of India*

This country's experience dates back further than most others. Among its noteworthy features is 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, in Youdi and Hinchliffe, 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 less highly paid. 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.

(b) *The case of the Côte d'Ivoire*

This country began to turn its attention to training-employment relations in the late 1960s. Faced with the problem of inadequate

basic statistical data, the *Direction des Etudes de l'Office National de la Formation Professionnelle* invested heavily in a manpower survey (Achio in Youdi and Hinchliffe, 1985).

The information thus gathered provided a sound basis for forecasting in accordance with the manpower approach. It was especially valuable for the projections made in 1982 concerning the evolution of the modern sector up to 1990.

The results led to a number of conclusions:

- In a developing country like the Côte d'Ivoire, consideration of the modern sector gives only a partial picture of employment as a whole and its future prospects. Moreover, there are considerable inflows and outflows of workers (poorly skilled immigrants from neighbouring countries and a large number of Europeans in higher-level jobs) which cannot easily be fitted into the picture and whose evolution is uncertain. The operation was therefore incomplete, and had to be widened in scope, notably by using data obtained from surveys of the informal sector.
- The analysis of future trends highlighted the considerable share of the public sector, and in particular the teaching profession, among skilled jobs to be filled: 68 per cent of senior executive posts in the education sector alone, and nine per cent in other public sectors.
- Given the proportion of young people in the population, manpower replacement needs are of little consequence in relation to the predicted increase in the number of people in employment.
- Comparison of available resources and jobs to be filled revealed an overall surplus where senior grade employment was concerned. At other levels, the imbalance was qualitative, not overall.
- The interpretation of these results raised the problem of the assumptions made as to the relationship between the level of qualification required by the job and the level of training of the job applicant.

(c) *The case of Algeria*³

In 1973, on behalf of the *Secrétariat d'Etat au Plan*, a UNESCO mission conducted a prospective survey of skilled manpower needs and their equivalence in terms of education and training. The period covered was intentionally long (up to 1990), with intermediate stages in 1977 and 1980. The general approach was based on the Hungarian experience referred to above. The estimates related to groups specifically defined on the basis of available data, covering 19 branches of economic activity, 11 training specialities, and five levels of training (*see Chapter VII, pp. 120-124*).

By reason of the lack of statistical data, very approximate estimates were made of occupational mobility, which it was considered essential to take into account.

To estimate the structure judged desirable at the end of the period, the survey made extensive use of international comparisons.

This approach made it possible to propose alternative estimates to those resulting from government forecasts and their extrapolation. But these estimates were made only in respect of overall employment trends and the structure of employment by sector.

They led to the conclusion that at the higher level what Algeria needed was not so much a quantitative expansion as a shift of emphasis in the direction of scientific and technical training at the expense of literary and especially legal training. Coming after a period of very rapid expansion of education following independence, and placed in a long term perspective, the survey clearly showed that the observed rate of expansion could not be extrapolated indefinitely and that the shortage would not last long. On the other hand, it appeared necessary to make

3. For further details, see Bertrand et al 1974; also the reports submitted to UNESCO in 1974 and 1983.

provision for a more rapid growth of technical training for skilled workers and technicians.

Conducted on the basis of insufficient data and provisional assumptions, this survey was mainly intended to pave the way for more soundly based work to be undertaken as and when more data became available and deeper thought was given to the subject.

In 1985 the *Secrétariat d'Etat au Plan* made estimates which it submitted to a group of outside consultants. These forecasts of training-employment trends up to the year 2000 were made for the purpose of exactly matching training to the employment situation. There were two variants, one based on economic assumptions arrived at by econometric methods, the other expressed in terms of social demand.

As in the case of the operation in 1973, it was seen to be difficult for an overall medium term forecast to avoid raising sensitive questions involving a political dimension: the validity of assumptions concerning growth, and also the problem of unemployment, itself linked with the calculation of activity rates and the problem of the activity of women. In other words, the whole question of the form which development was to take, along with its political and socio-cultural aspects, arose.

In the event, these successive operations do not seem to have had much impact on decisions regarding training. Except in special cases, such decisions appear to have been aimed mainly at meeting a very heavy social demand, in the light of resources which fluctuated considerably according to the economic situation.

(d) Other African countries

The Algerian approach was adopted and improved upon by two UNESCO Hungarian missions in Congo and Guinea. Taking an overall view, the investigators did not simply try to detect imbalances in skilled manpower; they placed the subject in the broader context of employment and development. This led to putting emphasis on demographic prospects (notably the activity level of women) and on the differences between urban and rural areas and between the modern and traditional sectors.

These surveys were not confined to the quantitative aspects of the problem. They involved critical assessments of the quality of formal education indicated by statistics and the level of skill actually acquired.

6. 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 the 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, or unemployed, or inactive (*see Chapter VI, pp. 104-109*). 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 that to meet them all that has to be done is to train the corresponding number of people.

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 working, 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 the 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 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.

II. 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.

1. 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:⁴

- 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.
4. What follows is taken in part from a 'methodological note on the analysis and forecasting of training-employment relations' written in conjunction with André Rosanvallon for a UNESCO project concerning Algeria.

- 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).

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 (*Chapter VI*) and of the assessment of the functioning of the labour market (*see Chapter VII, pp.116-127*).

2. 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 (*see Chapter VII, pp. 104-109*). 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 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 (*see Chapter VII, pp. 111-116*).

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 is so far as planning is not an academic desk-top exercise but a largely political process of reconciling conflicting interests and priorities (Klees, in Caillods, 1989).

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

The approaches analysed 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.

1. 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, 1988). 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 worth-while 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 analyse 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 compulsory period must logically be more profitable for individuals than for the community.

This approach has been the subject of a great deal of study, and data is nowadays available concerning more than 50 countries. The most recent assessment (Psacharopoulos and Woodhall, 1988) confirms the conclusions reached in the early 1970s, in particular the following:

- The yield of education is higher for individuals than for the community.

- The yield of primary education is higher than that of other levels, for both individuals and the community.
- The yield of education is generally greater than 10 per cent, the figure above which capital investments are considered worth-while. In other words, investment in education is at least as profitable as the various forms of physical investment.
- The yield of education is on average higher in the least developed countries than in industrialized countries.

The promoters of these studies consider that the results are sufficiently conclusive to make it possible to line up priorities and help to define an education policy and a policy of financing education. 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 analysing, 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, in Caillods, 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, in Caillods, 1989).

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

people who 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 happening.

2. 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 (Affichard and Gensbittel, 1984). Where the content of the questions is concerned, a distinction may be made between purely factual surveys analysing 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 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 (Affichard and Gensbittel, 1984).
- 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 (Sanyal, 1987).

Below are some examples of surveys conducted in different countries and contexts and having *different objectives*.

The IIEP international survey programme

This was a wide-ranging research programme implemented during the period 1978-1984 on the initiative of the International Institute for Educational Planning and with the participation of 21 countries in different continents and at different levels of development (Sanyal, 1987). The programme was centred on higher education, and its objectives were ambitious, namely:

- To gain a better understanding of the interactions between higher education and socio-economic development.
- To identify imbalances in higher education and attempt to correct them.
- To throw light on the variables which may influence entry to higher education and to enable appropriate policies to be defined.

In more practical terms, the idea was to analyse the demand for higher education, the transition from school to the world of work, and the functioning of the labour market. Three ways of doing this were envisaged:

- The longitudinal study of a group of students, graduates and employers. This was considered the most promising approach, but the follow-up of a group of persons over a long period is not easy, and the results take too long to emerge for purposes of decision-making.
- The simplest and most economical approach is to make use of census data, but such data is not always available, not sufficiently reliable, and only partially answers the questions posed.
- The retrospective analysis of the conditions of entry to working life by conducting a survey among a significant sample of students, young graduates and employers can give useful information on training-employment relations and their trends. This method is less ambitious and less scientifically satisfactory than the first one, and was chosen because it was easier to apply and produced results more quickly.

The sampling was done in accordance with statistical methods guaranteeing the representativity of the surveys. Questioning

employers and constituting a sample of individual observations in conjunction with them facilitated the identification of the population of new graduates in employment. But the constitution of a sample of unemployed persons was more difficult, and was attempted only in certain countries. The sampling ratios varied according to circumstances; in the Philippines it was between 5 per cent and 10 per cent of graduates, depending on the firms concerned.

The survey questionnaires comprised closed questions, and were filled in by the respondents themselves, some of whom were also interviewed face-to-face. The questions put covered a very wide range, and were not confined to factual data such as personal characteristics and educational background. They included assessments, opinions and preferences relating to education and employment, calling for graduated replies (e.g. very important, unimportant). The validity of such questions relating to attitudes raises the most difficult problems in surveys of this kind, and special precautions are called for. Another difficulty lies in the reliability of answers to questions concerning relatively long-ago stages in the educational and occupational history of the respondents.

Analysis of the results of these surveys led to a series of conclusions regarding the factors determining the demand for higher education, the functioning of higher education, and the transition from higher education to the working world. Various suggestions emerged relating to planning, but they lie outside the scope of the present discussion of methodologies.

Employer-employee surveys, or retrospective surveys of the transition from school to work

The IIEP has also conducted a series of surveys among firms and their employees which, in common with follow-up surveys, analyse *a posteriori* the entry into working life of graduates and

non-graduates at different levels.⁵ The main purpose was to analyse the working of the labour market, on the principle that distortions in training-employment relations are very often blamed on training, without concern for the employment circumstances prevailing. These surveys were aimed at answering four questions: What are firms' recruitment and employment policies? How do school leavers enter the working world? What factors influence their career path? What determines their category of employment and their salary (to what extent are the latter linked with the characteristics of the individuals and the firms concerned)?

Surveys covering employers and a sample of employees throw valuable light on training-employment maladjustments, showing among other things that employers' criteria of recruitment and promotion are not always related to employees' educational background alone.

The very different personnel policies of multinational corporations in Colombia, the important role still played by expatriates in senior posts in Cameroon, the low absorption capacity of a limited modern sector and the predominant role of a small businessman's environment in shaping the future of his firm, are all factors of imbalance which should give rise to reservations regarding the theoretical quest to match training and employment.

The French national observatory of entry to working life

In the very different context of France, the lack of statistical data on the circumstances of young people in the early 1970s was regarded as a shortcoming in a statistical system which was otherwise quite advanced. The more so since at that time training-employment relations were still seen in a perspective of overall planning. The improvement of this planning supposed a better

5. Atangana-Mebara, J.M., et al (1984); Caillods (1981); Leite and Caillods (1987).

knowledge of the real circumstances of young people's transition from school to work. A few years later, a sharp rise in unemployment among young people made this a matter of even more urgent concern.

The Centre d'études et de recherches sur les qualifications (CEREQ), a public establishment created in 1970 to study training-employment relations, was assigned the task of finding out more about young people's transition from school to work. After a few experimental surveys, it set up the *Observatoire national des entrées dans la vie active* (The National observatory of entry into working life). The creation of this overall and permanent observatory extended and systematized the first surveys of transition from school to work and was aimed at remedying the drawbacks of the various methods described above. The idea was to reconstitute the stock of an age-group and analyse entries into working life, at the same time checking the effects of level of training, length of time on the labour market, and situational factors. This means observing, *over a sufficiently long period*, the annual flow of young people who *permanently leave the education and training system as a whole*. Moreover, the sample must be large enough to be able to assess (in sufficiently detailed geographical terms) the job opportunities made available by a given type or level of training (Affichard and Gensbittel, 1984).

To this end:

- It was necessary to conduct a national survey covering a statistically representative sample of an entire cohort of school leavers, at all levels and between them possessing all specialities.
- Surveys conducted in the year following the date on which young people left the education system were followed by longitudinal surveys revealing the circumstances of the same young people four years later.
- Different types of education and training were studied successively, so as to cover, in a four-year cycle, the whole field of initial training; after which the cycle began again, and comparisons could be made at four-year intervals.

- All the surveys used very similar methods and questionnaires. In most cases, notably the surveys concerning entry into working life, the questionnaires were sent by mail.

The information gathered was purely factual; any value judgement, opinion, or material of a subjective nature was excluded on principle. The main data related to age, sex, family circumstances, parents' level of education, and jobs successively held: type of firm, nature of the work, status and category, and on-going training received.

This system was modified in the early 1980s, it being considered that:

- Training-employment relations cannot be analysed in the same way for people who have received vocational training, secondary school education, and higher education.
- A national survey limited the possibilities of analysis at the regional level, at a time when the emergence of decentralization in France created much demand for such regional analysis.
- A national survey conducted by an official body remote from the respondents and practically unknown to most of them may have lowered the response rate. Response rates are higher in the case of surveys conducted by bodies more familiar to the respondents (Affichard and Gensbittel, 1984).

These considerations led to the setting up of a more diversified and more decentralized survey system.

- The basic survey is now conducted directly by all public and private secondary schools, using a common questionnaire drawn up by the central authorities. It is sent to all pupils who left school eight months previously without continuing their studies. The school itself makes an initial analysis of the results, so as to have an idea of what becomes of its former pupils and of the effectiveness of its teaching in relation to the labour market.
- The regional authorities centralize the responses at their level and make the results available to the relevant research bodies and decision-makers.

- At the third level, the statistics are recapitulated by the Ministry of Education, while CEREQ processes 40,000 questionnaires that are statistically representative at the national level. This represents a sampling ratio of about seven per cent, varying according to types of training, some of them being analysed exhaustively.
- Three years after this first in-depth survey, some of the young people are questioned again. This is now done face-to-face, by field workers; the procedure gives better results than a postal survey, but it is more costly, and this has led to reducing the number of surveys. The purpose of this second wave of the survey is to obtain a complete picture of each respondent's vocational and on-going training activities during the period in question. Analysis over a longer period complements and possibly modifies the picture given by the first survey; some training often leads to an immediate but precarious and ill-paid job, while other training produces job opportunities less rapidly, but the results are more satisfactory in the long term.

Apart from this basic survey covering secondary school leavers, there are other specific surveys among young people who have received different types of education and training, such as higher education and apprenticeship. In the late 1980s regular telephone surveys made it possible to keep track of samples of young people who had taken part in special further training programmes, thereby enabling the effectiveness of such programmes to be assessed very rapidly.

The consolidation of the data obtained from surveys of transition from school to work, educational statistics, and employment surveys, makes it possible to produce a periodical *Training-Employment Report*, which shows how the outputs of various education and training systems (the national education system, agricultural institutes, training schools for para-medical personnel, etc.) are tied in with the recruitment of employees in the public and private sectors – not only people coming straight from completion of their education or training, but also those previously unemployed or inactive. This consolidation is analysed by level of training and by broad occupational categories.

Thanks to this Report, it is possible to analyse the place occupied by recently-trained young people in all sectors of activity where job opportunities exist, thereby assessing the role of initial training in relative terms and the impact of steps taken to channel training and employment.

The experience of Tunisia

On this basis, Tunisia began in 1989 to conduct surveys of ex-trainees of vocational training centres. Initially, a postal survey was confined to a given region and a given type of training. The following year, a follow-up survey covered all young people who had left training centres a year previously.

The questionnaire was sent by mail, and completed by the respondents themselves. The response rate was 65 per cent for the pilot survey and 52 per cent for the exhaustive survey. Additional face-to-face interviews were held with non-respondents to check the representativity of the sample. The questionnaire comprises five types of questions:

- Common questions on identification, education, and present employment circumstances. These questions serve as a filter, to direct respondents to one or other of the three following sets of specific questions.
- The second series concerns only those who are in employment; the questions are intended to identify the job and how it was found.
- The next set of questions concerns only unemployed respondents, and relates to the search for a job.
- The last specific questions deal with non-working population.
- A final common part of the questionnaire relates to subsequent on-going training.

The replies are coded by statistical personnel of regional vocational training offices, who are also responsible for creating awareness of the survey among training centres and trainees. An alternative and more economical solution is envisaged: having the questionnaires completed by the training centres themselves when the trainees come to collect their certificates.

Parallel with these surveys of transition from school to work, other surveys are conducted among training centres and employers (see Chapter VII, pp. 116-127). This survey system is regarded as the first stage of a more wide-ranging system ultimately embracing the whole education and training system and including longitudinal surveys.

Other experiences

Numerous other examples could be cited, such as:

- Surveys conducted by the German Institute for Labour Market Studies and Occupational Analysis (IAB), making it possible to keep track of samples of young people while still at school, or of secondary school leavers holding the certificate of secondary education, who are re-questioned at intervals of three to five years.
- The intermittent surveys organized by British universities to keep track of their graduates, and more recently a Youth Cohort Study, which consisted of questioning by mail a cohort of 16 to 17 year-olds in 1985, and questioning them again in 1986 and 1987.
- The numerous follow-up surveys undertaken in various developing countries with the backing of the World Bank, which encourages governments to develop studies of this type — the idea behind which is much the same as in the case of those undertaken by IIEP; they attempt not only to gather factual data, but also to analyse young people's motivations. But a high proportion of the surveys planned were not undertaken or not completed. Perhaps the problem is that the objectives, methodology and utility of these surveys have not been properly understood? (Psacharopoulos and Woodhall, 1988).

Surveys of this type are developing, but with very different objectives, types of information, and methods of gathering it.

Part two

Recent trends in human resources planning

In this second part, we shall review methods currently employed, mainly in developed countries, for the quantitative and qualitative planning of training.

IV. Forecasting employment and its breakdown by occupations in developed countries

Industrialized countries still make employment forecasts at different levels (national, regional and sectoral) and for various purposes.

1. National forecasts

The experiences briefly recounted in this second part, which differ from the previous ones in respect of their objectives and their scope, fall into two categories:

- Some are confined to forecasting employment and its breakdown by occupation, laying no claim to lead to a planning process based on the idea of matching. They thus escape the most serious criticisms that can be levelled at the manpower approach: the relationship between levels of skill and training, the failure to take remuneration into account, and the contradiction between the existence of a market and the planning of needs. Nevertheless they can be used to give general indications concerning training. They are applicable mainly to industrialized countries.
- Others stem from the matching idea, though they are confined to more restricted fields: regions or sectors of activity.

The case of the United States⁶

This country's experience was not dealt with in the first part, in view of the fact that the USA never went along with the matching idea and always rejected guidelines based on an overall, more or less directive, planning, relying for regulation mainly on the free play of market forces. But even a country where decision-making is as decentralized as it is in the USA cannot escape some form of planning, if only to establish broad guidelines or to determine investments. A satisfactory functioning of the market supposes well-informed protagonists; in this case, to help young people, their families and their counsellors in the process of vocational guidance by giving them information on employment prospects.

Along these lines the United States have over the past few decades acquired an experience of prospective studies relating to employment and occupations. Some features of this work are worth noting.

- Responsibility for it is borne mainly by a public body, the Bureau of Labor Statistics (BLS), an offshoot of the Department of Labor. It has substantial research resources for compiling and updating its data and assumptions, so as to update its forecasts regularly. It uses existing statistical data and an external econometric model. It has no monopoly of its work; other bodies, in particular foundations, work in conjunction with the BLS or in parallel with it for certain categories of manpower (engineers and scientists). A case in point is the Hudson Institute, which in 1987 published a study of manpower in the year 2000.
- The period covered by the forecasts is around fifteen years. The forecasts are regularly updated; for example, the 2005 version recently replaced the 2000 version.

6. See Johnson and Packer (1987) also *Monthly Labor Review*, November 1989.

- The information handled is extremely voluminous and detailed, be it a question of overall econometric forecasts, employment forecasts by sector (more than 200 sectors), or analysis by occupation (400 occupations). This exceptionally high figure is a compromise between the demands of users, who sometimes want even greater detail, and the methodological criticisms of experts, who sometimes point out that too much detail increases the risk of error and runs counter to the trend towards the broadening of skills and abilities.
- 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 of reasoned assumptions made by experts on the basis of qualitative studies and in consultation with professionals possessing practical experience. The starting point for projections for the year 2000 was the cross-tabulation between sectors and occupations in 1988. 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).
- The results are very widely circulated through various channels. They are used notably for preparing a handbook on occupations and occupational trends. They are also the subject of discussions which can have a national or even international impact. For instance, BLS tables showing growth occupations up to 1995 were interpreted in contradictory ways; some emphasized the fact that the highest numbers occurred in low-skilled occupations in the service sector, while others pointed out on the contrary that the highest growth rates related to occupations demanding high skills. Each side drew conflicting conclusions as to the impact of current trends and government

policies. But there was general agreement that the forecasts confirmed the need to raise the general level of training.

Thus, though the United States produce the most detailed forecasts relating to employment and occupations, they are not used directly as a planning instrument but as fuel for social discussion, made widely available to everyone. This is a very different context from that in Germany and the United Kingdom.

The case of the United Kingdom

In the United Kingdom, employment forecasts by sector and by occupation are regularly updated by the Institute of Employment Research (Warwick University) (Lindley, 1984). These forecasts cover 16 broad sectors and 48 detailed sectors under the standard international classification of sectors. There are 22 occupational groups.

The economic factors are estimated on the basis of a macro-economic model borrowed from an outside body (Cambridge Economics), using a number of variables: prices, balance of payments, and of course productivity.

A special feature of the forecasts is that they distinguish between jobs held by women, self-employed as distinct from salaried occupations, and part-time employment. This distinction is explained notably by the fact that there are now more women in employment, and by the development in industrialized countries of atypical forms of employment (part-time and self-employment). It should be all the more relevant in less industrialized countries, where the modern sector is not highly developed and employs few women.

The analysis of the evolution of occupational structures shows that it depends much more on changes in the breakdown of occupation by sector (the sectoral effect) than on changes in occupational structure within each sector (the structural effect).

The forecasts contain no reference to educational level and therefore do not go along with the idea of matching training to employment. The experts who produce them point out several

differences by comparison with the manpower approach in its initial form:

- Even though they may be brought into line with other projections concerning the formal qualifications and skills produced by the training system, this amounts to no more than a signal to which the attention of decision-makers should be drawn. There is no question of directly deducing objectives from it.
- The traditional manpower approach is based on a series of projections worked out on the basis of fixed coefficients, and leaves little room for changes in and analyses of sensitivity. In most cases, a single occupational structure per sector is envisaged. With improved data, it is possible to compare information relating to several periods and to make allowance for exceptional situations such as the very high unemployment and restructurations in the early 1980s in the United Kingdom. The model used takes account not only of trends, but also of the opinion of experts and the results of more qualitative studies. An attempt is being made to establish a network of experts capable of suggesting alternative assumptions and ranges of values for the principal coefficients.
- Whereas allowance for occupational mobility is considered as the weak point of all models, this one attempts to remedy the weakness gradually by using data from statistical surveys on employment.

In a country where planning is not on the menu and where social concertation is limited, the utilization of these projections is necessarily restricted, though they have been published. There are not many official discussions, but this work can give rise to general discussion, for example on the subject of shortages in this or that occupational field; employers tend to blame the training system, while research workers point out the role which employers should play if they wish to attract more candidates for the jobs to be filled.

*The case of Germany*⁷

Germany's economy is unquestionably a market economy, but one in which the Federal Administration and the Administration of the States (Lander) play an important role. Yet Germany has not gone so far as France in its attempts at overall planning, including training-employment relations.

This is not in contradiction with the fact that forecasts concerning employment and skills are more numerous and diversified in Germany. Many public, private and university bodies have contributed to these forecasts. This diversity of supporters entails a diversity of methods employed, so that it is difficult to give a comprehensive account of the subject.

In Germany, as in many other countries, the manpower approach in accordance with the OECD model was adopted in the 1960s. But its use as a planning instrument was abandoned, not only because of methodological objections but also, and more importantly, because this approach seemed incompatible with the individual's freedom to choose his own course of education and his own career (Tessaring, 1982). Preference was then given to approaches making greater allowance for social demand and attempting to set manpower supply against manpower demand, especially with regard to highly skilled manpower. The resulting projections do not claim to be valid predictions of what the future holds; they simply provide material for the establishment of education and manpower policies.

Some conclusions can be drawn from a balance-sheet of forecasting experiences (Tessaring, 1982). First, the validity of the forecasts does not seem to depend on the complexity of the methods used. Secondly, projections concerning highly skilled manpower seem reasonably reliable if skill structures are fairly stable. The lowest skills are the ones most difficult to pin down and predict, because of their diversity and their lack of formalism.

7. Cf. in particular: Clement, W. (1985); Tessaring, M. (1982, 1990).

Lastly, and most importantly, experience shows that forecasts relating to factors of change and the direction in which they operate are accurate, especially where aggregated groups are concerned. But much more serious errors have been made at a finer degree of detail of the evolution of employment and education.

Most of the work in recent years has been done by the Research Institute of the Federal Employment Bureau (IAB), and this gives it the seal of official approval, as it were. In making its latest projections, up to the years 2000 and 2010, this Institute co-operated with a private body, Prognos, in Basel. The approach adopted is based on the manpower approach, with some particularities worth noting:

- The forecasts relate to major types of operations (manufacturing, marketing, etc.) and not to occupations.
- This is to avoid using the forecasts as a way of influencing people's career decisions. Because these forecasts are not considered reliable and valid enough at the individual level; individuals can succeed even in occupations offering statistically few opportunities. It is also feared that massive conformity to the results of the forecasts (because they are regarded as emanating from official bodies) may have the effect of reversing the future trends.

Seen from the standpoint of other countries, where forecasting is a purely technical operation and is outside the ken of the general public, these concerns may seem surprising.

Recent trends in France

After the abandonment of the manpower approach by the body officially responsible for forecasting (INSEE) in the 1970s, a demand for forecasting arose once more in the late 1980s. It stemmed notably from new bodies responsible for giving thought to the future relationships between education and the economy which will be dealt with in what follows. These bodies assigned a consultant, BIPE, the task of undertaking statistical studies of an econometric nature in order to try to estimate the broad

characteristics of the employment situation in the year 2000 and what conclusions could be drawn where education was concerned.

This work has served as a reference for various reports proposing the broad lines of an educational policy. It relates mainly to the level of training and gives only very general indications concerning occupational groups. The main idea is to fuel the discussion on major guidelines, and notably on the proportion of pupils required to reach the level of the *Baccalauréat*. The argumentation also takes into account the important work done by the national education authorities in 1987-1988 on the evolution of pupil outflows up to the year 2000. But this is not, properly speaking, a form of planning based on the manpower approach.

At the methodological level, it should be noted that the latest projections, formulated in 1991, largely counter the criticisms levelled at the previous version and at the manpower approach by making full allowance for occupational mobility. The main differences between the two sets of projections lie in the assumptions concerning the respective importance assigned by employers to the recruitment of young people and the promotion of existing staff.

In 1990 a Ministry of Industry report concluded that a real planning of higher education and training, based on a better analysis of the needs of the economy, was called for. The report cited as an example the BLS forecasts in the United States. A Working Group met in 1991 and reopened the discussion on the timeliness of resuming a systematic forecasting programme incorporating both quantitative and qualitative studies.

The emphasis so far placed on quantitative forecasts should not cause us to lose sight of the work done in the 1980s on producing scenarios of a more qualitative nature, deriving more from prospection than conventional forecasting. (*Commissariat Général du Plan*, 1991). Parallel with this trend, which ties in with the contents of Part III, planning is taking on a more practical aspect, in that it is concentrated more at the regional and sectoral levels.

2. Regional studies

Two examples will be given of the regional and local approach: one of them taken from France, traditionally a highly centralized country which is beginning to decentralize; and the other from Anglo-Saxon countries, which have always typified highly decentralized countries.

*The case of France*⁸

The earliest regional approaches to planning date from the seventies, and developed in the eighties as decentralization proceeded. They were based on the manpower approach and the idea of matching, and sought to define, both qualitatively and quantitatively, the types of training needed in the medium term at the level of a given region.

Parallel with this, diagnoses were made of particular areas or specific population sectors (young people in particular).

But as we have seen, preparations for the VIIIth Plan challenged analyses in terms of matching and focused attention on the importance of a regional approach that could be regarded as a substitute for the quest for matching by enabling policies more closely in line with reality to be co-ordinated. Emphasis was placed on the value of gathering and interpreting a coherent body of information under regional responsibility.

These proposals were put into effect from 1980 onwards with the introduction of regional vocational training schemes. They were intended as instruments of information, co-ordination and forecasting; rejecting methods based on a strict relationship between each type of training and each type of job, precedence

8. What follows is a summing-up of the activities of the Working Group for the Regional Analysis of Training-Employment Relations: Problems and Methods (CEREQ, 1990).

was given to the analysis of situations and the workings of the labour market. The schemes embraced economic activities, employment, training, and individuals. The implementing of the decentralization programme in 1982 strengthened their role in helping to define a regional policy of vocational training. Mechanisms for concerted action among all those concerned were subsequently set up and became known as Regional Observatories.

The Working Group constituted to examine the methods of analysis that could be used by these Regional Observatories began by critically taking critical stock of approaches based on the idea of matching. But it noted that since these approaches had been abandoned at the national level, nothing had been worked out to replace them. The Group therefore concentrated on instruments for analysing the interactions between the production of knowledge by training systems and the utilization and recognition of such knowledge in the production system.

The case of Anglo-Saxon countries

In the United States and the United Kingdom in particular, responsibility for education and training is traditionally highly decentralized (*see Appendix III*). This means that it is not easy to make an overall assessment of the methods used to evaluate training needs. But in the United States, there is a heavy demand from regional and local bodies for forecasts of employment and occupations in order to help them to plan courses and provide vocational guidance for students. In the United Kingdom, the recent creation of Training and Enterprise Councils has raised a problem of competence and methodology in establishing training guidelines at the local level, responsibility for which rests to an increasing extent on employers. As in France, these regional and local structures are seeking appropriate methodologies. The solutions adopted vary considerably; in some cases recourse is had to consultants, who may be university-based.

3. Sectoral studies

Future-oriented study contracts in France

The late 1980s and early 1990s saw a considerable development of sectoral future-oriented studies aimed at analysing training needs (especially on-going training needs) and defining policies enabling them to be met. This was due to the decision of the government department responsible for vocational training to institute future-oriented study contracts, funded partly by the State and partly by employers' organizations. This decision lay in the context of a series of activities programmed under the heading 'negotiated modernization', designed to develop concerted action among social partners and involving the participation of the unions in the monitoring of the work undertaken.

These future-oriented studies are carried out by public or private research organizations in response to invitations for tenders. They comprise an analysis of the overall situation and an assessment of the prospects of the sector in question, taking both qualitative and quantitative aspects into account.

The next Chapter contains a detailed description of one of these studies.

V. An example of a sectoral study

This study was undertaken in France in 1989 and 1990 under a future-oriented study contract. It was carried out by the Centre d'études et de recherches sur les qualifications (CEREQ) in conjunction with the *Agence Nationale pour le Développement de l'Education Permanente* (ADEP) (National Agency for the development of lifelong education).⁹

1. The procedure

The study was followed through by a Steering Committee comprising representatives of employers, government departments, workers' unions and experts. This Committee was consulted on the methodology adopted and gave its opinion on the different stages of the work. The union representatives, either on the Committee or at the level of the firms investigated, provided information and gave their point of view, thereby complementing or balancing the components contributed by the firms themselves.

The objectives of the study included the definition of the lines along which training should be directed in the sector concerned, the identification of the specific needs of each category of employment, the constitution of a potential of information, analysis and expertise, and the establishment of proposed guidelines for the development of training policies. Consideration was given to both initial and further training, and the study was

9. This Chapter is based on the CEREQ publication: *Emploi, qualification, formation dans la grande distribution alimentaire*. La Documentation française, 1990.

intended at one and the same time to help and encourage firms to define their training policies and objectives, and to help the State to establish vocational training qualifications.

The sector covered by the study was mass-market retailing (predominantly food): supermarkets, hypermarkets, chain stores and the like, employing altogether 360,000 salaried employees out of a total of 1.6 million people employed in the retail trade in France. This strictly defined field is explained by the structure of the trade organizations concerned. Future-oriented study contracts made provision for an essential role to be played by trade organizations; but, though well-structured organizations exist in the modern mass-market retail trade, the rest of the retail sector involves a great number of other organizations which it was difficult to bring together.

However, since the food-dominated supermarket retailing sector is expanding rapidly and is very dynamic, the scope of the study may be considered more important than its relative weight in terms of numbers, the more so since the conclusions of the study are to a large extent applicable to the whole of the modern non-food distribution sector.

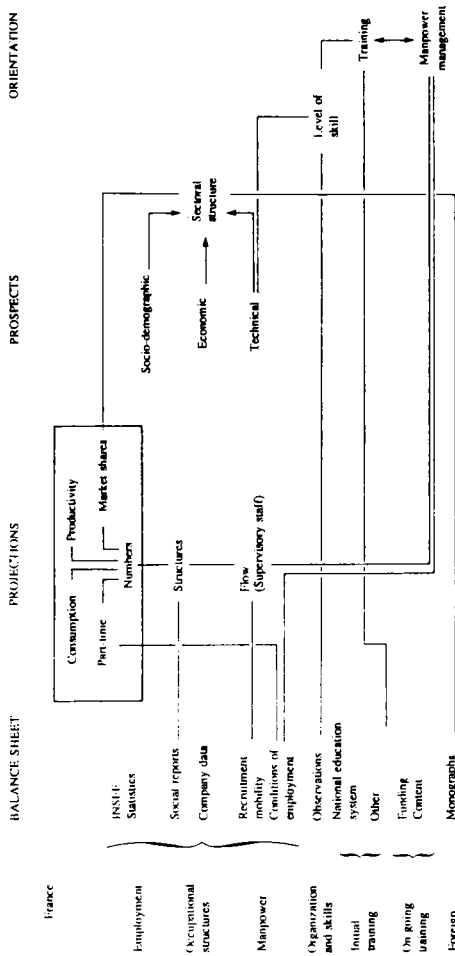
The methodology adopted comprised four stages (see *Chart 1*).

- Diagnosis of the existing situation.
- Extrapolation of employment trends observed.
- Prospective study of the possible future of the sector and how it will affect job skills.
- Guidelines and proposals for training and manpower management.

The study of food retailing represents a major innovation from two points of view.

- It constitutes a systematic effort at quantitative forecasting of the evolution of the sector and number of people it employs.
- The study undertaken in France was complemented by analyses made in other industrialized countries of the evolution of the sector and company policies within the sector. This clarified the diagnosis and analysis of the French forecasts by bringing out the specific features of this country and possible alternatives of evolution.

Chart 1. Sequence of stages in a sectoral survey



At the French level, investigations were both quantitative and qualitative. Quantitatively, a start was made by referring to existing statistical sources. Not published data alone; in a number of cases, specific treatment in greater depth was necessary – for example, to obtain data corresponding to the sector under study.

To complete the overall sector data, a closed questionnaire was sent to the principal firms in the sector in order to gather quantified information or precise replies to certain questions.

To make a qualitative analysis, a sample of some fifteen firms varying in size and in the nature of their activities was constituted. In these firms, selected also in the light of their availability, talks were held with:

- Human resources managers and personnel managers.
- Training officers.
- In some cases, those responsible for information technology, who are sometimes also in the know concerning planned and current changes.
- A sample of executives and supervisory employees representative of the company's principal areas of activity: retailing, purchasing, warehousing, etc.
- So far as possible, a sample of employees occupying the main types of employment, so as to study the nature of their activity and complete the overall picture of the company and its staff.

In addition, talks were held with training organizations and with experts familiar with the sector and training needed for it.

2. The diagnosis

The sector and the job

The foregoing investigations led first of all to a general diagnosis, which revealed a rapid growth of self-service supermarkets, and especially hypermarkets, which sell an increasingly high proportion of non-food products. This structure is quite specific to France, retail stores in other countries being more specialized – either in food, or in certain non-food items.

Because of economies of scale and the self-service system, these supermarkets have a high productivity and employ proportionately fewer people than small retail outlets in relation to their turnover. Since their share of the distribution market has steadily risen, the growth of total employment in the sector has

been less than the growth of turnover. In actual fact, the growth in employment has mainly corresponded to the increasing number of people working part-time; for a given volume of activity, more part-time than full-time employees are needed.

Though the calculation of numbers posed no problems, difficulties began to arise when it came to analysing their breakdown by occupation. All sources of information had to be consulted for this purpose.

The census was the most exhaustive source, and gave sufficient details concerning the breakdown by occupations under 400 headings. But the latest census dated from 1981, and the information was no longer up to date in 1989.

Two other statistical sources were available. One was an annual survey among companies, giving full details of their job structure. But it covered only firms employing at least ten persons, and even for those firms the response rate in this sector was not very satisfactory. Another survey provided information on the whole of the active population, but the sampling ratio was very low. Consequently, when a fairly small population has to be studied, such as executives in the mass-market distribution sector, the information gathered is only approximate. If we wish to study trends, the margin of error from one year to the next is liable to be greater than the real variations.

The companies concerned had to be approached directly. This was done, but other difficulties arose. Their statistics on their personnel were in many cases found to be inadequate; though every employee had an individual file, statistics were recorded only in matters relating to day-to-day management, and rarely was there any data on the structure of the personnel by occupation, much less on levels of training.

In studying trends, another problem is encountered. Many companies have been restructured in recent years – as a result of mergers, modification of the range of activities, sub-contracting, and so on – so that comparisons from one year to the next are not always significant. Similarly, comparisons between one company and another, in order to establish an average situation, are made difficult by the fact that their activities are not always the same:

some have restaurants in their stores, warehousing and transport facilities, purchasing centres; others do not.

Altogether, a wide diversity of sources of information was available, but no one source was fully satisfactory. However, a comparison and a critical analysis of these elements gave an approximate average picture at least of the structure by occupation. It was observed that one feature of the sector was a fairly small number of executive and supervisory staff and a very large number of employees, most of them comparatively unskilled – in other words, a polarization of skills. By combining these sources of information, a breakdown of staff by occupations was evaluated.

To obtain a more realistic picture, a qualitative analysis was necessary. The survey of companies had first of all made it possible to identify functions, or broad types of activity having the same goal and requiring the same type of skill. Some are specific to the distribution sector (selling, stock management, warehousing); other are common to all businesses (financial management, personnel management). It was observed how these functions were broken down among major units (stores, warehouses, purchasing centres, head offices) and in the organization of these units. This revealed very different degrees of centralization, the degree of decentralization being very marked in some firms (hypermarkets).

Job descriptions

The survey then made it possible to identify the principal jobs involved and to analyse the most characteristic of them. The comparison of these job descriptions led to the establishment of an average description of typical occupations (*see Chapter VI*).

Manpower

But job analysis is not enough. One has to know who fills these jobs: young people, holding formal qualifications or not, or adults, if so with what experience? And what are the conditions of

employment: is the job stable, permanent, and likely to lead to advancement within the company or the sector of activity? All these questions indirectly involve training, both initial and on-going. Once again, the survey had to co-ordinate official statistics giving an overall picture of the sector and more detailed data relating to the sample being investigated and making it possible to clarify and interpret the more general statistics. Recourse was also had to social reports containing information on the characteristics of the labour force and its renewal which firms have to prepare every year and communicate to representatives of their personnel. This gave valuable information on the characteristics of the manpower employed.

The collation of the available data showed that the mass-market food distribution sector was characterized by the youth of its employees, a high proportion of women, a high degree of mobility, a high frequency of part-time work, low salaries, and a low level of general and vocational training.

Part-time work has developed because it enables labour costs to be adjusted to considerable seasonal, daily and hourly variations in activity. Naturally, it is mostly accounted for by women (who represent 60 per cent of the number of people employed in this sector). But unlike other sectors, part-time work in this case does not correspond to a demand from employees (for more time to devote to their children), but to a demand from the employers (for flexibility of manpower management).

Along the same lines, the sector is characterized by the youth and the very high mobility of its manpower. The former corresponds to the high proportion of contracts of employment of specific duration, partly explained by the seasonal nature of the activity and partly by the employers' desire to be able to vary the size of their staff easily so as to cope with uncertainties in the volume of activity.

All these factors are important, because training cannot be developed without regard for the population sector for which it is intended: whether it is stable and motivated within the company. Thus high mobility, precariousness of employment and the frequency of part-time work were seen as obstacles; firms see less

point in investing in the training of impermanent personnel, and the employees themselves are not motivated.

Recruitment

But the most important question was how the different categories of personnel holding the principal jobs were recruited – in accordance with what profiles and what level of training. The conjunction of different sources of information revealed considerable differences between executives, supervisory grades, and employees.

In the recruitment of employees there is generally no reference to any specific training; training is regarded as one criterion of recruitment among others, in so far as a higher level may indicate a greater capacity for development and adaptation. Only in the case of workers engaged in food handling and processing, especially butchers, is specific training normally demanded.

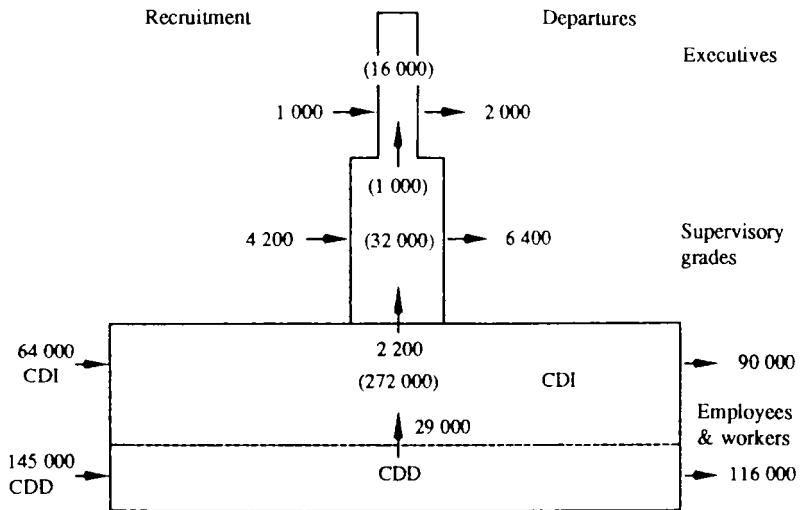
Supervisory staff (that is to say mainly department supervisors) play a role of capital importance in the organization in terms of the responsibilities which they shoulder. They occupy a key position in the process of occupational advancement. Traditionally, they used to be recruited mainly from the ranks of employees, by internal promotion, with little regard for any training they may have received. The increasing complexity of their activities means that employers now want them to be better trained, and they are therefore recruited from among young people who have received a comparatively high level of training and who are then given further training within the company.

Executives are of two types. In head offices, there are a few specialists (in management, information technology, logistics, marketing) who are usually graduates of higher educational establishments. In-store sales executives must have experience on the job in a supervisory capacity, but as a rule they are highly trained. The combination of quantitative and qualitative information gathered on mobility and recruitment made it possible to produce a chart showing the degrees of mobility corresponding to broad levels of skill (*see Chart 2*).

It should be noted that Chart 2 is not easy to produce. It gives an overall picture of all the people recruited by a firm and all the people leaving it. But it is probable that some of these movements involve other firms in the same sector. In other words, the movements which take place between the sector being investigated on the one hand, and the education system and other sectors on the other hand, are less than the sum of the movements between one firm and another; some of the latter are cancelled out.

But it is very difficult to quantify this phenomenon, for the statistics give no indication of where the mobile employees come from or go to.

Chart 2. *Mass-market food distribution sector in France: annual numbers employed and variations (average est. 1987/1988)*



Note: CDI= contract of indeterminate duration CDD= contract of specific duration

Source: CEREQ, in conjunction with ADEP, (1990).

Training

The final aspect of the diagnosis concerned initial and further training.

With regard to initial training, a report of training courses leading to certification by the national education system was drawn up. It showed that there was no type of training specific to mass-market distribution, but a recently-created certification was particularly appropriate to that sector. The objectives of this training were discussed with those responsible for designing it.

An attempt was then made to examine in greater depth the relationships between the training received and the job held. The data provided by firms on their criteria of recruitment were related as far as possible with the statistical data. The statistics of the Observatory of Entry into Working Life (*see Chapter III, pp. 39-47*) indicated what jobs in the sector under investigation the holders of the various formal qualifications tended to enter. But the limited size of this sector meant that it was not always possible to obtain valid indications on the basis of the sample questioned.

A second report covered training provided outside the national education system to prepare young people specifically for employment in the mass-market distribution sector, particularly department managers. The establishments concerned were visited and their objectives and systems of recruitment were analyzed.

Similarly, the study of further training covered both its quantitative and qualitative aspects. Quantitatively, France possesses a wealth of data on in-company training. Companies are obliged to spend a percentage of their wage-bill on training for their personnel, and every year must submit a declaration stating how this money has been spent. CEREQ, being responsible for the statistical processing of this information, was able to make an overall analysis of the sector. It covered expenditure by type of firm and personnel, and the average duration of training per category of personnel, and revealed in particular that the further training effort in this sector was appreciably weaker than the national average. Parallel with this, in-company surveys among

those responsible for training made it possible to analyze training plans and their objectives, the people for whom they were intended, and the types of programmes, methods and organization.

3. Projections

The first step towards forecasting was to extrapolate the trends observed in connection with the numbers employed and their recruitment. The idea was not so much to predict the future as to try to evaluate the consequences of the different assumptions made as to changes likely to occur, on the basis of observed trends. This task was assigned to a specialist in the business sector of the *Institut National de la Statistique et des Etudes Economiques* (INSEE) (National Institute of Statistics and Economic Studies). The year selected was 1995, because basic economic data up to that date were available, but not up to the more symbolic year 2000.

This approach involved a series of assumptions relating to:

- The total volume of retail trade activity.
- The respective market shares of the different sectors of retailing, so as to estimate the volume of business specific to mass-market food distribution.
- The evolution of productivity in each branch, so as to transpose volume of activity into number of hours worked.
- The numbers employed part-time, which affect the number of employees for a given quantity of work.

(a) To estimate *the volume of activity in the retail trade sector*, projections of the consumption of various types of product already established by INSEE were taken as a basis. Of course, the validity of these projections depends on the evolution of the economy, which introduces an element of uncertainty into this exercise as into all similar ones, given the period covered. More assumptions could have been made, but to do so would have complicated matters further.

(b) Assumptions concerning *market shares* were by contrast diversified, after discussion with leading retailers and experts. This market share was examined separately for different types of

products, both food and non-food. The simplest solution was to extrapolate past trends on the assumption that modern mass-market retailing would continue to gain market shares at the same rate as in previous years. This assumption was adopted, bearing in mind that in the long term it would lead to absurd results, for ultimately 100 per cent would be exceeded. But in the medium term the trend could still continue for some time.

However, to meet the objection a second assumption was made regarding market shares to be gained. This was that there would be a slow-down as 100 per cent was approached. A third assumption was based not on extrapolations but on the reasoning of experts: a continuation of rapid gains in food products (at the expense of small retail outlets), but a brake on gains in other products by reason of competition from other modern retail organizations.

(c) Before formulating assumptions as to *the evolution of productivity* (the ratio of volume of activity to hours worked), a list was prepared of factors favouring faster advances and slower advances than in the previous period. These factors were examined in greater depth in prospective studies. It was decided to assume that productivity increases would continue, but at a less rapid rate than previously.

(d) Similarly, with regard to *the evolution of part-time work*, account was taken of the extrapolation of the past trend towards growth, corresponding to an economic line of reasoning and the opinion of the majority of experts. This was an initial assumption. But an assumption of stabilization at the present level was also envisaged, to allow for the adverse social effects of an involuntary expansion of part-time work.

The number of people employed

The combination of these assumptions makes it possible to calculate a range of possible situations where the evolution of employment between now and 1995 is concerned. These situations lie within a bracket of between 0.3 per cent and 1.2 per cent annual growth rate. In terms of the number of people employed,

this corresponds to an annual creation of between 2,300 and 8,100 jobs in the retail food trade. This bracket may seem very wide, but this is always the case when many assumptions are combined, thereby widening the deviations between the extreme assumptions. But it is unlikely that in actual fact all the deviations work in the same direction. Out of a total of nearly 700,000 persons, the difference does not seem so great. This exercise is valuable in itself for retailers and for those responsible for employment policy. But it is not enough for those responsible for training, who would like to have estimates not of employment but of recruitment prospects per type of job or category of occupation. The next step must therefore be to estimate the breakdown of employment by occupation at the end of the period.

The recruitment flow

Two difficulties arise here. Firstly, as has already been remarked, knowledge of the existing occupational structure is very inadequate, and this makes its extrapolation difficult. Secondly, the analysis of factors liable to change this structure revealed contradictory trends, which will be examined in what follows. It therefore seemed wiser to make outline projections for only three major occupational groups: executives, supervisory grades, and employees, and to suppose that their relative weights will remain almost unchanged over the fairly short period covered.

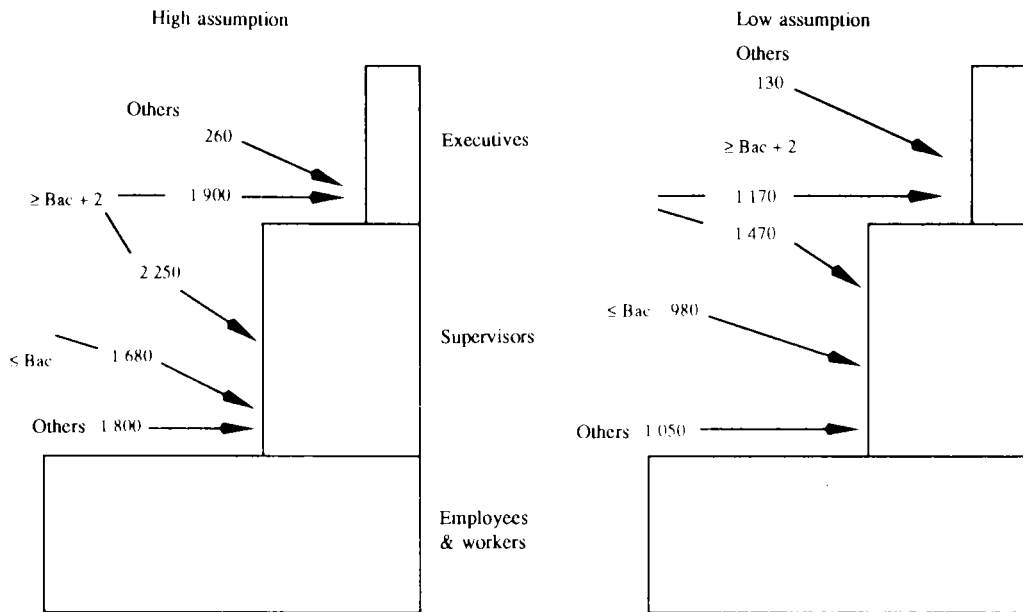
Assuming the degree of mobility to be unchanged also (failing any indication to the contrary), it was then possible to calculate the recruitment flow. But only for executives and supervisory grades. On the one hand the recruitment flow of employees is very considerable and difficult to analyze because of the seasonal factor, and on the other hand this analysis is of no great interest in view of the low level of training required. The estimation of training needs can be centred on executives and supervisory grades. The recruitment flow consists of: (i) Additional staff corresponding to the growth of employment, (ii) staff recruited to replace departures due to mobility. One of the interesting facts revealed by this analysis was that the latter were four to ten times

greater than the former. This fact is important, because it shows that at least in this example, the phenomena of mobility are more determining than the evolution of numbers in the evaluation of training needs.

But manpower mobility partly depends on the economic situation (it falls in a period of unemployment and rises in a period of full employment); and partly on company management practices, conditions of employment offered, and steps taken by firms to keep their staff. This clearly shows that the role of forecasting is not so much to predict the future as to identify the factors on which it depends. And some of these factors depend on the companies themselves.

But that is not all. It still remains to estimate *how* supervisory staff is to be recruited: on the basis of initial training or by internal promotion among existing employees. It is here that the information gathered from companies, either through their social reports or through specific questioning, is useful. This information has already enabled the existing situation to be evaluated, see *Chart 3*, according to which internal promotion accounts for half of executive personnel and about a third of supervisory grades. Where projections were concerned, two assumptions were envisaged. One was that 30 per cent of executives and supervisory grades would be accounted for by internal promotion; the other set the figure at 50 per cent. The former could be the case if firms wished to raise the level of training by recruiting more and better trained staff from outside. Conversely, a slow-down in growth would reduce the need for external recruitment. Having estimated recruitment from the training system, it remained to find out how this would be done. Here again, information – mainly of a qualitative nature – had been provided by the companies. Recent practice had been to recruit at much higher levels of formal qualifications than in the past, assuming that there would be a stabilization at these levels (whereas over a long period it would have been logical to assume higher levels). Four levels were established: below the *Baccalauréat* (secondary school leaving certificate); the *Baccalauréat*; the *Baccalauréat* plus two years; and a longer period of education.

Chart 3. *Mass-market food distribution sector in France:
average annual external recruitment, (period 1987-1998)*



Source : CEREQ, in conjunction with ADEP (1990).

The estimate of recruitment at these different levels in the light of the foregoing assumptions is shown in *Chart 3*. These results were submitted to the Steering Committee at an intermediate stage of the survey.

Some of the members would have liked the exercise to have been taken further, so that estimates of recruitment needs could be compared with those of the output of the education and training system

This raised the subject of matching training to employment, dealt with at the beginning of *Part I*.

The survey well illustrated the impossibility of adopting this approach in practice, for several reasons:

- The recruitment flow, as analyzed, can hardly be regarded as a rigid and objective estimate of companies' needs. It largely depends on what policy of mobility and recruitment is adopted.
- Since no course of training is designed specifically for employment in the mass-market distribution sector, it is difficult to see what flow of people leaving the training system could be compared with estimates of recruitment flow; those who have received business training may well enter sectors other than mass-market distribution.
- In any case, the national education system itself makes projections only for those who have completed broad categories of training, not for those who have qualified in special subject areas (this corresponds to the greater responsibility delegated to regional authorities as a result of decentralization). *A fortiori*, there are no forecasts concerning the many forms of training meeting the needs of the private sector.

None the less, these projections gave orders of magnitude which could be useful for both the education authorities and those engaged in the sector, and provided food for thought and a basis for more thorough analyses.

4. The prospects of structural changes and changes in levels of skill

Lying in a relatively short period, the projections of activity, employment and recruitment were based mainly on an extrapolation of observed trends. Thus the question arose as to whether a modification or even a reversal of these trends might take place in the future; this could have indirect effects on the problems under study.

Furthermore, the projections were confined to the purely quantitative aspects of the factors concerned, though the study also covered the qualitative aspects: trends in the nature of the jobs to be filled and the corresponding training needs.

For this reason, another task, more in the nature of a prospective study, was undertaken in parallel with these projections. It consisted of analysing the different factors liable to influence the structure and activity of the sector and its manpower characteristics and skills, so as to establish possible scenarios. These scenarios were purely qualitative and did not lie within any definite time-frame.

Three factors of change

The three factors of change are the socio-demographic context, the relevant technical data, and the relevant economic data.

The socio-demographic factors liable to influence the future of the retail trade are the ageing of the population, the reduction in the size of families, changing life-styles, and urban growth. All of them can affect patterns of consumption and the structure of the retail trade.

The analysis of modifications that could be brought about by *technological changes* was more thorough, though the impact of such changes on the retailing sector is less decisive than in industry. The analysis was based mainly on interviews with those responsible for information technology, who described the latest advances in that field and spoke of their possible consequences. Reference was also made to available studies on the subject, the

opinion of experts, and the observation of the activities of companies in other countries, notably the USA.

This analysis particularly highlighted the indirect effects of the widespread use of information technology on the various aspects of management. The conclusions are summed up in *Table 1*.

Future economic trends seem to lie in the direction of keener competition, itself linked with the approach to saturation point (supermarkets are everywhere) and internationalization (the integration of firms of different national origins, plus the installation of foreign firms in France).

Table 1. Mass-market distribution sector: impact of techniques

Innovation	who or what are involved		
	Suppliers	Company	Customers
New IT techniques			
Extension of IT	Physical flow management		
Optical code scanning	← Financial management →		
Micro-computing/ office automation	Sales management (assortments, marketing)		
Telematics	← Communication →		
Electronic funds transfer			Automation of payments
Industrial automation	Warehouse automation		
Others technologies			
Conservation of food products	Modification of products and their manufacture		

Source: CEREQ, in conjunction with ADEP (1990).

The study produced two scenarios based on the comparison of different factors and an attempt to establish their resultant, and also on investigations made in other advanced industrial countries. The latter showed that a special feature of the situation in France was the predominance of hypermarkets selling both food and non-food products. This indicates that French mass-market retailing has not reached the same degree of maturity as its American counterpart, for example. This observation influenced the content of the two scenarios.

- The first scenario resulted from the simple extrapolation of past trends: the growing predominance of hypermarkets, and strategies directed mainly at price-cutting.
- The alternative scenario was arrived at on the assumption that keener competition, together with new customer demands and the diversification of the clientele, would entail the same kind of structural and strategic changes as in other industrialized countries. This would mean a more marked differentiation between food and non-food products, and also between price-oriented and quality-and-service-oriented strategies, together with a higher degree of product specialization, smaller stores, and the diversification of forms of retailing.

This second scenario was believed to be the more probable, but its emergence would depend on changes in consumer behaviour patterns and company policies. This was the scenario whose impact was most closely studied, mainly from the point of view of training and levels of skill.

The consequences where skills are concerned

These consequences must be examined in two ways. First we must look at changes in the respective weights of the different types of jobs or occupational categories. Even if these cannot be quantified, we must at least have an indication as to trends. Subsequently we must see how the kind of work performed in each of these job categories, and the corresponding skills, could change.

In analysing these changes, it became apparent that certain trends resulted very probably from a combination of factors of

change. By contrast, other changes might depend on organizational decisions within the company. Consequently scenarios must once again be established, not just one assumption of change.

The most *marked trends*, most of which are common to both retailing and other sectors, are as follows:

- At the present time, most large stores of the hypermarket type have very compact central services; this is in line with the high degree of decentralization of responsibility at the level of the individual store. But keener competition and the need for ever more sophisticated management and marketing could entail an expansion of these central services. There will doubtless be a need for more specialists in the fields of marketing, logistics, human resources management and training.
- Automation, information technology and rationalization usually have the effect of reducing the number of simple, repetitive tasks, and hence the number of less skilled jobs.
- This will doubtless also apply to day-to-day administrative work (invoicing, checking, simple book-keeping) as a result of direct computer networking.
- Keener competition and better service should enhance the importance of the actual selling function and of customer relations generally.
- New food techniques and rationalization mean that more processing is done at the factory than in the store, and hence fewer skilled food workers are required in stores.
- Contrary to what the media might lead one to believe, there are few new skilled jobs; it would be more accurate to speak of the transformation of existing jobs. However, some new profiles may emerge, such as micro-computer specialists responsible for co-ordinating the development of micro-computer techniques.

Over and above these general trends, it is difficult to forecast the evolution of skills, in so far as it depends on the type of organization adopted by the companies themselves. What can be done is to identify the alternatives and indicate the probable consequences. This is tantamount to establishing scenarios.

The first choice is between centralization and decentralization. In favour of the former may be mentioned the rationalization of purchasing and management and the need to give the company the same image in all its stores. This would mean reducing in-store supervisory responsibilities in certain fields (purchasing, for example), and concentrating them in others (personnel management, for instance). The continuance of decentralization, where it already exists, may on the other hand be justified by the need to give supervisory grades incentive by allowing them a wide range of responsibilities.

In most sectors of industry there is often a simplification of the hierarchy and a reduction – at least in relative terms – of supervisory staff. In the mass-market retail trade, they already carry an extremely heavy work-load. It would be logical to introduce rationalization so as to reduce this load. But would this enable such staff to be reduced? It is not certain that it would.

Another special feature of mass-market retailing is the use made of personnel lent by suppliers to perform various in-store tasks. This is a way of cutting manpower costs, but it runs counter to the frequently announced intention to strengthen the company's image among its staff and customers.

When the trend towards the strengthening of the sales function has been established, it remains to decide what categories of personnel will be involved. Check-out clerks? But do they have the time and the skill? Stock-room clerks? But the store would no longer be a self-service outlet. Hostesses?

At this stage, one must switch from an overall approach to a more detailed analysis where the principal categories of jobs are concerned. For instance, where white-collar employees are concerned, analysis revealed that the evolution of their skills may depend on employers' organizational choices.

The analysis revealed that the evolution of the skills of employees depends on the type of organization adopted by the companies themselves. Four possibilities were considered:

- The first assumed the development of versatility, notably with regard to work at the check-out desks and work on the floor, and also from one food department to another. This would

involve a broader range of activities, but no real increase in levels of skill.

- The second possibility corresponded, on the contrary, to greater specialization, a higher level of professionalism not only for sales staff but also for those working in the different departments, who would be given slightly more responsibility.
- The third eventuality was the creation or development of jobs requiring an intermediate level of skill. This would concentrate such skills and create a level offering opportunities for advancement. But in this case the other employees would continue to perform tasks requiring a very low level of skill.
- Lastly, there is the possibility that the organization of work will not be modified; this would fit in with the first scenario placing emphasis on prices and requiring only supervisory personnel to possess any kind of skill.

Despite the uncertainties surrounding these alternatives, it is possible to make a few general pronouncements on the skills to be developed.

- Where store management is concerned, the probable changes involve giving priority to skills connected with personnel management and leadership, recruitment and interview techniques, and training. Next comes management proper: the ability to organize and manage time, optimize the flow of merchandise, and ensure basic financial management. The strengthening of specific marketing and sales techniques also appears desirable. Lastly, the widespread use of information technology, and especially micro-computerization, requires not a skill in information technology proper but the ability to use hardware and software, to understand their possibilities and their limitations, and to be able to discuss these matters with specialists.
- Where employees are concerned, it seems necessary to improve basic abilities such as writing, speaking and problem solving, on which everything else depends. The use of information technology does not call for a specific skill, but for an understanding of information circuits beyond the mere ability to use the machines. This should go hand in hand with

a better understanding by all the staff of the bases on which the firm is managed.

To these generic abilities are added more specific skills for certain categories of personnel, and this need can be met by training.

5. Guidelines and proposals

The guidelines stemming from this analysis covered three aspects: initial training, further training, and manpower management.

Initial training

This study, undertaken on the initiative of trade organizations and the public authorities responsible for vocational training, but not the Ministry of Education, came in a way too late for the latter. A short time previously, the Ministry of Education, in conjunction with trade organizations, had seriously tackled the question of bringing formal qualifications up to date. In this field, the study confirmed the validity of the decisions already taken and expressed the hope that the companies concerned would take them into account by establishing a better balance of recruitment among different levels of training.

Where senior executives are concerned, the study concluded that there was no reason to create new and specific courses of training; higher business schools provided the requisite bases. The problem was rather that graduates of these schools did not want to enter the mass-market distribution sector, mainly because of the difficult working conditions in stores and particularly longer working hours, including Saturdays. The poor image of the retail trading sector among young people is moreover an international problem. It is up to the companies themselves to make their jobs more attractive.

Further training

In this field, the principal suggestions related to:

- The role of supervision in the training of employees, which requires the ability to teach.
- The need to give trainees a better initiation and follow-up in the practical part of their training.
- The all-embracing and systematic nature of training programmes, which should be directed at all staff members and correspond systematically to the stages of their advancement, and whose different components should be co-ordinated.
- The need to step up training efforts, training being a profitable investment for employers.

Manpower management

The subject of the study was training, and those who conducted the study were not presumed to be concerned with manpower management. But the analysis as a whole showed that these two aspects are indissociable. What would be the point of training employees if they were unstable, lacking in incentive, and anxious about the future? How can the problem of certification of skills be separated from that of the attraction of the sector, the conditions of recruitment, and the career prospects?

But it was apparent that the forms of management frequently adopted by firms in this sector, based on low levels of skill among the personnel, precarious job status, and a high degree of mobility, were not easily compatible with the new demands of service, quality and skill. The problem of training must therefore be formulated in the overall context of coherent human resources policies.

6. Scope and limits

The modern mass-market distribution sector is quite specific; it employs little skilled manpower and offers a limited range of jobs requiring vocational training. The scope is also limited in that the study did not suggest any really new orientation for initial training, the broad lines of which had already been established.

This confirms that things do not always happen as in an ideal planning schedule, where studies and forecasts precede decisions and are followed by action in accordance with recommendations.

This example well illustrates the scope and limits of a planned approach. It cannot provide what decision-makers often demand: quantified forecasts of training needs, set against the predictable delivery of the training system, to see how they match. On the other hand, the study provides food for thought; the analysis of factors of change shows that change depends partly on the protagonists themselves, and they should be aware of the possible consequences of their decisions.

The methodological value of the example lies also in the overall approach adopted. It clearly shows the interrelations between skills and training problems on the one hand and mobility and conditions of employment on the other. Furthermore, the methodology is of value because the study attempts to fit into the context of the economy in general, the retail trade sector in particular, and individual companies and jobs; in other words, it extends from the macro to the micro and vice versa. In doing so, it lies in both a qualitative and a quantitative perspective; neither perspective on its own can be sufficient. The quantitative dimension alone would have given only an abstract picture of the problems and would have been as inadequate as the basic data were weak and incomplete. The qualitative approach on its own would not have given a sufficient idea of the magnitude of the problems and would have raised questions of representativity if it had been confined to a few case studies.

But there is a limit to this overall approach. As has already been pointed out, a sectoral approach can properly deal only with problems raised by training for specific jobs and to a low or intermediate level of skill. The problem of non-specific skills (for example, mechanical or building maintenance personnel, or bookkeepers) and especially the problem of senior executives, particularly in management, can be dealt with only intersectorally.

VI. The qualitative analysis of job content 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 what 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.

1. Four stages in the analysis of job content and training content

Four stages in the adoption of this approach may be distinguished; they correspond to the advance of ideas in this field (Lantier and Colardyn, 1982).

Stage 1. 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.

Stage 2. 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. 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.

Stage 3. 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 job 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.

Stage 4. 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 himself to transfer what he 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 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.

2. Job analysis: three approaches

Most methods of job analysis are directed primarily at determining the salary; they establish criteria for this purpose and attribute a weight to each of them. These are job evaluation methods. But job analysis can have other objectives: manpower management and the organization of labour within a company, the study of working conditions (ergonomics), or vocational guidance and training. The methodology differs according to the objective, because the information sought is not the same in all cases.

Here are three examples of training-oriented methods; they are taken respectively from France, a European working group, and the United Kingdom.

*The French experience: the French Directory of Jobs and its consequences*¹⁰

At the beginning of the 1970s France felt the need for instruments to acquire a better knowledge of training-employment relations and thereby improve the country's planning system. It was decided to compile a Directory of Jobs, an analysis and a systematic description of all occupations and their accessibility. The Directory was intended to meet, at one and the same time, the needs of vocational guidance and placement, training needs, and the needs of statisticians, with a view to reorganizing the classification of jobs.

Produced by CEREQ with the help of its associated centres and the National Employment Agency, the French Directory of Jobs involved a considerable amount of work; it was begun in 1974 and not completed until 1981. Ten thousand jobs were observed, and the resulting information was collated to provide a description of about 800 characteristic situations or standard occupations.

The activities concerned were analyzed in terms of the nature of the tasks performed and the working conditions (number of hours a week, how arduous the job, etc.). Information was also gathered on the profile of the people who held these jobs (their training and experience) the profile of people in similar jobs, and the desirable profile in case of recruitment.

The tasks were analyzed in terms of the following factors:

- The function exercised (or the participation in the major objectives of the company or organization: production, marketing, management, etc.).
- The process of production of goods or services of which the activity is a part and which is defined notably by reference to technologies.
- The nature of the relations maintained with facilities, documentary material, and individuals.

10. See Bertrand (1986); Mandon (1990).

- The degree of responsibility and autonomy of the person holding the job in relation to the instructions he receives, the controls to which he is subjected, the consequences of his possible mistakes, and his hierarchic or functional relations with others.

These factors, together with the identification of fields of specialization, also served to group the observations in order to define standard jobs. The standard job encompasses individual working circumstances whose characteristics are sufficiently common for them to apply to one single individual. This commonality of activities is presumed to involve equally common technical and occupational abilities.

This approach was designed to make the Directory an instrument of guidance, placement and training. To make this tool more operational, two job charts were subsequently produced, making it possible to visualize the standard jobs described, classified by function and by occupational category (white-collar employee, blue-collar employee, technician, supervisor, executive).

Experience showed that the Directory did not fully attain its guidance and placement objectives, which call for sources of information that are simpler and easier to use. But it proved to be very useful as a source of reference for the study of training needs (especially further training) and for company management of employment and skills.

It is apparent today that though the considerable amount of information gathered and systematically presented was of great value, there are two limitations on this approach:

- It is centred on individual work stations and is liable to give too rigid and limitative a picture of the job, whereas the trend is towards the development of team work and a flexible and variable organization of labour.
- It is too static, and gives no indication of changes; the more so since it was not possible to update the Directory periodically as had been planned.

The idea of the standard job has been taken up, with variants, by different bodies which have done a good deal of work on forward-looking job management and training consultancy.

Whereas the French Directory of Jobs looked at the subject essentially from the public angle and was mainly concerned with guidance and placement, this other work is intended for companies and is aimed at meeting their needs in respect of forward-looking human resources management. In a context of rapid change, companies feel the need to be able to forecast trends in employment and skills more accurately and to adopt appropriate recruitment, career and training policies.

It is in this perspective that the idea of the standard job seen from its dynamic angle (ETED for short) has been developed by CEREQ. It is designed to enable employment to be understood in its evolutive perspective and in terms of its human demands, by showing the links between the characteristics of jobs and the individuals who hold them (Mandon, 1990).

The analysis of activities is aimed at identifying the skills (in the sense of knowing how to mobilize knowledge), abilities and qualities required to cope with a given problem. It seeks to describe:

- The attributions of the holder of the job (the answer to the question: what does he or she do?).
- The sequence of events deriving from these attributions (the answer to the question: to fulfil these attributions, what does he or she have to bear in mind? And to what end?).

These questions reveal several dimensions of the activity concerned, such as its technicality (the field covered, the tools employed, the technical rules and procedures conformed to); the system of relations in which the activity lies (what other people are consulted, and for what purpose: supervision, collaboration, communication); and the contribution to the performance of the company or the team.

- The knowledge and know-how brought into play, which is broken down into basic knowledge, occupational know-how and skills, and know-how and corresponding abilities in relations with other people.

The method places emphasis on the fact that the contours of the standard occupations thus defined are not rigid; they vary

according to the environment and their elasticity depends on the individual.

The Eurotecnet project

The Eurotecnet Programme of the European Community relates to the study of technological innovations and their repercussions on training, principally further training (Eurotecnet, 1990). It has highlighted the need for a method of keeping track of the evolution of occupational profiles resulting in particular from technological progress. A Working Group comprising a French team (Racine) and a Dutch team (CIBB, an Institute working along the same lines as the French Directory) has proposed a method incorporating a job analysis stage and a prospective stage.

The manual setting forth the method suggests analysing the job by constituting groups of five to ten persons, led by a specialist. These groups should preferably be composed of people who have practical on-the-job experience, or failing that senior personnel and/or experts. For each type of job studied, the members of these groups are asked to provide information on the products turned out, the technologies involved, the technical and hierarchical conditions under which the work is initiated, the production procedures, the materials used, the tools and machinery, the standards and criteria of performance, the functional relations with other persons, the hierarchical situation, and the working conditions.

This information must then be reorganized to make it easier to understand and to enable it to serve as a basis for seeking additional information. An initial distinction is made between information relating to what activity the job involves and information concerning the conditions under which this activity is engaged in (place of work, hours of work, how arduous the work is). When this has been done, the data can be organized in several ways:

- The grouping of activities by major objectives or functions (e.g. production, administration, management, marketing).

- The organization of the data by subject area or technique employed for the exercise of the activity.
- Grouping by type of mental or physical activity; e.g. making a distinction between cognitive, psychomotor, manual and relational activities.

In addition to the description of tasks, job activity is analyzed from the point of view of the degree of autonomy (type of instructions or directives received, information received and transmitted, criteria on which results are judged).

As can be seen, this approach is similar to that adopted for the Directory of Jobs; in both cases what is done is to gather data on the tasks performed in the exercise of an occupation (i.e. a trade, a craft, a standard occupation) and to give an average description of it, which is then translated into meaningful terms where training is concerned. The British approach is quite different.

The British programme of definition of 'vocational qualifications'

With the idea of bringing a little more clarity and unity into a completely decentralized vocational training system that comprises no national certifications, the British Government recently launched a programme aimed at defining national qualifications.

These qualifications are defined by employers' trade organizations in accordance with a model developed by the National Council of Vocational Qualifications, which monitors the programme.

The primary idea is to define training by reference to an occupational objective. The starting point must therefore be job analysis. But this analysis, as seems to be the tradition in British work on this subject, is not centred on how jobs or occupations (consisting of series of tasks) fit into the context of the company or the production unit. Though it takes the breakdown of tasks as its starting point, it is not concerned with how those tasks are grouped so as to constitute jobs. On the basis of the description of tasks, the analysis aims to identify immediately:

- Competencies.

- The skills and knowledge corresponding to those competencies.
- Performance criteria.

This analysis leads to the definition of 'modules of competence', an example of which is given in *Appendix 1*.

3. Anticipating future levels of skill

In view of the time it takes for any innovation in the training system to bear fruit, we should not be satisfied with a description of existing job skills; we ought to look ahead. But forecasting in this connection is just as difficult and uncertain as in the quantification of people in employment (Eurotecnet, 1990; Mandon, 1990).

When reference is made to the evolution of skills, we tend to think of a factor of change on which great importance is placed: technical progress. But technical progress alone does not play a determining role; many other factors are operative, as has been suggested by the example described in the previous Chapter.

A whole series of factors must be considered in evaluating the nature of future requirements where skills are concerned. No scientific method can deliver a simple answer; the solution must come from periodically repeated observations aimed at identifying the principal factors of change and revealing the main trends to which they probably give rise.

These analyses must, so far as possible, reconcile the points of view of the protagonists concerned and those of the experts. These different points of view having been established, it is up to the people conducting the 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 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.

4. Translation into training objectives and content

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

- 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 psychoeducational 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.

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 Directory of Jobs.

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 which was not necessarily of any real use (see example in *Appendix II*).

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 (Möbus, M., 1989).

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 into line with the modules of occupational skills.

These examples lead to a concluding observation. 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 pay much attention to the development of behaviour patterns 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.

Part three

The lessons of experience

The experiences reviewed in Part one 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 analysing 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.

VII. 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.

This discussion calls for a clarification of concepts and the recognition of differences of context. A distinction should first of all be made between the concepts of projection, forecasting, propection, and planning.

The confusion between projection, forecasting, propection and planning is the source of numerous errors and misunderstandings. A few simple definitions are required to set things straight (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 propection 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 assumptions) can be assessed quantitatively, that is to say it can be transformed into a forecast.

“Planning consists of conceiving a desired future, also 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.

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.

1. 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, *Chart 4*). The planning of this flow of young people, should, therefore, be given higher priority than in industrialized countries

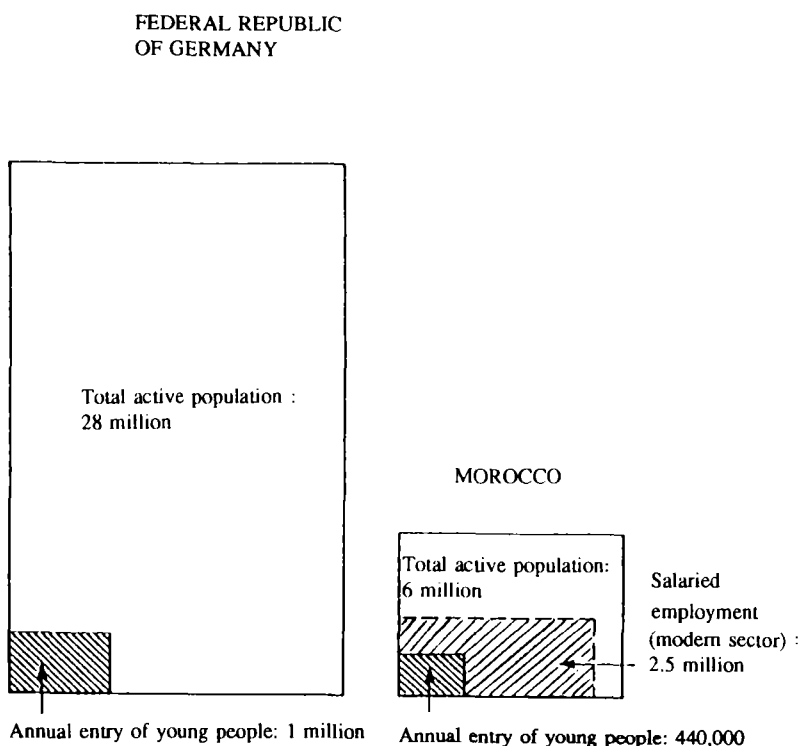
This difference is further accentuated by two phenomena:

- The rate of growth of 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 higher levels can give rise to growth rates out of proportion to the absorption capacity of the economy.
- 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 the shortage of budgetary resources.

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?

Chart 4. *Ratio of active population to annual arrival of young people on the labour market, early 1980s*



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 (*see pp. 127-141*).

Different political and education systems. As noted in Part one, 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, the outcome of 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* (*see Appendix III*).

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 United States, 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 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 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 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 takes longest to bear fruit, given the time required to design the curriculum, build and equip premises, and recruit teachers – before beginning 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 by joint agreement. But the nationalism of young nations has prevented much progress 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 worth-while.

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 United States, 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 (*see pp.111-106*).

2. 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 (*see Appendix III*).

The examples of vocational training planning given in the *Annexes* suffice to show that 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 have not the vocation, competence or motivation to establish a form of planning taking account of 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:

- 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 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 account of 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.

Many developing countries continue to have recourse to outside expertise. There are serious objections to this solution. If,

as is the case (*see below*) the main difficulties of human resources planning are not technical but socio-political and administrative, 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. 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.

3. 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 can bring to bear 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) make a ruthless diagnosis which could be more widely applicable to *education and training authorities* in general: “instructors perform their task without regard for either the objectives the trainees have set themselves or the needs of their future employers. [It is assumed] that instructors bear social needs in mind. But that is not the case. It is by looking at things from inside the bureaucracy that the logic of its decisions can be understood. The organizations concerned have established their own rules of the game in the light of their internal logic, and though the outside world shapes their action to a certain extent and imposes constraints, it does not determine the factors influencing the behaviour of 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 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 ten 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 small firms, which usually seek immediately usable manpower for a specific job, which supposes previous specialized training, and 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.

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 sake-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.
4. 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 it can be obtained, and how it is 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.

The data thus gathered on the output of the education system is 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; *see Chapter III*), and also the circumstances under which employers recruit different types of manpower for different types of job.

Ideally, 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) A knowledge of the number of pupils enrolled in school is the least of the problems involved, for 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 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 stale.

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 (*see pp. 124-127*).

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 Part 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 classification.

Training is usually classified *by level* and *by speciality*. Looked at purely from the 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 demanded 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.

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 analysing 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 1*. 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 so.

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 in 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 Classification (ISOC), revised in 1988. It 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 kind of work corresponding to an occupation) and the skill, defined as the ability to perform the job.

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 (*see pp. 124-127*). 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 so far mentioned, is the individual status of the worker: is he 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 sake-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 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.

(a) 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.

(b) Information on employment and the labour market that one would like to have 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 arising; but these surveys are often over-ambitious and their results are not 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 arising.
- 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 departments responsible; 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 analysing 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.

Along these lines, *Appendix IV* contains an example of a set of face-to-face questions that can serve as a basis for surveys directed at one and the same time towards gathering data, diagnosing existing problems, and forecasting the future. An attempt has been made to simplify this investigation as much as possible. If circumstances allow (such as the availability and diversity of people questioned) the range of questions can be extended.

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 (for instance, surveys concerning employment). 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. In this connection it is worth mentioning a recent measure in Togo, where an Observatory of Vocational Training Needs was set up in the context of a World Bank project. This Observatory centralizes all information

concerning employment, carries out additional surveys if necessary, and produces occasional monographs (Orivel, 1991).

5. 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 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 upon 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 cannot be attained or will take so long to attain that any action will be paralysed.
- 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. "In many countries the financial crisis has led to a dramatic deterioration of teaching conditions reflected in (i) the shortage of teaching materials; (ii) the decline in salaries in real terms, or delays in the payment of teachers, entailing their abandonment of the profession; (iii) the increase in absenteeism; and (iv) the dilapidation of premises" (IIEP, 1990).

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, assessing mainly knowledge, but rather on an evaluation of 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 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 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 can not only provide qualitative information but also 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 Directory of Jobs (of the type described in *Chapter VI, pp. 90-95*) 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 Directory of Jobs) 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, an attempt 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, 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

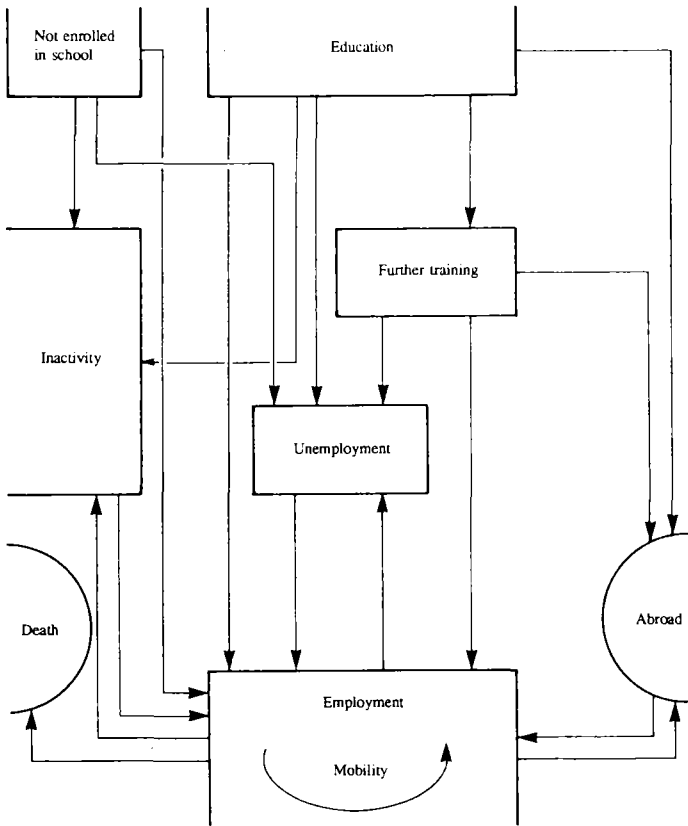
These estimates can take the form of a simplified model of recruitment flows, not only straight from training school but from other sources too. This model, shown in *Chart 5*, has the advantage of giving an overall picture, but it is not sufficient. If possible, it should be added to in several ways:

- 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 sectors. 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 converse 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, limited to total numbers, 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 place 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.

Chart 5. *Simplified model of recruitment flows*



Note: The arrows suggest the main flows; the chart can be adapted to the national context by neglecting the weakest flows.

For developing countries which lack data, the chart has to be simplified.

This operation raises at least two problems:

- 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 in (*see Chapter III pp. 39-48*). Where other countries are concerned, it should always be possible to estimate orders of magnitude, even if only 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 ten or fifteen 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 held 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 in the Côte d'Ivoire; see *Chapter 1*, pp. 25-30). 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 small number of sectors and skills (taking as a basis, for example, the experiences referred to in *Chapter 1*).
- 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 ten 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 (*see Chapter VI*). 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 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 come on to 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 twenty 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 sake-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 (*see pp. 141-152*).

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. 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 (*see pp. 110-111*).

6. The training system has to be adaptable

Even if the work of evaluation and forecasting which has just been referred to has been properly done, there remains a substantial margin of uncertainty, and the weight of sake-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*.

Structure and type of establishment: Structure is less of a problem in higher education than in vocational training. Long ago, an article that has now 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; 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 to an increasing extent needs wide-ranging skills. 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 ten or eleven years); in Japan, more than 90 per cent of young people have completed a total of twelve 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.

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, the occupational aspect coming usually after completion of secondary education, and being handled by 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 gone into 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 was referred to in (*see pp. 107-109*).

Specialisation: 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 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 liable to be costly, in that 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 social homogeneity in that it breaks down the divisions that exist between the «élite» and the operatives in other systems, which incidentally function in parallel in Germanic countries.

Adaptability through further training

Training should not be confined to initial classroom instruction. The rapid obsolescence of knowledge and the marked trend towards mobility entail a considerable development of further training, which alone makes it possible to react to changes more promptly than initial training can be expected to do. This development raises several questions: Who is to organize it? Who is to finance it? Who is to benefit from it? How ought it to be given recognition?

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 so 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 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. 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 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.

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 idea 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 is 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 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 undertake research, experiments or trials which many companies, especially small ones, do not have the resources to tackle themselves.

Co-operation between schools and employers can 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 that 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 would deserve 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 in varying degrees and under very variable conditions from one national context to another.
- Our conception of this planning has changed considerably over the past twenty 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 analysing possible trends and their sake-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.

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- 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.

Appendices

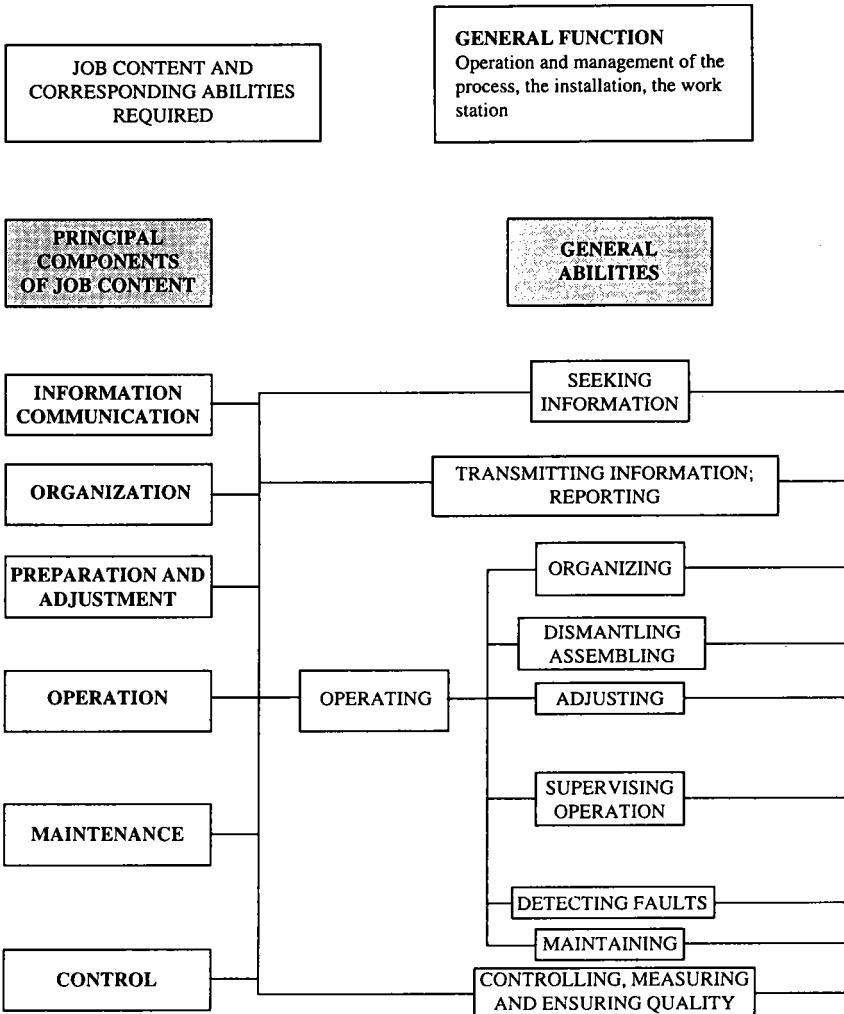
- I. Example of a 'module of competence'
- II. Requisites for a French diploma
- III. Institutions, organization and individuals
- IV. An example of a questionnaire

Appendix I. Example of a 'module of competence'

Unit of Accreditation Financial Record Keeping (5)	
Competence	Prepare wage packets and issue.
Performance Criterion	<input type="checkbox"/> Wage packets correctly prepared within required deadlines. <input type="checkbox"/> Security procedures (money, wage packets) followed at all times. <input type="checkbox"/> All records up to date, legible and accurate. <input type="checkbox"/> Any wage queries dealt with promptly and courteously.
Activities	Skills/Knowledge
<input type="checkbox"/> Analyse total cash and denominations of currency required. <input type="checkbox"/> Obtain cash and prepare wage packets as directed. <input type="checkbox"/> Prepare cheques as required. <input type="checkbox"/> Pay wages. Obtain signatures. <input type="checkbox"/> Deal appropriately with pay queries.	<p>Skills</p> <input type="checkbox"/> Read and interpret tables and reference books. <input type="checkbox"/> Use a calculator. <input type="checkbox"/> Financial calculations. <input type="checkbox"/> Complete forms/records. <input type="checkbox"/> Use tact and courtesy in resolving pay queries. <input type="checkbox"/> Plan and organise work within deadlines.
	<p>Knowledge</p> <input type="checkbox"/> Security procedures for cash handling/paying out wages. <input type="checkbox"/> Banking procedures and documentation. <input type="checkbox"/> Procedures and documentation used in organisation. <input type="checkbox"/> Procedures for dealing with abnormalities (e.g. incorrect pay).

Source: United Kingdom Training Agency, Policy and Programmes Division, *Standards of performance for administrative business and commercial staff*, Sheffield, p. 56.

Appendix II. Requisites for a French diploma



GENERAL CAPABILITIES

The holder of this certificate, working alone or as one of a team on production and processing installations, in accordance with specific instructions and conforming to health and safety regulations, and within the limits of the responsibilities assigned to him, should be capable of:

- Fully understanding the technology of the process, the parameters involved in its different stages, and the corresponding operational procedures.
- Operating the production installation, ensuring the processing and transfer of materials.
- Monitoring the evolution of the products and the installations so as to ensure the quality of the products and the productivity of the installation in the context of the instructions received.
- Helping to maintain the installation.

SPECIFIC CAPABILITIES

A1 – Identifying the process and the installation.
 A2 – Decoding relevant charts, diagrams and other information in graphic form.
 A3 – Analysing the production schedule and the work schedule.
 A4 – Noting and checking.
 A5 – Consolidating.

B1 – Informing and reporting.
 B2 – Taking part in meetings of working groups.

C1 – Deducing his own work schedule from the production schedule and the work schedule.
 C2 – Collaborating in the initiation and adaptation of the procedure.
 C3 – Collaborating in the monitoring of products in course of production.
 C4 – Collaborating in the determination of necessary adjustments.

D1 – Assembling and dismantling tools and equipment.
 D2 – Preparing the installation.

D3 – Making necessary adjustments.

D4 – Collaborating in putting a production line into service.
 D5 – Operating the installation.
 D6 – Personally checking the cleanliness of the equipment and machinery.
 D7 – Ensuring the supply of raw materials.
 D8 – Ensuring the supply of necessary items for the performance of the work.
 D9 – Ensuring the storage and handling of raw materials and products.
 D10 – Collaborating in putting the installation back into service after a stoppage.

D11 – Seeking the causes of anomalies.

D12 – Maintaining equipment and machinery in good condition.

E1 – Ensuring that the quality of the products, during and after manufacture, conforms to the specifications and procedures laid down.

Appendix III. Institutions, organization, individuals

Some examples: the vocational training planning model

- In Anglo-Saxon countries, planning is highly decentralized. There is no tradition of national government certification relating to technical or vocational training, and schools do not depend on central government but on regional or local authorities. Universities enjoy a considerable degree of independence. In the United Kingdom, this decentralization is paralleled by the essential role played by employers, whose representatives are in the majority in Training and Enterprise Councils (TEC). These Councils were set up with effect from 1989, and there are about a hundred of them; their purpose is to match training to the needs of the economy and to slant training on the requirements of employers instead of on the social demand of individuals (Ashton, D.; Maguire, M.; Taylor, R., 1990).
- In Germany, education is entirely the responsibility of the regions (Länder), which are free to establish curricula. The Federal Government's role is limited to co-ordination between regions. This role is more important when it comes to vocational training, which is a Federal responsibility; its provision is mainly incumbent on business and industry. The Federal Institute of Vocational Training (BIBB) is responsible for employers' and trade unions' representatives reaching a consensus on the definition of the objectives and curricula of in-company training. The Institute co-ordinates this work with the regions, which retain responsibility for in-school training.

- In contrast to Anglo-Saxon countries, France has for long past typified a highly centralized and State-controlled model where vocational training is concerned. The definition and attribution of certification is a State monopoly; traditionally, the State runs most training establishments and exercises tight control over universities. During the 1960s and 1970s, broad guidelines for education and training were established in the context of the preparation of plans under the leadership of the *Commissariat Général du Plan*, which was a focal point of concerted action. In recent years this system has begun to change; the first steps towards decentralization made local authorities responsible for the construction and fitting out of schools, which is an important component of planning. Parallel with this employers, who for long past had been represented on the Advisory Committees called upon to give their opinion concerning the certification of vocational training, have come to play a role of increasing importance at the regional level and where schools are concerned. They are also represented on educational committees which advise on the certification of University Institutes of Technology. But university degrees remain the province of the Ministry of Education. Major guidelines concerning training-employment relations are now discussed by a High Committee of Education and the Economy comprising experts and representatives of government departments and of social partners. But this apparently very comprehensive arrangement raises the problem of the dissociation between the bodies responsible for quantitative planning and those concerned with its qualitative aspects, that is to say its content.

Appendix IV. An example of a questionnaire

This type of questionnaire can be submitted to a company, an offshoot of a company, or any other public or semi-public body employing skilled manpower.

Its purpose is to seek information about the labour market and the present conditions under which trained young people are recruited, and to gain an idea of the future outlook and the factors influencing it. Depending on what is needed and what is available, more or less emphasis can be placed on one or other of these aspects.

Closed questions cannot be used for an investigation of this kind. All that can be done is to suggest an interview guide that will have to be adapted to circumstances. The main object is to gain a better understanding of the mechanisms of training-employment relations and to evaluate (failing accurate statistics) orders of magnitude which would otherwise often be difficult to arrive at. In particular where changes are concerned, what are sought are not figures but trends.

This type of questionnaire can be put to one or several individuals, depending on the size of the establishment, the complexity of its activities, the availability of its senior staff, and what degree of detail is required.

1. The establishment and its activity

The questions here are confined to those which can have an incidence on manpower and its associated skills and training, to the exclusion of administrative or economic information which would pointlessly complicate the interview.

These questions are to find out what the establishment itself does and what is done by other establishments of the same firm, by a parent company abroad, etc.

1.1. Briefly describe the establishment: is it a single office of a firm which has other establishments, a factory, or a branch? In this last case, how many other branches are there? Are they similar to, or different from this one?

1.2 Types of activity; how many people work in this firm, and what kinds of goods or services are produced?

For who are they intended? Are they very varied, or are there only one or two types of goods or services? Does production vary? If so, what causes it to vary?

1.3 List the activities in which the establishment engages, and state which of them are the most important.

- Design of products/services.
- Production control & methods.
- Production of goods/ services.
- Marketing.
- Maintenance.
- Transport, warehousing, handling.
- Financial management.
- Personnel management.
- Information management
- Others.

Is this establishment representative or specific?

More significant functions from the point of view of skills and manpower can be gone into in further detail.

2. Manpower skills, training

If the activity is seasonal, state maximum and minimum levels and explain why.

The ideal would be to have statistics cross-tabulating (a) and (b), (b) and (c), and (b) and (d). Failing that, orders of magnitude (percentages) will have to do.

1.4 Can the processes and techniques employed to perform the principal functions, in particular production, be briefly described, in terms of mass production, small-scale production, degree of automation, degree of computerization?

2.1 Total numbers employed

	Permanent	Seasonal
2 yrs ago
1 yr ago
Now

2.2 Is it possible to have a breakdown (at least approximate) of the numbers employed in terms of:

- (a) The functions defined above.
- (b) Occupational categories, e.g. executives, technicians, supervisors, employees, skilled.
- (c) Level of training.
- (d) Sex.

2.3 Where applicable, state the proportion of foreign manpower employed.

2.4 Can any significant trends be observed in this breakdown?

Depending on available time and resources, a more or less detailed description can be given of each occupational category.

In the absolute value or in percentage of numbers employed.

2.5 Within each category, which specific types of job are the most significant in terms of the numbers performing them, their strategic importance for the establishment, their specific features and/or the problems of recruitment which they create?

2.6 For each of the categories and/or types of job identified above, is it possible to have a figure or annual volume of recruitment necessitated by:

- replacement of outgoing staff, or
- variations in the number of people?

If possible, state the relative importance of retirements and other causes of departure.

2.7 In these same categories or types of job, what proportion of recruitments is accounted for by:

- people already working for the firm;
- people with relevant experience recruited from outside;
- young people who have just completed their training.

2.8 In this last case, are there any particular requirements as to the type and level of training, or is a margin of adaptation left in function of availabilities?

2.9 What view is held of the recruitment of people who have just completed their training as regards to:

- (shortage?) and
- adaptation to the needs of the firm?

3. Future prospects

The aim is to identify changes which can have a direct or indirect incidence on skills and training, in particular for the most significant occupation categories.

3.1 In the course of the coming years, what kind of changes can be anticipated in the following fields:

- (a) Economic and commercial:
 - Competition and markets.
 - Renewal or diversification of products and/or services.
- (b) Technical:
 - Changes in the technical characteristics of products.
 - Changes in production processes.
 - New management technologies.
- (c) Organizational:
 - Changes in the structure of the company or establishment.
 - Changes in labour organisation.
- (d) Recruitment and management policy.

Replies to be investigated further

3.2 What possible consequences can be foreseen regarding training and regarding the levels of skill of the principal occupational categories?

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