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# Vocational Training in Developing Countries

by Dr Hans Herbert Langen, Bonn

Full employment policy in the sense that everybody willing and able to work can find a job within a reasonable time has been a recognised political, social, and economic goal in most industrialised countries. Political, because no government can expect to remain in power with a large number of unemployed; social, because employment is a major factor integrating the individual into society; and economic, because the wage or salary has become the principal and frequently the only income for most persons.

During the last decades full employment policy has for the same reasons gained in importance in most developing countries. There is, however, one additional argument for full employment policy in these countries: If rapid economic development is one of the most important principles of national policy, and there seems to be little disagreement concerning this principle, full use of available resources is imperative. The most important and universally available resource in most developing nations is manpower. In order to contribute to economic development, however, manpower must be productive. Full employment policy which does not aim at productive employment must fail before long due to the imbalance of goods and money, in developing countries even more so than in industrialised countries.

The key to productive employment is vocational training. This is equally true of traditional branches of economic activity, such as agriculture and crafts, as of the modern ones, such as industry and services. In German agriculture training of farmers was probably the most important single factor contributing to the unexpected and unprecedented rise in productivity during the post-war years. In the modern sector of the economy the development process cannot even start before some basic skills have been acquired by the work force.

## Training and Education

In a broad sense vocational training means preparing individuals to engage in economic activities. Training and technical education are therefore complementary and closely connected. General education should lay the foundation for specialised training which makes the individual fit for the technical requirements of a specific job. This applies to the training of young persons as well as to accelerated training of adults, vocational retraining and advanced training for per-

sons already in employment. Unfortunately this model cannot be copied by most developing countries. Among the reasons illiteracy, growth of population, and lack of instructors and training facilities might be mentioned specifically.

According to a survey conducted by UNESCO in Latin America more than 40 per cent of the total population above 15 years of age were illiterate in 1950. Average school attendance of the same group of population was one year. In 13 countries more than 50 per cent of the population had not finished the first school year. The situation is not fundamentally different in many developing countries of Asia and Africa. Many developing countries have two or more official languages which makes the situation even more difficult. This means that sometimes in the first grade, sometimes later, a foreign language must be studied before the student can follow instruction. In industrial countries by way of example eight years of basic education in the mother tongue of the student are considered insufficient as preparation for vocational training. In order to achieve the same standard with given methods of education, students in developing countries must receive basic education for at least ten or twelve years. An important and frequently neglected aspect of general education is that it must help to overcome the prejudice against manual labour and technical education as opposed to liberal arts education. Special incentives by the government and social upgrading of manual labourers and technicians will be successful only if complemented by education.

The second impediment against a rapid expansion of training is the extreme growth of population in most developing countries. For this reason a substantial portion of the funds available for education and training must be used to maintain the present level, leaving very little for improvements. While a re-allocation of total available government funds with a substantial increase in expenditures for education and training would certainly be of advantage, complementary government action aiming at a reduction of the population growth rate is imperative.

Under present conditions the lack of instructors and training facilities seems to be the principal limiting factor for further development. Even if efforts are multiplied it will be a long time before the number of instructors and training workshops can be substantially increased. In this emergency situation

special attention must be given to the question whether all available training facilities are used effectively and to their full capacity. We must also look for new training methods which might quantitatively and qualitatively multiply the effect of instruction.

### **Training Facilities**

Numerically most important is training in the traditional way i.e. by watching and helping more experienced individuals in their work. This kind of training will remain the backbone of any training system for many, many years to come. It must, however, be greatly improved by formalising the training process. This can be done for instance by setting minimum training standards which must be enforced and supervised by competent authorities. A growing influence is exercised by training workshops or training cum production centres organised by the government, international organisations, and under bilateral technical assistance agreements. Considerable efforts have also been made by private industry from industrialised countries which founded subsidiaries in developing nations or sold industrial equipment. In both cases they are bound to import technical skill which is soon transmitted to local workers.

In addition to these well-known facilities there are, however, some others which are hardly used. In most developing countries by far the highest proportion of educated and trained people are working either in the public service or in military service. Only most recently some efforts have been made to utilise this unique accumulation of knowledge and experience for training purposes. Concerning public administration training institutes and academies have been created which are staffed mainly by part-time lecturers, normally holding important positions in the government and administration. It is interesting to note that industrialised nations have also taken recourse to similar methods to overcome the shortage of teachers. In the most heavily industrialised region of Western Germany, in North-Rhine-Westphalia, the Minister for Education recently appealed to university graduates, whether still active in other professions or inactive, to teach a few hours every week in public schools. Concerning military service the examples are more frequent. The advanced technology of military equipment requires technical training of a high level which can be used in production after release from the service. Under the special conditions of developing countries, however, techniques of organisation and leadership of discipline and responsibility are probably even more important than technical skills. Here, too, a line can be drawn to similar experience in industrialised countries e.g. the USA where it is not uncommon for leading military personnel to take over positions in top management of private industry. Closely connected with military service is the organisation of a special national service for all those not drafted to the army. In several African states this

special group of conscripts has received special training in separate camps and was later used for projects of national interest such as road and dam-construction, slum clearance, irrigation, enlargement of bridges and harbours, and similar activities. The organisation of such services is, however, not without problems. Special care must be taken to avoid any resemblance with forced labour. Even in emergency situations where it is imperative to look for new solutions basic human rights must be respected.

### **Training Methods and Policies**

Training methods at present used focus on a very small number of specialists. On the other hand the vast majority of young persons start working without having received the slightest vocational preparation. Between these two extremes there should be room for accelerated basic training covering a substantial proportion of the young population. Such training methods have been developed and introduced for instance in India, several North African states, Yugoslavia, and Venezuela. Following systematic instruction in elementary technical skills and the use of the most common industrial tools under conditions simulating actual production, these persons may either follow recognised vocational training streams or pick up jobs for which they are suited. Most of these jobs will be auxiliary services in small scale industry or handicrafts. These efforts are limited, however, by the scarcity of technical instructors. For related theoretical instruction modern teaching aids such as television and programmed instruction might offer some relief.

Some countries have also been experimenting with a training system in which relatively short training courses are interrupted by gainful employment. At the end of any training cycle a certificate is issued which qualifies for specific operations. This solution combines the opportunity for gainful employment with gradual improvement of technical skills and the chance of professional advancement.

In addition to measures aiming at immediate results many countries have also developed long-term programmes in the field of vocational training. The basis for such programmes is an estimate or projection of the future demand for skills in the principal sectors of the economy. It is only very recently that social sciences have offered some tools for more rational estimates. Most estimates show that the demand for university graduates might be satisfied in the not too distant future. On the other hand it seems improbable that the demand for technicians and skilled workers, supervisors, and instructors can be satisfied. Most estimates on the demand of semi-skilled labourers had to be corrected upward recently. With the introduction of automation an additional demand for this group of workers has become obvious. It is, however, uncertain whether this demand is transitory or permanent.

## Apprenticeship Training

As regards organisation of training the conclusion drawn from a large number of manpower estimates is that the apprenticeship system will remain the backbone of any national training system. In most developing countries apprenticeship was not regulated in any way until recently. In absence of free organisations, such as chambers of industry and commerce and trade unions, the state had to enact apprenticeship laws, prepare models for apprenticeship contracts, define job profiles, specify skills to be taught, and organise services for supervision of apprenticeship and final examinations. Many states found it useful to confer upon "National Committees for Apprenticeship", where representatives of employers, workers, and the interested public administration are represented, the power to regulate apprenticeship in detail.

In the 1950s apprenticeship laws used to provide for training periods between three and five years. In more recent laws this period has been successively lowered. This development is the consequence of the new concept of vocational training: an apprenticeship certificate is no longer a guarantee that this profession can be exercised for the rest of the life. Apprenticeship can provide the individual with a broad basis of skills which enable him to adapt himself to constantly varying requirements. Thus, training will continue throughout the working life of the individual. It cannot be denied, however, that economic reasons have also played an important role. Parents and young people alike are interested in gainful employment as early in life as possible. Under the conditions in developing countries gainful employment of young people is frequently a necessity in order to balance the family budget. The idea of a long training with reduced cash income is therefore rarely accepted. Employers, on the other hand, try to evade the cost of any training which does not bring immediate returns. Great public campaigns aiming at informing the general public about the possibilities of training have been much more successful after the reduction of training periods.

For the subsequent upgrading night courses and correspondence courses play a very important role. The related technical instruction is given in full time courses lasting for two to four weeks.

A variety of techniques has been developed to interest employers in financing vocational training. Some countries levy a special apprenticeship tax, others

compel employers by law to train a specific percentage of their total work force as apprentices. Some provisions require firms executing projects financed from public funds to employ on this project a specific percentage of engineers, technicians, and certified skilled labourers. The results of these efforts have not always been satisfactory. This is not surprising. In most industrialised countries training in industry which today sets the standards for all other training has been long neglected. It is a long way to the recognition that a skilled and intelligent work force is one of the greatest assets of an industrial enterprise.

## Training of Supervisors and Technicians

It seems that the training of supervisors has been neglected in many developing countries. One of the reasons is that their position and their duties are not well defined. As regards position in the hierarchy supervisors used to be the élite of production workers. They were, however, separated from management by an unsurmountable wall. It was their duty to see to it that orders by management were executed. Today supervisors have broader responsibilities. Organisation, leadership, and quick reaction are new requirements which must be added to a solid knowledge of the technological process and occupational hazards. It is very difficult to find among the rank and file of workers persons who do possess these qualities. This is mainly due to insufficient general education. The recruitment of supervisors from special schools for technicians has, however, been equally disappointing. These persons have as a rule good theoretical training. They lack, however, practical experience and are therefore not accepted by the workers. This has led to the creation of special supervisory institutes which have been founded in many developing countries. These institutes operate mostly in the vicinity of large industrial enterprises. The total course lasts for about three months, alternate sessions are held inside the plant and in the institute where the practical experiences are analysed.

Special efforts for the training of technicians have been made for some time in many countries. This training is given in special schools and lasts as a rule for three years. A bachelor's degree and sometimes an entrance exam is requested for admission. The curriculum concentrates on technological processes, production planning, and production control. Great efforts are being made to complement this essentially theoretical instruction by workshop practice.



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### **Training outside Industry**

This paper has concentrated on training in industry so far, because it is there that the need for additional training is felt most acutely. It appears also that industry (including small-scale industry) will provide most of the new jobs which must be created to give employment to the rising population. This must not lead, however, to neglect the other sectors of the economy especially artisan trades and agriculture. For artisans not many attempts have been made, and the results are not very encouraging. Perhaps the most successful model is the foundation of regional co-operatives which do not restrict themselves to purchasing raw material and selling finished products. Many co-operatives have organised productivity departments which offer technical services such as information about new tools, better raw materials,

simple work methods, and calculation of costs. These services are, where they exist, frequently supported financially from government funds. In the absence of industrial organisations, such as craft chambers, guilds and trade unions, co-operatives might also issue minimum training standards and organise courses for theoretical instruction.

In the long run a certain standardisation by special apprenticeship laws for crafts and agriculture, or by extending the application of existing industrial training acts seems highly desirable. Such laws, where they have already been promulgated, seem to have little effect at present. They must be preceded by much greater efforts to sell the idea and concept of training to the general public and by building up an organisation which ensures a minimum of uniformity in applying training standards and supervision.

### **DEVELOPMENT FINANCE**

## **Indebtedness Prevents Industrialisation**

by Dr Hans-Joachim Hartmann, Hamburg

**F**or their balance of payment to be in equilibrium is equally important for either industrialised or developing countries. It is true that scarcity of foreign currencies may constitute a much worse bottleneck for an underdeveloped nation's overall expansion of its economy than for a highly developed industrialised country. It is certain that, contrary to an opinion widespread in overseas countries, economic development, and especially employment for a rapidly growing population can also be achieved through the expansion and improvement of farm production. However, the most important chances for an economic evolution of the young states in Africa and Asia, as well as for the Latin American republics, seem to be offered by industrialisation. But this requires steady investments in machines and industrial plant, which can only be bought abroad. Independently of internal capital accumulation, which is indispensable for industrialisation, such necessary imports can only be paid for by an existing currency fund or by a steady influx of foreign funds, lest severe imbalances of foreign payments be produced.

There are only a few developing countries—most of them the oil-producing countries—that own a sufficiently well-filled foreign currency cashbox, and therefore no artifice or expedient, of which even the strangest are always forming the subject of hopeful experiments, will be able to assist developing countries in keeping their balance of payments in good order, unless they use two obvious methods, either separately or in combination: they must raise foreign credit, either in the form of bond loans or through export credits granted by their suppliers, or by increasing

their income from exports. These rules form an "iron law", whose immutability now serves as the background of all the international discussions that are conducted with developing countries.

### **Increasing Debt Service**

Developing countries, after the second world war, have chosen, with much fervour, the path of contracting more and more foreign debts, and for many of them, this has now become an impasse. Accumulated foreign debts have reached dimensions that make it more and more questionable in the interests of both creditors and debtors whether further debts should be amassed. In 1955, the total of foreign indebtedness of the developing countries had reached about 10 billion dollars, but by 1965, it had grown to \$ 36.4 billion. In the autumn of 1967, the publication of last year's statistical returns are expected, and they very probably will show a continued rise of the foreign debt burden. Indebtedness of this size produces the obligation to pay such high interest and amortisation as to cause the economists and currency specialists in the developing countries some severe headaches. There is a great number of states which are forced to use a disproportionately high part of their annual export earnings for paying interest on their foreign debts and for meeting their current repayment obligations. These sums are thereby automatically withdrawn from planned development projects. The World Bank has produced a special study on conditions in 36 selected developing countries, in which it is stated that Brazil, for example, had to use, in 1955, 31.7 per cent of its export earnings for servicing its