

# **M. Alister McIntyre**

**Human Resources  
Development:  
Its Relevance to Jamaica  
and the Caribbean**



Grace, Kennedy Foundation Lecture 1990

## **Preface**

Two years ago, the Grace, Kennedy Foundation Lecture was a dream. The many and varied problems of the Caribbean region were crying out for constructive analysis leading hopefully to viable solutions.

The Directors of this Foundation felt that if some of their resources were devoted to serious consideration of major issues by persons competent to evaluate them, their money would be well spent.

It is now no longer a dream. The first **GFK Lecture** was delivered in 1989 and its author, the Honourable G. Arthur Brown, set a high standard of objectivity and competence, which created a sound basis for continued dialogue. Indeed the subject chosen for the 1990 lecture arises naturally out of points raised by the first lecture.

We are delighted that the newly appointed Vice Chancellor of the University of the West Indies, Mr. Alister McIntyre, found it possible to prepare and deliver the second **GFK Lecture** on the subject "Human Resources Development: Its Relevance for Jamaica and the Caribbean."

A cardinal element of the concept of the **GFK Lecture** is its wide dissemination to aid continuing discussion at all levels of society. The lecture is broadcast on radio, committed to print in the national press and now, more substantially, appears in this book. The 1990 lecture will also be given publicly to a large audience before it is broadcast. It will be broadcast and published by the media in other territories of the English-speaking Caribbean through the Caribbean News Agency (CANA).

In this lecture, Mr. McIntyre briefly examines the two dimensions of human resource development within the context of a rapidly

changing global environment. First, he deals with the production of goods and services as a complex network of human activities, which has been facilitated and accelerated by the knowledge revolution. The emergence of new technologies and their applications have highlighted the need for developing countries to increase their investments in research and development. Mr. McIntyre also directs attention to the opportunities offered by an expansion of the services sector and the implications of that expansion for education and training.

In analysing the status of education to meet these demands, Mr. McIntyre provides comparisons from the developing and the developed world, dealing briefly with the investment needed to upgrade the education system.

Finally, Mr. McIntyre proposes that Jamaica and her Caribbean neighbours promote the development of a 'production culture' to provide an environment which supports investment and production for the benefit of the people of the region. The 'bottom line' will really be the result of our co-operative efforts to improve the quality of life.

The Directors of the Grace, Kennedy Foundation are happy to offer the content of Mr. McIntyre's lecture for further study to all who wish to have an informed view of the challenges and opportunities which face the developing nations of the Caribbean.

*Rev C. Samuel Reid*  
*Director - Grace, Kennedy Foundation*





**Mr. M. Alister McIntyre, C.D.**

In September 1988, Mr. McIntyre assumed the position of Vice Chancellor of the University of the West Indies, returning to the campus where he had started his career as a lecturer.

For eight years prior to that time, Mr. McIntyre was Deputy Secretary-General of the United Nations Conference on Trade and Development (UNCTAD). In 1987 he was given a special assignment to review the United Nations Secretariat in the economic and social sectors -this in addition to his regular duties. He was also appointed, for a period in 1987, Assistant Secretary General in the office of the Director General for International Economic Co-operation.

Joining the University of the West Indies as a young lecturer in Economics in 1960, Mr. McIntyre was promoted to Senior Lecturer and in 1967 to Director of the Institute of Social and

Economic Research (ISER) at Mona, where he remained till 1974. He then served for three years as Secretary-General of the of the Caribbean Community Secretariat (CARICOM) before joining UNCTAD.

During this time, he made a considerable contribution to public service in the Caribbean, serving on a number of commissions, advisory councils and committees for the governments of Jamaica, Trinidad and Tobago, Guyana, Belize, and The Leeward and the Windward Islands. This was a period of dramatic change in the Caribbean when many small territories were making the transition from colonial rule to independent self-government.

To adjust to these changes, various mechanisms were evolved to transform discreet small territories separated from one another and previously dependent on the British government into an independent, regional grouping. This task was made more difficult by rapid changes in the global environment – changes, which seem to be accelerating with time. This situation offered enormous opportunities for close study of economic, social and constitutional reform. As a keenly observant participant in this change, Mr. McIntyre built up his expertise in and sharpened his perceptions of various aspects of integration and development, first from a regional base and later from an international perspective.

His books, monographs and reports, articles and addresses - too numerous to mention individually - give an indication of the scope and depth of his work. His experience and wealth of information have ensured that he is much sought as a consultant at a high level.

A Grenadian by birth, Mr. McIntyre holds a First Class Honours Degree from the London School of Economics, a Bachelor of Letters from oxford University where he was a student at Nuffield College, and an Honorary Doctor of Laws from the University of the West Indies. He has been honoured by the Government of

Jamaica, which installed him as a Commander of the Order of Distinction and by the Government of Guyana which bestowed on him the Cacique's Crown of Honour.

## **Introduction**

The Grace, Kennedy Foundation is very fortunate in being able to attract another distinguished West Indian in the person of University of the West Indies Vice Chancellor Alistair McIntyre, to deliver the second in its series of annual lectures. As Chairman of the Foundation and a staff member of the UWI - going back to the days when the present Vice Chancellor first joined the University - I feel doubly honoured and very pleased to introduce this volume which contains the text of his lecture.

An underlying theme of the inaugural lecture of 1989 was the critical importance of human resources development as an essential strategy in moving the societies and economies of Jamaica and other CARICOM states into the twenty-first century. It is therefore logical to have decided on this theme for the second lecture.

This is a subject about which Mr. McIntyre feels strongly and thinks deeply; indeed he has emphasised the imperative of investment in human resources in addresses delivered during the past year. In this wide-ranging lecture, and with the perceptiveness which represents one of his hallmarks, he deals with two dimensions of human resources development, contrasting the relatively low priority assigned to education and training in the Caribbean - especially in science and technology - against the situation obtaining in Far Eastern countries. He stresses strongly also the importance of developing and maintaining an environment, which is conducive to production: a 'Culture of Production'.

This lecture should be of interest not only to the academic community but also to a wide spectrum of the general public. The issues which Mr. McIntyre raises and the experiences on which he focuses should be of even more direct practical concern to those who hold positions of responsibility in the arena of public policy

and private sector decision-making throughout the CARICOM region.

*Prof. The Hon. Gladstone E. Mills*  
*Chairman*  
*Grace, Kennedy Foundation*



## **The Concept of Human Resources Development and the Knowledge Revolution**

I am very pleased to be the second lecturer in the Grace Kennedy Foundation Lecture Series. It is a tall order to follow the Honourable G. Arthur Brown, whose lectures were a model of breadth of knowledge and lucidity of exposition. I shall be speaking on human resources development, which picks up on some of the themes emphasized in the first lecture, and take up issues of relevance to Jamaica and the Caribbean.

### **The Two Dimensions of Human Resources Development**

There are two dimensions to human resources development. One is concerned with the contribution which human beings make to the production of goods and services and therefore with human resources as a means to development.

People participate in the production of goods and services by applying human effort and ingenuity to a country's endowments of natural resources, technology and capital equipment. Indeed, it is by human ingenuity that knowledge is accumulated about how to produce goods and services, from the simple to the most complex products, and about what plant and equipment could be designed and built for the purpose. Furthermore, it is human ingenuity, which identifies what sorts of goods and services human beings wish to use and what opportunities are there for producing or securing them.

The other dimension views human resources development as the ultimate end of development, which is to develop people from both a material and nonmaterial point of view. In this perception one is not merely concerned with the production of goods and services for their own sake. One is ultimately concerned with the utilization

of the fruits of increased production for improving the human condition: giving people the possibility of being better fed, better educated, healthier, and living lives of dignity and self-respect.

I want to expand first on the concept of human resources as a means to development. Knowledge is a principal means through which human beings contribute to the production of goods and services. This involves the application of technology, and is therefore linked to a country's capacity to generate, acquire, adapt and utilize technology.

### ***The Knowledge Revolution***

In the world today, a virtual knowledge revolution is taking place with the emergence of a new technologies in fields such as biotechnology, information technology, and the materials sciences. I shall comment briefly on the first two because of their special relevance to development prospects in Jamaica and the Caribbean.

Biotechnology is a new term for something old - the study of how life works, and how living things and their products can be applied for man's purposes. The fermentation of beer and rum is biotechnology, so is the making of drugs, the use of new methods of cloning plants, new chemical manufacturing and so on. In recent years great excitement has been caused by the dramatic advances in genetic engineering in fields such as agriculture. Genetic engineering has opened up vastly enlarged possibilities for producing plants and animals that are disease resistant, give higher yields and have greater uniformity in size and appearance. The advantages are already becoming apparent in livestock, fruit, and vegetable production.

At the same time, the new advances are leading to the development of artificial products to replace natural products. Two examples of importance to the Caribbean are the production of artificial

sweeteners as substitutes for natural sugar, and the laboratory production of cocoa butter to take the place of the natural product. As with other types of technology, there are both positive and negative effects. The important thing is to achieve a mastery over this technology so that the benefits can be harnessed, and timely steps taken to minimize the impact of negative factors.

The University of the West Indies (UWI) is already engaged in research and training in biotechnology. Work is going on at all three of our campuses. At the Mona campus, the recently opened Biotechnology Centre is an important facility for postgraduate training and research. One of the areas where significant work has started is tissue culture, where the Centre is working on projects in collaboration with government and private industry with respect to the propagation of crops such as Irish potatoes, ginger, cassava, bananas, plantains, yams and sweet potatoes.

Information technology is concerned with the collection, processing and transmission of information. It is the outgrowth of the development in computer technology and related artificial intelligence systems. Without denying the importance of the human mind to development, we have to acknowledge that computers have become almost indispensable to human existence. In the contemporary world, computers *enable transport reservation and accommodation systems, link continental inventory systems, accelerate financial transactions, manage complex systems, run traffic lights and bus systems, control electricity production and transmission, keep government records, control automated factories, are the brains in robots, and operate remote sensing and communications satellites.* Looking particularly at the field of production, the radical transformation brought about by computer technology has spread to virtually every sector of the economy. It is affecting not only the manufacture of traditionally capital and technology intensive goods, such as plant and equipment of various kinds, but it has also

spread to labour-intensive goods such as textiles. For instance, in the Federal Republic of Germany, over 60% of textile production is computerized.

In the field of intelligence systems, it is reported that Japan hopes to bring a fully robotized automobile plant into commercial production by 1993. Japan has also led the way in the introduction of computerized just in time' production systems which have significantly reduced the need to hold inventories of raw materials and components. For example, it is reported that United States firms average nine months of inventory stock, while Japanese firms are able to manage with less than two months' stock.<sup>2</sup>

### ***Knowledge and World Trade***

Knowledge-based products have become one of the fastest growing categories in international trade. Exports of high technology products accounted for 21% of the Organization for Economic Cooperation and Development (OECD) exports of manufactured goods in 1985, as against 16% ten years earlier. The growth of trade in high technology products has been associated with the phenomenal growth in Japanese exports, making Japan draw level with the United States and the Federal Republic of Germany as the three largest exporting countries in the world. Japanese exports of high technology products alone increased from just under 12% of its total exports in 1975 to nearly 20% in 1985. The expansion of high technology trade, particularly in engineering products has also been associated with the emergence of the 'South-East Asian Four' (Hong Kong, Republic of Korea, Singapore and Taiwan) as major exporters, with their combined share in world exports (8%), being greater than that of the individual shares of Britain and France. There can be little doubt that the changes being brought about by knowledge in international trade are leading to far reaching shifts in the structure of world production and trade, shifts that will have profound implications

for the distribution of economic power among countries, with concomitant consequences for international economic relations.

Computerization may have even more profound implications for Jamaica and the Caribbean with respect to production and external trade of services. I shall come back to that in the next section. But the brief illustrations that I have given about the character of the knowledge revolution in the two fields to which I have referred pose already a number of important issues for our community.

### *Research and Development*

Growth in the knowledge base of a country springs from its efforts in the field of research, education and training and the relevance of these efforts to production possibilities. I shall return later to education and training, but one can ask here: How adequate is the research effort to development needs, and how supportive is the environment to intensification in research activity?

This is not the occasion to engage in a detailed overview of research efforts. Such descriptions can be found in the reports of the University of the West Indies upon its work, which are available from the university campuses, and from the reports of agencies such as the Scientific Research Council. The information shows that for a small country and region, Jamaica and the English-speaking Caribbean have not done badly in their research effort as compared with neighbouring Latin American countries. For example, I commend to you the Report of the Inter-American Bank on Economic and Social Progress, 1988, which contains a comparative analysis of research performance in the fields of science and technology. The report shows that Jamaica and Trinidad and Tobago were among the ten countries in Latin America with the largest number of scientific papers published. Where the English-speaking Caribbean is being less successful is in the commercialization of research results by using them to

produce new goods and services, or to upgrade the production of existing ones. Such latter activities are usually reflected in a country's expenditure on research and development.

The data show that developed countries tend to spend about 1 to 3% of their gross national product on research and development. For Jamaica, a rough estimate has been made that about 1/8 of 1% is being expended on research and development. <sup>3</sup> It is doubtful whether any of the CARICOM countries have registered a better performance.

Many commentators have already emphasized that if we are to make the transition to the new scientific age, a significantly stepped-up effort in research and development is urgent and imperative. For the University's part, we are giving consideration to the strengthening of postgraduate studies and research and to a substantially increased programme of research and development. Among other things, we are hoping to establish, in collaboration with the private sector, science and enterprise parks which would provide a range of research and development as well as management services to the private sector, especially to businesses in the start-up stage. However, this is running somewhat ahead of the analysis. In the next section I shall return to the computer revolution and the question of production and trade in services.



## **The Production and Export of Services**

I have made reference already to the impact of the computer revolution on production and trade in services. This has led to a fundamental re-thinking of the role of the services sector in economic growth and development.

In the early literature on the subject, services were thought to be of secondary importance to an economy. One school of thought held that services only assumed importance in an economy when it had reached a postindustrial stage, where societies could afford the luxury of allocating an increasing proportion of their resources to service activities such as personal services and leisure.

This view of the matter did not accord with the reality in many developing countries, where the services sector accounted for a large, sometimes, and the largest proportion of production and employment. Accordingly, another hypothesis developed, which viewed services as the residual or informal sector in the economy, which accommodated people who could not get wage employment in the higher productivity formal sectors. Services were therefore defined as the low productivity sector par excellence, characterized by activities such as household service and petty trading.

The application of computer technology to the services sector has however prompted a re-examination of its role and importance. It began to be realized that in many developed countries, services had become a major source of growth over the 1980s, characterized by high-value products and high-paying jobs. Services have also become important in international trade, accounting currently for about one-fifth of the value of world trade in goods. Services fall into two broad categories: producer services, which constitute inputs into the production process, for example, transport telecommunications, design, marketing, finance; and consumer services, which are directly consumed, for example, travel, tourism

hairdressing. There are borderline cases such as health and education where controversy continues about the category in which they should be placed.

It is now thought that a country's competitive edge in the production of goods is significantly affected by the importance of producer services in the economy and their competitiveness. Up-to-date statistics on producer services are not available. However, in 1981 producer services represented 14% of the value of manufacturing output in the Federal Republic of Germany, 16 % in Italy and 22% in France. Other information confirms the growing importance of producer services such as business support services and telecommunications in determining the competitive position of countries.

Japan is a particularly interesting case. Since the early 1970s the rapid growth of the services sector has been led by the expansion of producer services. From 1972 to 1986 the number of newly established firms increased by 120% for producer services, while for consumer and public services the increases were 22% and 27% respectively. Likewise the number of employees in producer services increased by 112%, while the corresponding increases for consumer and public services were 30% and 60% respectively. 4

Services have also become a major element in international trade as computerization has made tradable a number of services, which have hitherto been confined, to national boundaries. Among the rapidly growing new services in international trade are cleaning services, courier services, security services and credit card verification. Computerization has also been partly responsible for the explosive growth in international financial and securities trading. It is estimated that every day some US \$60 trillion of transactions take place on the world's major financial markets. The value of international financial transactions has now become a substantial multiple of the value of merchandise trade. Trade now

tends to follow finance, whereas traditionally it has been the other way around.

## **Services in Developing Countries**

Developing countries are beginning to attach importance to services trade. Four developing countries - Singapore, Mexico, Saudi Arabia and Egypt - are among the top twenty exporters of services in the world economy.

A major study commissioned by the Government of Singapore recommended that the promotion of services should be given high priority in government policy, placing equal emphasis on manufacturing and services, and making these two sectors the twin engines for Singapore's future growth. Attention is being given to strengthening the international competitive position of various sophisticated services in which Singapore has built up expertise, for example, air and sea port management. Engineering, consultancy, and business services.

Mexico has traditionally relied on services such as tourism, processing services and re-insurance to provide the bulk of its foreign exchange earnings from services. However, it has recently been improving its competitive position in non-traditional areas such as architecture and construction engineering, and is currently giving attention to the diversification of the services sector in the context of industrial restructuring. Saudi Arabia is selling services connected with the petroleum industry, whereas Egypt is relying upon a mix of tourism, engineering and construction, and labour services.

Several other developing countries are attempting to develop a competitive edge in some of the newer services. India is becoming a significant exporter of computer software, raising its exports of software from US \$22 million in 1984 to US \$103 million in 1988.

Tunisia is concentrating on exporting software to Arabic countries. Bahrain is setting up an international Trade Centre to become a regional centre for merchandizing in the Middle East. Colombia is trying to develop the export of health services, whereas the Dominican Republic is endeavouring to develop on a broad front through the establishment of free zones for services exports.

Although India is a very large country, and is for that reason a special case, it is nonetheless a good example of how scientific and technological capability, including computer expertise, can lay the base for thriving service industries.

India has some two and a half million scientific and technical personnel trained at university/tertiary level, and several million more high school science graduates. It possesses the world's third largest pool of scientific and technical skills after the United States and the Soviet Union.

Its software firms are targeting the United States market where fluency in English gives them a competitive edge. They are also doing well in Europe where the industry is handicapped by manpower shortages. For instance, it is reported that some four hundred electronic data specialists are required in the Federal Republic of Germany. This provides an opening for developing countries such as India, with skilled and relatively inexpensive manpower. However, recruitment of highly trained specialists by developed countries, known as 'body shopping' is creating concern that the country will be denuded of its specialist manpower. Joint venturing between local and overseas firms in areas such as software development is seen as one way of stemming the outflow of trained people.

### ***Initiatives for Developing the Services Sector***

If Jamaica and the rest of the Caribbean are to make any significant progress with the development of the new computer-based services, then a number of things will have to be done. First, a significant part of the labour force, particularly young persons with secondary and tertiary level education, will have to acquire computer literacy. This effort will have to start at the UWI, in other tertiary institutions and in schools, and will also have to involve on-the-job training.

Second, at the university level, efforts will have to be intensified to expand and upgrade programmes in computer science, so that a larger number of software engineers can be produced. Among the things the University will need to do, is to undertake vigorous recruitment of and establish more competitive levels of remuneration for computer scientists. At the present time, several faculty vacancies at the senior level are unfilled because of low salaries. The university will also have to encourage more research and development work in software.

Third, the governments will have to adopt definite policies about the importation of hardware and, in particular, to consider whether imports of computer hardware should not be permitted on a duty free basis.

Fourth, an adequate supply of technicians must also be trained who can service and maintain the equipment. The purchase of hardware is usually done on a package basis, which includes the training of technicians. Governments should encourage competition among suppliers so that the best terms for equipment/training packages are secured.

All of this assumes that computerization will form part of an overall strategy for development of the services sector. This should involve the targeting of specific service activities, the development of locations that will favour clustering them to benefit from

economies of scale, and aggressive efforts to help local companies find joint venture partners which can, among other things, give them access to specific niches in export markets.

As already mentioned, the idea of free zones for services, which parallel free zones for goods is beginning to gain ground. This is one possibility that may have attraction in the Caribbean.

Turning to the specific service activities that deserve consideration, a few preliminary and very general comments can be made. In the field of producer services, most governments already recognize the need to improve the physical and economic infrastructure to support the growth of production for the local market and for export. Attention is now being given to upgrading internal and external transport services, which are generally thought to be deficient in both quantity and quality.

A similar situation prevails with telephone and external communications services. Several governments are implementing, or are in the process of formulating, plans for improvement in those services. The return of Cable and Wireless Limited to Jamaica and the intensification of its activities in territories which it never left indicate this. Other companies are also involved in the supply of state-of-the-art equipment and training.

Banking, insurance and securities trading are growing rapidly, and reaching a stage of sophistication that should permit them to go beyond the domestic market. Governments have expressed interest in the development of a CARICOM Stock Exchange, starting first with the listing of securities on existing exchanges in Barbados, Jamaica, and Trinidad and Tobago. However, given the close interaction which is now developing between securities and other financial markets, partly reflected in the financial conglomerating which is taking place, the CARICOM countries may well have to consider establishing a Caribbean Common Market in financial



services. This should serve as a learning phase for the development of extra-regional exports of those services.

Some countries are also building up capabilities in other producer services, which could provide an initial base for eventual export development. These services include engineering and consultancy, accounting and auditing, market research and advertising. The growth of informal commercial importers in wholesale and retail trade raises the question whether this potential should not be harnessed for developing Jamaica as an international merchandizing centre, identifying sources of quality goods in high demand and supplying them competitively to neighbouring countries.

In respect to consumer services, the expansion and diversification of the tourist industry is a top priority. But with this could come expansion in a number of other related services such as entertainment, education and health. I have mentioned before that the world market for cultural tourism seems to be growing with the development of tourist packages that include instruction in the culture of the tourist destination and, in some instances, language training. Similarly, Jamaica is among the countries that are beginning to cater to the increasing exercise and diet consciousness of their customers. Health care packages are becoming important in the industry. Countries that are able to offer quality care inexpensively could develop a significant competitive edge in the trade.

In my address to the first Conference of Caribbean Economists in July 1987, I made the more general point that some countries in the region have, over different periods of time, been exporters of educational and medical services, and that the prospects of developing such exports once again on a large scale deserve investigation.

This section ends with the thought that if we are to take fullest advantage of the openings for developing the services sector, bold and innovative approaches will have to be adopted at all levels to upgrade and develop the educational system.

# **Education and Training as Avenues for Economic Growth**

## ***Education***

The state of knowledge in a country is ultimately linked to the development of its educational system. It is clear from what has been said before about the knowledge revolution that the educational system has a central role to play in developing a country's potential. There is some evidence that sequentially later industrializations have been characterized by higher levels of mass education. The second industrial revolution in the United States and Germany involved more educated populations than the first industrial revolution in Britain and there are indications that at least Japan and Korea began their industrializations with more educated populations than those of Britain, Germany or the United States in earlier periods.<sup>5</sup>

In 1903, there were five students in British universities for every ten thousand in the population. In 1985 the comparable figure for Korea was 217.5 students. Indeed, both Japan and South Korea have been maintaining very high enrolments at the secondary and tertiary levels. In 1986, Japan had 96% of its secondary age populations enrolled in secondary schools, and 29% of its tertiary age cohort enrolled in tertiary institutions. In the Republic of Korea 95% and 33% were comparable ratios.

## ***Deficiencies in Education***

Turning to our own situation, complaints about the educational system in Jamaica and in several other Caribbean countries are now legion. Chronic shortages of qualified teachers, deteriorating buildings and equipment and shortages of materials are among the most pervasive problems. The poor quality of the educational

system is a phenomenon of the seventies and eighties. Prior to that, Jamaica and the rest of the region had a reputation for good education. Very many persons who have occupied important positions in the post-war period had the benefit of only a primary education. During the colonial period and in the pre-independence years, Jamaica and Barbados, in particular, supplied teachers to English-speaking countries in West Africa. At the secondary level, some countries in the region exported educational services, taking students, from nearby Latin American countries, who wished to have a secondary education in English. Sometimes these were the children of West Indian migrants abroad who had a deep respect for the high standard of schooling in the region.

It has however to be said, that although standards were high, the numbers being educated were rather small. In 1950, the gross enrolment ratio in primary education in Jamaica was 68%, and secondary education 15%. This compares with current figures of around 100% at the primary level, and over 50% at the secondary level. The rapid expansion in enrolments started in the 1970s as the government of Jamaica adopted a policy of free secondary education. However, during the 1980s the effective implementation of this policy was constrained by decreasing public expenditure on education, which had the effect of reducing standards. Valued in constant 1974 dollars, recurrent expenditure on education fell from a peak of \$129 million in 1977-78 to a low of \$93 million in 1984-85, and is reported to have reached an even further low in 1987-88.

To put the matter in a nutshell, the principal problem in primary and secondary education has become one of quality rather than quantity.<sup>6</sup> In the case of the tertiary system, there are serious deficiencies in quantity, and in some cases in quality. At the quantitative level, the gross enrolment ratio in Jamaica is no more than 6% or about one third of the average for middle income developing countries.

The disparity is particularly marked in science and technology. I cite often the case of Singapore - admittedly a special one - with a population not too dissimilar from Jamaica (2.6 million as against 2.4) but with about ten times the number of students enrolled at the tertiary level in science and technology. Compare also the regional picture in relation to engineering. The so-called newly industrializing countries have a range of 20% to 40% of their post-secondary students enrolled in engineering. The largest segment of engineering students in the CARICOM area is at the UWI, where there are some eight hundred engineering students enrolled out of a total enrolment in all faculties of almost twelve thousand.

In the natural sciences, it is a matter of concern to note that in the ten-year period 1977-1978 to 1987-1988, there was virtually no growth in the number of students registered for a first degree at the Mona campus. The numbers remained almost static at just over one thousand although there was a small increase in the number of postgraduate students.

There has been virtually no growth in the intake of students into the natural sciences at UWI because of inadequate preparation at the secondary level in mathematics and science. It is also manifested in the high failure rate in preliminary and introductory courses in subjects such as mathematics and computer sciences. In 1987/88, the failure rate for the preliminary course in mathematics was 37%, in the introductory course 40%. In computer science, the failure rate in the introductory course, was 35%. I have been drawing illustrations from university education in discussing deficiencies in the tertiary system, but one must not confuse the two. The university is only one part of the tertiary system. Tertiary education refers to the whole range of post-secondary education including the College of Arts, Science and Technology, technical and vocational colleges, and schools, community colleges, teacher

training colleges, agricultural training institutions, and work/study schemes often involving formal apprenticeships.

Some commentaries on the deficiencies in tertiary education in the area of science and technology have missed this distinction and gone on to argue erroneously that the training of technicians is of higher priority than that of scientists. The training needs of the two categories are complementary rather than competitive. Scientists and engineers require technicians in order to do their work and the reverse also applies.

### *Overseas Students*

One of the manifestations of deficiencies in the educational system is the large number of students studying abroad. According to UNESCO data, in the period 1983-85 the CARICOM countries had over eight thousand students studying abroad, of which Jamaica contributed over two thousand. These may well be underestimates, since a proportion of people going abroad as visitors or migrants tend also to take advantage of educational opportunities. It would occasion no surprise if it were found that CARICOM countries are spending US \$20 million per annum on foreign study, sufficient to sustain a fourth campus at the University of the West Indies. Moreover, the potential brain drain involved is significant. Although it would be desirable to send a proportion of our students abroad, detailed study of the present situation might show that a significant number of these students could be attracted towards local study, if the educational systems were strengthened.

Two factors, which favour an overseas education, are the greater flexibility that exists in admission requirements and the wider choice of courses and specializations that are open to students.



At the UWI, significant progress has been made in recent years in making admissions requirements flexible. Thus, it is now possible to secure entry at 'O' level into degree programmes in natural sciences, and in arts programmes offered in the evenings. It is also possible to secure partial or full accreditation for a number of diploma and certificate programmes offered by other tertiary institutions, thereby reducing the time students are required to spend on campus in completing a degree.

Students at the Sir Arthur Lewis Community College in St. Lucia and the Antigua State College can now do the first year of the degree work in arts, sciences and social sciences. This will be extended to other tertiary level institutions as circumstances permit. The Bachelor of Education degree is now being done by special arrangements with the Mico Teachers' Training College in Jamaica and the College of the Bahamas.

The proposed introduction of a semester-type system by the UWI starting on a phased basis in the academic year 1990/91, will give further flexibility to the process of accreditation and also open up possibilities for introducing a wider choice of courses.

### ***Training***

Serious deficiencies also exist, with respect to training. The opportunities for getting a technical or industrial skill are very limited. Accordingly, one finds that out of the 203,000 that were unemployed in Jamaica in 1988, 89% of them had received no training. A relevant point is the small enrolment in technical and vocational schools. Ministry of Education statistics for 1986-87 show that a mere 8,611 students or 3.6% of total secondary school enrolments were in technical high schools and vocational and agricultural schools. Furthermore, these schools suffer from shortages of equipment, space and trained teachers, as do others in the system.

One factor favouring late industrializers like Jamaica is the reduction that has occurred in the time required to acquire an industrial skill. At the start of the first industrial revolution, a typical apprenticeship lasted from five to seven years. Today, modern technology has simplified industrial skills to such a degree that vocational training centres in developed countries are able to graduate technicians in a fraction of the time.

### ***Resources for Education and Training***

The central issue facing the upgrading and enlargement of the educational system in Jamaica - and to some extent in other Caribbean countries - is that of finding the necessary resources to do so. There is very little room available to governments for increasing expenditure on education.

In the typical case, the government is already devoting 5% to 6% of GNP to expenditure on education, which compares well with, developed countries and other developing countries at similar levels of development. It can be argued that Jamaica can increase modestly the proportion of its national budget devoted to education, from the present level of 13%, and bring it close to the average for middle income developing countries, which is 15% to 16%. But this may not involve any absolute increase in expenditure since the government, in any event, is expected to reduce sharply the overall public expenditure in order to cut its budget deficit from its present high level of 9% of GNP. Prospects for revenue growth are also at best modest, since it is unlikely that the economy itself will achieve anything but small increments of growth in the short term.

Given this set of circumstances, the potential for improving the educational system will depend on several factors, including the achievement of greater cost-effectiveness in education so that

greater value is received for money spent; the ability of the government to re-allocate expenditure from tertiary and secondary education to primary education; and the readiness and the ability of private sources to take up the slack at those two levels.

In other words, we have reached a situation in Jamaica and in most of the English-speaking Caribbean where free education at the secondary and tertiary levels is no longer feasible. If we wish to continue to have free education at these levels we will have to accept deterioration in standards. The demands of economic development under present conditions make free higher education an unrealistic choice, if ever it could have been realistic.

Economic development is about choices. Parents, especially those with incomes, have to decide in accordance with their income levels what importance to assign to education in their household expenditure. They will have to decide what priority to give education as against say investment in other items, such as motor cars, satellite dishes, and other state-of-the-art appliances and equipment. This will ordinarily involve parents and their children, who are direct beneficiaries of these levels of education, assuming full or partial responsibility for the cost of their education. Modalities will have to be found for expanding student loan schemes, with varying levels of concessionality, dependent upon the household income of the student involved.

An approach to the financing of education along these lines combines both principles of equity and ability to pay. By providing for the full public financing of an improved system of primary education it ensures that all students, irrespective of the parents' income, will get a sound educational foundation. At the same time, it requires households to contribute to the cost of higher levels of education on terms that take into account their ability to pay.

Finance is not the only area in the educational system that requires reform, but it can open the way for other improvements such as in the maintenance of the physical plant and the retention of quality teachers in the system.

One should also not overstate the relationship between education and economic growth. There are no spontaneous forces that will work automatically to transform an educated labour force into new economic activity. Countries such as South Korea have gone through periods of unemployment for their educated population. Nonetheless, the existence of an educated labour force provides a starting point for economic growth if entrepreneurs come forward to utilize the existing endowment of skills. This leads to the question of entrepreneurship, which I shall take up in the following section.

## **A Culture of Production**

In the study of the development process, a great deal of attention has been given to the role of the entrepreneur in economic development. International studies of the question have by and large not been definite in identifying the precise contribution made by entrepreneurship. In his classical study of the issue, Joseph Schumpeter depicted the entrepreneur as the catalyst, taking the lead in risk-taking and innovation. This perception continues to dominate up to the present day, and fairly accurately describes the role played by many of the successful businessmen of our time, especially in North America and Europe.

In the case of the late industrializers such as Japan, the republic of Korea, Singapore and Taiwan, it is still a matter of debate how far their success is attributable to individual effort, as against concerted efforts in strategic planning by the private and the public sectors. The direct role of the state has been even more pronounced in countries such as Brazil, India and Mexico.

In general, the evidence suggests that a key feature of the industrialization process is the maintenance of a supportive environment for increasing production. In this, the government is crucial, not so much as producers, but as providers of production incentives. These incentives go all the way from encouraging innovation, research and development to maintaining appropriate macro-economic policies, and measures impacting directly at the plant level, and influencing both management and labour to achieve and sustain high productivity and cost effectiveness. However, the encouragement of production is not a matter for government alone. It has to be a broadly based effort by all parts of the society to adopt a greater orientation toward production.

### ***Production Culture***

A production culture, an ethic favouring increased production and competitiveness, characterizes most of the success stories in world growth and development. This has manifested itself in high rates of corporate and personal saving; a well motivated management and labour force aspiring continuously to do better, a strong national commitment to performance through hard work, discipline, and respect for achievement. Although in some cases these elements are believed to have sprung from traditional cultures, they are essentially man-made. There is nothing inhibiting a country from developing a culture of production if its leadership is inspiring the population to do so at national, community and enterprise levels.

In Jamaica and the Caribbean, greater attention needs to be paid to several elements that together constitute a culture of production. One is greater recognition of achievement. I quote here some very frequently quoted statements by Sir Arthur Lewis on the elements, which are needed if Caribbean people are to succeed.

You must be willing to work hard, while the rest of your companions are at play. You must be willing to practice over and over again, until you get it right. You must be highly self-critical. You must be humble enough to welcome, analyze and apply the criticisms of others, or you will never learn. There is no doubt that achievers have a special type of personality. This drive for achievement is not identical with brainpower. Many people with excellent brains achieve nothing, while men with moderate brains can be highly successful if they have the drive to achieve.

An achiever feels an acute sense of failure every time he has to make an excuse for nonperformance, however valid. But in some third world countries one gets the impression that the largest industry is the manufacture of excuses for non-performance, and pride in the artistry of one's excuses is widespread.

We shall not be well endowed with business types until our society learns to appreciate the business-like personality, and absorbs this appreciation into the cultural framework of boyhood, girlhood and adolescence.<sup>7</sup>

An area, which cries out for improvement is the work habit. Complaints about the tolerance of lateness, absenteeism, long breaks during working hours and slacking on the job are frequent. Insufficient respect is paid to deadlines; the completion of jobs and contracts on time tends to be the exception rather than the rule. All of these affect productivity and competitiveness, and are particularly harmful to sectors and industries engaged in international trade where reliability of supply and rigorous adherence to delivery dates are absolutely indispensable for success.

Many of these weaknesses reflect a failure of supervision and inadequate delegation of responsibility. Training can play a role here to sensitize managers and supervisors about the need to delegate responsibility, and to undertake effective monitoring of the performance of colleagues under their direct responsibility. Management must try to work out with unions, incentives as well as penalties that could help to reduce and, hopefully, in time, eliminate these weaknesses.

More deep-seated are attitudes that are characterized by complaining, lamenting the weaknesses in the local situation, and extolling the virtues to be found in countries over-seas. While we have to be very sensitive to local deficiencies, we must act to correct them, not merely to play the role of armchair critics. We have to develop the confidence to believe that we can tackle our own problems, and thereby contribute to the onward march toward progress.

At a more general level, the people of the region, especially the young, need to be exposed to role models of success in business and other economic activity. This poses a challenge to the educational institutions and the media to develop and present local cases of achievement and success for the enlightenment of the population.

A questionable practice is the tendency to restrict outside competition in employment, by permitting outsiders to take up employment only where there are no nationals available to do the particular job. The work permit legislation which regulates the employment of foreigners had initial justification in a situation where employers tended to give preference to foreigners even where there were local citizens of equivalent or superior qualifications. However, situations are now being reported in the region where some CARICOM countries have refused to grant work permits to nationals from other CARICOM countries, where local persons did not have the basic qualifications for the job or had patently lower qualifications.

If CARICOM countries are to progress with export development and new activities such as services, then a hard look has to be taken at the administration of work permits, to make sure that professional and skilled people in the region are able to compete among themselves for employment and to stand up against the best available from outside. The indulgence of mediocrity, not to speak of incompetence, is a recipe for economic failure, however congenial it might be on nationalist grounds.

At the same time, Jamaica and other CARICOM countries need to give greater incentives for and recognition to, hard work and achievement. Although, productivity incentives have been introduced by many companies, these are still not a standard feature of salary and wage agreements. Salary and wage structures in the public sector make little or no provision for rewarding high performances. Overall, insufficient recognition is given at the national level to the successes achieved by scientists and other professionals in their respective occupations.

Greater incentives and support should be extended for self-employment and the development of small businesses. These could



take the form of so-called incubator services, which help the start-up businessman to transform an idea into a bankable project. Retraining schemes could have a similar effect, by assisting people to change occupations and careers, especially when they wish to enter fields of high growth potential.

Policy-makers should take care to ensure that such services are well distributed between urban and rural areas, so that sectors such as agriculture and agribusiness receive the support required. The extent that new employment opportunities are created in the rural areas may lead to less migration to towns. Internal migration to the principal urban areas in Jamaica has been growing at about 7% per annum, which creates pressures on jobs, housing and social services in the towns while leaving capacity under-utilized in the countryside.

A word about the macro-economic policy framework, which has received considerable attention recently in the context of adjustment programmes. The private sector has generally welcomed the deregulation of economic activity in so far as it involved the abolition of cumbersome and time-consuming administrative controls and procedures. However, some concern has been expressed about the reduction or removal of protection for local industries. This may have some justification where the need for infant industry protection can be substantiated, and where producers in other countries with which local producers have to compete are being protected. There has been a tendency in this matter for the pendulum to swing too sharply from advocacy of policies of excess protectionism to those of complete free trade.

Caribbean governments need to consider carefully the circumstances under which unilateral trade liberalization is in the national interest. Where continuing protection is justified, they need to tighten their surveillance machinery to ensure that the

industries concerned do not receive excess protection and that it is phased out once they are beginning to stand on their feet.

In general, in an economy like Jamaica which relies heavily on foreign trade, macro-economic policy, especially monetary policy, which deals with the availability and terms of credit, and fiscal policy, which deals with taxes and government expenditure, should be policy neutral, in the sense that they do not favour one sector over another. In particular, they should not favour protection for domestic market as against protection for export.

Where this is unquestioned as a principle, it should not be applied simplistically. In the real world, one has to take a strategic view of the economy and decide which sectors and activities need special encouragement because of their importance to the growth and competitiveness of the economy in the long term. For example, this applies to the case in which import substitution should be encouraged in order to build an export capability over time.

In general, a comprehensive and well-formulated policy framework for improving the environment for investment and production is now a matter of top priority. Governments already recognize this. They recognize also the importance of involving the private sector in the formulation and implementation of such a framework. This includes the question of macroeconomic policy, notwithstanding the fact that countries like Jamaica which are implementing IMF stabilization adjustment programmes have very limited room for maneuver.

## **Human Development as the Purpose of Economic Development**

I would like to turn in this final section to the second dimension of human resources development. This concerns developing the capability of people to lead fulfilling lives. It gives expression to the idea that economic development does not only involve increasing the production of goods and services; it is ultimately concerned with improving the human condition.

### ***The Trickle Down of Growth***

The early literature on economic development perceived that economic growth would trickle down to the broad masses of the population through increased employment and through the utilization of increases in government revenue to improve social services such as education, health and social security.

The experiences of many countries during the 1960s cast doubt upon the effectiveness of the trickle down mechanisms, especially in relation to employment. In several countries, increases in employment tended to lag behind the growth in output. Evidence began to accumulate that the lower income groups in the population - the so-called bottom 40% - were not experiencing improvements in their conditions of life commensurate with the overall expansion which had taken place in the economy.

### ***Basic Needs***

This led to the widespread shift toward basic needs strategies of development which attempted to target directly the basic needs of the masses of the population for items such as food, shelter, clothing, education and health. Although these strategies had a strong rationale and a wide appeal, they ran into trouble in several

countries. There were instances where governments attempted to implement very ambitious targets over too short a period of time, often employing draconian measures to change patterns of demand and supply.

Many of these did not work and created severe tensions and imbalances in the economy. Another feature was expansion of the state sector, which critics alleged crowded out private investment, and promoted governmental inefficiency, political patronage, and corruption. Far from building up capabilities, the attempt to expand the provision of some services too rapidly, for example, education and health, led to deteriorating standards. On the whole, it was perceived that basic needs strategies were the product of romantic notions of self-reliance, which encouraged the adoption of autocratic policies even in very small countries with a high structural dependency upon foreign trade.

Little noticed a few cases where basic needs were followed while keeping the economy open and moderating the growth of the public sector. Barbados is an example of this in the Caribbean, with comparatively high levels of nutrition, education, health and public transport, while maintaining a high ratio of foreign trade to production and a predominantly private enterprise economy. This satisfaction of basic needs is therefore not necessarily synonymous with closed economy policies and statism. Nonetheless, by the end of the 1970s, certain disenchantment had set in with basic needs strategies of development.

### ***Market Oriented Strategies***

During the 1980s a large number of developing countries shifted towards more market oriented strategies for economic growth. This invariably involved the deregulation of the economy through the privatization of the state enterprises, the abolition of price and other controls, and subsidies, as well as the liberalization of foreign

trade. These elements were thought indispensable to the achievement of growth competitiveness as the economy sought to move towards a path of export oriented development. Such a strategy was also held to require flexible exchange rates and a positive real rate of interest that reflected the true scarcity of capital. Furthermore, fiscal discipline was a central element in the form of a sharp reduction in public sector deficits, which had hitherto crowded out private investment and were an instrument and major source of inflationary pressure.

The pressure of export was heaviest on heavily indebted countries which, as a matter of urgency, need to generate additional foreign exchange to service their debt. The policy mix described above came to constitute the core of IMF/World Bank stabilization and adjustment programmes with indebted countries.

Without entering the controversy about whether these policies have succeeded or are likely to succeed, we can see that it was clear from an early stage that they were having a disproportionately negative impact on the poorer and the more vulnerable groups in the society. This caused very deep concern in several parts of the international community, and led to the introduction of programmes to alleviate the negative social impact of adjustment.

These programmes, which were first started in Ghana in 1986, typically include infant feeding programmes, food for work projects, start-up finance for redundant workers to engage in self-employment, and community-based care and education projects.

Social impact programmes can help to alleviate the worst cases of distress, but they are no panacea. Essentially they are designed to allow the economy to buy time until the process of adjustment takes hold and sustained economic growth returns. A fundamental reason why problems of social impact arise is that structural rigidities in the economy impede the movement of labour and other

factors of production from sectors that are contracting to those capable of expansion. The diversification of production and markets is therefore at the heart of the adjustment process, since they make the economy more adaptable to changes taking place both at home and abroad.

### ***Supply Centred Adjustment***

It follows from this that countries, implementing a stabilization /adjustment programme, have essentially to follow a two track approach: pushing for a restoration of economic growth through the diversification of production and markets, while at the same time ensuring that the most vulnerable groups in the society are protected from drastic declines in their living standards. Such an approach will require somewhat different stabilization/adjustment packages than have obtained up to now. The promotion of diversification will entail the targeting of policy measures and finance towards the removal of major supply constraints in the economy, rather than merely giving emphasis to a policy package to contract demand.

Supply-centred adjustment is beginning to gain some endorsement from the international community. This is reflected in the fact that the World Bank is now taking a leading role in adjustment programmes. However, countries are not yet getting sufficient resources from the multilateral institutions to implement effective supply-centred programmes. Indeed, in several cases there is still a negative net transfer of resources to the multilateral institutions, despite the programmes that have been put in place. The expectation that private lending and direct investment will resume on a scale sufficient to bring about a positive net transfer of resources is proving to be less and less realistic.

### ***The Dilemma of Growth versus Distribution***

One should observe in parenthesis that the basic issue underlying the discussion of 'trickle down', 'basic needs', and 'social impact' is the age-old dilemma of growth versus distribution. This continues to be one of the most elusive questions in economics. It should occasion no surprise to find that it remains a highly controversial one with sharply divided positions, and that a country's experiences with the problem vary over both time and space. What this boils down to is the need for each country to formulate its economic policy not on the supposition of universally held truths, but on the basis of its concrete realities including the political space that policy-makers perceive themselves to have.

### ***Relevance to the Contemporary Situation in Jamaica***

How does all of this apply to the contemporary situation in Jamaica where an adjustment effort has been under way since the latter part of the 1970s? A case study of Jamaica's experience has been included in the latest issue of the United Nations' World Economy Survey. As far as the social impact is concerned, the study shows that despite the efforts that were made to provide a safety net for household consumption, most of the social indicators moved negatively.

According to UNICEF, between 1978 and 1985 the incidence of mild malnutrition rose from 8% to 39%, and the prevalence of stunted growth in infants from 6% to 14%. In that period, real expenditure on health per head of population fell from J\$ 78 to J\$ 54, or by 30%. Another source has estimated that in constant 1980/81 values real expenditure on education in Jamaica fell from its peak of J\$ 333M in 1976/77 to reach a low of \$ 193M in 1985/86.<sup>8</sup> Furthermore, migration of Jamaicans to the United States has continued in the 1980s at roughly 20,000 per year, or nearly twice the level of the 1970s.

The United Nations' study concluded that the basic weakness in the Jamaican economy is the relative absence of structural change. It makes the point as follows:

In sum, the economy today looks similar in fundamental ways to what it was fifteen years ago. It relies on a few export earners, which have few linkages to the rest of the economy, which generate relatively few jobs and which have a high import content. ....

It is also a relatively specialized economy, relying heavily on imports for direct consumption of rich and poor alike. It has a conspicuously unequal distribution of wealth and persistently high unemployment. 9

How does all of this apply to the contemporary situation in Jamaica? It is widely acknowledged that the task for the future involves maximizing the diversification of production and markets so that the economy becomes more adaptable and more resilient to external shocks and more capable of responding to emerging opportunities. This brings us back to the first issue that I took up, namely the upgrading of human resources as a means towards greater growth and development.

Unless and until we expand the knowledge base and make it more directly supportive of production possibilities, unless and until we become more production oriented as a people, sustained growth and development may continue to be an empty aspiration. We have a chance during the 1990s to turn the tide and move forward.

This opportunity is made more attractive by the prospect that as we turn the century, population growth will begin to decline.

According to projections made by Professor G. W. Roberts of the University of the West Indies, the population of primary school age will decline from 550,000 in 1987 to 486,000 in 2007 and of secondary age from 400,000 to 347,000. If we lay good foundations in this decade, we can bring our children and our children's children in sight of better education, which itself will



bring greater material advance, and greater self-fulfillment. We cannot afford to fail them.

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