Foreword

The Regional Strategy for Technical and Vocational Education and Training (TVET) adopted by the Caribbean Community's Ministers of Education at their Eighth Meeting in Trinidad and Tobago in May 1990 provides a cohesive framework for developing, improving and coordinating TVET across the Region. In the development of this Strategy emphasis was placed on the essential links between the education sector and other sectors and this served to reflect as well the recognition by the Region's leaders that human resource development and skills are critical elements in the development process.

The Strategy was developed in consultation with key persons in education, industry and other sectors that impact on TVET. The Secretariat is also deeply indebted to the Members of the multi-disciplinary Working Party for their inputs and the Chief Education Officers and other technical officers for their invaluable contributions to this document which promises such significant and progressive change in our approach and attitude to skills training within the Region.

At the Eighth Meeting of the SCME, Ministers pledged their support towards ensuring that the necessary provisions are made at the national level to facilitate the implementation of the regional actions set out in the Strategy. It is therefore with considerable optimism that I look forward both to the continued development and improvement of TVET in the Region and to the contribution of the Strategy to the overall enhancement of our human resource capability - a critical consideration in our concerted efforts to meet the challenges of the Twenty First Century.

May 30, 1990

Roderick Rainford
Secretary General

CARICOM Secretariat
Introduction

The advent of the new century poses several new challenges to the Member States of the Caribbean Community (CARICOM). Factors external to the region such as the changes in the Eastern Block and the consequent diversion of development funding, the consolidation of the European Market, the growth in the Japanese Economy, the strengthening of the Asean Grouping, the rapid advances in technology, in information and communications, in manufacturing and processing, all combine to create several constraints to the development of the region. Internally, continued dependence on limited agricultural and industrial activities also constrain development.

A key requirement for development in the modern technological age is a population that is well educated and trained in science and technology and capable of being readily mobilized to meet changes in technology. The prime example of this is seen in the technological and industrial might of Japan.

If the Region is to meaningfully compete in the coming decades in the world market place for its development, it is essential that it puts in place a comprehensive Human Resources Development Programme aimed at strengthening its capability in Science and Technology. Technical/Vocational Education and Training (TVET) forms a cornerstone of such a programme.

TVET may be seen both as a vehicle for the development of marketable and entrepreneurial skills and as an engine for development. Within the context of TVET may be developed those life skills and attitudinal disciplines so essential in today's highly competitive world.

TVET covers all programmes and schemes that contribute towards the development of knowledge and skills required for work. It transcends education systems provided by Ministries of Education and includes many additional non-formal programmes, provided by other Government Ministries and Departments, by private colleges and by informal in-plant and on-the-job training.

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It is with such considerations that this Regional Strategy for TVET is being presented. It proposes the framework and the processes necessary for the delivery of TVET to meet the needs of the Member States and of the Region.

Audience

The Strategy is addressed to:

- Ministers of Government - Policy-makers
- National Planners
- Programme Leaders - Heads of Institutions - Teachers/Instructors - Employers
- Decision-makers in both public and private sectors
- Technical cooperation and development assistance organizations.

Background to the Strategy

The CARICOM Survey of Technical and Vocational Education and Training

The Standing Committee of Ministers responsible for Education (SCME), at its Sixth Meeting in Saint Lucia, May 1986 mandated the Caribbean Community to conduct a survey and prepare a report on TVET in the Region. The report was presented to the SCME at its Seventh Meeting in Guyana, May 1988.
The CARICOM Survey is a comprehensive report on TVET across the Region. It details many issues and highlights areas of concern for the development and improvement of TVET. Some areas of concern mentioned are as follows:

Technical / Vocational Education is defined as an orientation and exposure to the subject which gives the knowledge and skills upon which students could build for a future career. As an education course the main aim is not to build marketable skills, though upon completion, some students may have acquired sufficient knowledge and skills to gain employment.

Technical/Vocational training is defined as a programme aimed at applying the necessary knowledge and skills for specific occupations.

(i) Status of TVET
TVET often suffers from low status and a negative community perception.

(ii) Agriculture
Negative perceptions about Agriculture still exist. This is a concern that needs to be addressed in developing education and training programmes that are congruent with economic development policies.

(iii) Gender Biases
Role stereotyping and gender biases are concerns that need to be addressed. Counselling, opening up job opportunities and equal opportunity activities are some of the strategies needed to address these concerns.

(iv) Institutional and In-plant Training
Both school and the work place have a role in skill development and training. The harmonization of education and training activities in both sectors is necessary for effective delivery of TVET.

(v) Variety of Certification in TVET
Institutions across the Region offer a wide range of courses certified in a variety of ways. This causes problems for determining equivalencies, transfer from one institution to another and validation of programmes.

(vi) Coordination and Management
The delivery of TVET often takes place through complex mechanisms. Therefore, effective coordination and management of TVET is necessary for an efficient national training system.
(vii) The Disabled Person in TVET
Special provisions need to be made for the development of programmes to meet the needs of the disabled.

TVET are key elements in National Development and in the Productive process. Thus the capability of emerging nation status in Science and Technology is a critical element to future growth and development. In a world increasingly dominated by Science and Technology, lip service to these branches of knowledge can not not suffice. The impact of developments in:

* Computer and Information technologies
* Environmental Science
* Micro-electronics and many others,

challenge us to develop the capabilities of our own Caribbean people. Technical and vocational education and training is a method of developing these capabilities.

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**Mandate to be CARICOM Secretariat**

Based on the findings of the Survey and the discussions at the Seventh Meeting of the SCME, the CARICOM Secretariat was given the responsibility to prepare Regional Strategy for TVET.

In consultation with a Working Party comprising key persons in TVET, Chief Education Officers and other persons involved in TVET, the Secretariat prepared a draft Document which was submitted to the Eighth Meeting of the SCME held in Trinidad and Tobago from 30 April to 4 May 1990. At that meeting Ministers of Education endorsed the proposal and recommended that it be called the Regional Strategy for Technical and Vocational Education and Training since the document provides the framework within which specific activities at the national level could be identified and developed.

**Purpose of the Strategy**

This Strategy is intended to provide a framework, to identify processes and to propose systems for developing and improving TVET within each Member State and throughout the Region. It should facilitate the:

(i) formulation of programmes for TVET;
(ii) expansion of education and training opportunities;
(iii) optimization of use of available resources;
(iv) increase in impact of resources allocated for education and training;
(v) consolidation and continued development of TVET.

In constructing this Regional Strategy, it was recognised that various arrangements for and varying levels of development in TVET obtain within the Member States. These arrangements and activities, formal and informal, national and regional, manifest a high degree of complexity.

The Strategy thus focuses on the processes or systems required within each country and at the regional level which, when in operation, will enable the appropriate minute decisions and actions to be identified, as well as a more systematic approach to further development of TVET.

**Organization of the Strategy**
The Strategy consists of eleven (11) sections. Section 1 discusses the pre-requisites for TVET. Specific actions for obtaining those pre-requisites are outside the scope of this Strategy. However, Member States are urged to attend to the interventions and reform necessary for students to acquire an adequate foundation for TVET. Sections 2 to 10 deal with specific aspects of TVET. Each of those sections provides a rationale and proposed actions. The final section -Section II -deals with the implementation of the Strategy.
Section 1 Pre-requisites for TVET

The conviction has grown that, in a rapidly changing society, the best form of vocational education is one which helps students to develop their capacity to learn, to think critically, to adjust to rapid changes in technology, and to gain some understanding of their later working environment.


The entry requirements for TVET are essentially basic skills in Literacy and numeracy and those concepts, principles, skills and attitudes that are required for continuing education after the first phase of the education system.

In determining the parameters of this Regional Strategy for TVET the education system is regarded as comprising two phases. The first phase is up to age 11. The second phase encompasses education and training at any of the following:

- All-age primary schools
- Post-primary centres
- Lower secondary schools (3 years)
- Secondary schools (5 and 7 years)
- Technical Colleges/Institutions.

This simple demarcation in two phases is being used in the Strategy because it allows for accommodation of the various arrangements existing in Member States for the provision of education up to secondary level and continuing on to the TVET Institutions. The Strategy is targeted to the second phase of the education system.

The first phase of the education system is of critical importance in providing an adequate foundation for activities at the second phase. Although the Strategy does not deal specifically with this first phase Member States need to pay urgent attention to the specific analyses and interventions necessary to improve and strengthen the education provisions during this phase.

In order to identify the pre-requisites of the first phase for TVET, it is useful to identify factors that hinder students from deriving maximum benefits from TVET programmes.

Some of these factors are an inability to process information and inadequate skills in literacy and numeracy. Educators in TVET claim that literacy and numeracy are serious concerns for TVET programmes as they are in fact for any other education programme. Indeed many candidates for TVET are unable to read and perform elementary mathematical operations; yet in many cases this is the principal rationale for their being placed in TVET programmes.

National Governments must pay attention to the consolidation and development of the education foundations particularly at the primary level. The understanding of Science, the 3Rs and the Life Skills are the foundations on which any successful TVET system can be built. This coupled with the introduction of positive attitudes are fundamental to a successful education system.

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An adequate foundation for TVET should therefore provide students with ample opportunity to develop skills in literacy and numeracy. In the first phase of the education system these skills should be developed through systematic instruction and should be reinforced through the various subject areas offered. In most territories the primary school curriculum includes:

- Language Arts
- Mathematics
- Social Studies
- Family Life Education and
- Science

All these subject areas can provide students with concepts, skills and attitudes that are essential as a foundation for continuing education.

The science programmes in particular are of special significance for TVET. These programmes can incorporate certain simple technological concepts. They should also provide students with opportunities to design and build models, make useful products and demonstrate skills in creativity and innovation. Through the science programmes students can also acquire skills such as observing, measuring, classifying, inferring, predicting, making hypotheses and experimenting. The students also learn to handle and care for simple pieces of apparatus.

Although there is a direct and on-going relationship between the education system and the socio-economic development in any society, changes in the latter take place far more rapidly than in the former. Consequently, many of the underlying principles and ideas that inform the present education systems in the Caribbean are not only out of date, but continue to lag behind the scientific and technological movements that will take us into the twenty-first century.

The development of desired attitudes towards TVET also begins at this phase of the education system. By incorporating aspects of technology into the curriculum students will begin to be aware of the value of technology in daily life and of TVET as a viable option in continuing education and desirable for a future career.

In some territories a few programmes in TVET are offered in this first phase. The programmes should be strengthened and given equivalent status to the other subject areas in the curriculum.

The provision of these pre-requisites at the first phase of the education system is linked to the quality of the teacher training programmes for teachers at this level. Across the Region, most primary school teachers operate as generalists. Therefore the teacher training programmes need to focus on content and methodology in the various subject areas. In order to prepare teachers to provide that foundation deemed adequate in the first phase, teachers will need special training to enable them to deal with the literacy and numeracy concerns in the school system. Exposure of the teachers to science and aspects of technology is also necessary if these areas are to be regarded as a component of general education programmes.

It is recognised that the success of the interventions proposed for developing and improving TVET depends on the type of foundation students obtain in the first phase of the education system. Therefore concomitant
action to ensure effectiveness of this preparatory phase will need to be undertaken as the following actions being adopted for an effective system for TVET are implemented.

Technical and Vocational Education are only part of the total education system. It is therefore important that the holistic nature of the educational process be a clearly stated objective in educational planning and administration.

Policies and approaches need to be put in place to deal with the problem of status and the attitudes sometimes displayed in TVET.

The Arts, Science, Technology, Social Activity and Service all have their place in the organisation of the total school. This must be the goal and objective of a sound Caribbean Educational System.

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Section 2 A National Training System

Major Action: Establish a National Training Agency

The whole system (for TVET) in each country is fragmented by separate administrative arrangements, operates at many levels and areas, incorporates fundamentally different delivery systems, uses a wide variety of teaching-training institutions, and has established many different examinations and qualifications.

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Rationale

An effective and well-managed National Training System is essential for the effective delivery of TVET. The System comprises two essential complementary training sub-systems: Institutional and In-plant.

Institutional training is usually coordinated by various Ministries, the University, professional bodies and other related organisations. In-plant training is coordinated by Industry. To avoid omissions or overlaps in training programmes and to achieve continuum, the overall coordination and management of a National Training System will involve functional linkages among various Ministries, organisations and other systems that impact on TVET. The co-ordination and management of this system could be achieved through the establishment of a National Training Agency. These linkages are shown in Figure 1 - A Model of a National Training System. The various linkages will allow for the flow of information to the National Training Agency in order to facilitate decision-making and co-ordinating and monitoring activities.

Composition

The National Training Agency should comprise representatives from the Ministry of Education, training institutions, industry, public and private sectors, trade unions and the community.

The National Training Agency could be developed out of existing systems for administering TVET. For example, boards established for technical institutions could co-opt other persons to obtain the composition recommended for carrying out the functions of the National Training Agency. The technical Secretariat that would service the National Training Agency could perform its functions by drawing on the part-time assignments of permanent staff from other agencies in the education/training continuum.

The lack of coordination at the International, Regional, National and Local levels has created problems with administration and introduced inefficiencies in the system. There is a real need for mechanisms to be put in place to coordinate TVET activities at all levels of the system. CARICOM, OECS and organisations such as UWI, GAST and CATVET can assist in the coordination at the Regional level. National Councils for TVET would assist in the planning and co-ordination of these activities at the National level and interact with Regional Agencies and Bilateral and International Aid Agencies.

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Functions

The coordination and management of TVET will be the main function of the National Training Agency. Through sub-committees and the use of technical persons the National Training Agency can coordinate and monitor these essential activities:
-identifying training needs;
-establishing and monitoring training standards, and monitoring the delivery of training;
-testing and certification;
-harmonizing activities in education and training systems at both formal and non-formal levels;
-monitoring manpower demand and supply;
-monitoring the gathering of occupational information;
-evaluating the training system in terms of efficiency and effectiveness;
-publishing materials;
-monitoring and advising on curricula activities;
-advising on use of available resources;
-coordinating and executing promotional and motivational programmes;
-monitoring vocational and career guidance;
-monitoring teacher/instructor training;
-orienting training programmes in keeping with the Labour Market Information System.

A Model of a National Training System

Diagram showing the interconnection between various government bodies and their responsibilities in the training system.
Section 3 Regional Coordination

Major Action: Appoint a Regional Advisory Committee

At the international level:
In many instances international overseas and government agencies operate independently of each other and often in apparent conflict. This lack of coordination brings its own problems.

At the regional level:
It often happens that through ignorance or lack of communication there are coordination problems which lead to misunderstanding and confusion.

CARICOM Survey P.130

Rationale

The implementation of this Regional Strategy for TVET involves certain activities which could be effectively coordinated at a regional level. For example, regional mechanisms for teacher training and for certification, accreditation and validation activities are necessary. A Regional Advisory Committee will oversee the implementation of the Strategy and will appoint sub-committees as may be necessary for the various aspects of the Strategy being coordinated at a regional level.

Composition

The Regional Advisory Committee will have representatives from:

- National Training Agencies
- TVET Institutions (Secondary and Tertiary level Institutions)
- University of the West Indies
- University of Guyana
- College of Arts, Science and Technology (CAS1) - National Institute of Higher Education, Research, Science and Technology
- Organisation of Eastern Caribbean States Secretariat - CARICOM Secretariat
- Business and Professional Groups - Caribbean Congress of Labour
- Caribbean Examination Council
- Caribbean Association for Technical and Vocational Education and Training.

The CARICOM Secretariat will act as the Secretariat for this Committee.

Functions

Through the appointment of sub-committees as may be necessary for specific tasks, the Regional Advisory Committee will monitor, advise and co-ordinate activities, examples of which are as follows:

- Regional programme articulation, certification, accreditation and validation
- Assessment of regional training needs
- Regional representation for procurement of resources for activities in TVET
- Procurement, allocation and use of resources - Feasibility studies
- Referencing of projects undertaken by external agencies
- Dissemination of information
- Development and strengthening of teacher education programmes.
- Development of public awareness programmes.
Section 4 Manpower Planning for TVET

Major Action: Develop a Labour Market Information System

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<th>There is a need to formulate human resources development programmes by:</th>
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<td>• paying increasing attention to manpower planning for national economies and for the regional economy;</td>
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<td>• achieving a closer relationship between such manpower planning and national development plans;</td>
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<tr>
<td>• achieving a closer relation between such manpower planning and regionally determined and regionally applicable economic activities</td>
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Rationale

A Labour Market Information System (LMIS) can provide useful information for formulating development plans and employment policies and programmes and for providing direction to developments in TVET. Labour Market Information can be defined as any qualitative or quantitative information concerning the size and composition of the Labour Market, or any part of it, the way it functions, its problems, the opportunities which may be available to it, and the employment related situations, intentions or aspirations of those who are part of it.

The LMIS is of specific relevance to TVET since it can provide information on a range of issues such as:

- the demographic and socio-economic characteristics of the labour force, and the composition of employment, unemployment and under-employment;
- the occupation/industrial structure of the employed/unemployed (last job held) labour force;
- the basic framework in which projections about future employment and labour force trends can be made;
- estimation of training needs by occupation and education/training qualifications and projections for the future.

The system has two components: demand and supply. It has five essential features. It should be comprehensive, up-to-date, economical, linked with major producers and consumers of LMI, and established within an adequate institutional framework. The level of detail, efficiency and accuracy required will be determined by each Member State. Existing data collection activities in various sectors can be used in establishing the system. Considerations for the design of the system are:

(a) the identification of users and their needs;
(b) the orientation of data normally collected;
(c) the identification of available indicators to describe employment trends, as well as the nature of and changes in the labour force;
(d) the training of persons in data collection, analysis and reporting techniques; and
(e) the utilization of existing data-gathering machinery.

The LMIS would provide the basis upon which the National Training Agency would orient programmes to meet the projected needs.

Some of the outputs of the LMIS are regular bulletins containing an assessment of occupational outlook, updated information on Labour Market issues, vocational guidance and other policy-oriented information for decision-making in TVET. For the LMIS to provide information to the necessary detail and precision the following instruments need to be developed following existing inter-national recommendations:
A Directory of Occupations;
-Standard Industrial Classification;
-Standard Classification of Education and Training.

A great deal of work has been done in developing these instruments and in establishing an LMIS in some
Member States. As a cost-effective measure and to ensure compatibility and ease of referencing, Member
States can benefit from systems already established or being established through bilateral agreements.

The LMIS has the following characteristics:

Features

- Comprehensive framework;
- Up-to-date;
- Economical;
- Supported through necessary linkages between LMI users and producers;
- Adequate institutional framework.

Information Blocks

- Patterns and trends of employment opportunities and manpower requirements;
- Characteristics of supply and demand;
- Wage structure by occupational group and industrial sector;
- Performance of skill-generating institutes.

Information inputs

- Administrative records;
- Census and Surveys;
- Special Studies;
- Qualitative Information;
- Technological Trends;
- Economic Trends (national accounts data);
- Collective bargaining agreements.

Outputs

- Regular Bulletins;
- Assessment of Occupational Outlook;
- Information on Labour Market Issues;
- Vocational Guidance;
- Policy-oriented information for decision-making in TVET;
- Annual Labour Market Reports (on some of the above items).

A unit or a committee will be required to develop and service a Labour Market Information System. The
Ministry or Agency where this committee is located will be determined by each Member State. The Ministry
or Agency selected would provide a Secretariat (not necessarily full-time) to support the work of the
committee.

Composition

Representatives from:

- Ministry of Education;
- Ministry of Planning;
- Ministry of Labour;
- Ministry of Finance;
Because many at the critical skills needed for economic and social development are not being provided by education institutions, there is a pressing need to develop and provide education and training programmes that are more than merely academic, or that only expose students to basic craft and technical skills. Initiatives are therefore being taken by many Governments to introduce technology as a major component at all levels of the education system; and to expose all students to a range of technical and vocational skills so that on completion of their education, they might be better able to meet the needs of the labor market to contribute to modernization and development of the economy, and to that of Caribbean society as a whole.

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Functions

The functions of this committee will include:

(i) evaluation of existing data and available indicators to describe the nature of and changes in the composition of employment and the characteristics of the labor force;
(ii) development and implementation of action and linkages to produce LMI outputs on a regular basis and to promote their full use by relevant policy- and decision-makers through liaison with the National Training Agency;
(iii) determination of resource inputs necessary for the development of an LMIS;
(iv) development of the following instruments (following existing international recommendations):

- Dictionary of Occupations;
- Standard Industrial Classification;
- Standard Classification of Education and Training.
Section 5 Public Awareness and Attitudes

Major Action: Develop and implement a promotional programme

As elsewhere in the world rapid technological developments are bringing about significant changes in the socio-economic reality of Caribbean society. It is therefore important for people at all levels of Caribbean society to develop an understanding of the importance of technology and its contribution to life in a contemporary society. A prerequisite to this is the need to make available to a wide crosssection of the population a body of knowledge and skills which will enable them to gain not only an understanding, but also an appreciation of the technological environment and of the variety and type of new jobs that will be necessary and available.

CARICOM Survey P. 67

Rationale

Programmes for creating public awareness of and fostering positive attitudes towards TVET occupations are necessary. Despite the great strides made in TVET, it continues to suffer from problems of low status. The requirements for success of TVET programmes go beyond the creation of systems and models: attitudinal changes at all levels are also required. Therefore public awareness and motivation programmes should have this factor as the principal point of focus.

These programmes will help persons become aware of the nature and scope of TVET. They can also learn about possible benefits and opportunities in this area. The programmes can help in creating an environment that is receptive to technology and that is conducive to the development of indigenous technology.

One strategy for promoting TVET is through the use of programmes for popularizing science and technology. For example, the National and Regional Science Fairs can be used to promote the work of students in TVET programmes. Promotion through the media is also necessary to inform the public, for example, about the processes and skills involved in certain jobs, technology in everyday living and the role of TVET in equipping people with life skills necessary to function in these situations.

The perception that TVET is for weak students gives rise to negative attitudes in both parents and children.

Parents will pressure educators or their children to do academic subjects in spite of aptitude problems and students will opt out of vocational subjects such as agriculture due to perceived status problems. These attitudes have to be addressed and will be lessened when it is perceived that TVET has its own genuine legitimacy.

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Essential aspects of a promotional programme are:

- infusing aspects of TVET into existing science and technology popularization programmes;
- preparing materials for promotion and for the provision of career and vocational guidance;
- establishing linkages between the media and the National Training System to develop strategies for promoting TVET;
- ensuring that supportive policies and procedures are outlined;
- targeting all persons whose decisions and attitudes affect the viability of TVET.
These activities must be co-ordinated and executed at the national level by the National Training Agency. However, given the similarity in the concerns in all Member States, design and materials production could be undertaken on a regional basis, under the aegis of the Regional Advisory Committee.

Prejudices against technical and vocational education are hard to eliminate and there is a tendency to stream children within and between schools, so that only the rejects from the academic streams tend to go to the technical and vocational stream.

This is unfortunate, and not in keeping with scientific and technological developments either in progress or envisaged. There is need to put greater emphasis on TVET to meet the demand for new skills.

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Section 6 Vocational and Career Guidance

Major Action: Organise professional vocational and career guidance services

On the whole, organised and systematic vocational guidance and career counselling services in educational institutions in the Region are either non-existent or are severely limited. In the majority of schools, guidance and advice are given on an ad hoc informal basis by subject teachers who usually have no special training for this task. At the same time, in the few schools in which guidance counsellors are available, they tend to focus on helping students overcome behavioral, family or social problems rather than advising them on their future careers.

CARICOM Survey PP. 100-101

Rationale

Vocational and career guidance is also an essential consideration in the promotion of TVET. Therefore within any National Training System, there should be well organized procedures for the provision of guidance. The guidance officers will need to provide information and advice about careers and deal with concerns such as those of gender bias, opportunities for handicapped persons and motivation and self-concept of candidates for TVET.

Vocational and career guidance closely linked to the Labor Market Information System is essential for the success of TVET initiatives in Member States. Guidance officers will need to use Labor Market information to advise about types of jobs available, skills needed, career paths, salary scales and trends and opportunities for professional growth. The use of the Dictionary of Occupations will be necessary in cross-referencing and advising about additional training that may be required for transferring from one occupation to another.

Vocational and career guidance services could be co-ordinated by the National Training Agency. A corps of trained persons will be created to work as a guidance unit, located in the Ministry of Education or other appropriate department or institution, and put at the disposal of the entire education system. This will obviate the need for having such officers located in every relevant education or training location and improve the likelihood of having adequately trained persons to perform these services. The size of the corps will depend on the scale of individual territories.

There is an absence at well developed and organized guidance programmes, in schools and a lack of appropriate and well informed and sensitive vocational and career counselling in most schools. Moreover, in schools where this service is provided, the majority of counsellors appear to be virtually unaware of their own gender biases and prejudices and of the negative effects and far-reaching consequences that these have on the students with whom they interact, and to whom they give counsel. In addition, the advice offered to students about subject choices often bears little relationship to the realities of the changing needs and demands of the labor market. As a result, there is often a glaring mismatch between students abilities, interests and career opportunities and their employment possibilities on completion of training.

Furthermore, this mismatch appears to be much greater for female students who continue to be shunted into sewing and cooking classes rather than into more technical skilled area.

Both male and female students who enter into non-traditional areas of training, experience a significant amount of pressure from their peers.
Section 7 Programme Consolidation and Development

Major Action: Review, Upgrade, Intensify and Extend TVET offerings

The CARICOM Heads of Government the Nassau Understanding on Structural Adjustment, agreed that:

"deliberate efforts will be made to introduce technology as a major component in primary, secondary and tertiary education. All school children will be exposed to the principles underlying agricultural, technical, and vocational skills.

The systems analytical approach, including the use of computers, will be made an integral part of the formal education system. Institutions of tertiary education will, as appropriate, introduce certificate, diploma and degree programmes in the information technologies as well as the courses geared to the application of these technologies in agriculture, manufacturing, tourism and other services".

CARICOM Survey, p. 13

Rationale

Technological developments are increasingly impacting on everyday activities in the region. The importance of technology in daily living and the role of technology for economic development are essential considerations in developing a system for the provision of TVET in each territory. Schools need to respond to the demands of a changing environment and therefore now have the responsibility to ensure that as part of General Education, all students acquire scientific and technological literacy and competence in certain basic skills that have been traditionally considered to be domain specific to TVET. This means that there will be need for major reform in the education system. The reform will involve the development and reorientation of curricula, shifts in emphases, and attitudinal changes.

In certain instances, for curriculum reform to be effective in meeting national or regional development needs, appropriate policy decisions and support from other sectors will be required. For example, in the case of agriculture, political will, land tenure, fiscal incentives, adequate infrastructure, marketing arrangements and appropriate technologies are essential if technical and vocational education in agriculture is to lead to the application of the skills acquired for the development of the agriculture sector.

Within recent times TVET has made some rapid strides in the formal, informal and non-formal sectors. The progress made is evident in the proliferation of TVET programmes across the region. These programmes will need to be consolidated in efforts to further develop and improve TVET. Also special efforts will be required to deal with gender bias concerns and the provision of programmes for handicapped persons.

There are many different TVET systems available among which are the following:

- formal Instruction-based courses;
- shared arrangements between Institutions and employers;
- Modular approaches: learning/training;
- Competency/performance-based programmes;
- Self-instructional programmed learning packages;
- Distance learning modes;
- Apprenticeship training

CARICOM Survey, p.55
At the formal level, in attempting to provide a large number of students with some basic skills in TVET, some territories have developed core programmes or prevocational programmes made up of a cluster of skills. At higher levels in the Secondary school system technical and craft programmes are offered. CXC examines nineteen (19) subjects in TVET at the secondary level. The Technical Institutes and colleges also offer and examine a wide range of programmes. In efforts to enhance programme development and delivery, linkages are being established among Institutes. For example the College of Arts, Science and Technology (CAST) in Jamaica has established linkages with the Sir Arthur Lewis Community College in Saint Lucia.

The informal system can also involve training for indigenous skills and handicraft. There are some outstanding examples of informal training in the Caribbean. Two of these are the HEART Youth Employment Programme in Jamaica and the Servol Life Centre in Trinidad. At the non-formal level, some Ministries, for example those for Labour, Trade, Tourism and Youth and Community Development provide training which sometimes include apprenticeship training. Also, organisations such as the 4H Club, Youth groups and Community Centres provide skill training.

These efforts at the informal and non-formal levels should be encouraged and harmonised with mainstream activities since skills training has to be a shared responsibility among the various sectors in order to provide a large cohort of people with core skills that are necessary for survival and to meet the demands of a changing labour market.

The consolidation of programmes offered in the various sectors will involve an identification and review of course offerings. The review process should aim to:

- ensure that programmes are relevant to the needs of the target population;
- remove unnecessary overlaps in subject areas;
- ensure that programmes are up-to-date in terms of content and methodology;
- improve programme articulation and facilitate transfer from one programme to another.

Clearly defined criteria are necessary for the reshaping of existing curricula and the introduction of new programmes. Priority areas for TVET could be determined from an analysis which involves:

- identification of those sectors showing rapid growth, for example, tourism, the service industry and computer related areas;
- analysis of current unemployment problems and the need to train for self-employment;
- identification of new and emerging areas of technology

Five subject areas which have implications for immediate TVET programme development are:

- Computer Studies
- Business Methods
- Energy Systems
- Environmental Issues
- Science and Technology, including bio-technology

With the new development in Technology, constant attention will have to be given to the development of the new curriculum areas. The developments will have to take place at all levels of the educational system Primary, Secondary and Tertiary - to provide the necessary articulation between the different age groups. The creation, development and encouragement of centres of excellence for Science and Technology are also desirable objectives.

CARICOM Survey E.16

In all areas of TVET, students are expected to acquire competencies in skills which can be categorised as introductory skills, entry level skills for further training, and marketable skills for the world of work.
In consolidating and developing programmes for TVET, other issues that will need to be addressed include the development of partnerships between Institutions and Industry, and linkages among Institutes for programme articulation, certification, accreditation and validation (dealt with in the following section). Through partnership programmes, Business/Industry can share responsibilities for skill development, contribute financially and share expertise and resources.

Partnership programmes can be fostered in a variety of ways such as:

- job placement
- work attachments
- advice on courses
- donation of equipment
- part-time teaching staff
- financial assistance

TVET programme consolidation and development will involve:

- development of policies and programmes to incorporate TVET as part of general education
- Review and updating of existing programmes in terms of knowledge, skills, attitudes and experiential exercises.
- Development of programmes in new areas of technology and modules to meet needs of handicapped persons.
- Modularisation of programmes to facilitate profiling, articulation, certification, accreditation and validation.

The National Training Agency, operating with sub-committees as desirable, will institute and oversee the specific actions required at the national level to achieve the objectives discussed. Such specific, national level actions will be guided as necessary by the work of the Regional Advisory Committee.
Section 8 Programme articulation, certification, accreditation and validation

Major Action: Create effective linkages among TVET programmes and institutions

The logic of stepwise continuation from one stage to the other is not always followed. It often happens that students may pursue courses in one institution and find that linkages to a higher one are not in place. An existing example of good articulation is the case in Jamaica where students in the four Community Colleges may do the first year of the Business Administration Diploma and transfer to the second year at CAST. The Technical and Community Colleges in the Region are now exploring ways in which this concept may be development. UWI has developed what are essentially transfer arrangements through the challenge examinations. CARICOM Survey p. 131

Rationale

The TVET programmes offered across the region are examined and certified in a variety of ways. The examinations fall into three categories -Institutional, Regional and External.

The lack of articulation of the various programmes and the mix of certification procedures pose problems of nomenclature, levels and equivalencies. Therefore, there is need to regularise measurement and evaluation practices in order to improve standards, facilitate transfer from one institution to another and provide certification that is meaningful in terms of knowledge, skills and attitudes. Rationalising the processes for articulation, certification and validation should also serve to strengthen both the programmes offered and also the functions of the examining bodies.

The modularisation of programmes using a competency based approach facilitates the determination of levels of competency achieved, programme articulation, profiling, certification and accreditation.

In several of the territories local examinations are used to certify programmes. These certification procedures need to be monitored and harmonised at national level and with the activities of the Caribbean Examinations Council (CXC) and other examining systems.

Beyond the proficiency levels examined by CXC, the TVET Institutions have the responsibility to design and examine TVET programmes. In this regard, linkages among Institutions will serve to enhance activities and reduce duplication of effort. These linkages where they exist need to be strengthened. Linkages of the TVET Institutions with the University of the West Indies (UWI) and the University of Guyana (UG) are also necessary for programme articulation, certification, accreditation and validation.

At all levels the measurement of performance in TVET should be in terms of knowledge, skills and attitudes. A concern about existing measurement procedures is the lack of adequate testing of practical skills. In order to test practical skills, criteria for the various proficiency levels will need to be developed. Access to tools and equipment and adequate time in the workshop are other considerations for skill development and practice. The development of desired attitudes in the area of TVET should also be an integral component of programmes in TVET. These skills and attitudes could be measured on an on-going basis.

School-based assessment is an effective strategy for continuous assessment. However, for this to work properly, teachers will need to be trained in school-based assessment procedures. Also, criteria for the various levels of acquired competence will need to be clearly defined in order to obtain a profile of the student.

The activities required at national and regional levels to establish and operate the required linkages will be carried out respectively by the National Training Agency of any country and by the Regional Advisory Committee.
At the national level it will be necessary to establish and coordinate a system for measurement and evaluation up to the secondary level as shown below -

At the regional level it will be necessary to develop and implement strategies for streamlining, for certification, accreditation and validation procedures. This will involve:

- appointment of a sub-committee by the Regional Advisory Committee to detail procedures and carry out tasks;
- development of strategies for programme articulation;
- specification of standards;
- development of strategies for determining equivalencies;
- linkages among Institutions to implement strategies to facilitate certification, accreditation and validation.
Section 9 Teacher Training for Programme Delivery

Major Action: Strengthen teacher training for diversified and effective programme delivery

The training of teachers and of teachers trainers, provision for staff development and improvement of qualifications and the question of salaries need urgent attention. The exodus at technical teachers and instructors to the more lucrative private sector is a matter of deep concern. This is particularly so with the greater marketability of those with technical skills.

CARICOM Survey, p.132

Rationale

Across the Region there is a need for more trained teachers for TVET. Because of the urgency of the situation institutions have been forced to employ teachers who may have industrial experience but lack the pedagogical skills necessary for effective delivery of the programmes and vice versa.

There are four types of TVET teachers:

(i) craft instructors who, in most cases, have a certificate or diploma in a specialised craft area but have virtually no teacher training;
(ii) trained teachers/instructors who have a certificate or diploma in specialised craft/technician area, and with varying levels of teacher training;
(iii) assistant lecturers;
(iv) lecturers who have an accepted level of qualification [Certificate, Degree or equivalent] but do not necessarily possess teacher training qualifications.

The entry requirements to Teacher Training Institutions vary from four passes in CXC to a Craftsman Diploma plus two years industrial experience. The length of programmes also vary from two years for a certificate programme to three years for a Diploma and four years for a Bachelor’s degree programme. The variety of programmes being offered is a response to the urgent need for a cadre of trained teachers for TVET.

There is a need to articulate these programmes in order to determine equivalencies and facilitate transfer from one Institution to another. To prepare teachers for effective delivery of TVET three programme requirements have been identified:

(i) technical competencies specific to subject matter content of the discipline/area to be taught;
(ii) pedagogical competencies for effective delivery of content;
(iii) industrial experience or work/business experience for practical skills upgrading specific to industry practice and procedures.

Several factors contribute to the shortfall of good teachers and these constitute a common theme among many Commonwealth countries: poor pay and conditions of service, poor promotion prospects, relatively better conditions for skilled artisans in industry, low status of vocational teachers, rigid procedures and conditions of service based on formal academic qualifications, especially where recruitment is done by the Public Service Commission, and a shortage or trainable vocational graduates, where local facilities exist for teacher training.

Apart from the above requirements of teacher training programmes, other needs are for:

(i) the inclusion of technological areas, such as Computer-Aided Design and Computer Aided Manufacture (CAD/CAM) in training programmes;
(ii) flexibility with respect to cognitive and motor skills;
(iii) inclusion of personnel/human relations and management skills in training programmes;
(iv) strategies for upward mobility and the professional development of teachers;
(v) incentives to retain trained persons in the teaching profession.

There are some new and exciting methods emerging for the delivery of TVET.

Some examples are:

* the use of educational technology, audio cassettes, video recordings, tapes, slides, etc;
* self-instructional programmes through computer based education;
* electronic mailbox teacher/student interactive systems;
* the use of Distance Learning via UWIDITE, an existing method for the far-flung Caribbean islands;
* modular and par-time credit programmes geared to emulate with to full-time courses;
* structured programmes run in house or in plant to meet specific training needs.

CARICOM Survey, E-15

The teacher training programmes should prepare teachers for the delivery of TVET in a variety of ways. Innovations in delivery are necessary in order to provide more students with necessary skills. Teachers will therefore need to function in a variety of training mechanisms which include:

- formal Institution-based courses
- shared management between Institution and employers;
- modular approaches;
- competency/performance-based programmes;
- distance learning modes;
- apprenticeship training.

It will be necessary to:

* Articulate training programmes in terms of entry qualifications, objectives and evaluation procedures.
* Strengthen programmes to incorporate

  - technical competencies
  - pedagogical competencies
  - industrial attachment or work/business experience

* Strengthen programmes to provide teachers with opportunity to develop skills for the delivery of TVET through a variety of training mechanisms.

The actions will be implemented at the national level by the Ministry of Education in conjunction with the National Training Agency and the teacher training programmes. At the regional level, the Regional Advisory
Committee will provide guidance to the overall development of teacher training programmes and identify opportunities for linkages across the region, in order to promote cost effective use of resources and to upgrade and harmonise standards for certification and accreditation.
Section 10 Infrastructure

Major Action: Rationalise, upgrade training facilities and arrangements in keeping with projected needs

The constraint of financial realities is often one of the most serious of all. Science and Technology are not cheap and the introduction of technical and Vocational programmes is a costly business.

Often it has been found that internationally-funded projects with inputs and foreign technical assistance have collapsed or been seriously reduced after the foreign input was withdrawn due to lack of or low level of local budget support.

CARICOM Survey P.132

Rationale

The successful implementation of TVET requires an adequate infrastructure for training in each Member State. This infrastructure can be described in terms of facilities, an interactive system for TVET and a training data-base.

Facilities

Some of the concerns expressed about facilities for TVET are:

- the lack or inadequacy of the facilities
- high cost of the facilities
- under-utilisation of physical plant
- poor maintenance and repair of equipment.

Plans to develop or improve facilities for TVET will need to include systematic procedures for maximising use of resources and for the care and maintenance of equipment. Two strategies for maximising the use of resources is the pooling of schools to use facilities at one location and through the development of Centres of Excellence. The concept of a Centre of Excellence as obtains in the OECS territories involves the use of one Institution to serve a group of territories through sub-regional agreements to provide training in certain specialist areas. The development of Centres of Excellence at national and sub-regional levels can help in the strengthening of Institutions and reduce costly duplication of facilities.

An Interactive System for TVET

A National Training System as explained in Section 2 needs to be efficiently co-ordinated and managed by the National Training Agency. In providing an adequate infrastructure for TVET, the National Training Agency will need to establish functional linkages with public and private sectors. The linkages proposed should provide the necessary interactions for the dynamic growth of TVET in each Member State.

The rapid developments in Science and Technology, the introduction of computers and other sophisticated developments create a real problem for keeping up. This applies to both equipment in the school system as well as the capability of the teaching service. There is no easy answer to this problem. A possible direction is to use links with business and industry to obtain equipment and resources for the institution.

CARICOM Survey, p. 132

Data Base
The information fed to the National Training Agency through the linkages with the Ministries, Industry, Labour Market Information System and Vocational and Career Guidance will facilitate policy and decision making with regard to TVET. The data-base at a National level will include information such as availability of programmes, training institutions, status of equipment, costs, number of staff for TVET, teacher training needs, students' records, nature of and changes in the work force, profiles of various jobs, salaries and vacancies. The development of such a data-base will also facilitate regional co-ordination of selected components of TVET.

It will be necessary to:

- Develop specification standards for facilities -work- shops and skills training centres
- Assess needs for facilities and equipment
- Develop and implement strategies for maximising the use of existing facilities
- Train persons for maintenance and repair of buildings and equipment
- Develop data-base for TVET. This will include activities such as:
  
  - identifying location and hardware for data-base;
  - appointing and training persons to gather, store, interpret and retrieve data;
  - establishing functional linkages among various organisations and a system for obtaining information

The implementation of these actions at the national level will be co-ordinated and monitored by the National Training Agency. Those actions that have regional implications will be co-ordinated by the Regional Advisory Committee.

... cost effectiveness would be served by:

(a) a more rational co-ordination of national training activities;
(b) enhanced planning, managerial and administrative capacity within Ministries of Education;
(c) an effective technical information service for vocational training institutions;
(d) adherence by institutions to carefully defined strategies for achieving specific programme goals, to reduce duplication and wastage;
(e) improved management techniques for effective control and monitoring of funds;
(f) a better flow of information and data

Survey of Vocationally-oriented Education in the Commonwealth, Commonwealth Secretariat, 1988 p .40
Section 11 Implementation of the Strategy

A wide range of activities is being proposed in this Strategy in order to develop and improve TVET across the region. Since Member States are at different levels in the development of TVET, the starting point and the level of detail of the activities will differ from one territory to the next. However, the Strategy provides a framework for further development and for the harmonising initiatives already underway.

Determination of specific actions

The systems and processes proposed in this Strategy will facilitate development and implementation of programmes that are congruent with National development plans. Linkages among the various Ministries, public and private sector and the Labour Market Information System will facilitate policy and decision makers in making informed decisions about TVET, assessing training needs and determining the specific set of actions and the appropriate group/s for carrying them out.

Cost

TVET is expensive and Member States have already made significant budgetary allocations for training programmes. The activities proposed in this Strategy are aimed to make systems already in place for TVET more effective and more efficient and the following cost effective strategies are being proposed.

Projectisation of Activities

Having determined the set of specific actions and the possibilities at the national level for giving effect to the objectives set out; it might be desirable to organise these interventions in project form to facilitate implementation and financing. Similarly, this approach could be taken for interventions and initiatives to be undertaken at the regional level.

When a project is undertaken at the regional level it should satisfy the criteria listed below.

The regional project should:

- enhance the programmes being developed at the national level;
- provide benefits outside the capability of individual Member States;
- be congruent with national development plans;
- provide outcomes that are superior to those possible by each country going it alone;
- be cost effective.

Regional projects will be developed for:

- establishment and functioning of the Regional Advisory Committee;
- promoting public awareness and attitudes;
- technical assistance to Member States for the development/establishment of a Labour Market Information System.

The Development of Income Generating Capabilities

TVET Institutions have potential for income generating projects and activities. However, in many territories the income generated by Institutions is usually transferred to national funds. This has been found to be a disincentive for both teachers and students to continue with any income generating projects. In order to finance TVET, Member States could allow Institutions to make use of income generated for supporting and delivering their own programmes.

Proper accounting procedures and special accounts for Institution building and strengthening will be necessary. By engaging in these income generating projects students will be making valuable contribution to the Institutions. They will also be getting opportunity to apply technical and entrepreneurial skills.
Financial Partnerships

TVET produces graduates at different levels of specialisation for a variety of occupations. Employers benefit from the investment made by Government in the area of TVET. Therefore, the establishment of partnership agreements between Government and the private sector could help off-set some of the cost involved for TVET. In most territories some type of partnership programme is already in place. Where the programmes exist they will need to be strengthened so that maximum gains could be realised in a concerted effort to provide TVET to a wide range of students.

Maximising the use of Available Resources More efficient use of staff, space, equipment and facilities will also help in making a system for TVET more cost-effective. Maximising the use of available resources is therefore necessary and in order to do so there should be:

- careful planning, using modern tools and equipment;
- strategies for the use of laboratories and workshops by many groups from neighbouring Institutions;
- utilisation of the expertise of staff in specialist areas;
- maintenance of school facilities through self-effort and the use of school capabilities.

Rationalisation of efforts by the Bilateral and International Agencies

There is need to rationalise the use of bilateral and international funds so that maximum benefits could be realised. Rationalising the use of resources will also ensure that the activities being funded by the different donor agencies are congruent, enhance each other and so reduce any duplication of effort.

Agents for implementation

At the National level, the National Training Agency will be responsible for the coordination and management of the continuing activities. At the regional level the Regional Advisory Committee will be provide guidance and direction for the overall implementation of the Strategy and will be responsible for the development and execution of the regional projects which have been identified.

Time Frame

As was recognised earlier, each country is at present at a different level of attainment in its TVET arrangements. Consequently, the immediate interventions and actions will vary among them. The Strategy focusses on the minimum set of systems and processes that should obtain in each country if further development of TVET is to take place dynamically, coherently, and cost-effectively.

These facilitating systems and processes and the major ‘activities outlined are targeted to be achieved in a three year period.