THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF SCIENCE, TECHNOLOGY
AND HIGH EDUCATION

THE TECHNICAL EDUCATION AND TRAINING POLICY IN TANZANIA

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CHAPTER ONE

BACKGROUND

1.1.   Introduction

1.1.1. The fundamental goal of Tanzania for the next decade and beyond shall be economic development for the ultimate goal of improving the living standards of its people. Economic development is only meaningful if it encompasses the majority of the population, both as participants in bringing this about and as beneficiaries. Thus, consideration of community participation including that of the vulnerable social groups especially women, in the socio-economic development process, is not only logical but also imperative if the development goal in question is to be realized. Because of mass poverty, ignorance and disease limit full and active participation of the Tanzanian majority in the development process, their alleviation is the ultimate target for any development strategy.

1.1.2. Specifically, the government seeks to increase output in all productive sectors, to improve social service delivery, to restore internal and external balances in the economy, to raise Gross Domestic Product (GDP) growth to an average of five percent per annum and at the same time reduce inflation to below ten percent.

1.1.3. The development goal and objectives stated above are to be attained through specific macro-policies. These are:

    a)   Increased role of the private sector in the establishment, management and financing of technical education and training institutions;
    b)   Creating an enabling environment;

    c)   Increased role of the financial institutions;

    d)   The government will continue to make policies, supervise and regulate the same;
    e)   Increased investment in human resources development in the social sector; and

f) Increased community participation in financing technical education and training.

1.1.4. Achievement of the Broad Education Objectives

These macro-economic policies have important implications for the educational sector. This policy is therefore intended to achieve the following broad educational objectives:

a) Enhancement of the partnership in the provision of education through the deliberate efforts of encouraging private agencies to establish and run schools and institutions at all levels;

b) Identification of critical priority areas to concentrate on, for the purpose of creating an enabling environment for private agencies' participation;

c) Broadening of the financial base for education through effective government spending, cost-sharing strategies and liberalization of hirtherto restrictive procedures;

d) Streamlining of the management structure of education by placing more authority and responsibility on schools, communities (for empowerment), districts and regions;

e) Emphasis on the acquisition of quality education through improved teacher management, curriculum review and the institutionalization of appropriate assessment strategies;

f) Strengthening of an integrated formal and non-formal education and relationship by instituting into the system points of sub-level inter-comparability, convergence and fluidity of horizontal and upward mobility:

g) Increase accessibility to education by focussing on the equity; and

h) Facilitation of growth for the culture of job creation and self-employment through the increased availability of and opportunities for vocational education and training.

1.1.5. Need for Policy on Technical Education and Training Technical education and training activities have been given reasonable emphasis in our education system since long before independence. However, lack of clear national technical education and training policy has resulted to uncoordinated changes and falling standards in technical education and training in the country. Therefore there is an urgent need for a policy on technical education and training.

The need for technical and training lead to the policy proposals contained herein which have included all formal education levels but with strong emphasis on tertiary non-university technical education and training guided by four main considerations, namely:

a)   The need for Tanzania to have sufficient trained technical manpower of all categories (manpower requirement strategy);

b)   The need to impart technical skills to our youths and adults to enable them to go into sustainable self-employment (social demand strategy);

c)   Inculcate a science and technology culture in the Tanzania society (education strategy); and

d)   The need to improve manpower balance among the technical cadre of engineers/technologists, technicians and craftsmen from the present national ratio of 1:2:14 leading to the internationally accepted ratio of 1:5:25.

1.2   **Policy Objectives**

1.2.1   **General Objective**

Human resources represent an important factor in the economic development of any country. One crucial factor in this regard is the training of technical manpower at different levels to meet the demand of manpower requirement in the various sectors of the economy. The technical education and training policy is therefore established to achieve the following general objectives:

a)   To enhance the application of science and technology to socio-

economic development in order to improve the standard of living of the population and meet the basic needs of the masses;

b) To establish an appropriate legal framework, laws, regulations and rules for rationalizing, assessing and monitoring the development of technical education and training in the country;

c) To facilitate creation of relevant institutions both public and private, to implement specific objectives on the development of technical education and training;

d) To enable the country to attain adequate and acceptable levels in technical manpower requirements in different sectors of the economy; and

e) To ensure the existence of an effective technical education and training system, which can address itself to present and future economic development requirements of the society through effective planning and implementation of national programmes.

1.2.2. **Specific Objectives**

In order to achieve the general objectives outlined above, the following specific objectives shall be implemented:

a) To train sufficient numbers of skilled, competent and reliable technicians and technologists, to meet the needs of formal and informal sectors;

b) To establish, maintain and consolidate training institutions by equipping them with sufficient manpower and facilities for high quality training to meet their specific objectives;

c) To promote coordination between educational, manpower and economic planners, through the National Council for Technical Education;

d) To encourage industry to take an active role in the education and training of artisans/craftsmen, technicians, technologists and engineers;

e)   To ensure that, there is a free flow of information between training institutions, government parastatal organisations, and any other organisations offering technical education and training;

f)   To ensure that technical education and training at all levels of education is properly integrated with the national economic development programmes;

g)   To promote a self employment culture through entrepreneurship education development;

h)   To promote indigenous and endogenous technologies;

i)   To ensure that, the national technical education and training standards match with international standard classification of occupation;

j)   To improve the employment conditions for teachers/lecturers in technical education and training system in order to attract and retain qualified personnel; and

k)   To promote and encourage women participation in technical education and training.

1.2.3. **Policy Targets**

The current training situation in the whole spectrum of technical education and training has not achieved the required manpower balance between the different cadres. Between 1985 to 1994 this ratio remained stagnant at 1:2:14 between engineer/technologists, technicians and craftsmen. This unfortunate situation occurred because training institutions at all levels have not increased their facilities and students intake. This imbalance led to inefficiency in industrial activities as some engineers/technologists have been forced to work as technicians while in other cases technicians have had to assume and perform duties of engineering/technologists. This policy requires that:

a)   The present ratio should be improved from 1:2:14 to 1:3 :18 a

Move close to the internationally accepted ratio of 1:5:25. to achieve that ratio the raining of engineers/technologies should change the present 400 to 1000 while that of technicians should change from 800 to 3000 and that of craftspersons be raised from the present 11,000 to 18,000 annually by the year 2000; and

b) Plans for short, medium and long term technical education and training programmes will be implemented so as produce the technical manpower required in all sectors of the economy.

CHAPTER TWO

THE DEMAND FOR TECHNICAL EDUCATION
AND TRAINING

2.1   **Rationale**

2.1.1   The importance of technical education and training to a developing country cannot be overemphasized. It provides the necessary knowledge and skills required to exploit the natural resources of the country through scientific and technical discovery. It enables the material wealth of a nation to be built up. The availability of technical personnel in the right numbers, at the right time, in the right place and with the right balance of technical knowledge and practical skills determine the pace and direction of industrial innovation and socialeconomic development.

2.1.2.   The changes taking place in Tanzania, in terms of policies and structures, need to be supported by an effective technical education and training policy and a system which can adequately address itself to the demand of the various sectors of the economy. The shortage of technicians, engineers and technologists in every sector of the economy create a serious bottleneck in the implementation of the economic development programmes on which the nation depends. There is a general consensus that the shortage mentioned and its solution lie in technical education and training. Therefore, analysis of the role of training and labour force in economic development shall be done.

2.1.3.   The analysis of the role of the labour force in the achievement of economic objectives shall be an on going activity both at government level and within the different sectors of the economy. It shall identify areas of the economy in which growth could be hindered by manpower deficiencies and imbalances for example between engineers, technicians and craftspersons. It shall yield special data for planning technical education and training including information required for forecasting the numbers of different kinds of technicians and engineers that will be required at critical points of time and the

specialist knowledge and skills which they must acquire to be productive workers in specific jobs in particular kinds of organizations. The effectiveness of manpower forecasting and planning depends on a high degree of expert technical collaboration between the government, industry and the technical education system working together to identify the nature of manpower priorities and to maintain the right balance between the overall development of the country's manpower resources and the usually narrower needs of a particular industry. This task is complex and will be addressed as an ongoing activity within the framework of this policy. Therefore:

a)   The government shall reinforce the concept of science and technology at all levels of the education system. This can be done by harmonising and synchronizing the functions of the various ministries and institutions dealing with science and technology;

b)   The ministries charged with formal and non-formal education shall therefore ensure that, education at all levels, emphasizes the concept of entrepreneurship;

c)   The government shall ensure that there is horizontal and vertical mobility at different levels of technical education and training.

2.2   Demand for Technical Education and Training at Different Levels

2.2.1.   Success of technical education and training depends on the success of other sub-systems in the education system in the country. In view of this, the policy shall also address itself to issues pertaining to other levels i.e. pre-primary, primary, secondary levels etc.

2.2.2.   **Pre-Primary School**

The government shall introduce science and technology activities so as to impart values of science and technology to Tanzanian children.

2.2.3.   **Primary School**
Primary education is the base of higher education including technical

Education and training. The introduction of some package in the teaching of science and technology at this level, no matter how elementary it may be, is very vital because the majority of those who complete primary education level primary schools without the necessary technical skills to find creative work which can lead them to self-employment. Therefore, the government shall ensure that:

a)   Consolidation and expansion of primary education shall go together with the effort of strengthen the teaching of basic technical skills in the sense of preparing pupils for self-employment through understanding of basic needs and technical practices in their communities i.e basic arts/crafts and agricultural skills;

b)   Strengthening of the vacation education package in the primary school curriculum through renovation on the teaching of agriculture and re-introduction of appropriate and relevant art and craft subjects;

c)   Content of the vocational education package shall be based on identified community needs; and

d)   The ministry responsible for primary education shall ensure capacity building and consolidation of the primary education cycle through improved resource input t match with intended outcome.

2.6   **Post Primary Technical Centres (PPTCS)**
The Post Primary Technical Training Centres programme which was established in 1975 as one source of training skilled manpower, has been characterized by decreasing enrolment, insufficient operating funds, management problems and little social acceptance. These have affected the quality and quantity of the output and the programmes has now almost collapsed in many parts of the country. Thesefore, the government shall do the following:

a)   Enhance the post primary technical centres programme for purpose of preparing school leavers for employment in the rural areas and urban informal sector;

b) Ensure flexibility of the post primary technical curriculum in order to suit actual needs of the target group as well as needs of the labour market likely to absorb them;

c) VETA shall provide training standards for different fields of occupation to be taught in the post primary technical centres; and

d) Ensure improved resource input through increased local government input, individual and community participation in cost sharing.

2.2.5. Folk Development Colleges (FDCs)

The FDCs emerged in 1975 as adult post literacy institutions, providing programmes related to the needs of rural communities. Initially the FDCs were known as rural farmers training centres. There are 52 FDCs in the country which are providing craft knowledge and skills in different fields of occupation including carpentry, brick/block laying, electrical, automechanics, fanning and home economics. In spite of its long existence, the FDCs programme lacks objectives that address rural community development problems. Current training objectives relate mostly to the needs of the formal sector instead of the targeted needs of the informal sector. Also, while the target group of the FDCs are supposed to be adults, most of the trainees are young primary school leavers. Therefore, the government shall make sure that:

a) Folk Development Colleges are strengthened and expanded to cover different occupations practised in both the rural and urban communities;

b) For the purpose of proper coordination, the FDCs programmes shall be regulated by VETA.

2.2.6. Vocational Training Pogrammes
The national vocational training programme was introduced in 1968 with the primary objective of offering one/two years basic vocational training aimed at providing skilled labour for the industrial sector in the country. At present there are 18 vocational training centres with an annual output of 3,100 graduates.

Most of the vocational trades offered are those found in the conventional fields of engineering which include building, mechanical, electrical and other crafts.

In order to strengthen and consolidate the provision of vocational education and training in the country the government approved a new policy in September 1993 which has the major objective of securing close coordination of vocational education and training system in the country. Therefore, the government shall ensure that: The Vocational Education and Training Authority, (VETA), shall be responsible for vocational education and training system in the country.

2.2.7. Apprenticeship Training

Traditional apprenticeship can have a positive effect on employment and earnings, especially in areas with poor infrastructure. Apprenticeship is cost effective mainly because it has greater efficiency in the acquisition of skills on the job. Learning-by-doing under actual production conditions, rather than off the job formal training modes where the trainee spends most of his/her time at the training institution, ensures sound mastery of skills. Also, trainees spend relatively limited periods of time in formal instruction. Thus, during most of the time of apprenticeship, they are productively employed so that both direct training costs and income foregone (opportunity costs) are generally much lower than at alternative training institution. Therefore government shall ensure that:

a)   Every large enterprise shall adopt a wider apprenticeship modular training scheme as a means of providing opportunities for much large proportions of the labour force to benefit from certified training activities;

b)   Traditional apprenticeship training on employment promotion is implemented through establishment of programmes like distance training, advisory services, mobile training workshops and availing incentives for trainers or the master craftsmen; and

c) A mechanism is established to facilitate employers so that they rectruit more technical trainees in their industries.

2.2.8. Technical Secondary Schools

Training programmes for technicians, technologists and engineers will for sometime continue to rely on the output from technical secondary schools for their intake. The envisaged expansion of the training facilities for technicians, technologists and engineers, signifies increased quantitative and qualitative demands from the technical secondary schools system. Therefore government shall ensure that:

a) An appropriate and cost effective vocational education package is introduced to replace the diversified course package;

b) Teaching of science and technology is strengthened in technical secondary schools; and

c) Training standards for different fields of vocational education to be taught in the current technical secondary schools prepared.

2.2.9. Technician Training

More than 44,200 technicians will be required by the year 2000. This demand requires additional training facilities. Therefore, more technical colleges must be established. This will be achieved by joint efforts. The government will encourage private institutions and interested organizations to build technical colleges. Existing infrastructure for training technicians in both public and private sectors shall be consolidated through capacity building in order to ensure maximum utilization of resources. Therefore, the government shall ensure that:

a) The National Council for Technical Education shall be established to manage and coordinate all matters concerning technical education and training. Such matters shall include programme validation, college accreditation, standardization of programmes and

awards, conducting research in technical education for the purpose of improving on programmes.

b) Dar es Salaam Technical College, which is one of the institutions of higher learning in the country, shall be made an autonomous institution under the ministry responsible for technical education and training for increased efficiency and future elevation to a university of science and technology;

c) Technical institutions shall strengthen industrial training for students of technical colleges;

d) Guidance and counselling shall form part of technical education and training curriculum;

e) Present technical education and training institutions shall be consolidated to ensure efficiency and effectiveness are achieved;

f) More technical colleges shall be built and some technical schools like Ifunda, Moshi and Tanga shall be elevated to produce technicians; and

g) Existing vacancies and facilities in technical colleges and other institutions shall be properly utilized.

2.2.10. **Technical Teacher Education**

In general, the technical teaching profession is overpowered by industry in competing for manpower. The low remunerations in the teaching profession makes it difficult to attract the high achievers. The demand and supply situation is also aggravated by poaching by training institutions ofthe private sector which have no formal teacher training programmes.
In order to meet the envisaged increased demand for technical education and training in the country, a large number of technical teachers will be required to teach in primary schools, post primary technical centres, vocational training centres, private trade schools,

secondary schools, technical colleges and colleges of education. To meet this demand the following strategies shall be applied:

a) Technical teacher education shall be expanded and consolidated to match the demand of personnel for training institutions in both public and private sectors;

b) The quality of training programmes for technical teachers shall be improved to cope with unfolding methodologies in the teaching profession;

c) An appropriate attractive package shall be established for technical teachers at all levels to ensure their retention in the teaching profession; and

d) Professional technical personnel who enter the teaching field shall be given pedagogical training;

2.2.11 .**Professional Technical Manpower**

At present, the existing capacity for training engineers and allied technical professional personnel at the University of Dar es Salaam, Ardhi Institute, Dar es Salaam Technical College and Sokoine University of Agriculture is 400 students annually. The need for professional technical manpower will continue to expand because of increased industrialization in the country. Therefore, the existing capacities shall be expanded by increasing training facilities, developing new programmes to cater for new technologies and improving staff development programmes.

2.2.12. **Non Formal Education**

Transmission oftechnical skills cannot depend on formal education only. Non-formal education has abig role to play. Formulation of an appropriate framework for technical education and training in certain specified areas in Tanzania requires support of different Institutions in the country. Therefore:

a) Adult education programmes shall be modular and shall

be improved through extension services of functional literacy i.e. on improved agriculture skills and low cost housing; and

b)　　　　Advisory and counselling services on entrepreneurship skills shall be available to the masses involved in small business.

2.2.13.　Women Opportunities in Technical Education and Training Awareness and attainment of vocational and technical skills will lessen the burden of women in their daily activities and at the same time promote their employment opportunities.

In view of the fact that limited access of women to science and technical education has something to do with cultural background, special campaigns shall be launched to encourage women take science and technical subjects. Other measures shall include:

a)　　　　Expanding enrolment capacity for girls in secondary schools offering science subjects;

b)　　　　Reserving specific vacancies for qualified women in technical training institutions;

c)　　　　Conducting functional literacy programmes on appropriate technology for women on various areas of basic services; and

d)　　　　Establishing special awards for women who excel in technical education and training.

CHAPTER THREE

MANAGEMENT, CURRICULUM AND CERTIFICATION OF TECHNICAL EDUCATION AND TRAINING

3. 1   Management

Power and decision making within the system is concentrated at the higher levels of the organisational structure. Top-down patterns of control and communication of decision exist with limited delegation of power and authority. Consequently, at the level of the institution there is little leeway to manoeuvre in line with prevailing institutional conditions. This, in turn, has in most cases resulted in slow implementation of directives and at most it has created misunderstandings, go-slows, etc.

Further, tertiary institutions of technical education and training are basically academic and professional. Yet they are overloaded by complex administrative and bureaucratic structures. This situation has led to improper management of technical institutions, low salary structures and generally an unattractive incentive package for staff. The government shall improve the management situation in the technical education and training by:

a)   Giving more autonomy to training institutions and technical colleges so that these institutions and colleges have more say in their own development programmes and issues;

b)   Institutionalizing a system of in-service and pre-service training of technical education managers; and

c)   Recruit able technical education managers.

3.2   **Curriculum and Certification**

The curriculum is the centre of any education system. It encompasses the sum of all the planned learning activities, and experiences the learner will have under the direction and guidance of the education institution. The process of curriculum development involves four

basic elements: the learner, teacher, the content and the intended learning outcomes to meet the society's aspiration. The consideration of these elements asserts varying pressure on curriculum decision making, establishment of aims and duration, content, learning methods and evaluation processes.

In Tanzania the curriculum development process is the mainstay of the Tanzania Institute of Education, a parastatal organization under the Ministry of Education and Culture. In the case of technical education and training, the Institute has a section dealing with technical education and training curricula. The function of the Institute is curriculum design, development, dissemination and evaluation of preprimary, primary, secondary and teacher education. This takes most of the time and finance of the Tanzania Institute of Education to the extent that curriculum design, development and evaluation for technical education and training has been dormant. Therefore the government shall:

    3.2.1   Establish the National Council for Technical Education curriculum and certification on which shall manage all matters concerning technical education and training. Such matters shall include: programme validation, college accreditation, standardization of programmes and awards, conducting research and advising government on all matters concerning curriculum and certification on technical education and training;

    3.2.2   Take into consideration the need for information technology (INFORMATICS) in technical education and training curricula; and

    3.2.3   Ensure that all curricula for technical education and raining shall follow the modular approach.

CHAPTERFOUR

THE ROLE OF TECHNICAL EDUCATION AND TRAINING IN PROMOTING THE INFORMAL SECTOR

4.1   The majority of Tanzanians are self-employed. This group which forms the informal sector has a potential which is yet to be developed. In most cases the productivity and income generation capacity of this group is below subsistence levels. Technological change taking place in Tanzania and the world over, demands an effective technical education and training system which can adequately address itself to labour market requirements. Also, the proportion of outputs from schools, vocational training centres, technical colleges and universities who cannot find employment in the formal sector will continue to increase. Therefore the government shall ensure that:

> 4.1.1 The ministry responsible for the informal sector shall embark on a programme of employment data collection in close collaboration with the Central Bureau of Statistics on informal sector activities and in the country on regular basis;

> 4.1.2 A system shall be established whereby those already in the informal sector shall be trained in different technical skills and entrepreneurship;

> 4.1.3 Technical institutions of higher learning shall establish centres for career counselling and guidance on self-employment opportunities for the informal sector; and

> 4.1.4 Institutions of vocational and technical education and training shall include production and small business projects in their training programmes.

CHAPTER FIVE

FINANCING OF TECHNICAL EDUCATION AND TRAINING

5.1   The society has always expected the government to be the sole financier of education in general and technical education and training in particular. This unfortunate situation has been a result of dependence on the government for all major investments. A culture where individuals and institutions contribute for technical education and training shall be built. The major issue in technical education and training financing is that the system is underfinanced. Because the education sector is mostly government financed, it is high time that the financing of technical education and training moves more towards community, parent and private participation. Therefore:

5.1.1   The government share to technical education and training budget shall systematically be increased; 5.1.2 Financing of technical education and training shall move more towards, community, parent and private participation rather than depending entirely on the government. However, community resource mobilization shall be based on conscious planning - a process which shall involve institutions and government planners as well as NGOs;

5.1.3   The concept of cost-sharing shall be broadened so that local authorities undertaking big investments with assistance of the central government, can generate income for sustaining technical education and training programmes;

5.1.4   Laws shall be enacted to commit the society in general to contribute to technical education and training;

5.1.5   Credit facilities for technician/technologist trainees shall

exist and students shall be encouraged to borrow against their future earning;

5.1.6   Technical institutions of higher learning shall engage in substantial income generating activities including consultancy, production, maintenance and other services. Revenue shall be invested in a revolving fund; and

5.1.7   Technical training institutions shall establish a system of attracting foreign students as a means of obtaining foreign exchange for their use.

CHAPTER SIX

INTERNATIONAL COOPERATION IN TECHNICAL EDUCATION AND TRAINING

6.1   While countries have boundaries, knowledge and skills have no boundaries. It is of mutual interest therefore, for the developed and developing countries to share world technological achievements. Technical education and training in Tanzania cannot be implemented successfully if it is not done in co-operation with the international community.

International cooperation in matters concerning technical education and training shall be encouraged and promoted. Therefore, the government shall ensure the following:

6.1.1   Collaboration of applied researches between Tanzania and non-Tanzania technical education and training institutions and personnel;

6.1.2   Maximum utilisation of south-south scientific and technological cooperation under the spirit of Technical Cooperation among Developing Countries (TCDC) and Economic Cooperation among Developing Countries (ECDC);

6.1.3   Regional and sub-regional cooperation in technical education and training through exchange of information, professionals and adaption of training materials including training methodologies;

6.1.4   The role of the United 1`?gtions system and other international agencies shall be promoted to support technical education and training;

6.1.5   Membership to regional and international organisations like the Commonwealth Association for Polytechnics in Africa,(CAPA) and participating in both regional and international fora;

6.1.6   An enabling environment for promoting and ensuring success in international technical assistance programmes and projects;

6.1.7   Tours and exchange of visits between Tanzanian institutions and foreign institutions;

6.1.8   Institutional linkages and collaboration between Tanzanian local technical education institutions and foreign institutions and organizations through bilateral and cultural agreements with foreign governments; and

6.1.9   Admission of foreign students in technical education and training institutions for the purpose of promoting regional and international cooperation, unity and peace.

CHAPTER SEVEN

SUMMARY OF THE POLICY

7. 1.   **Rationale**

7.1.1. Existence of problems at different levels of education that have resulted to falling standards in technical education training and the need for Tanzania to have full trained and qualified technical manpower to meet demands in various sectors of economy, necessitates for having a clear policy.

7.1.2. The introduction of a national policy shall guide and address to all issues pertaining to provision of the required technical education and training knowledge to Tanzanians.

7.1.3 1t is envisaged that the availability of technical personnel in the right numbers at the right time in the right place and with right balance of technical knowledge and practical skills shall determine the pace and direction of industrial innovation and socio-economic development.

   a)   The government shall reinforce the concept of science and technology at all levels of the education system. This shall be done by harmonising and synchronizing the functions of the various ministries and institutions dealing with science and technology;

   b)   The ministries charged with formal and non-formal education shall therefore ensure that, education at all levels emphasizes the concept of entrepreneurship; and

   c)   The government shall ensure that there is horizontal and vertical mobility at different levels of technical education and training.

7.2. Pre-Primary

The government shall introduce science and technology activities so as to import learner values of science and technology to Tanzanian children.

7.3. **Primary School**
The government shall ensure that:

7.3.1 Consolidation and expansion of primary education shall go together with the efforts of strengthening the teaching of basic technical skills in the sense of preparing pupils for self employment through understanding of basic needs and technical practices in their communities i.e. basic arts/crafts and agriculture skills;

7.3.2 Strengthening of the vocational education package in the primary school curriculum through renovation of the teaching of agriculture and re-introduction of appropriate and relevant art and craft subjects;

7.3.3 Contents of the vocational education package shall be based on identified community needs; and

7.3.4 The ministry responsible for primary education shall ensure capacity building and consolidation of the primary education cycle through improved resource input to match with intended outcome.

7.4. **Post-Primary Technical Centres**
The government shall do the following:

7.4.1 Enhance the post primary technical centres programme for purposes of preparing school leavers for employment in the rural areas and urban informal sector;

7.4.2 Ensure flexibility of the post primary technical curriculum in order to suit actual needs of the target groups as well as the needs of the labour market likely to absorb them;

7.4.3 VETA shall prepare training standards for different fields of occupation to be taught in the post primary technical centres; and

7.4.4 Ensure improved resource input through increased local government input, individual and community participation in cost sharing.

7.5. **Folk Development Colleges**
The government shall ensure that:

7.5.1 Folk Development Colleges shall be strengthened and expanded to cover different occupations practised in both the rural and urban communities.

7.5.2 For the purpose of proper coordination, the FDC programmes shall be regulated by VETA.

7.6 **Vocational Training Programmes**
The government shall ensure that the Vocational Education and Training Authority, (VETA) shall be responsible for vocation education and training system in the country.

7.7 Apprenticeship Training
The government shall make sure that:

7.7.1 Every large enterprise shall adopt a wider apprenticeship modular training scheme as a means of providing opportunities for much large proportions of the labour force to benefit from certified training activities;

7.7.2 Traditional apprenticeship training on employment promotion shall be implemented through establishment of programmes like distance training, advisory services, mobile training workshops and availing incentives for trainers or the master craftsperson; and

7.7.3 A mechanism shall be established to motivate employers so that they accept more technical trainees in their industries.

7.8 **Technical Secondary Schools**
The government shall ensure that:

7.8.1 An appropriate and cost effective vocational education package shall be introduced to replace the diversified course package;

7.8.2 Teaching of science and technology shall be strengthened in technical secondary schools;

7.8.3 Training standards for different fields of vational education to be taught in the current technical secondary schools are prepared.

7.9. **Technician Training**
The government shall make sure that:

7.9.1 A National Council for Technical Education shall be established to manage and coordinate all matters concerning technical education and training. Such matters shall include programme validation, college accreditation, standardization of programmes and awards, conducting research in technical education for the purpose of improving programmes;

7.9.2 Dar es salaam Technical College, which is one of the institutions of higher learning in the country, shall be made an autonomous institution under the ministry
responsible for technical education and training for increased efficiency and future elevation to a university of science and technology;

7.9.3 Technical institutions shall strengthen industrial training for students of technical colleges;

7.9.4 Guidance and counselling shall form part of technical education and training curriculum;

7.9.5 Present technical education and training institutions shall be consolidated to ensure efficiency and effectiveness;

7.9.6 More technical colleges shall be built and some technical schools like Ifunda, Moshi and Tanga shall be elevated to produce technicians; and

7.9.7 Existing vacancies and facilities in technical colleges and other

institutions shall be properly utilized.

7.10 Technical Teacher Education

The government shall ensure that:

7.10.1 Technical Teacher Education shall be expanded and consolidated to match the demand of personnel for training institutions in both public and private sectors;

7.10.2 The quality of training programmes for technical teachers shall be improved to cope with unfolding methodologies in the teaching profession;

7.10.3 An appropriate attractive package shall be established for technical teachers at all levels to ensure their retention in the teaching profession; and

7.10.4 Professional technical personnel who enter the teaching field shall be given pedagogical training.

7.11 Professional Technical Manpower
The government shall ensure that existing capacities shall be expanded by increasing training facilities, developing new programmes to cater for new technologies and improving staff development programmes.

7.12 Non Formal Education
The Government shall ensure that:

7.12.1   Adult education programmes, shall be modular, shall be improved through extension services of functional literacy i.e. on improved agricultural skills and low cost housing;

7.12.2   Advisory and counselling services on entrepreneurship skills shall be available to the masses involved in small business.

7.13 **Women Opportunities in Technical Education and Training**
The government shall ensure that:

7.13.1   Enrolment capacity for girls in secondary schools offering science subjects shall be expanded;

7.13.2   Specific vacancies for qualified women in technical training institutions shall be reserved;

7.13.3   Functional literacy programmes on appropriate technology for women on various areas of basic services shall be conducted; and

7.13.4   Special awards for women who excel in technical education and training shall be established.

7.14 **Management**
Management shall be such that:

7.14.1   More autonomy shall be given to training institutions and technical colleges so that these institutions and colleges have more say in their own development programmes and issues;

7.14.2   A system of in-service and pre - service training of technical education managers shall be institutionalized; and

7.14.3   Able technical education managers shall-be recruited.

7.15 **Curriculum and Certification**
The government shall ensure that:

7.15.1   The National Council for Technical Education shall be established which shall manage all matters concerning curriculum and certification on technical education and training. Such matters shall include: programme validation, college accreditation, standardization of programmes and awards, conducting research and advising government on all matters concerning curriculum and certification on technical education and training;

7.15.2   The need for Information Technology (INFORMATICS) in technical education and training curricula shall be taken into consideration; and

7.15.3   All curricula for technical education and training shall follow the modular approach.

7.16. **The Role of Technical Education and Training in Promoting the Informal Sector**
The government shall ensure that:

7.16.1   The ministry responsible for the informal sector shall embark on a programme of employment data collection in close collaboration with the central bureau of statistics on informal sector activities in the country on regular basis;

7.16.2   A system shall be established whereby those already in the informal sector shall be trained in different technical skills and entrepreneurship;

7.16.3   Technical institutions of higher learning shall establish centres for career counselling and guidance on self-employment opportunities for the informal sector; and

7.16.4   Institutions of vocational and technical education and training shall include production and small business projects in their training programmes.

7.17. **Financing of Technical Education and Training**
    The government shall ensure that:

7.17.1   The financing share to technical education and training budget shall systematically be increased;

7.17.2   Financing of technical education and training shall move more towards community, parent and private participation, rather than depending entirely on government. However, community resource mobilization shall be based on conscious planning a process which shall involve institutions and government planners as well as NGOs;

7.17.3   The concept of cost - sharing shall be broadened, so that local authorities undertaking big investments with assistance of the central government, can generate income for sustaining technical education and training programmes;

7.17.4   Laws shall be enacted to commit the society in general to contribute to technical education and training;

7.17.5   Credit facilities for technician/technologist trainees shall exist and students shall be encouraged to borrow against their future earning;

7.17.6   Technical institutions of higher learning shall engage in substantial income generating activities including consultancy, production, maintenance and other services. Revenue shall be invested in a revolving fund; and

7.17.7   Technical training institutions shall establish a system of attracting foreign students as a means of obtaining foreign exchange for their use.

7.18.   **International Cooperation in Technical Education and Training**
    The government shall ensure:

7.18.1   Collaboration of applied researches between Tanzania and non-Tanzania technical education and training institutions and personnel shall be encouraged for exchange of technical knowledge and skills;

7.18.2   There shall be maximum utilisation of south-south scientific and technological cooperation under the spirit of Technical Cooperation among Developing Countries (TCDC) and Economic Cooperation among Developing Countries (ECDC) for promotion of technological achievements;

7.18.3   Regional and sub - regional cooperation in technical education and training through exchange of information, professionals and adaption of training materials and involving training methodologies shall be strengthened for promotion of technical education and training;

7.18.4   The role of the United Nations system and other international agencies shall be promoted to support technical education and training;

7.18.5   Membership to regional and international organisations like the Commonwealth Association for Polytechnic in Africa,(CAPA) and participating in both regional and international for a shall be enhanced for the purpose sharing knowledge and skills;

7.18.6   Environment for promoting and ensuring success in international technical assistance programmes and projects shall be enabled for the support of technical education and training;

7.18.7   There shall be tours and exchange of visits between

Our institutions and foreign institutions for sharing of the world technological achievements;

7.18.8 Institutional linkages and collaboration between our local technical education institutions and foreign institutions and organizations through bilateral and cultural agreements with foreign governments shall be promoted for purpose of exchange of experiences in technical education and training; and

7.18.9 Admission of foreign students in technical education and training institutions shall be encouraged for the purpose of promoting regional and international cooperation, unity and peace.