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## *Relevance of TVET Education in Kenya to Attainment of Vision 2030*

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### **1 Abstract**

*The Kenya's Vision 2030 has made it clear that Kenya should be industrialised by the year 2030. Simply put, the country has a highly developed tertiary and quaternary sector of industries. It is also important to note that development in a country is also based on human resource development index. The manufacturing sector in Kenya dates back to the end of World War II. Most manufacturing firms are family-owned and operated. In addition, the bulk of Kenya's manufactured goods (95 percent) are basic products such as food, beverages, building materials and basic chemicals. Only 5 percent of manufactured items, such as pharmaceuticals, are in skill-intensive activities. This implies that the manufacturing that Kenya wants to attain is sophisticated manufacturing. The Vision proposes intensified application of science, technology and innovation to raise productivity and efficiency levels across the three pillars. It recognises the critical role played by research and development (R&D) in accelerating economic development. More resources will be devoted to scientific research, technical capabilities of the workforce, and in raising the quality of teaching mathematics, science and technology in schools, polytechnics and universities. Kenya intends to create a globally competitive and adaptive human resource base to meet the requirements of a rapidly industrialising economy. This will be done through life-long training and education. Training of human resource in Kenya is as old as the education system in Kenya. However there are striking disparities in the nationality of key engineers in major manufacturing industries and also the owners of the industry. The time factor should also be considered as it takes a long time to develop human resource. Therefore Kenya needs to know why Kenyan engineers are not employed as key manufacturing engineers, why our cottage industry is not developing to major industries, what to train, who we need to develop, how to develop the required human resource in the given time frame. This is because the human resource should be tailor made if Vision 2030 is to be attained. These are issues this paper will discuss.*

### **2 Introduction**

The Kenya Vision 2030 is a vehicle for accelerating transformation of our country into a rapidly industrialising middle-income nation by the year 2030. Technical and vocational education and training (TVET) has emerged as one of the most effective human resource development strategies that Kenya need to embrace in order to train and modernise their technical workforce for rapid industrialisation and national development. The argument is that in order for technical and vocational education to effectively support industrialisation, skills training must be of high quality and competency-based.

One of the most important features of TVET is its orientation towards the world of work and the emphasis of the curriculum on the acquisition of employable skills. TVET delivery

systems are therefore well placed to train the skilled and entrepreneurial workforce that Kenya needs to create wealth and emerge out of poverty. Another important characteristic of TVET is that it can be delivered at different levels of sophistication. This means that TVET can respond, not only to the needs of different types of industries, but also to the different training needs of learners from different socio-economic and academic backgrounds, and prepare them for gainful employment and sustainable livelihoods. A skilled workforce is a basic requirement for driving the engine of industrial and economic growth, and TVET holds the key to building this type of technical and entrepreneurial workforce (Afeti). The term “TVET” as used in this paper follows the *1997 UNESCO International Standard Classification of Education* definition, which is “education and training to acquire the practical skills, know-how and understanding necessary for employment in a particular occupation, trade or group of occupations or trades.”

Kenya has stated making efforts towards being industrialised by the year 2030. We have seen tremendous improvement in fundamental basic infrastructure like ultra modern roads, heavy investments in cheaper geothermal power, modernisation of technical training institute and also offering induction training to technical teachers in developed country like Sweden and China. However, it is disturbing to note that majority, if not all, of the construction companies and skilled workers involved are foreigners who go back home without training locals. Further, almost all of the machines employed are made outside Kenya. It is generally accepted that a country that cannot provide itself with highly skilled human resource and manufacture commodities then it is still a poor country. This is because they will be spending a lot of money importing the goods and services.

Vision 2030 has made it clear that Kenya must be industrialised by the year 2030. Simply put, it is having highly developed tertiary and quaternary sector of industries. It is also important to note that development in a country is also based on human resource development index. This will be done through specialised training at different levels; community polytechnics, and the technical, industrial, vocational and entrepreneurship (Republic of Kenya, 2007)

### ***Expected Status of TVET by 2012 as Projected in Vision 2030***

The vision for the education sector for 2030 is “to have globally competitive quality education, training and research for sustainable development”. To achieve this vision, four strategic areas, namely, access, quality, equity, science, technology and innovation have been identified for support based on their impacts on the economic, social and political pillars.

### ***Raising the Transition Rates***

The key challenge is transition from secondary level to university level, as only 3 percent of secondary school students currently enter university, a proportion that does not compare favourably with that of middle income countries. To address the issue of access the Government plans to raise the transition rate from secondary level to university from 8 percent to 15 percent.

### ***Raising the Quality of Education***

In order to improve the productivity and competitiveness of Kenya’s human resource pool, all students will be provided with a better learning environment, including improved teaching skills and more textbooks. This will provide learners with opportunities to exploit their potential to the fullest. By 2012, the country expects to have laid the foundation towards becoming a nation that harnesses science, technology and innovation to foster national prosperity, global competitiveness to provide a high quality of life to its people.

The Government will upgrade TVET institutions to enable them to provide training in skills consistent with emerging technologies and also introduce a national system of certification. The Government will also introduce a system of accrediting private sector institutions involved in TVET. This will equip the informal sector with the technical capability required to transform into small-and medium-enterprises, thus enabling them to integrate into the modern economy. The

training at this level will also be linked to higher institutions of learning and should be recognised as a bridging course for higher skills certification.

### ***Meeting the Human Resource Needs of Vision 2030 by 2012***

With the anticipated pace of economic growth, more of the existing skills and many others that Kenya does not have will be required. The intention of this policy is to guarantee supply of overall required skill with an emphasis on tourism and BPO (Business Processing Outsourcing/Off shoring sectors).

### ***Policy Strategies for Science and Technology in Education***

Training in STI will be enhanced through the following strategies, namely:

1. Mainstreaming STI into the curriculum – The strategy will integrate instructional technology into content and delivery at all levels;
2. Establishing centres of specialisation for key sectors – This will entail designating various institutions to offer specialised training for all the sectors; and
3. Promote e-learning at TVET and university levels – This will encourage research through access of information from advanced institutes in the developed world.

### ***Current Status of TVET In Kenya***

TVET in Kenya is delivered at different levels in different types of institutions, including technical and vocational schools (both public and private), polytechnics, enterprises, and apprenticeship training centres. In Kenya informal apprenticeship offers the largest opportunity for the acquisition of employable skills in the informal economy. The informal sector accounts for more than 90 percent of all skills training in the country. According to World Bank analysts “Kenya’s informal sector constitutes 98 percent of all businesses in the country, absorbs annually up to 50 percent of new nonfarm employment seekers, has an employment growth rate of 12-14 percent.” contributes 30 percent of total employment and 3 percent of GDP.”

In Kenya, formal TVET programmes are school-based. In general however, students enter the vocational education track at the end of primary school, corresponding to 6 – 8 years of education. The vocational education track has the unfortunate reputation of being a dead-end, so far as academic progression is concerned and fit for those pupils who are unable to continue to higher education. The duration of school-based technical and vocational education is between six months and five years, depending on the level one trains.

What type of governance structures do we have for managing TVET in Kenya? Oversight responsibility is shared in general between the ministries responsible for education, higher education science and technology, ministry of youth and ministry of labour, although some specialised vocational training programmes (for instance in agriculture, health, transport) fall under the supervision of the sector ministries. In spite of the large variety of training programmes, from hairdressing to electronics and automobile repair, the place of TVET in the overall school system in Kenya is marginal both in terms of enrolments and number of institutions.

The socio-economic environment and the contextual framework in which TVET delivery systems currently operate on may be described by the following groups of indicators:

### ***Weak National Economies Characterised by Low Job Growth, High Population Growth, and a Growing Labour Force***

The per capita income is less than US\$500 (Republic of Kenya, 2010). Although the economy is growing at a respectable rate of more than 5 percent there is limited prospects for employment creation. On the other hand, it is estimated that about 500 000 young people add to the labour force each year in Kenya. This huge deficit in the employment statistics is not unrelated to the

high population growth rate and the increasing number of school leavers arising out of national initiatives of the past decade to achieve universal free primary education.

### ***Shrinking/Stagnant Wage Employment Opportunities Especially in the Industrial Sector***

In Kenya, the industrial labour force is less than 10 percent. The vast majority of the workforce is in the services and agricultural sectors. Not forgetting that of these, about 85 percent of the workforce is in the informal, non-wage employment sector.

### ***Huge Numbers of Poorly Educated, Unskilled and Unemployed Youth***

Although some progress has been made, that is, Kenyans are more literate and that the literacy rate is 15 percent higher than the Sub-Saharan African average, there is some evidence to suggest it has declined since 2002. The literacy rate in 2005 was 74 percent for Kenyan adults and 80 percent for youth (aged 15 to 24 years); but this compares to 84.3 percent for adults in 2002 (UNDP, 2004, 2007 and 2008). The Labour Force survey found out that labour market participation rates increase as the level of education increases as we would expect. The sad reality, however, is that majority of inactive persons in Kenya (58 percent) had primary education, 30 percent had secondary education, and 1.7 percent with university education (Republic of Kenya, 2010). Of significance to TVET is the fact that an enrolment at the secondary school level, where TVET is normally provided, is also low. Post-primary education is still low despite the increase in enrolment rates in primary. For instance, the net enrolment rate for secondary was 28.9 percent in 2008 (Young, 2007). The main reasons for non-enrolment in secondary school are; affordability, unsatisfactory educational attainments among standard eight completers, include limited secondary school capacity in some regions, and socio-cultural factors (Onsomu *et al* 2006). The transition rate from primary to secondary education has increased over time, but still low and varies considerably by region. It stood at 52.4 percent in 2008 (Republic of Kenya, 2009c) and a regional average disparity of 6.3 percent. The average school completion rates is quit high but still many young people either complete or drop out of the school system before they have acquired any practical skills and competencies for the world of work. Average completion rates are 78.2 percent for primary school in 2008 and 87.9 percent in secondary school in 2004; and about 20 percent for senior secondary school. And only 3.3 percent of the college age group actually enters the universities and other tertiary institutions (MoHEST, 2004; Republic of Kenya, 2010).

### ***Educated but Unemployed College and University Graduates***

Large numbers of graduates coming out of the formal school system are unemployed, although opportunities for skilled workers do exist in the economy. The Labour Force Survey found out that labour market participation rates increase as the level of education increases. The sad reality is that, as expect, majority of inactive persons in Kenya (58 percent) had primary education, 30 percent had secondary education and 1.7 percent with university education (Republic of Kenya, 2010). This situation has brought into sharp focus the mismatch between training and labour market skill demands. There are striking disparities in the nationality of key engineers in major manufacturing industries and also the owners of the industry in Kenya. Critics argue that the lack of inputs from prospective employers into curriculum design and training delivery in universities and colleges is partly responsible for the mismatch. Another reason that is often cited for the incidence of high unemployment among graduates is the absence of hands on skills.

### ***Uncoordinated, Unregulated and Fragmented TVET Delivery Systems***

TVET provision in Kenya is spread over different ministries and organisations, including NGOs and church-based organisations, with a multiplicity of testing and certification standards. This situation has implications for standardisation of training, cost-effectiveness, quality assurance, recognition of prior learning, and the further education of TVET graduates, because of the absence of a framework for mutual recognition of qualifications. In the informal sector, informal apprenticeship,

which is often the only means for the rural poor and the economically disadvantaged to learn a trade is marginalised, unregulated, and lacks government support and intervention. The diverse TVET management structures and the sharing of supervisory responsibilities by various Government bodies and ministries account for some of the inefficiencies in the system, like duplication and segmentation of training, and the absence of a common platform for developing coherent policies and joint initiatives. Such fragmented governance structures do not promote effective coordination, sharing of resources, and articulation within the system.

### ***Low Quality of Training in Relation to Cottage Industries Development***

In general, the quality of training is low, with undue emphasis on theory and certification rather than on skills acquisition and proficiency testing. Inadequate instructor training, outdated curriculum, obsolete training equipment, and lack of instructional materials are some of the factors that combine to reduce the effectiveness of training in meeting the required knowledge and skills objectives. This is part of the reason that the cottage industries in Kenya do not grow to big and globally competitive industries. Other reasons include lack of government support and incentives, lack of knowledge on patent rights, tedious process of acquiring patent right and lack of finance. Others are high quality skills training requires qualified instructors, appropriate workshop equipment, adequate supply of training materials, and practice by learners.

### ***Geographical, Gender and Economic Inequities***

Although access and participation in TVET in Kenya reflects the gender-biased division of labour (justifying therefore the current efforts of gender mainstreaming in vocational education and training), we should not lose sight of the economic and geographical inequities. Economic inequity is a greater barrier to participation in technical and vocational education than gender. In many counties, children of poor parents are unable to afford the fees charged by training institutions. Invariably, the good technical and vocational schools are located in the big towns and cities, thereby limiting access to rural folks.

### ***Poor Public Perception***

For many years, technical and vocational education in Kenya has been considered as a career path for the less academically endowed. This perception has been fuelled by the low academic requirements for admission into TVET programmes and the limited prospects for further education and professional development. Worse, the impression is sometimes created by Government that the primary objective of the vocational education track is to keep dropouts and “lockouts” from the basic and secondary school system off the streets, rather than project this type of training as an effective strategy to train skilled workers for the employment market. The term “lockouts” refers to students who are unable to move up the educational ladder, not because of poor grades but because of lack of places at the higher level.

### ***Weak Monitoring and Evaluation***

Current training programmes in Kenya are supply-driven. TVET programmes are very often not designed to meet observed or projected labour market demands. The emphasis appears to be on helping the unemployed to find jobs, without any critical attempt to match training to available jobs. This situation has resulted in many vocational school graduates not finding jobs or finding themselves in jobs for which they have had no previous training. Non-targeted skills development is one of the major weaknesses of the TVET system in Kenya. Training institutions also do not track the employment destination of their graduates. Consequently, valuable feedback from past trainees on the quality of the training they have received and the opportunity for their experience-based inputs to be factored into the review of curricula and training packages are lost. In other words, use of tracer studies to improve the market responsiveness of training programmes is currently absent in many countries.

### ***Inadequate Financing***

Kenya spends only about 4.85 percent of its education and training budget on TVET. It must be recognised that TVET is expensive on a per student basis and thus it should be heavily financed. Unit costs are necessarily expected to be higher in TVET institutions than in primary and secondary schools because of smaller student-to-teacher ratios, expensive training equipment, and costly training materials that are “wasted” during practical lessons.

### ***Central Government Expenditures by Functional Classification***

#### ***Public versus Private Provision of TVET***

TVET in Kenya is delivered by both government and private providers, which include for-profit institutions and non-profit, NGO and church or faith-based institutions. In Kenya, government TVET institutions in 2007 included two polytechnic university colleges, two national polytechnics, 19 technical training institutes, one technical training college, four vocational and skills training centres, 650 youth polytechnics, and 930 vocational and skills training institutes controlled by private sector, FBOs and NGOs (MoHEST, 2010). The total enrolment of about 37,700 to TVET public institutions was achieved in the year (2008/2009 (Republic of Kenya, 2010). Kerre (2010) approximates that about 37,000 student miss to join higher education and training in 2009.

Non-government provision of TVET is on the increase both in terms of number of institutions and student numbers. This trend is linked to the fact that private providers train for the informal sector (which is an expanding job market) while public institutions train mostly for the more or less stagnant industrial sector. Private providers also target “soft” business and service sector skills such as secretarial practice, cookery, and dressmaking that do not require huge capital outlays to deliver. On the other hand, the first choice of students is the public vocational schools because of the lower fees charged and the perception of better quality. For obvious reasons, for-profit private providers are often concentrated in the urban centres, while Church-based institutions tend to be based in rural and economically disadvantaged locations. State support for non-government education providers is very minimal in Kenya. The Government support is currently limited to offering students with educational loans and bursaries only.

#### ***Threat of HIV and AIDS***

The impact of HIV and AIDS on the labour force in Kenya (and hence its potential effect on vocational and technical training and skills development strategies) is considered alarming (Republic of Kenya, 2010). According to *Kenya AIDS Indicator Survey* (KAIS) UNAIDS (2007), the total number of people living with HIV in Kenya at the end of 2007 was 1.4 million. Women are disproportionately affected (3 out of 5 people living with HIV are women). HIV prevalence among adults aged 15 – 49 years in Kenya was 7.4 percent (7.1% – 8.5%) in 2007 as compared to 6.7 percent in 2003. However, information is scarce on how African governments have factored the threat of HIV/AIDS into their TVET programmes. Yet the technical and vocational training environment presents a constant danger for the spread of the disease and puts the trainees at risk because of the inevitable use of sharp cutting tools and machines for training.

### ***Bridging the Gap in Manufacturing Sector in Kenya***

Kenya aims to have a robust, diversified, and competitive manufacturing sector by the year 2030. The manufacturing sector in Kenya dates back to the end of World War II. Most manufacturing firms are family-owned and operated. In addition, the bulk of Kenya’s manufactured goods (95%) are basic products such as food, beverages, building materials and basic chemicals. Only 5 percent of manufactured items, such as pharmaceuticals, are in skill-intensive activities. This implies that the manufacturing that Kenya wants to attain is sophisticated manufacturing. Vision 2030 proposes intensified application of science, technology and innovation to raise productivity and efficiency

levels across the three pillars. However, even within the country, manufacturing has been on the decline for a considerable period of time and its contribution to the GDP has remained stagnant at about 10 percent since the 1960s.

### ***Who we Need to Develop***

Casting a wide net in the process of industrialisation may lead us to move out of focus. To remain objective Kenya has to identify specific manufacturing strides that she needs. Further, the manufacturing desired has to be classified in phases according to human resource availability, finance, complexity and need assessment. This will be the bench mark of who we need to train according to the phases. This will also help in building a Skills Inventory for Kenya. This inventory will indicate the distribution of well-trained Kenyans. This applies especially to Kenyans possessing TVET and university level education. Such a database is an indispensable tool for planning the country's future training programmes. It will also identify the existing gap in human resource requirements in all the sectors and thus guide priorities in where to train. For example, we understand that most manufacturing process require services of a chemical engineer. Interestingly up to now only one university in Kenya offer chemical engineering. To ensure that the training at both the TVET and university level remains relevant, there will be regular updating of the national skills inventory.

### ***What to Train***

In Kenya training is as old as mankind. This training exists both as formal training and non formal training. In Kenya the highest skilled manpower is trained in polytechnics and universities. Over the years training has been going on in this institution despite the deafening noise of the mismatch between skills trained and labour market demand. This is a challenge at all levels. Many primary and secondary students who cannot proceed with formal education are absorbed by TVET institutions. However, the training at this level has been hindered by inadequate facilities as well as institutions; hence most young people end up in the informal or *Jua Kali* sector. That problem and the mismatch between the level of skills imparted by the education system as whole and the requirements of the labour market, must be corrected in order to meet the demands of the new economy. This raise the question what do we train? (Republic of Kenya, 2007).

If the objectives of Vision 2030 are to be achieved then training should be tailor made according to the phase of industrialisation we are in. This is to say that training should be purposive. This is what most developed countries do. For example when USA was beaten by Russia on space technology by being the first to sent a space craft to the moon, the Americans under the leadership of President John F Kennedy made it known that their objective is being the first country to sent people in the moon. The education system was geared towards achieving that goal by emphasising mathematics, science, engineering and technology – a stride they achieved in 1969. In recent years we have seen countries like Iran take pride that they have been able to develop sophisticated weapons using home grown technologies. This can simply be attributed to the current weapon race that has made many counties including France, Germany, South Korea, North Korea, India, China, and America shifting the attention of their education system towards weapon development. It is interesting to note that all the countries have reported commendable success rate.

### ***How to Develop the Required Human Resource in the Given Time Frame***

Human resource development is a challenge as it takes a longer time to develop a highly skilled manpower. This problem is worsened by the fact that not all skills in the labour market are taught in the training institutes. Further still, technology being highly dynamic it is a big challenge to keep the curriculum in up to date with the current technology. Therefore Kenya has to adopt new human resource development strategies if they are to meet the market demand. This implies that education reforms should be concomitant with industrialisation phases. This is to make sure that the development process is demand and purpose driven. To achieve this, the Government should develop policies that will mandate all industries to be educational and research partners with higher

institutions of learning. Further, the Government should establish a National Training Framework (NTF), National Qualifications Framework (NQF) and the Qualification and Credit Framework (QCF) that may assist in promoting flexible education system, education system that guarantee quality and avoids duplication of skills when furthering education system that is geared towards progression and learner mobility among within local institutions, regionally and elsewhere around the globe.

### **3 Conclusion**

As Kenya moves ahead in her economic and educational reform, the focus on human resource development will continue to take precedence. The move into higher-value manufacturing and industries such as the life sciences, nanotechnology, and precision engineering, the desired national skills profile will need to be enhanced.

In attempting to address the demands of the new world economy, Kenya's education landscape will fundamentally be overhauled to provide a broader-based intellectual foundation, critical thinking skills and creativity that the economy demands. An ability-driven education that allows students' aspirations and interests to be better met need to evolve. This will break the mould of a highly structured education system that characterised much of the present educational system. This new phase should emphasise a system that values innovation, nurtures diversity and encourages individuals with different strengths.

The four major lessons learned from the strategic management of educational reform for industrialisation in Singapore Seong (2006) that can be applied in Kenyan scenario:

1. Align educational reforms with economic reforms through a consultative and collaborative working relationship among various government ministries and agencies. Inter-ministerial committees are important to provide greater coherence in the development of manpower needs for the nation.
2. Strategic educational reforms should be prioritised based on the capacity and ability of school staff. Putting in place excellent structures and processes and simultaneously developing the ability and capacity of school leaders and teachers are crucial before moving into greater decentralisation. Thus a gradual move from centralisation to decentralisation is essential. Empowerment could only be appropriated when school staff has the ability and capacity to provide quality education through sound processes.
3. Employ a multi-prong approach to meet current and future manpower needs. Upgrading of skills and knowledge requires both a strong foundation of basic technical education and on-the-job training. Partnerships with business organisations both locally and overseas provide short term measures to improve technical expertise while secondary and technical education institutions provide the future manpower needs.
4. Strategic planning for industrialisation and educational reforms is characterised by flexibility in initiating required changes and in responding to new challenges. The process of decision-making is distinguished by efficiency, pragmatism and the "top-down" approach.

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