

TECHNICAL VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS' CONTRIBUTION TO PROMOTING SUSTAINABLE DEVELOPMENT

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ABSTRACT

The concept of sustainable development can be possible if people possess the necessary skills and competences for work in a sustainable manner. Technical, Vocational Education and Training (TVET) has been identified as the type of education that can contribute to the development of a workforce that is skilled and can embrace the ideas of sustainability. In this paper, the researcher presents ideas developed through a plenary discussion with 12 master's students at his university about the role TVET institutions can play through their traditional roles of teaching and research. The paper reviews literature and explores the concept and concerns for sustainable development, the models for sustainability and sustainable development, and identifies the role TVET institutions can play in the transformation to sustainable societies. Further, the paper identifies the challenges TVET institutions face in imparting sustainability skills and concludes by suggesting possible solutions to the challenges.

Keywords

Technical, Vocational Education and Training, Sustainable Development.

Introduction

1.0 Definition and Concept of Sustainable Development (SD)

A widely used definition of sustainable development is from the World Commission on Environment and Development (WCED) (1987), in the report “Our Common Future” also known as the Brundtland report. According to WCED, “*sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (United Nations, 1987).

At the United Nations (UN) earth summit held by the United Nations Environment Program (UNEP) in Rio de Janeiro (1992), sustainable development was further defined as “*Improving the quality of human life while living within the carrying capacity of supporting eco systems*”. Depending on the context in which it is used, sustainability can best be implemented in the planning approval where the sustainability issues can be delivered to the people that is affected by the socio-economic development (United Nations, 1992).

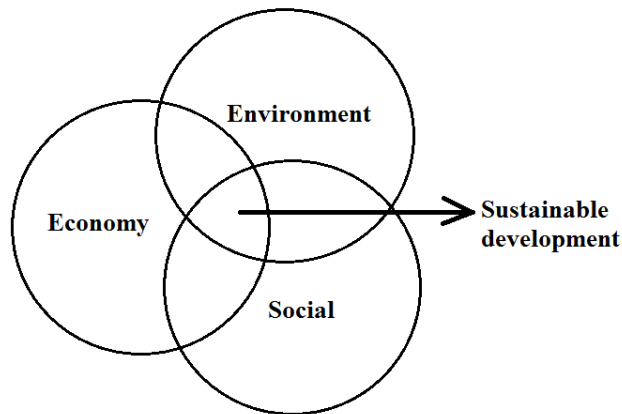
UNESCO-UNEVOC (2005), noted that sustainable development is not a fixed concept; rather it is a culturally-directed search for a dynamic balance in the relationships between social, economic and natural systems. A balance seeks to promote equity between present and future, countries, social classes, genders, and races (UNESCO-UNEVOC, 2005). Sustainable development therefore, is to satisfy the needs of the present generation, balancing public welfare and environmental and economic development interests and concurrently ensuring the observation of the environmental requirements and the preservation of natural diversity in order to avoid the reduction of possibilities to satisfy the needs of future generations (Ademola, Oloruntoba, & Clara, 2017).

Regarding sustainable development, former UN Secretary-General Ban Ki-moon, 2007 (cited in UNESCO, 2012) had this to say;

“We hold the future in our hands. Together, we must ensure that our grandchildren will not have to ask why we failed to do the right thing, and let them suffer the consequences.” (UNESCO, 2012).

Fundamentally, sustainable development is a concept based on the integration of economic, social and environmental concerns. The concept promotes economic growth, maintains social integrity and minimizes environmental impact (Tovey, 2009).

Figure 1: Sustainable Development Concept



Source: (Mohamed S., B., H., 2014)

1.1 Concerns about Sustainable Development (SD)

Sustainable development (SD) is driven by evidence that, despite living in a world that is richer than ever before, environmental damage escalates and poverty and inequality persist (Wals, 2009). A Living Planet Report by Leape (2008), notes that our global mark surpasses the world's capacity to regenerate by about 30 percent and cautions that if society's demand for natural resources continues to increase at the same rate, by the decade of 2030, we would need the equivalent of two planets to maintain our lifestyles (Leape, 2008).

Diesendorf (2000), highlights the principal impacts of humans on the environment. These are:

- changes, possibly irreversible, to the composition of the atmosphere and therefore to earth's climate;
- destruction of stratospheric ozone and therefore increased damage to living organisms from ultraviolet light in sunshine;
- degradation of topsoil and increases in desertification;
- loss of biological diversity;
- damage to photosynthesis and nutrient cycles;
- widespread pollution of air, rivers and oceans; and

- depletion of artesian water storages.

Further, Diesendorf (2000), highlights several areas of concern relating to the socio-economic aspects of sustainability. These are:

- A large body of evidence that the gap between the rich and the poor has been increasing, both between countries and within many countries.
- Human rights violations are still endemic in many countries.
- Debt and economic slavery are still prevalent with the erosion of minimum working conditions and wages in several countries.
- A large proportion of the world's population has inadequate diet, nutrition and access to drinking water.
- A large proportion of the world's children live in poverty. Ethnic groups, indigenous people and other minorities in nominally rich countries are generally at risk.
- Preventable and treatable diseases are prevalent in both developed and developing countries.
- A large proportion of the world's population is still illiterate.
- There are still many refugees, resulting from war, political persecution, environmental destruction and economic hardship.
- Despite significant overall advances during the 20th century, the status of women is still not clear.

It's therefore evident from the above concerns that sustainable development is needed internationally (Diesendorf, 2000).

1.2 Models for Sustainability and Sustainable Development

1.2.1 Diesendorf Model or Framework

Diesendorf (1998), developed a model or framework for sustainability and sustainable development. The framework answers the questions "What is the scope of sustainability? How can we present it in a systematic manner, distinguishing between ethical principles, broad goals and objectives which are actionable and measurable?" The framework comprises of four logical levels:

- a) **Level 0**, comprising the broad ethical principles;

At Level 0, there are three principles. These are; respect for nature; respect for humans; and to be generous in our respect and kindness.

b) **Level 1**, comprising broad goals arising from these principles;

Included at Level 1 are the broad goals to conserve inter- and intra-generational equity (basis for the definition of sustainable development in the Bruntland report), human well-being, biodiversity and ecological integrity.

c) **Level 2**, comprising measurable objectives or indicators

The indicators should be measurable, relevant, simple to use and understand, reliable, reproducible, and timely for decision-making.

Diesendorf (1998), further elaborated on these indicators in table 2 below.

Table 1: Examples of some measurable objectives or sustainability indicators

'Ecological'	'Economic'	'Social'
Rate of materials' flow; Rate of energy use; Total & per capita rate of greenhouse gas emissions; Vehicle kilometres travelled per capita; Human population & growth; rate; Area of land degraded & polluted; Water pollution; Air pollution	'Genuine progress indicator' Distribution of household & personal income; Percent of income needed to pay for basic 'needs' of a person; Percent of children living in households with no adult earner; Mortgage repayments & rents relative to median income in region; Employment by top 5 companies in the region.	Basic services within walking and cycling distances of dwellings; Availability of day care for under 5s. Levels of education, including literacy & numeracy; Life expectancies at birth and at age 20; Morbidity rates; Crime rates; Homelessness; Teaching of indigenous languages in schools.

Source: Diesendorf (1998)

Sustainability indicators have an important place in the concept of sustainability and the process of sustainable development. Indicators are required for monitoring progress and are valuable for motivating action. However, they do not in themselves produce good policy and actions to implement it.

d) **Level 3**, comprises the action plan for implementation of education for sustainable development. According to the Ottawa Charter (1986) and the Bellagio Principles (1998) cited by Diesendorf (2000), the following steps towards the implementation of ESD are proposed.

- Present a guiding vision, goals and scenarios
- Develop sustainability policy in all sectors, at all levels, with all types of instrument
- Create supportive environments
- Strengthen community action
- Develop personal and organizational skills
- Re-orient the system

1.2.2 $I=PCT$

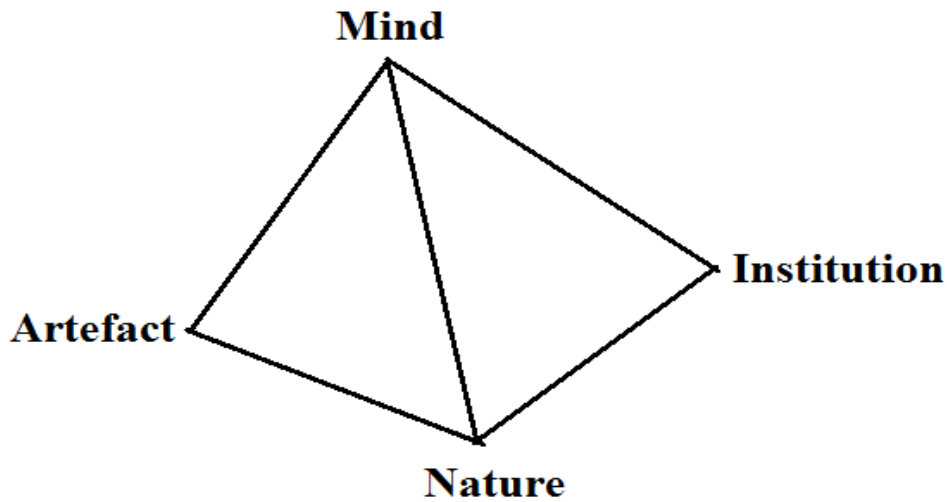
The formula: $Impact = Population * Consumption/person * Impact/unit\ of\ consumption$ ($I = PCT$) is another model often used in sustainable development. It is inspired by economics and its attention is focused on the impact of consumption. However, this model is often critiqued for emphasizing environmental management while down playing the social and economic aspects of sustainable development (Johnston, 2007).

1.2.3 MAIN Prism of Sustainable Development

Kain (2000) proposed a prism for sustainable development which comprises of Mind, Artefact, Institution and Nature (MAIN).

- The environmental dimension (nature) includes stocks of non-renewable and stocks of renewable resources.
- The economic dimension (artefacts) includes all man-made material assets such as buildings and roads.
- The social dimension (mind) is the awareness of individual subject (worldview, knowledge, and experience).
- The institutional dimension relates to the organization of our society and the relation between people.

The model is however critiqued for downplaying the environmental dimension (natural capital), which is a pre-condition for the development of human well-being.



Source: Kain, 2000

1.2.4 Five Capitals Model

The five capitals model uses economics as the starting point. The model maintains that governments have five capitals or stocks to manage: natural, social, human, and financial and manufactured (Forum for the future, 2003). Each of these capitals can be defined and the stocks evaluated, as seen in table 1 below.

Table 1: Capitals, Stocks and Flow

Capital/Resource	Stock	Flow
Natural	Land, sea, air, vegetation, ecological systems	Food, water, energy, waste, disposal, climate
Human	Knowledge, skills, health, motivation, spiritual ease	Happiness, creativity, innovation, work, energy, participation
Social	Families, communities, organizations, governance systems, schools	Security, shared goods (e.g., culture, education) inclusion, justice

Manufactured	Infrastructure, roads, buildings, tools, fixed assets	Living/working space, access, distribution
Financial	Money, stocks, bonds, banknotes	Means of valuing, owning or exchanging other four capitals

Source: Forum for the Future, 2003

According to this model, sustainability is achievable if we lived from the flows of benefits that the stocks provide rather than eroding the stock.

1.3 Education for Sustainable Development (ESD)

Education for sustainable development (ESD), sometimes known as Education for Sustainability (EfS), is an orientation to essential aspects of education such as access, relevance, equity and inclusivity. It also includes planning, policy development, programme implementation, finance, curricula, teaching, learning, assessment, administration. ESD aims to provide a clear interaction between education, public awareness, and training with a view to creating a more sustainable future (UNESCO, 2012). The Australian Government (2009), in their national action plan for education for sustainability, defined ESD by the following principles: transformation and change; education for all and lifelong learning; systems thinking; envisioning a better future; critical thinking and reflection; participation; and partnerships for change. “Education for sustainable development therefore aims to help people to develop the attitudes, skills and knowledge to make informed decisions for the benefit of themselves and others, now and in the future, and to act upon these decisions” (UNESCO, 2010).

1.3.1 Characteristics of Education for Sustainable Development (ESD)

According to United Nations decade of education for sustainable development (2005-2014), international implementation scheme (UNESCO, 2005), ESD:

- is based on the principles and values that underlie sustainable development;
- includes all three spheres of sustainability-environment, society, and economy with an underlying dimension of culture;

- uses a variety of pedagogical techniques that promote participatory learning and higher-order thinking skills;
- promotes life-long learning;
- is locally relevant and culturally appropriate;
- is based on local needs, perceptions and conditions, but acknowledges that fulfilling local needs often has international effects and consequences;
- engages formal, non-formal and informal education;
- accommodates the evolving nature of the concept of sustainability;
- addresses content, taking into account context, global issues and local priorities;
- builds civil capacity for community-based decision making, tolerance, environmental stewardship, workforce adaptability and quality of life;
- is interdisciplinary: no single discipline can claim ESD for itself alone, but all disciplines can contribute to ESD (UNESCO, 2005).

To further highlight the relevance of ESD, the UNESCO World Conference on Education for Sustainable Development (UNESCO, 2009) noted that.

“ESD, which is relevant to all types, levels and settings of education, is an approach to teaching and learning based on the ideals and principles that underlie sustainability. Since ESD engages with such key issues as human rights, poverty reduction, sustainable livelihoods, climate change, gender equality, corporate social responsibility and protection of indigenous cultures in an integral way, it constitutes a comprehensive approach to quality education and learning. By dealing with the problems faced by humanity in a globalized world, ESD will shape the purposes and content of all education in the period ahead – ESD is, indeed, education for the future” (UNESCO, 2009, p.8).

1.3.2 TVET for Sustainable Development

Technical and Vocational Education and training (TVET) have been recognized the world over as tools for empowering people, especially the youth, for sustainable livelihood and social economic development (Ajibola & Jumoke, 2012). The United Nations Educational Scientific and Cultural Organization (UNESCO) and the International Labour Organization (ILO) recommendations of

2000 on TVET for the twenty-first century, defined TVET as those aspects of education process involving, in addition, to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. TVET is further understood to be: an integral part of general education; a means of preparing for occupational fields and for effective participation in the world of work; an aspect of lifelong learning and a preparation for responsible citizenship; an instrument for promoting environmentally sound suitable development and a method of alleviating poverty (Kerre, 2010). However, it has been noted that especially in least developed countries, the skills necessary for manufacturing processes and services in a sustainable manner are not yet available in education institutions (Fien, Maclean and Park 2009). People with the right skills, knowledge, competencies, frame of mind, attitude and motivation remains the most enduring strategy for the pursuit of sustainable development. The only way to provide people with the capacity knowledge, skills, attitudes and motivation to reduce the harmful influence of society on the environment and to protect and preserve the globe for future generations is through education (Ajibade, 2013). TVET, as an integral component of lifelong learning, has a crucial role to play in this new era as an effective tool to realize the objectives of a culture of peace, environmentally sound sustainable development, social cohesion and international citizenship (UNESCO-UNEVOC, 2006). Therefore, the role of TVET is to provide young people and adults with the life-skills necessary for the labor market and also to provide support to keep up with the fast changing market by expanding necessary skills and competencies (Wals, 2009).

1.3.3 TVET institutions' contribution to sustainable development

The world over TVET suffers from a subordinated role in comparison to the tertiary education sector. Nonetheless, TVET has the potential to address social, economic and environmental challenges in a sustainable way if implemented carefully through their traditional functions of teaching, research and knowledge dissemination (Thienemann, 2014).

Examples of TVET institutions' contribution to sustainable development are discussed below.

Conducting research and development

Conducting research is one of the traditional roles of TVET institutions. Research can be conducted about sustainable technologies. Students and trainers can be stimulated to conduct research by putting in place competitive research funds about sustainable technologies. Such sustainable technologies could be about:

- alternative energy technologies like geothermal, water turbine generation, biodiesels etc.;
- new materials for building construction;
- developing reusable, recyclable or compostable packaging materials for manufactured products;
- development of disease resistant varieties of plants and animals;
- development of environmental friendly agricultural inputs such as pesticides, and fertilizers;
- development of sustainable transport means like hybrid and electrical cars;
- disease control among humankind;

TVET curriculum for sustainability

According to Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (2011), the term “curriculum” refers to the teaching-learning content, structure and processes provided by teaching institutions or training centres. Curriculum specifies what kind of knowledge, skills and values should be taught to students and why is that so, but it may also specify the desired ways of how students should be taught (Kärkkäinen, 2012). The TVET curriculum for sustainable development, on top of the general and technical subjects should include such aspects as:

- extra-curricular activities that enhance learning about sustainability for instance environmental fairs, music, art and drama competitions etc.;
- sustainable development issues; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption;
- sustainability ethos about the treatment of others such as mob justice;
- includes real-life sustainable development issues to enhance learners’ motivation and learning;
- sustainability programs designed for life-long learning;
- multi-disciplinary approaches to problem solving

- be flexible to address issues of the ever changing technological advancement;
- promotion of an entrepreneurial mindset;
- Information and Communication Technology (ICT);
- development and utilization of learners’ talents in ways that enable them to live happy healthy and fulfilled lives irrespective of gender and ethnicity;

A number of new subjects (issues) therefore need to be incorporated into TVET curriculum for the sake of enhancing sustainable development.

New training methods for TVET

In teaching and learning, some learners prefer certain learning methods and some trainers prefer certain teaching methods. The TVET trainers should choose the right methods for their learners. The teaching and learning methods in TVET should stimulate and enable learners to change their behaviour and take action for sustainable development. Learners have specific, challenging, practical, goals in mind. Learning tasks should be constructed with those goals in mind so that they are useful to enable learners to progress to higher levels of expertise in their chosen field (Lucas, Spencer, & Claxton, 2012). To further emphasize the importance of training methods, Fien, Maclean and Park (2009) urge that the way TVET is delivered has great influence in the adoption of sustainability attitudes. In the table 2 below, they identify the important attitudes which TVET institutions can develop amongst their students.

Table 2: Attitudes for Sustainability

Work by oneself (self-discipline)	Engage in self-assessment, self-reflection, and analysis
Work with others in teams	Manage change
Work with integrity and honour, with honesty, punctuality and responsibility;	Create a stimulating and supportive environment
Adapt to varying situations; know and understand problems and issues; and work out solutions creatively	Appreciation of the importance of social, environmental and economic contexts
Peacefully resolve of conflicts	Ownership and entitlements
Have a good grasp of the reality of the world, of oneself and of others	Quality consciousness and appreciation of quality

Continue learning and pursue lifelong education in a learning society	Passion
Persistence	Entrepreneurial spirit

Source: Fien, Maclean and Park (2009)

TVET institutions as role models of sustainable practices

TVET is not only about skills training but can lead by example in practicing sustainable development through its policies and practices. Such policies and practices could be:

- zero tolerance to corruption
- interactions between the school and the community
- responsible management of waste (dumping or recycling);
- energy and water saving at the school;
- use biodegradable materials
- display of safety instructions in the laboratories, electrical works, hazardous waste sites, at construction sites, open pits etc.;
- adhering to standard procurement of goods and supplies in ways that support sustainable development principles;
- conflict resolutions at all management, academic and non-academic levels;
- treatment and recycling of waste water;
- creating a healthy and non-toxic environment by proper ventilation of buildings, planting trees;
- use innovative pedagogies to flexibly deliver TVET programs;
- financial accountability;
- environmental auditing through ISO quality assurance systems

Furthermore, TVET institutions can develop their own sustainable development implementation models for their particular situations. An example is the one which was developed by the University of Plymouth known as the four “C” approach:

- Making the CAMPUS more sustainable and inclusive
- Including sustainability ideas and issues in CURRICULUM, teaching and learning
- Joint initiatives for sustainability with COMMUNITIES in the South West

- Creating a sustainability CULTURE within the University as a whole

These aspects when practiced at the institutions can be inculcated into the learners and later to the wider communities.

Greening TVET

Greening is regarded as a process of adapting knowledge and practices with the aim of aligning them with the overall concept of sustainability (UNESCO-UNEVOC, 2017). A green economy is one 'that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities'. This is crucial if we are to move towards sustainable societies (UNEP, 2011). TVET institutions have an obligation of producing a workforce with green skills. Green jobs are found in many sectors of the economy from energy supply to recycling and from agriculture and construction to transportation. They help to cut the consumption of energy, raw materials and water through high-efficiency strategies, to de-carbonize the economy and reduce greenhouse-gas emissions, to minimize or avoid altogether all forms of waste and pollution, to protect and restore ecosystems and biodiversity (UNEP, 2008).

Partnering with key stakeholders

TVET institutions can contribute to sustainable development by encouraging partnerships and facilitating cooperation among TVET stakeholders on issues concerning sustainable development. The stakeholders could be the employers from the private sector, government and Non-Governmental Organizations (NGOs) and Community Based Organizations (CBOs). Information from these stakeholders is vital in forecasting future sustainability skills needs of employers. Also, international or regional networks can be fostered to share on issues relating to sustainability.

1.4 Challenges of Integrating Sustainable Development in TVET Institutions

TVET institutions, especially those in the developing countries face a lot of challenges in their attempt to integrate sustainable development aspects in training. The following challenges have been identified:

Lack of sustainability policy and strategies for TVET. Policy guides TVET institutional behaviour and actions. It can be explicit and implicit single decisions or group of decisions, which may set out directions for guiding the future actions of TVET institutions. In many countries, TVET has not been integrated into national sustainability policies and strategies. Even in cases where the

policies have been integrated, their implementation has been poor. This is a very big challenge of integrating sustainable development in TVET Institutions.

Lack of funds to update training equipment. TVET students need to practice on new equipment that meet environmental standards for them to acquire sustainability skills. However, many TVET institutions, especially those in developing countries lack funds to continuously update their training facilities. In his research about automotive training in Kenya, Kitainge (2016) concluded that training facilities should be as close as possible to the work place facilities (Kitainge, 2016). If students continue to be trained using less sustainable machines, they will be unable to acquire the skills that would enable them to work in a sustainable way.

There is a lack of knowledge on the part of TVET trainers. As TVET becomes increasingly more knowledge-oriented, the role of teachers and instructors must change from the didactic imparting of skills and knowledge to the facilitation of learning in a sustainable manner. The increasing use of Information Communication and Technology (ICT) and other media also contributes to this shift in teaching and learning methodologies. The implementation of such strategies depends on qualified mentors and supervisors in TVET training programmes. In order to improve the quality of teaching and training in TVET institutions, it is important to raise the standard of professionalism for vocational teachers and instructors by identifying a set of national standards that can be applied across the system (Euler, D. (n.d.)).

Lack of skills and competencies among youth and women to work in a sustainable manner hinders the transition to greener economies. This has highlighted the importance of reforming the teaching and learning methods of TVET systems of many countries. For instance in China, Bai & Geng (2014) in their paper about transferable skills in technical and vocational education and training noted that one of the policies, the secondary vocational education reform and innovation action plan emphasized the importance of reform and innovation in teaching methods. It encouraged schools to explore project-based teaching, case teaching, situated teaching and virtual and simulated teaching, so as to promote the all-rounded development of students. The action plan highlighted the importance of comprehensive competencies and transferable skills for student development (Bai, B. & Geng, X. 2014).

1.5 Suggested solutions to the challenges

Proper preparation of TVET trainers. The trainers inculcate the skills and values necessary for sustainable development at all levels. Additionally, they originate and develop the teaching curriculum, transfer knowledge to society through research dissemination and community outreach. This can be improved if existing trainers are re-trained through continuous refresher courses about sustainability.

Stimulate staff and student research by introducing competitive research grants for sustainable development projects. The research findings can be disseminated in conferences or seminars and published in journals at a cost. The funds generated can be ploughed back to make research grant more attractive.

Efficient and responsible resource utilization in the TVET institutions by recycling and proper disposal of non-recyclable materials. This can be through household solid waste recycling and waste water recycling before it's released back in the environment.

TVET institutions should mobilize for funds to acquire new equipment that meet environmental standards to enable students practice on them to acquire sustainability skills. Funds should be mobilized by:

- emphasizing training with production, such that the products are exhibited and sold for a profit;
- involvement of Non-Government Organizations (NGOs) and Voluntary Organizations in the cost sharing or financing of vocational programmes;
- engaging in consultancy activities for the TVET institutions themselves and other private and public enterprises;
- Vocational training funds. In many countries where employers are active participants in VET a training fund for financing vocational training has been set up. Tax contributions from the employers collected through pay- roll levies or subsidies from the government are transferred to the Training Fund.
- Involvement of international donor agencies such as the World Bank, UNESCO, UNICEF and so on, to fund TVET activities

TVET personnel are expensive to train and hire. They should be highly motivated by offering them a good pay package, promoted at work and insured together with dependants in health insurance schemes. This ensures that they will be settled and highly effective with their work.

TVET institutions can invite guest speakers with knowledge in sustainability to raise awareness among staff regarding consumption of resources such as energy, water and paper, alternative energy technologies, waste management, human rights, good governance and employer future skills needs.

Display of safety instructions posters for the laboratories, for electrical works, for handling hazardous waste, for construction works in progress, open pits and walk ways. This instills a culture of safety for all the staff and students in the TVET institutions and sustainability can be enhanced in that regard.

Efficient use of energy by use of power saving equipment in the TVET institutions and where possible applying renewable energy technologies. A clear example can be the use of solar power for the lighting system within the institution premises. Also, using energy saving bulbs in the laboratories and lecture rooms.

Benchmarking sustainability practices with other TVET institutions already implementing sustainability training. This can involve studying sustainability practices from other TVET institutions and finding ways to meet or improve upon them. Benchmarking is vital in gauging successes and identifying weaknesses. The TVET institutions can start by identifying problem areas, selecting top competitors who are excelling and making the necessary changes.

Staff in TVET institutions need to have a strong financial base. They should be supported to invest through pension schemes, Savings and Credit Cooperative Organizations (SACCOs), and other investment clubs. This improves their social status and young people can look at them as their role models.

TVET institutions should develop and deliver courses that meet the local labor market skills demands in a sustainable way. The courses can include such aspects as re-designing unsustainable production processes, information technology, natural sciences and green technology.

TVET institutions should establish well facilitated collaboration centres within their campuses to coordinate issues relating to sustainable development. The coordinators for these centres should be people knowledgeable and enthusiastic with sustainability issues to mentor others and advocate for their inclusion in the institutions' strategic plans.

1.6 Conclusion

The process to re-orient TVET to sustainable development already exists in most TVET institutions but there are no clear guidelines or principles to point it in the right direction. This paper is anchored on Diesendorf (1998), model or framework for sustainability and sustainable development. The framework answers the questions “What is the scope of sustainability? How can we present it in a systematic manner, distinguishing between ethical principles, broad goals and objectives which are actionable and measurable?” TVET institutions can follow this model by emphasizing the measurable objectives or indicators of sustainable development at **Level 2** and the action plan for their implementation to achieve education for sustainable development as indicated at **Level 3**. In this way, TVET institutions can therefore contribute to the promotion of sustainable development by preparing a generation of workers with sustainability skills, knowledge, values and attitudes that support sustainable development.

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