



## Greening TVET: Isn't It Alarming?



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### Introduction

Technical Education and Vocational Training (TVET) is considered a key sector in providing employable education and training contributing to

the job market. It recognizes formal, non-formal and informal learning for the world of work – the larger focus being on offering/acquiring employable skills. The skills are mainly related to employment, entrepreneurship and lifelong learning. UNESCO (2015)

defined TVET as comprising education, training and skills development relating to a wide range of occupational fields, production, services and livelihoods. TVET is taken as a part of lifelong learning, can take place at secondary, post-secondary and tertiary levels and includes work-based learning and continuing training and professional development, leading to qualifications (UNEVOC, 2009).

The concern of sustainable development by the stakeholders of TVET has been a crucial research area. Regarding this, the concept of Greening TVET has been applied and implemented in many TVET systems directly or indirectly. There is no more information regarding this concept, and the implementation is still challenging. In this regard, UNESCO (2014) reported significant constraints in reorienting TVET towards achieving sustainable development goals.

## **Education for Sustainable Development**

The Brundtland Commission introduced the concept of sustainable development in 1987. The idea of sustainable development aims to overcome the present global economic, environmental

and social challenges. Education is one of the major aspects of achieving SDG. Education for Sustainable Development (ESD) fosters both formal and non-formal education to achieve "environmental and ethical awareness, values and attitudes and behaviour consistent with SD and for effective public participation in decision-making" (United Nations, 1992). In the same way, UNCED (1992) explained ESD as a process to provide the knowledge towards sustainability and support societies to "reach their fullest potential" (p. 36).

Education is indispensable for achieving sustainable development (United Nations, 2004, p. 1). Education for sustainable development aims to help people develop the attitudes, skills, and knowledge to make informed decisions for the benefit of themselves and others, now and in the future, and act upon these decisions (UNESCO, 2010). UN Education for All (EFA) and the UN Decade of Education for Sustainable Development (ESD) have been set as international agendas to enhance the knowledge of ESD. Education not only helps to achieve understanding regarding SDGs. It also plays a role in developing particular values and promoting behaviours as a major

contributor to attaining a sustainable future (Pavlova & Huang, 2009). Education, in many countries, is seen to reproduce and promote the dominance of the neo-liberal market economy ideology nationally and internationally (Cars, 2013, p. 2). He further highlights that conceptualizing education is being confronted, and instead, the alternative post, economic paradigm, which focuses more on people's capacity and global ecology, is being increasingly discussed.

## **TVET and Sustainable Development Goals**

TVET play a vital role in the field of development. The shift in the development paradigm has really threatened nature and natural resources. The degradation of natural resources in terms of quantity and quality has been exhausted. So, in line with the development, sustainable development should be considered in every aspect. TVET is not far from this scenario. So, TVET is another platform to achieve sustainable development goals. Most of the goals of SDG are directly related to the conservation of natural resources. Technical education also aims to develop the nation in several means related to achieving SDGs. TVET aims

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to develop entrepreneurship in the labour market or provide the job opportunity which intimately needs nature.

## **Greening TVET**

Greening TVET describes the efforts to foster the culture of sustainable practices in TVET and helps to facilitate the transition to climate-resilient societies, greater resource efficiency, and a circular economy. It's a holistic framework which promotes a sustainable and low carbon world in the TVET sector. It highlights the efforts to foster the culture of sustainable practices in TVET. It plays a key role in preparing learners for emerging green jobs and providing them with green skills and competencies

TVET is expected to play a key role in preparing learners for emerging green jobs and providing them with green skills and competencies. However, while the demand for green skills is growing globally, TVET systems in many countries struggle to respond and cater to these needs. In order to achieve "Green TVET", the three dimensions of sustainability need to be addressed: environmental, economic and social. In some sources, "culture" is added as a

fourth underlying dimension (UNESCO, 2009).

TVET is described as a contributor to the three dimensions of SD as it serves as a "platform for honing economic sustainability, economic literacy, sustainable production and consumption as well as managing small businesses and moulding the workforce equipped with social sustainability skills and environmental skills" (Majumdar, 2010, p. 7).

Greening is the process of pursuing knowledge and practices to become more:

- environmentally friendly,
- enhancing decision-making and lifestyle
- in a more ecologically responsible manner,
- that can lead to environmental protection and
- sustainability of natural resources for current and future generations.

The implementation of greening the organization is an essential request in a time of fast-change and sustainable development. The professional profile of technical and vocational teaching professionals needs to be reviewed and consolidated in terms of the latest and

necessary competencies to fulfil the requirement of a new era to achieve Sustainable Development Goals.

A green economy is one whose growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services" (UNEP 2011, p. 16).

Green jobs contribute to preserving or restoring environmental quality in that sector and allowing for sustainable development (International Labor Organization, 2013). It also helps to protect ecosystems and biodiversity, reduce energy, materials, and water consumption through high-efficiency strategies, de-carbonize the economy, and minimize (or altogether avoid) generation of all forms of waste and pollution. This finally helps to advance more environmentally-conscious practices.

Majumdar (2011) has proposed a greening strategy by inserting a green paradigm in TVET. In fact, TVET is a prime platform for providing a technical workforce. He suggests "greening" TVET by introducing five components

of institutional operations to extend sustainable development principles in TVET institutions. These five components are Green Campus, Green Curriculum, Green Community, Green Research, and Green Culture. The components are discussed below:

### **Green Campus**

The concept of a green campus was more focused on the environment of the organization. It's the philosophy of practising what is taught in the classroom. It more focuses on sustainable management and efficient use of resources. The main resources are energy, water, air and waste pollution control. Thus, green campus intends to reduce the carbon footprint of students, teachers, and staff within the TVET institutions with energy management, water management, and pollution control.

In the context of Nepal, managing the resources within the organization is still challenging. Using the latest technology in terms of energy management, for instance, low energy emitting bulbs, solar lights, and solar technology can be used in all the TVET organizations, replacing the bulbs consuming more energy. In terms of waste management,

institutions can also manage waste by waste recycling, waste segregation, vermin composting, etc. Rainwater harvesting, reuse, and recycling of water can be the best practices for managing water. Moreover, with low cost and available resources and staff, a green campus can be maintained.

### **Green Curriculum**

This concept focuses on a curriculum that is environment friendly and which helps to promote sustainable development. It is the systematic adaptation and revision of the traditional curriculum in terms of market-oriented curriculum, green curriculum, technology and environment-friendly curriculum, along with the methods, applications and approaches that can directly help to achieve sustainable development goals.

A green curriculum is one of the major aspects that guide maintaining a green campus, green research, green community and green culture. In the context of Nepal, the curriculum is not as per the market demand and is also not environment friendly which is the urgent need to revise the curriculum as per the need of the global market to fulfil the SDGs.

## **Green Community**

The concept of a green community is to foster the community with green principles and practices. The partnership approaches can directly impact achieving the goals to maintain a cleaner and greener environment-friendly community. In terms of the TVET System, there are many more courses that are directly linked and can be applied and implemented with the linkage of the community. For instance, a short campaign programme, community mobilization, community partnership, and community engagement can be done. In many fields, like agriculture, health, and community linkage can be managed in a proper way. TVET should go to the community, not limited only to the TVET institutions. Also, TVET can learn the recent practices and extra activities that are implemented in the community.

## **Green Research**

The concept of green research is exploring green technologies and innovations promoting sustainability. This does not mean doing research in a broad sense, but the project work assignment provided to the students can be replaced by mini-research in

households within the community and school.

## **Green Culture**

This concept is about green values, ethical standards, attitudes, and behaviours directly linked to and respect the green lifestyles. We already have so many cultural practices directly related to green culture, but the application, implementation, and internalization of such practices are needed.

## **Challenges in Greening TVET**

Jagannathan (2013) highlights that the green paradigm has prompted new employment opportunities. But the problem is seen in the willingness of the concerned authorities to manage the environment for greening TVET. Asia Business Council (2009) has compiled a green jobs index in Asian countries. This report suggests the shift of jobs from traditional to environment friendly. This is a great challenge to be ready to adopt the emerging green jobs and skills. The TVET graduates should fulfil the jobs, occupation, skill needed for the market and industry. The

problem is, are we ready or prepared to face such challenges.

Another challenge in TVET is skills shortage or mismatch as per the global need to achieve SDGs. So, the urgent need is to revisit the curriculum, and the necessity is upskilling and reskilling the graduates. There are many more indigenous knowledge and skills in Nepali culture, which directly helps to create an environment-friendly society; integrating such practices in the curriculum can be done.

## **Conclusion**

In the green paradigm, issues relating to education and training should be viewed in the overall context of education for sustainable development. However, "green" education and training are constrained by several factors, such as the slow responsiveness of education and training institutions in creating futuristic curricula for green jobs. TVET needs innovative plans and strategies to foster higher investment in quality human capital and green lifestyles to achieve sustainable development. Mere cost advantages are no longer sufficient; a country should have holistic economic, education, social, environmental, and financial

strategies. Appropriate and relevant policies and incentives should be put in place to amass talent pools especially those with creative and green mindsets. To achieve green TVET, investment in innovation-based competitiveness ability to generate new ideas, products, and services is needed. There is clear evidence to show that TVET has played a key role in enhancing green development.

Education and training for greening economies and corporations need to address all levels of education. Environmental education has a vital role in creating awareness at the basic education level. The recent global plan for green growth has given rise to a range of needs at technical and vocational education and tertiary educational levels. To respond comprehensively to the needs of transiting to green economies, education and training systems need to take an integrated view of potential opportunities and constraints for green initiatives. This requires an effective green framework, policies, and practices to create a highly skilled and creative workforce and talent pool critical to achieving sustainable, inclusive economic growth.

## References

- Asia Business Council. (2009). *Addressing Asia's new green jobs challenge*.
- Cars, M. (2013). Sustainable transformation, Kizuna (spiritual bonds) and learning: Evidence emerging from aftermath in East Japan, Towards a new development paradigm. In V. Chinapah (Ed). *Education for rural transformation (ERT): Good practices from national and international perspectives* (Vol. 1, pp. 95-116). Institute of International Education.
- International Labor Organization. (2013). *Sustainable development, decent work and green jobs* (Report V: International Labor Conference 102nd Session).
- Jagannathan, S. (2013). Education and skills in Asia: Responding to greening economies. In R. Maclean, S. Jagannathan, & J. Sarvi (Eds.), *Skills development for inclusive and sustainable growth in developing Asia-Pacific* (pp. 265-280). Springer
- Majumdar, S. (2010). *Greening TVET: Connecting the dots in TVET for sustainable development*. <http://hdl.voced.edu.au/10707/2635>
- Majumdar, S. (2011). *Developing a greening TVET framework*. <https://bit.ly/3LAbRQc>
- Pavlova, M., & Huang, C. (2009). Final report of a project on developing innovative approaches in education for sustainable development. In *Curriculum reform TVET China*. Zhejiang Technology Institute of Economy.
- UNCED. (1992). *Agenda 21: Promoting education, public awareness & training*. United Nations Conference on Environment & Development, Rio de Janeiro, Brazil, 3 to 14 June 1992. <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>
- UNEP. (2011). *Towards a green economy: Pathways to sustainable development and poverty eradication*. <https://bit.ly/3sT9fGy>
- UNESCO. (2010). *Education for sustainable development (ESD)*.
- UNESCO. (2014). *Shaping the future, we want*.
- UNEVOC. (2009). *TVET glossary: Some key terms*.
- United Nations. (1992). *The UN conference on environment and development: A guide to Agenda 21*. UN Publications Service.



United Nations. (2004). *General assembly resolution 58/219*. UN Publications Service.

<https://www.thegospelcoalition.org/blog/s/trevin-wax/the-6-moral-foundations-of-politics/>

## Editor Biosketch

**Shiba Bagale** is a professional trainer who is associated with Training Institute for Technical Instruction, Bhaktapur, Nepal. She is also an independent researcher and author. She has published several scholarly articles and books on education, environment, gender and technical instruction. Her recent contribution was a book, 'Perceptions and Practices of Instructors' Training' (2020), written in the context of the Nepali TVET system. Her interest areas include inclusive education, climate change, sustainable development, social inequality, and the TVET sector.

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