The Sustainability Starts with Teachers is a collaborative capacity building programme for teacher educators on Education for Sustainable Development (ESD) in Southern Africa. The project builds on the existing capacity base for ESD in the Southern African region and links existing and expanding ESD capacity to the UNESCO Regional Office for Southern Africa (ROSA)'s ESD programme of work, which is aligned with the Southern African Development Community Education Sector goals.

Focusing on the region's educators to implement changes towards sustainable development, the programme will have the catalytic effect of enabling the next generation of teachers to integrate sustainable development into their teaching and community practice, contributing to the achievement of educational quality and relevance in Southern Africa.

The programme is a partnership programme.
UNESCO Education Sector

Education is UNESCO’s top priority because it is a basic human right and the foundation on which to build peace and drive sustainable development. UNESCO is the United Nations’ specialized agency for education and the Education Sector provides global and regional leadership in education, strengthens national education systems and responds to contemporary global challenges through education with a special focus on gender equality and Africa.

The Global Education 2030 Agenda

UNESCO, as the United Nations’ specialized agency for education, is entrusted to lead and coordinate the Education 2030 Agenda, which is part of a global movement to eradicate poverty through 17 Sustainable Development Goals by 2030. Education, essential to achieve all of these goals, has its own dedicated Goal 4, which aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” The Education 2030 Framework for Action provides guidance for the implementation of this ambitious goal and commitments.
Learning Action 1: ESD Policy, Context and Competences Review
These *Sustainability Starts with Teachers* materials were first developed for a Japanese Funds in Trust partnership project between UNESCO, the Southern African Regional Universities Association (SARUA), Rhodes University and the Swedish International Centre of Education for Sustainable Development (SWEDESD). Initially the materials were developed for Secondary Education teacher educators, and were produced in 2017 as VERSION 1, with the following reference:


In 2019, the *Sustainability Starts with Teachers* materials were substantively revised into a Version 2. The focus of Version 2 materials is Teacher Education for Early Childhood Development (ECD), Primary Education, Secondary Education and Technical and Vocational Education and Training (TVET). The VERSION 2 reference is:


The *Sustainability Starts with Teachers* Capacity Development for Teacher Education programme is implemented as a partnership between the UNESCO Regional Office for Southern Africa, Rhodes University’s Environmental Learning Research Centre, the Southern African Regional Universities Association (SARUA) and the Swedish International Centre of Education for Sustainable Development (SWEDESD). The project is supported by the Swedish International Development Cooperation Agency.

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The line drawings in this volume were originally produced for the Learning for Sustainability Project, DANIDA Department of Education, South Africa.
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Building on your pre-course assignment, the first step in our Action Learning Programme will be to undertake a more careful ‘Sustainability Starts with Teachers’ review in your TE/TVET programme.

**LEARNING OUTCOMES:**

At the end of this learning action, you will have:

- Undertaken a review of the context, policies and competences in your teacher education / TVET institution to see how these reflect SD and ESD.
- Chosen the focus of your chosen Change Project based on this review.
Learning Action 1: A case story
In this Learning Action we will follow the work of a Secondary Teacher Education community of practice in Zambia as they undertake an ESD review. They will help us to think through how we can do such a review in our own context. Their review will also remind us that ‘Sustainability Starts with Teachers’!

Meet Mrs Chenjerai. She is an experienced secondary teacher educator in a TEI in Zambia. She has experience in gender issues and teaches languages.

Meet Mr Pula. He is a newly appointed secondary teacher educator. He has a background in the Sciences.

They are working in a Sustainability Starts with Teachers community of practice to undertake an ESD review in their Teacher Education institution. They have other colleagues working with them who are less familiar with the concepts of ‘sustainable development’ and ‘Education for Sustainable Development’.

Mr Pula and Mrs Chenjerai were initially not sure how they should do a policy and competences review. After asking some colleagues in the University, at the TVET institutions and at the Education Ministry, they decided on the following approach:

- **Step 1**: Develop a common understanding of the concept of ‘sustainable development’
- **Step 2**: Develop a common understanding of the meaning(s) of ‘Education for Sustainable Development’
- **Step 3**: Review the Vision and Mission Statement of the TEI to see if it reflects SD and ESD principles
- **Step 4**: Review other relevant documents and syllabi in the TEI
- **Step 5**: Link this work to SDG Goal 4 (Target 4.7)
- **Step 6**: Link this to competences of the 21st century teacher.

We will follow their process through this Learning Action. You could follow a similar process to undertake an ESD policy review in your TE/TVET institution. The activities and the referenced materials in the next section will provide support to work through a similar process in your TE/TVET institution.
Learning Action 1, Activity 1

Based on the work you did on your pre-course task, try to summarise the understanding of the concepts ‘sustainable development’ and ‘Education for Sustainable Development’ in your TE/TVET institution. What are the critical issues that colleagues in your TE/TVET institution are addressing through their engagement with ESD?
Now let us follow a process of how we might deepen our understanding of the concepts of **sustainable development** and **Education for Sustainable Development** in order to inform a more in-depth review of context, policy and competences in our TE/TVET institutions.
Step 1:
Develop a common understanding of the concept of ‘sustainable development’

FROM OUR CASE STORY:

In developing a common understanding of the concept of sustainable development, Mr Pula emphasised ecological sustainability, and told Mrs Chenjerai about the water, energy, climate change and food security issues facing their country and the region of southern Africa. Mrs Chenjerai agreed that these were important, but she also suggested that sustainable development should include principles of social justice, gender issues and indigenous knowledge and language. When they were discussing this, they were joined by an educator from a Technical Vocational Education and Training institution, and he reminded them to also include economic issues into their definition of sustainable development. He mentioned the Green Economy, and said that it had potential for also addressing poverty issues through new jobs and also through the saving of resources and reducing waste. From this they learned that sustainable development is not a simplistic concept, and together they had to discuss the meaning/s of the concept in their TE/TVET context and agree on the full meaning of the concept in their context.

The challenge in undertaking a policy, context and competences review in relation to the concept of sustainable development is to understand the extent to which your TE/TVET institution is including environment, social justice, economics and relevant indigenous knowledge into your curriculum and programmes, in order to see if and how early childhood education, primary, and secondary education teachers and Technical Vocational Education and Training educators in the TE/TVET institutions are being prepared for dealing with these inter-related concerns.

A short historical perspective on sustainable development

Sustainable development has a long history. The 1972 United Nations Conference on the Human Environment, held in Stockholm, Sweden, helped to focus international attention on environmental concerns and led to the creation of many environmental ministries and NGOs working to conserve the planet’s resources. The approach taken by many of them was to try and balance economic growth and social progress on the one hand, with environmental protection and the stewardship of natural resources on the other. This contributed to ‘environment versus development’ kinds of arguments. The global community, including many African countries, acknowledged that a closer examination was needed of the inter-relationships between the environment and socio-economic issues like poverty.

During the 1992 Earth Summit, which was held in Rio de Janeiro, Brazil, the important relationship between environment and development was debated. This placed the concept of sustainable development on the global agenda. The Summit led to the establishment of a number of multi-lateral agreements and conventions, and produced a global plan of action for sustainable development in the 21st century, known as Agenda 21. Agenda 21 suggested that economic, social and environmental considerations were intertwined with issues of poverty, equity, quality of life, and global environmental protection. These processes influenced many SADC governments to institute environment and sustainable legislation and
Undertaking a review of ESD in a TE/TVET — Sustainability Starts with Teachers: Learning Action 1

Institutions (including government departments responsible for environment and sustainable development concerns). Out of this also arose a number of SADC protocols (co-operative agreements) on environment, land and water – and more recently, on climate change responses. SADC also established an environmental education programme in 1997, named the SADC Regional Environmental Education Programme, to carry forward these commitments into the educational sphere.

Showing SADC region commitment to principles of sustainable development, in 2002 the World Summit on Sustainable Development (WSSD) was hosted by South Africa in Johannesburg. Here the importance of linking and balancing the interests of people (social), planet (environment) and prosperity (economy) was once again re-iterated. It was at this conference that the UN decided to declare a Decade on Education for Sustainable Development (UNDESD), which started in 2005. While this ended in 2014, it provided the foundation for the Global Action Programme (GAP) on ESD which followed in 2015 (the SST programme is part of the GAP). Throughout the UNDESD, education systems around the world started with introducing sustainable development into education systems through ESD.

However, halfway through the Decade, in 2009, at the Bonn Declaration it was noted that not enough attention was being given to integrating these issues into teacher education – a concern that was raised again at the end of the UNDESD during the World Conference on Education for Sustainable Development, and in the final UNDESD report. In line with this, UNESCO’s TVET strategy for the period 2016-2021, which noted a gap in green skills in Technical and Vocational Education and Training institutions, has three pillars: (i) fostering youth employment and entrepreneurship; (ii) promoting equity and gender equality; and (iii) facilitating the transition to green economies and sustainable societies. The third pillar of the strategy implies a move towards adapting training for improving sustainability approach and practices in the existing jobs and developing a qualified workforce for the new and emerging technology jobs. The knowledge, abilities, values and attitudes – also known as ‘green skills’ – that are required to support a sustainable and resource-efficient society (CEDEFOP, 2012) and economy are needed to be strengthened in TVET to achieve sustainable development. It is therefore important for teacher and TVET educators to develop their knowledge and understanding of sustainable development, and hence this initiative to help SADC teacher and TVET educators to see their important role in supporting teachers and instructors to take up ESD in their practices. It is no accident that this initiative is called ‘Sustainability Starts with Teachers,’ since educators are central to enabling the outcomes of sustainable development.

The definition on the right is the most widely used and cited definition of ‘sustainable development’. However, more than 300 different definitions of term have been published, which shows that this is not an uncontested concept. This open-endedness frustrates some educators, who feel that they need to know the boundaries of things – how one thing is different from another – if they are to teach it well. But sustainable development is an open-ended process, a vision that society must work towards, which may manifest in different ways in different contexts.

The term sustainability is therefore often used, rather than sustainable development, in order to reflect a sense of process or movement. Scott and Gough (2003) proposed that sustainability is “a process through which we shall need to learn to live more in tune with the environment … Sustainable development is a learning process through which we can, (if we choose) learn to build our capacity to live more sustainably.” (ibid, our emphasis). In fact, Scott and Gough (2003) argue that the process of

---

**Defining sustainable development**

Sustainable Development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

(United Nations World Commission on Environment and Development, 1987)
sustainable development is unlikely to take place without substantial learning that is multi-sectoral, multi-levelled, multi-disciplinary and diverse.

It is for this reason that there is need for sustainable development to obtain its meaning in a local context, while also referring to the international definition of sustainable development quoted above.

Learning Action 1, Activity 2

Discuss the two definitions of sustainable development below. To what extent are the views of ESD as identified in your pre-course task reflected in these definitions? What are the implications for your TE/TVET Change Project development?

Sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.


Sustainable development is a learning process through which we can, (if we choose) learn to build our capacity to live more sustainably.

(Scott and Gough, 2003)

Now read through the section below and revisit your arguments about the implications of understanding sustainable development for your TE/TVET institution context, and your Change Project.

Interpreting sustainable development from various perspectives

There are many diverse values, choices and perspectives that influence the way in which people understand sustainable development, as reflected in different explanations of the concept (UNEP, 2008):

- **Emphasising inter-generational equity:** The World Commission on Environment and Development (1987) explain: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs.”
- **Emphasising equity (social justice), and limits to growth:** Herman Daly (1996) suggests that sustainable development is “development without growth beyond the environmental carrying capacity, where development means qualitative improvement and growth means quantitative increase”. He advocates an approach to sustainability that “strives for sufficient per capita wealth – efficiently maintained and allocated and equitably distributed – for the maximum number of people that can be sustained under these conditions.”
- **Emphasising ecosystems (ecological explanation):** Rist (1999:192) describes sustainability as the ability of an ecosystem to continue levels of production borne by the system over a long period of time.
• **Emphasising morality**: Hattingh (2002) argues that the meaning and interpretation of sustainable development is informed by various philosophical and ethical interpretations. He says that sustainable development is strongly associated with “a moral imperative that, apparently, no one can ignore or reject without having to provide a very good reason for dissent … even though there is … little consensus about the content, interpretation and implementation of this imperative”.

• **Emphasising economic development**: An energy company slogan reads, “Sustainable development: We’re growing with the planet”, which gives the impression that there are no limits to growth. As long as business grows, development will be sustainable (*unlimited growth*).

### ‘Weak’ and ‘Strong’ Sustainability

There is fairly broad consensus that sustainable development involves three interrelated dimensions: environment, ecology and society. These three ‘pillars’ of sustainable development give shape and content to ESD. There is, however, still contestation on how this relationship should be conceptualised or dealt with. Some, for example, see economy as somewhat ‘separate’, yet interconnected with society and environment. Others argue that economy is, and has always been, an act of society and should therefore not be separated from society (Sauve, 2002; Raworth, 2017). Yet others would argue that it is impossible to conceive of society and economy without ecology, and thus see both society and economy as being embedded in ecology.

These disagreements have led to a debate about ‘strong’ sustainability and ‘weak’ sustainability. Illustrated here are different ‘models’ or representation of sustainability – ‘weak sustainability’ and ‘strong sustainability’ – that this debate about sustainability has created (see Figure 1).

The concept of strong sustainability is based on the scientific fact that all human life and activity occurs within the limitations of planet Earth, or the ‘biosphere’ where humankind lives, including all societal functions, such as the economy. Natural resources are finite and there are many environmental assets for which there are no human-made substitutes (e.g. climate, the ozone layer or biodiversity). There are also important social justice issues to consider. Here, the foundational arguments are:

---

**Figure 1** Weak and strong sustainability representations (UNEP, 2008)
• Without a functioning biosphere there can be no society or ‘sociosphere’, and
• Without a sociosphere there can be no societal functions, including an economy or ‘econosphere’.
• To set ‘right’ the problems in the biosphere and in the sociosphere, there is need for radical changes in the ‘econosphere’, as this model and the thesis of regenerative economics provided by Kate Raworth (2017) shows (see Figure 2).

You can follow the discussion on the relationship between regenerative economics, the sociosphere and the biosphere via various video clips, this one being an introductory one: https://youtu.be/Mkg2XMTWV4g.

In sum, strong sustainability argues that the environment should not be degraded for future generations. Each generation should inherit at least a similar natural environment. It also argues for fundamental economic transformation, more benign social relations, and a better understanding of human-environment interconnections.

Social engagement in defining sustainability

Wals and Jickling (2002) provide a more sociological or socially engaged model for thinking about sustainable development, where they indicate that citizen participation and involvement has a role to play in defining sustainability. This provides a more situated/contextual perspective to sustainability debates. This is significant for educational processes, especially if we agree that people will need to learn together about the meaning of sustainability. This also reflects Scott and Gough’s (2003) view that sustainable development is a process of learning, rather than a pre-defined ‘state’ that has already been discovered.
Wals and Jickling (2002) argue that the model should simply be used as an heuristic (a tool) that can help people analyse their position within the force-field of sustainable development thinking, and the direction which communities or individuals might take in the future. Through this conception of sustainability, they build citizen participation into the process of defining sustainability at a local level.

**Short activity (optional)**

Consider the models of sustainable development provided above. Which one would be most useful to guide your ESD work? Discuss how you might begin to use such a model in the context of your TE/TVET institution or teaching practice/training.
Step 2:

Develop a common understanding of the concept of ‘Education for Sustainable Development’

FROM OUR CASE STORY:

After clarifying their understanding of sustainable development, Mr Pula decided to do an online search for ‘Education for Sustainable Development’. He came across some useful documents which helped him to understand what Education for Sustainable Development was. He showed these to Mrs Chenjerai and the colleague from the Technical Vocational Education and Training institution. Most useful was the UNESCO Global Action Programme on ESD, and the new UNESCO document on ESD Learning Objectives. He thought that these documents would be most relevant, as they have recently been released to guide ESD thinking and practice around the world. He was also aware that there was an ESD policy framework available in Zambia, so he also decided to try to find this to see how it compared with the international documents.

One way of developing a common understanding of the concept of ‘Education for Sustainable Development’ is to think about sustainable development as a learning process, as outlined in the section above. Another way of thinking about Education for Sustainable Development is to think about it based on some of the definitions and descriptions of ESD that are provided by international documents such as the 2014 UNESCO Roadmap for Implementing the Global Action Programme (GAP) on Education for Sustainable Development.

The UNESCO GAP document provides guidance for educators and policymakers on the meaning/s of Education for Sustainable Development. It was developed out of the United Nations Decade on Education for Sustainable Development, capturing the main lessons learned out of ten years of implementing ESD across many countries in the world, including SADC countries. The Global Action Programme on ESD was endorsed at the 37th session of the General Conference of UNESCO in 2013 to guide the education sector on how to strengthen implementation of Education for Sustainable Development.

The GAP is a very useful document for understanding ESD and what it is about. It can easily be downloaded from: http://unesdoc.unesco.org/images/0023/002305/230514e.pdf.

You can also find various videos which help to make practical sense of the meaning of ESD. Here is one example from Kenya, where student leaders are working with students on campuses to learn about sustainability issues and to take leadership for sustainability on their campuses: https://www.youtube.com/watch?v=hIPlivwLFNQ
Learning Action 1, Activity 3

Here are two definitions of Education for Sustainable Development:

*Education for Sustainable Development in its broadest sense is education for social transformation with the goal of creating more sustainable societies.* (UNESCO, 2012)

*To create a world that is more just, peaceful and sustainable, all individuals and societies must be equipped and empowered by knowledge, skills and values as well as be instilled with a heightened awareness to drive such change. This is where education has a critical role to play. Education for Sustainable Development (ESD) is about shaping a better tomorrow for all – and it must start today.* (UNESCO, 2014, pg. 8)

Discuss the two definitions:

- To what extent do the programmes in your TE/TVET institution reflect these definitions?
- How would you critique these definitions? What is missing from them, and how do they reflect the southern African realities?
- What do you think can be done to improve education in your TE/TVET institution to reflect a strong concept of ESD?
- How would this thinking about ESD definitions influence your planned Change Project?


The GAP has defined the following five priority areas for ESD, which you can consider in relation to the education being offered in your TE/TVET institution:

- **Priority Action Area 1: Advancing policy:** Mainstream ESD into both education and sustainable development policies, to create an enabling environment for ESD and to bring about systemic change

- **Priority Action Area 2: Transforming learning and training environments:** Integrate sustainability principles into education and training settings

- **Priority Action Area 3: Building capacities of educators and trainers:** Increase the capacities of educators and trainers to more effectively deliver ESD

- **Priority Action Area 4: Empowering and mobilising youth:** Multiply ESD actions amongst youth

- **Priority Action Area 5: Accelerating sustainable solutions at local level:** At community level, scale up ESD programmes and multi-stakeholders ESD networks.

Learning Action 1, Activity 4

- Which of these five priority action areas from the GAP would you prioritise in your TE/TVET country context?
- Why would you prioritise these?

- To what extent does your current programme already address these five priority areas from the GAP?
- What needs to be done to change this?
Now that you have developed a common understanding of SD and ESD, you can draw on these to critically review the Vision and Mission statement of your TE/TVET, to see if it reflects some of the principles and commitments of ‘strong sustainability’ and the Global Action Programme for ESD.

You can look into the UNESCO document *Education for Sustainable Development Goals: Learning Objectives* to see the way in which ESD learning objectives have been set. The document can be downloaded here: [http://unesdoc.unesco.org/images/0024/002474/247444e.pdf](http://unesdoc.unesco.org/images/0024/002474/247444e.pdf).

From this you will see that it is possible to set ESD learning objectives for each of the Sustainable Development Goals. The book also shows examples of learning objectives for each of the 17 Sustainable Development Goals. These include cognitive learning objectives, socio-emotional learning objectives and behavioural learning objectives. *These can also be extended to social learning objectives which could include communities and social groups in the learning.*

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**Learning Action 1, Activity 5**

In this activity we will examine the learning objectives and how they have been set in the publication *Education for Sustainable Development Goals: Learning Objectives* (UNESCO, 2017a). The document is included in your e-library, and can also be downloaded from: [http://unesdoc.unesco.org/images/0024/002474/247444e.pdf](http://unesdoc.unesco.org/images/0024/002474/247444e.pdf)

**Task:**

As a group, choose one or more of the Sustainable Development Goals listed in the publication that are relevant to your Change Project. Then go to the page where the learning objectives for that SDG have been outlined. Discuss these critically in relation to your planned Change Project, with emphasis on the following questions:

- To what extent can these learning objectives be expanded for use in TE/TVET programmes?
- Which of the learning objectives would you emphasise?
- How would you work towards a combination of cognitive, socio-emotional, behavioural AND social learning objectives?
- Critically consider the associated topics and learning methods suggested. Would you be able to integrate/use any of these in your Change Projects? Explain why/why not?
Step 3:
Review the Vision and Mission statement of your TE/TVET institution to see how it reflects ESD (or not)

FROM OUR CASE STORY:

After developing a common understanding of the concept of sustainable development and ESD (informed by the GAP and the UNESCO ESD Learning Objectives document), Mr Pula and Mrs Chenjerai decided to review the Vision and Mission statement of their TEI to see if it reflected what they had come to understand about SD and ESD. The Vision and Mission Statement of their TEI read:

**Vision:** To be a Centre of Excellence in the development of competent, creative and innovative professionals capable of responding to changing socio-economic trends through Teacher Education in Zambia and beyond.

**Mission:** To develop competent, innovative, effective and efficient Teacher Education professionals guided by the national economic blueprint ‘Zambia Agenda for Sustainable Socio-Economic Transformation’ and the Zambia policy on Education for All.

Mr Pula and Ms Chenjerai were pleased to note that their TEI’s Vision and Mission statement does reflect aspects of ESD. However, they worried that despite the TEI’s Vision and Mission, issues related to sustainable development received little attention at their institution.

Write down your ‘common understanding’ of sustainable development, and read through the UNESCO Roadmap for Implementing the Global Action Programme on ESD before reviewing your institution’s Vision and Mission. This is to see to what extent your TE/TVET institution Vision and Mission reflects principles of sustainable development.

Learning Action 1, Activity 6

Source a copy of your institution’s Vision and Mission statement. Work with a group of colleagues to review it.

- To what extent does it reflect your understanding of sustainable development?
- To what extent does it reflect the definition of sustainable development that reads “Sustainable Development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs”? Do you think this is needed or not?
- To what extent does your institution’s Vision and Mission statement reflect the objectives of ESD and the GAP?
- How would you reframe/restate your institution’s Vision and Mission statement to more substantively reflect SD and ESD (based on your understandings of these concepts and your context)?
Step 4:
Review other relevant documents guiding the work of educators in your TE-TVET institution

The environmental scan document compiled for the ‘Sustainability Starts with Teachers’ programme shows that many countries in the SADC region have already started to integrate aspects of ESD into national curriculum and assessment policies, and into teacher education programmes. These have implications for the content and process of secondary teacher education, as shown in the two examples below.

An example from South Africa:

<table>
<thead>
<tr>
<th>Phase and Subject</th>
<th>Biodiversity and ecosystems</th>
<th>Sustainable development</th>
<th>Water system and security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior (Grade 7-9) Natural Sciences</td>
<td>Biodiversity Solar energy and life on earth Ecosystems Conservation Micro-organisms</td>
<td>Use of materials and impact on the environment Conserving electricity in the home</td>
<td></td>
</tr>
<tr>
<td>Senior (Grade 7-9) Social Sciences</td>
<td>Natural resources Management of resources Resource use Sustainable use of resources</td>
<td></td>
<td>Water in South Africa</td>
</tr>
<tr>
<td>Further Education and Training (FET) (Grade 10-12) Agricultural Sciences</td>
<td>Plant studies – Components of ecosystem The biomes of Southern Africa Ecology and agro-ecology Interactions in ecosystems and ecological farming</td>
<td>Sustainable utilisation of natural resources Farming systems that use agro-ecological principles</td>
<td>Water quality and management Sustainable use of water in agriculture Water use/irrigation</td>
</tr>
<tr>
<td>Further Education and Training (FET) (Grade 10-12) Geography</td>
<td></td>
<td>The concept of development Effect of development on the environment Using resources Effects of using more non-conventional energy on the South African economy and the environment Energy management</td>
<td>Water in the world The world’s oceans Water management in South Africa Floods Drainage systems in South Africa Fluvial processes Catchment and river management</td>
</tr>
<tr>
<td>Further Education and Training (FET) (Grade 10-12) Life Sciences</td>
<td>Biosphere to ecosystems Biodiversity The role of invertebrates in agriculture and ecosystems Population ecology Human impact on the environment Current crises for human survival Loss of biodiversity</td>
<td></td>
<td>Water (availability and quality)</td>
</tr>
</tbody>
</table>

An example from Malawi:

Secondary schools in Malawi offer a variety of subjects, but these vary in different schools depending on their facilities. In total, the following subjects are offered: Mathematics, English, Geography, Chichewa, History, Physical Science, Biology, Home Economics, Wood Work, Metal Work, Technical Drawing, Computer Studies, Commercial Studies, Social and Developmental Studies, French, Art and Craft, Physical Education, Life Skills, and General Science. Chichewa, English, Mathematics, Agriculture, Physical Science, Biology, Life Skills
and Physical Education are mandatory. At secondary level, ESD is covered in carrier subjects, which are Geography, Biology, and Social and Developmental Studies. Although Geography and Social and Developmental Studies are not mandatory core subjects, they are popular electives, and most schools offer them. Although Geography, Biology, and Social and Developmental Studies are the carrier subjects for issues concerning the environment, there is little horizontal integration among the subjects, due to the subject-discipline approach taken, as well as the pressure created by national examinations.

(Sustainability Starts with Teachers Environmental Scan Document)

The environmental scan done in 2019 shows a lack of ESD integration in the Technical Vocational Education and Training in Botswana, Namibia and Zimbabwe. This calls for integration of ESD in the TVET education. UNESCO (2017b) have developed a *Greening Technical and Vocational Education and Training: A practical guide for institutions* to help leaders and practitioners of TVET in improving their understanding and implementation of ESD. The resource is guided by a whole-institution approach, and uses a step-by-step process that can be applied in an institutional setting. The process consists of four steps: understanding, planning, implementation, and monitoring and assessment. The Guide identifies several key elements to assist TVET leaders and their institutional teams in understanding the steps in greening their institutions and programmes. It explains the need for, and the institutional benefits of, greening.

In the next activity, we will work through relevant examples from your own countries, and from the documents that guide Early Childhood, Primary, Secondary education and Technical and Vocational Education and Training in your country. The discussion will focus on what this means for improving ESD in your TE/TVET institution's context.

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**Learning Action 1, Activity 7**

Collect any strategic guiding documents that inform the work that you do in your TE/TVET institution. These could be, for example:

- the strategic plan of the TE/TVET institution,
- the national curriculum policy (syllabus) that teacher educators used to guide TE/TVET,
- course module outlines or books,
- assessment policies, and
- any other relevant documents.

Use the following dimensions of ESD (UNESCO, 2014:12) to review a relevant document(s) that guide Secondary Teacher education in your TE/TVET institution:

- **Learning content**: Integrating critical issues such as climate change, biodiversity, disaster risk reduction, and sustainable consumption and production into the curriculum.
- **Pedagogy and learning environments**: Designing teaching and learning in an interactive, learner centred way that enables exploratory, action-oriented and transformative learning. Rethinking learning environment – physical as well as virtual and online – to inspire learners to act for sustainability.
- **Learning outcomes**: Stimulating learning and promoting core competencies, such as critical and systemic thinking, collaborative decision making, and taking responsibilities for present and future generations.
- **Societal transformation**: Empowering learners of any age, in any education setting, to transform themselves and the society they live in.

Based on this review, what can you suggest for your Change Project in terms of curriculum innovation and change?
Step 5:
Review Sustainable Development Goal Number 4

BACK TO OUR CASE STORY:

Mrs Chenjerai reported to the colleagues that when she attended the UNESCO conference on the Sustainable Development Goals, she was told that all countries now have to report on Goal 4 of the SDGs, which is the education goal, and that teacher education programmes needed to align with this goal. However, Mr Pula told Mrs Chenjerai that he did not fully understand what Sustainable Development Goal 4 meant, and he was not sure what the TEI could do to contribute to the achievement of this goal. Mrs Chenjerai therefore suggested that they revisit the SDG documents that she received at the conference, to review Sustainable Development Goal 4. She also reminded her colleagues that it could be downloaded from www.globalgoals.org.

On the website www.globalgoals.org you will find more information on the SDGs, and in the next Learning Action we will review these in more detail. As discussed in the Introduction and Orientation text, there are 17 SDGs. Of interest here is Goal 4, which focuses on Quality Education.

UNESCO (2015a:2) describes quality education like this:

Quality education fosters creativity and knowledge, and ensures the acquisition of the foundational skills of literacy and numeracy as well as analytical, problem-solving and other high-level cognitive, interpersonal and social skills. It also develops the skills, values and attitudes that enable citizens to lead healthy and fulfilled lives, make informed decisions, and respond to local and global challenges through education for sustainable development (ESD) and global citizenship education (GCED). (UNESCO, 2015a:2)
Learning Action 1, Activity 8

Sustainable Development Goal Number 4 reads: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (UNESCO, 2015b:7). Under this goal, there is a target (4.7) which reads:

*Target 4.7: By 2030, ensure that all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development.*

Discuss SDG 4 and Target 4.7:

To what extent do you think your TE/TVET institution is developing its education programmes along the lines expected by SDG 4, and SDG Target 4.7 specifically? Based on your earlier discussions on SD and ESD, what would you say needs to change in your TE/TVET institution and/or your TE/TVET institution’s education programmes / campus management programmes to further develop teacher/TVET education in ways that will come closer to achieving SDG 4 and Target 4.7?

Given that there are 13 years left between now and 2030, could you work on a 5-, 10- and 15-year plan that can inform how you might transform or change education in your TE/TVET institution towards SDG 4 and Target 4.7? What needs to be done in your TE/TVET institution, as well as in your national system of education? And who should be involved in the process?

In southern Africa, there is a strong philosophy called ‘ubuntu’ / ‘uhunu’ which talks about ‘I am because you are’. It emphasises the well-being of one as being linked and related to the well-being of others. To what extent could foregrounding this philosophy in the TEI curriculum help with the transformations being discussed in SDG 4 and Target 4.7?
Step 6:
Review the work that you are doing in the TE/TVET institution for its relevance to a notion of ‘the 21st century teacher’

FROM OUR CASE STORY:

When Mrs Chenjerai and the team had finished discussing the relevance of what they had done to the SDG Goal 4, especially Target 4.7, she also remembered a discussion at the conference on ‘competences of the 21st century teacher’. She told her colleagues that this was also an important dimension of ESD, as it helped to develop teachers for the 21st century. Mr Pula was curious to know more about these, and suggested that they finalise their TEI Policy ESD review with a critical analysis of how their TEI could develop these competences. This was an exciting discussion, and they felt that not only could these be helpful for guiding professional development of the teachers in the TEI, but it could also give them a ‘common direction’ for their Change Projects towards improving ESD in the TEI. They decided to revise the list of competences that were given to Mrs Chenjerai at the conference, and to develop these into a guideline document for their TEI to guide their ESD work further.

Another way to consider if your TE/TVET programmes are addressing ESD and the global goals (Target 4.7) is to think about the relevance of the teacher education / Technical and Vocational Education and Training that you are offering in the 21st century. There has been some discussion on what are relevant competences for teachers in the 21st century, and there is discussion on how these competences can guide us to think about better quality teacher education / Technical and Vocational Education and Training. In the SWEDESD/SADC Teacher Education Programme that was pilot tested in southern Africa, the following set of Teacher Education competences were developed via a consultative process across a number of countries.

Competences for 21st century teachers

- **Systems thinking:** The ability to recognise and understand relationships, to analyse complex systems, to think of how systems are embedded within different domains and different scales, and to deal with uncertainty.
- **Futures thinking:** The ability to understand and evaluate multiple futures – possible, probable and desirable – to create own visions for the future, to apply the precautionary principle, to assess the consequences of actions, and to deal with risks and changes.
- **Values thinking:** The ability to understand and reflect on the norms and values that underlie one’s actions and to negotiate sustainability values, principles, goals, and targets – in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions.
- **Strategic thinking:** The ability to collectively develop and implement actions that further sustainability at the local level and further afield.
- **Collaboration competence:** The ability to learn from others, to understand the needs, perspectives and actions of others, to deal with conflicts in a group, and to facilitate collaborative and participatory problem solving.
• **Critical thinking**: The ability to question norms, practices and opinions, to reflect on one's own values, perceptions and actions, to take a position, and to understand the perspectives of other stakeholders.

• **Personal competence**: The ability to reflect on one's own role in the global system and to continually evaluate and further motivate one's sustainability actions.

• **Integrated problem-solving competence**: The overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable solution options – integrating the abovementioned competencies.

At a workshop in January 2017, where these were discussed in the context of the Sustainability Starts with Teachers programme framework, the following dimensions were added to the list of competences above:

• **Creativity and innovation** needs to be emphasised – we should include both critical competences and the competence to be constructive and innovative, because this is needed for change.

• **Values and action competences** should be included, including local cultural values.

• **Enhanced leadership**, cooperation, communication, adaptation skills.

• **Research**, reflection, and **action research competences** for reflexivity.

• **Technological competence** and responsiveness to the environment.

• **Learner-centred**, participatory, human rights responsiveness.

• **Collaborative competence**, including teachers being open to learn from learners.

• **Transformative competence** – with an ability to adopt and adapt to change.

• **Conflict resolution** and dealing with resistance to change.

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**Learning Action 1, Activity 9**

Consider the above mentioned 21st century competences and the response from the participants in the Sustainability Starts with Teachers course planning process.

Write out a list of ‘priority 21st century competences’ that you think are crucial for your programme/s and your TE/TVET institutions, and for strengthening the ESD work in your TE/TVET institution.

Prepare these for discussion at your next staff meeting, and ask for feedback.
Critical analysis

Look back at what has been discussed in this Learning Action. Discuss the following questions in your TE/TVET institution community of practice:

- To what extent has this Learning Action helped you to re-view your TE/TVET programmes?
- How can you work towards a more critical understanding of SD and ESD in your context?
- What still needs to be discussed and taken forward?
- Can you prepare some suggestions for colleagues / your department / your TE/TVET institution?
References


UNESCO Education Sector

Education is UNESCO's top priority because it is a basic human right and the foundation on which to build peace and drive sustainable development. UNESCO is the United Nations' specialized agency for education and the Education Sector provides global and regional leadership in education, strengthens national education systems and responds to contemporary global challenges through education with a special focus on gender equality and Africa.

The Global Education 2030 Agenda

UNESCO, as the United Nations' specialized agency for education, is entrusted to lead and coordinate the Education 2030 Agenda, which is part of a global movement to eradicate poverty through 17 Sustainable Development Goals by 2030. Education, essential to achieve all of these goals, has its own dedicated Goal 4, which aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” The Education 2030 Framework for Action provides guidance for the implementation of this ambitious goal and commitments.
The Sustainability Starts with Teachers is a collaborative capacity building programme for teacher educators on Education for Sustainable Development (ESD) in Southern Africa. The project builds on the existing capacity base for ESD in the Southern African region and links existing and expanding ESD capacity to the UNESCO Regional Office for Southern Africa (ROSA)'s ESD programme of work, which is aligned with the Southern African Development Community Education Sector goals.

Focusing on the region’s educators to implement changes towards sustainable development, the programme will have the catalytic effect of enabling the next generation of teachers to integrate sustainable development into their teaching and community practice, contributing to the achievement of educational quality and relevance in Southern Africa.

The programme is a partnership programme.