BRITISH COUNCIL

Going Global Partnerships

Developing a Comparative Analysis Tool for Greening TVET Systems

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Acknowledgements

Disclaimer

The views and opinions expressed in this report are those of the expert team and do not necessarily reflect the official policy or position of the British Council.

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Executive Summary

Background

The climate crisis has created an urgent need to reshape economies and industries to adapt to and mitigate the expected impacts of climate change. The 'green transition' that this requires will create both new opportunities and new challenges. While investment in new green industries and technologies has the potential to drive large-scale job creation, some jobs in carbon-intensive industries will be lost, and young people will need to be ready for changes in the labour market that take place over the course of their lives.

In every country, Technical and Vocational Education and Training (TVET) systems will need to evolve to support citizens in navigating changing labour markets and developing the skills required to enhance employability and respond to their development goals. The British Council has developed this comparative analysis tool that can be used to help assess how 'green' a national TVET system is at a system level. Through synthesising the perspectives of expert informants and system actors, the tool is designed to help governments and wider TVET system stakeholders to identify areas of strength, areas for further development, and stakeholder priorities.

Dimensions of 'greening'

Through a targeted desk review, eight dimensions were identified that policymakers could examine in developing a TVET system that supports the transition to a green economy.

1. Policy coherence

2. Labour market intelligence & skills anticipation

3. Employer engagement

4. Curriculum and assessment

5. Learner engagement and support

6. Institutional strengthening and the TVET workforce

7. Financing

8. Quality assurance, monitoring, and evaluation

Pilot results and emerging recommendations

A digital self-assessment tool was developed, containing 80+ questions. Employers, government officials and TVET providers in three countries – Botswana, Morocco, and Tanzania – were invited to pilot the self-assessment tool by completing an online version of the survey tool. Respondents were asked to assess the extent to which certain elements of a model

green TVET system were present in their system, with respondents asked to answer based on their own perceptions of how the system operates practically rather than how it is envisioned in strategy and legislation.

Results from the workshops and the survey were analysed to identify strengths, challenges, priority areas for development, and recommendations. Findings were then validated with stakeholders through an interactive workshop. A desk exercise was also completed to test how the tool could be applied to the TVET system in England.

There was generally a high level of commonality in the challenges reported by stakeholders in thinking about how to green their TVET systems.

There was a shared view that there is a **strong political will** and interest from governments in greening economies, but sometimes a disconnect and **fragmentation** between greening initiatives and the TVET system. TVET systems can do more to respond to the greening imperative.

- **Develop a joint vision of greening TVET** across the government, TVET sector, and employers to support a just transition to a green economy.

- **Clarify roles and responsibilities** of different actors, including employers, in greening the TVET system and wider economy.

- **Strengthen linkages with sectoral policies** to ensure that TVET initiatives align with and support the broader sector policy goals and programmes of the government.

Many respondents expressed the view that stronger **connection with industry** to address greening was an area for development and focus.

- **Strengthen employer engagement:** Actively engage employers in the development and implementation of green training and skills development with formal mechanisms for ongoing dialogue and collaboration.

- **Include the informal sector and communities** with tailored approaches that address the unique characteristics and needs of informal workers.

Strong views were also expressed on **financing**, with the vast majority of respondents believing that there was not sufficient financing in place for the TVET system to meet the demands (in terms of training delivery and organisational change that greening requires).

- **Align financial mechanisms with policy objectives:** There would be value in looking at the extent to which the priority that governments place on greening is reflected in the financial incentives and resourcing available to TVET providers.

- **Expand financing mechanisms for green TVET provision:** identify and engage funders interested in climate adaptation and mitigation, in addition to traditional education and employment intervention funders.

Building knowledge and understanding of the implications of greening on jobs, skills and TVET was also identified as an area for future focus to raise awareness of the opportunities and challenges of greening among trainers, staff, learners, and employers.

- **Strengthen career guidance:** Provide information on the practical application of skills to needs in the green economy, potential career paths, and entrepreneurial opportunities.
- **Enhance staff development** with opportunities to upskill and improve their understanding of the green economy. Capacity development could include all types of staff, from facilities (green campus), services (careers), and administration (supporting the green transition across systems) to instructors (with future skill and transversal skill needs) for a holistic transition of the TVET system.

Perspectives on the tool and process learnings

During the piloting process, participants were generally positive about both the relevance and usability of the self-assessment tool. Part of the value of the tool (acknowledged directly by participants in one of the workshops) is that it helps stakeholders take a broader view of what creating a TVET system that supports the green transition entails, thinking beyond the narrow focus on occupational skills for particular 'green' industries that is sometimes taken. Instead, a wider 'systems strengthening' perspective, which also considers occupations in non-green industries (one of the biggest gaps in the current discussion), is taken.

Participants generally found the tool intuitive and comprehensible. In response to feedback from participants the length of the tool has been reduced by 25% through consolidation of survey questions. The research team have made five technical recommendations to the British Council on improvements to the deployment process for the tool (including development and use of a sampling frame, identification of an alternative digital platform, inclusion of civil society organisations representing communities, and potential use of longer workshop for formats to provider a greater platform for deliberation and discussion).

1. Introduction

1.1. Background

Numerous national and international sustainability agendas and green development plans (e.g. Sustainable Development Goals, the Paris Agreement on Climate Change) demand green transformation and a move towards a green economy. This trend reflects longstanding debates about how to reconcile the needs of the environment and development or growth and sustainability. The transformation of the economy, technology, and society will result in wide-reaching changes in labour markets. Some jobs will cease to exist, others will change dramatically, and new jobs will emerge.

TVET systems play a crucial role in this changing landscape. However, among existing frameworks, there is not currently an assessment tool that provides a system-level review of the sector. While considerable effort has been made to develop frameworks targeting institutions, employers, and policy individually, an overarching and holistic tool has not been developed.

The British Council commissioned Paeradigms to develop a tool that identifies and measures how green the TVET system is, at policy, industry, and practice levels. The assignment involved a targeted desk review to identify relevant literature to inform the substantive content of the benchmarking tool, development of a digital comparative tool, and testing of the tool with representatives from educational institutions, ministries, and employers in Botswana, Morocco, and Tanzania. It also includes findings from an interview process and survey results with the Institute for Apprenticeships and Technical Education (IfATE) in England.

1.2. Purpose

This research is part of the British Council Going Global Partnerships programme. The objective of the project was to develop a pilot benchmarking tool that can enable a comparative analysis across the pilot countries to illustrate the level of "greenness" in the Technical and Vocational Education and Training (TVET) system, considering policy, industry, and practice. The tool aims to support governments in measuring progress and identifying successful initiatives, thus informing policy development and funding applications. The tool can act as a platform for sharing best practices, fostering innovation, and facilitating discussion among partners. This research contributes to developing capacity in TVET systems and providing a monitoring and evaluation tool with the potential to provide cross-country learning to enhance international practice.

1.3. Structure of the report

This report describes the research and development process that went into the tool. Chapter 2 describes the methodology, Chapter 3 covers the desk review, and Chapter 4 presents the comparative analysis of the pilot study. Since the tool is intended to be flexible enough to further develop as it is used, Chapter 5 includes a detailed description of its development, piloting, testing, and delivery, along with learning and recommendations for future use. Chapters 6 and 7

present the overall conclusions, learnings, limitations, implications, and recommendations. Chapter 8 is a glossary of terms pertaining to the green transition. Four country reports, focusing on each country in the pilot (Botswana, Morocco, Tanzania), and England as a case study are attached as separate Appendices.

2. Methodology

2.1. Overview of methodology

A 5-stage approach was taken for the development and testing of the comparative analysis tool.

STAGE 1: Desk review

Targeted review of literature, existing frameworks, TVET model systems

STAGE 2: Tool development

Development of a first version of the benchmarking tool

STAGE 3: Data collection

Stakeholders from each country complete the self-assessment survey tool

STAGE 4: Data analysis

Research team produce draft analysis of the findings of the survey

STAGE 5: Data validation

National workshops are held in each country to test and validate the draft analysis.

Figure 1: Tool development and piloting stages

A targeted desk review was undertaken in February 2023, to identify what a model TVET system that supports the transition to a green economy looks like, from which the substantive content of the self-assessment tool could be elaborated.

Extrapolating from the insights from the desk study, the research team then created a self-assessment tool that could be completed by policymakers, employers and TVET providers in each country.

An online version of the tool was then piloted in 3 countries in Africa – Morocco, Botswana, and Tanzania. During the piloting process, stakeholders from each country were asked to complete the self-assessment survey tool; the research team then produced a draft analysis of the findings of the responses to the tool; and a national workshop was held in each country to test and validate the draft analysis. These workshops provided an opportunity for in-depth discussions and further insights into the progress and challenges related to greening TVET.

Additionally, a desk study of greening of TVET was undertaken in England – with insights on England also being validated independently through an interview and survey response from the Institute for Apprenticeships and Technical Education (IfATE).

Further information on the desk review process and findings is contained in Chapter 3. Further information and reflections on piloting and testing is contained in Chapter 5.

2.2.   Research questions

The research questions posed in this study are designed to explore and gain a deeper understanding of the progress and awareness of greening TVET. These questions were derived in cooperation with the British Council to guide the development of the comparative analysis tool:

- **Research question 1:** What does a model TVET system that supports transition to a green and blue economy look like? What attributes should be considered?

- **Research question 2:** How can we assess the extent to which a TVET system supports transition to a green/blue economy, taking into account the limited availability of data and other evidence in many countries?

- **Research question 3:** What examples exist in the targeted countries which illustrate how they are enhancing, or plan to enhance, their TVET systems to ensure they support transition to a green/blue economy and deliver TVET more sustainably?

- **Research question 4:** What can each country do to enhance their TVET systems to ensure they support transition to a green/blue economy and deliver TVET more sustainably?

3. Desk review

Several useful tools and frameworks have been developed to support TVET actors in working through how to 'green' the TVET system. Some of these have been designed for particular actors. UNESCO-UNEVOC, for example, has developed practical guidance for TVET institutions (UNESCO 2017), while England's Institute for Apprenticeships and Technical Education has produced a Sustainability Framework, which provides advice to employers on the integration of sustainability considerations into the development of apprenticeships (Institute for Apprenticeships and Technical Education, 2020).

The International Labour Organisation's guidance tool on 'Greening TVET and skills development' (ILO, 2022) integrates a wider range of factors (including curriculum and assessment, teacher Continuous Professional Development, employer sensitisation, and institutional greening). The tool provides useful guidance across these topics, which we build upon in this tool. However, the ILO guide and self-assessment questions are currently less well-developed regarding areas that are vital for system-level transformation (including policy coherence, financing, and skills anticipation). Furthermore, the primary audience of the guide's self-assessment framework currently appears to be leaders of TVET institutions. None of the existing tools identified aim to specifically support policymakers and wider system leaders to assess the extent to which TVET, at a system level, is set up to support the transition to a green economy.

A targeted desk review was, therefore, undertaken in February 2023 to identify what a model TVET system that supports the transition to a green economy looks like, from which the substantive content of the self-assessment tool could be elaborated. After screening identified studies for relevance, 12 were selected that appeared to have the greatest relevance to developing TVET systems for the green economy, from which the research team extracted data and insights.

- Auktor (2020) Green industrial skills for a sustainable future, United Nations Industrial Development Organization.
- Dierdorff et al (2011) Greening of the world of work: Revisiting occupational consequences, National Center for O* NET Development.
- Education Commission (2021) Education for Climate Action.
- GIZ (2022) Skills for a Just Transition to a Green Future.
- ILO (2022a) Skills Development for a Just Transition.
- ILO (2022b) Greening TVET and Skills Development - A Practical Guidance Tool.
- Institute for Apprenticeships & Technical Education (2020) Sustainability Framework.
- Langthaler, McGrath, & Ramsarup (2021) Skills for Green and Just Transitions: Reflecting on the role of Vocational Education and Training for Sustainable Development. Austrian Foundation for Development Research.
- Mwaura and Glover (2021). Green jobs for young people in Africa: work in progress. Include Knowledge Platform.

- Rademaekers, Svatikova & Yearwood (2015) Facilitating green skills and jobs in developing countries. Agence Française de Développement.
- UNESCO-UNEVOC (2021). Skills development and climate change action plans: enhancing TVET's contribution.
- UNICEF (2023 forthcoming) Accelerating green school-to-work transitions for youth.

Insights from the reviewed studies were extracted and configured into the following themes.

1. Policy coherence
2. Labour market intelligence & skills anticipation
3. Employer engagement
4. Curriculum and assessment
5. Learner engagement and support
6. Institutional strengthening and the TVET workforce
7. Financing
8. Quality assurance, monitoring, and evaluation

These were refined following initial discussion with the British Council project team and feedback received from a presentation at a gathering of TVET system leaders from across Africa being hosted by the British Council and Nuffic.

3.1.   Theme 1: Policy coherence

Government policy is a key driver of what TVET provision is delivered in a country (and the extent to which it supports greening). Decisions on TVET policies and programmes should be linked to a country's long-term development goals, with a clear line of sight between the government's economic and industrial policy and the skills interventions being delivered (Auktor, 2020).

There is frequently also a disconnect and lack of coordination between environmental policies and programmes () and the education, employment and training interventions,including TVET provision, required to deliver them effectively (Mwaura and Glover, 2021).

Strong ownership of a green jobs and green skills agenda from the government – and strong policy coordination – can help to address this disconnect. This requires cross-government coordination to improve join-up and reduce silos between Ministries. It also requires strong communication and engagement across government, employers, civil society, and wider development actors to reduce fragmentation and align greening efforts among stakeholders (GIZ 2022, ILO 2022a, Rademaekers et al. 2015). Engagement with enterprises in the informal sector is also a key component, given that the sector still accounts for the majority of employment across Africa and Asia (Langlather et al, 2020, GIZ 2022, Mwaura and Glover, 2021).

A just transition requires considering how policies designed to support the green transition might disrupt patterns of exclusion experienced by marginalised groups of learners or citizens (UNICEF, 2023).

What does policy coherence look like in a model TVET system that supports the transition to a green and blue economy?

- Government has a strong understanding and vision for how TVET systems can support the national transition to the green economy.

- Strong and clear linkages between the government's TVET policy (or relevant section of the Education Sector Plan) and the government's wider environmental, industrial, or other sectoral policies and programmes are considered.

- Mechanisms for inter-ministerial and official level dialogue, consultation and join-up between the education and labour ministries and the ministries responsible for environmental, industrial, and other sectoral policies and programmes are considered in the TVET system.

- Workers in the informal sector are systematically engaged in dialogue on the skills implications of the green transition, either directly or through intermediary organisations such as cooperatives, associations, and civil society organisations.

- Government has a vision for how a 'just transition' can be achieved (engaging workers in the informal sector, women, and members of marginalised groups) to facilitate fair access to green TVET and green employment opportunities.

3.2.   Theme 2: Labour market intelligence and skills anticipation

A frequent challenge in TVET systems is a disconnect between the skills demanded in the labour market and the skills delivered by TVET providers. Changes to skills needs that are driven by greening and digitalisation have the potential to make labour markets more dynamic, making this a more significant challenge than it is currently (GIZ 2022). 'Greening' of economies may increase demand for certain existing occupations (potentially increasing demand in training for that occupation); change the skills requirement associated with an existing occupation (which may require updating of the content of TVET courses; or, in a small number of cases, create new occupations (for which new TVET courses may need to be developed) (Dierdoff et al. 2011).

TVET providers need to understand what skills are currently being demanded by employers (using labour market intelligence) and the likely longer-term shifts in skills demand (using skills anticipation data) (UNICEF, 2023). This requires close coordination and dialogue between TVET actors and industry (including employers, chambers of commerce, and other employer associations) (GIZ, 2022), as well as systematic labour market assessments and skill needs assessments, which identify the jobs that may be created or lost due to the green transition (Mwaura and Glover, 2021; UNESCO-UNEVOC,2021). TVET providers and other stakeholders also need to actively use insights from labour market and skills anticipation data to evolve provision.

What do labour market intelligence and skills anticipation look like in a model TVET system that supports the transition to a green and blue economy?

- Systematic mechanisms for skills anticipation are in place and provide timely and reliable data.

- Mechanisms are in place to support employers to better anticipate their future skill needs.

- Stakeholders have a clear view from research/projections of potential changes to long-term skills demand, including the areas where green jobs are likely to be created or destroyed due to the green transition.

- Stakeholders have a clear view of mismatches between anticipated skills demand and current skills supply.

- Mechanisms are in place for using LMI and skills anticipation data (e.g. to inform policy development or to inform the design and implementation of training delivery).

- A forward-looking skills strategy is in place (incorporating insights from research, data, and dialogue with employers) to deliver the skills likely to be required.

3.3. Theme 3: Employer engagement

Strong employer engagement with the TVET sector is an important mechanism for improving the relevance of the training delivered by TVET institutions. Systematic engagement with employers (directly or through trade associations/employer representative organisations) can help TVET providers to understand how 'greening' will impact on future demand for skilled workers from businesses. Areas where employers can usefully engage include governance, skill needs identification, training delivery, financing and raising environmental awareness' (ILO, 2022b). Some employers may themselves need to develop greater awareness of how the green transition will impact their business activities and the skills they need: TVET graduates, TVET institutions, civil society organisations and trade unions (ILO, 2022b) can help raise this awareness and initiate action.

What does employer engagement look like in a model TVET system that supports the transition to a green and blue economy?

- Developed mechanisms are in place for dialogue between employers, government and the TVET sector on future skills requirements; delivery of training to the workforce; financing of training; and how to support citizens whose jobs will be impacted through the green transition.

- Developed mechanisms are in place for engaging employers on the relevance of green skills and/or training on new skills to enhance support on the uptake for green skills.

- Employers actively participate in the governance of the TVET sector.

- Employers are systematically involved in the development of curriculum and training programmes.

- Employers are systematically involved in the delivery of training and learning opportunities.

- Employers (with the TVET sector and other partners) are actively supporting at-risk employees (whose jobs will be impacted through green transition) to develop their skills and adaptability (e.g. through on-the-job training and access to short-form TVET)

- Employers are providing opportunities for work-based learning and apprenticeships.

3.4.   Theme 4: Curriculum and assessment

New skills related to the green transition are far wider than the occupational skills being demanded by companies operating in green economy areas such as renewable energy (ILO, 2022a). Greening is likely to impact the requirements of all occupations to varying extents. The Institute for Apprenticeships and Technical Education (2020) distinguishes between:

- 'light green' occupations – such as in care, hair or marketing, where 'the nature of the occupation is unchanged… but there may be additional duties that are done differently or in a consciously sustainable way'. A person in these occupations may need to pay attention to the sustainability of the materials used, for example.

- 'mid green' occupations – where the occupation is broadly unchanged, but new knowledge, skills and behaviours are needed to enable the use of new technologies and approaches. In engineering, construction, or transport, for example, this may involve greater use of alternative technologies and materials in place of current carbon-based resources.

- 'dark green' occupations – which are directly "embedded within the green occupational landscape and delivering sustainable outcomes" – such as roles working on wind turbine engineering, recycling or sustainability management.

In response to these changes, there is a need to ensure the curricula used in TVET institutions reflect changes to occupational requirements – and better equip learners with the knowledge, competence, and behaviours required to contribute to the green transition. Existing occupational profiles and TVET curricula may need to be updated to incorporate content on environmental awareness, resource efficiency or new green technologies (Rademaekers et al. 2015; GIZ 2022).

In addition to these occupational requirements, given uncertainties around what technological paths for successful climate adaptation and mitigation, it is important to build 'adaptive capacity' through embedding opportunities in the curriculum for citizens to develop their foundational and transversal skills. Foundational skills (including literacy and numeracy) will be needed for many of the mid-skill new jobs that will be created in the green economy. Transversal skills (such as decision-making, teamwork, leadership, communication, and problem-solving) will be valuable in supporting businesses to green their operations and in supporting citizens to navigate changes in the labour market as jobs are changed, destroyed, and created (UNICEF, 2023).

What does curriculum and assessment look like in a model TVET system that supports the transition to a green and blue economy?

- New TVET curricula have been developed for new green occupations.

- TVET curricula have been revised for those occupations likely to be most significantly impacted by green transition, where significant change is expected or significant skills demand is anticipated.

- TVET curricula have been revised for occupations more widely to incorporate transversal skills and environmental awareness.

- Learning and teaching materials have been updated to reflect any changes to the curriculum.

- Assessment methods are appropriate to judge whether learners have the skills likely to be required for greening the economy.

3.5.   Theme 5: Learner engagement and support

Currently, many young people have only a limited understanding of what green jobs are and the career opportunities that may be available to them. There is a need to rectify this through the provision of career information, advice and guidance related to green jobs, careers, and opportunities (UNICEF, 2023).

There is also a need to support workers whose jobs are destroyed or changed as a result of the green transition to re-skill. Good practices that TVET systems could adopt to support the retraining of workers include offering flexible, modular, and short-run retraining courses; mechanisms to recognise and accredit the skills workers have acquired informally; support for entrepreneurship and self-employment; and integration of training with wrap-around services such as internships, career guidance, and job matching (GIZ, 2022).

What do learner engagement and support look like in a model TVET system that supports the transition to a green and blue economy?

- Learners are provided with career information, advice and guidance related to green jobs, careers, and opportunities.

- Mechanisms are in place for reducing barriers that stop reskilling/upskilling learners and new entrants from enrolling.

- Modular, flexible, and short-duration training is available so that at-risk workers and others can combine skills training with other commitments.

- TVET provision is integrated with wrap-around services – such as careers guidance, job-matching, and job search support.

- A mechanism is in place for engaging and targeting different and diverse groups of learners (new entrants, returners, and up-skilling workforce) on the relevance of green skills and/or training on new skills.

- Mechanisms for the Recognition of Prior Learning (RPL) are in place to support those who will need to make job transitions (where required to access training courses).

3.6.   Theme 6: Institutional strengthening and TVET workforce development

A key success factor for the delivery of green skills through TVET is a suitably skilled workforce with actively engaged staff (Rademaekers et al. 2015). Continuing professional development training for TVET sector staff could include environmental awareness, building their 'capacity to support skills development in sectors with greening potential' (GIZ 2022), and opportunities to develop their understanding of recent developments in industrial practice (ILO 2022a). Any changes to the TVET curriculum will need to include engagement with, and resources for, teaching staff to support them in delivering the updated curriculum content. For TVET institutions to be able to respond to new skills demands, there is likely also a need for some degree of local autonomy (Langthaler et al. 2021).

What does institutional strengthening and TVET workforce development look like in a model TVET system that supports the transition to a green and blue economy?

- Initial and continuing teacher training programmes for TVET staff include components on environment awareness and discipline-relevant content on green services and green production methods.

- There are mechanisms in place for developments in industrial practice (e.g. new green technologies) to be shared with TVET staff to inform the ongoing development of curriculum, teaching and learning.

- Training has been developed (and is being taken up) to enable TVET staff to gain the knowledge and skills required to deliver the revised curriculum and the skills learners need.

- TVET institutions have sufficient autonomy and agility to respond to new demands for training for green jobs.

3.7.   Theme 7: Financing

Governments tend to under-invest in education and employment interventions as a mechanism for bringing about the green transition – with very little climate finance invested in human capital interventions (Education Commission 2021). There is a significant annual shortfall in the financing required to meet SDG4 commitments (with UNESCO estimating the education financing gap to be around USD 100bn annually). Meanwhile, green jobs interventions have struggled to obtain the financing required to scale (Mwaura and Glover, 2021). There is a need to increase financing from all sources, including the private sector, and to ensure that the limited financing available is spent to the best effect.

What does financing look like in a model TVET system that supports the transition to a green and blue economy?

- Sufficient financing is available to support the organisational change required in the TVET sector to respond to new demands of green transition (including potentially new capital investment, equipment, technology, and workforce development).

- Sufficient financing is available to deliver the training required for green economy employment.

- Sufficient financing is available to support retraining at-risk workers for green jobs.

- Private sector financing from employers and other stakeholders complements public investment.

- Funding allocation systems for TVET take into account changes in skills and occupations needed due to the green transition.

3.8.   Theme 8: Quality assurance, monitoring, and evaluation

Monitoring and evaluating the impact of policies and programmes is essential to ensure that skills development interventions are effective and that progress is being made against greening objectives (Rademaekers et al. 2015; Mwaura and Glover, 2021). Effective monitoring and evaluation should include monitoring inputs, assessing whether the end goals are achieved, and using insights from monitoring and evaluation to adapt and improve programmes (Auktor, 2020). Robust and transparent quality assurance of TVET courses is crucial to improve perceptions of TVET provision.

What does quality assurance, monitoring, and evaluation look like in a model TVET system that supports the transition to a green and blue economy?

- Mechanisms are in place for quality assurance of the education delivered through the TVET system.

- Monitoring and evaluation mechanisms are in place to assess the extent to which the TVET system supports the greening of the economy.

- Mechanisms are in place for tracking the learner outcomes – including completion, achievement and progression rates (and the extent to which learners secure employment in priority green occupations)

- Stakeholders actively monitor and evaluate how effectively the TVET system supports greening.

- Insights from M&E and learner tracking are being used to continuously improve the TVET system.

4. Comparative analysis

Overview of the findings across the pilot countries and England

This section offers an overview and analysis of the findings from the country reports, which include information received across the three pilot countries, survey data, and focus group workshops. The project team also consulted IfATE via an interview and survey response to complement the desk research for England; comments about this response are mentioned in a narrative for each theme. The purpose of this section is to spark dialogue and cross-country learning. The country reports (Appendices 3, 4, 5, and 6) offer more detailed insight into each.

Due to the under-representation of stakeholder groups and sample size of respondents (Botswana had 18 respondents, Tanzania 10, and Morocco 8), it is not possible to go into an in-depth analysis on areas such as differences in responses based on organisation categories and as such, the analysis presented here should be looked at in that context.

It is worth noting that group representation in the data collection has a significant bearing on these results, and they should, therefore, not be seen as evidence of strength in the represented themes. For example, employers likely know more about aspects of labour market intelligence than they do about curriculum delivery. Additionally, it's important to interpret and view the results of the survey contextually. For instance, across all countries, there were instances where the majority of respondents responded 'to some extent' to questions. This result could be evidence that certain elements of the issue are in question. Such questions require more in-depth country research to determine the extent to which questions and gaps exist. It's also important to note the point of departure of respondents as their outlook on the questions is relative to their specific context rather than a global or general view.

The survey is grouped into eight themes, within which there is a series of both open and multiple-choice questions**. For a general insight into the state of play, data on 'yes' responses across all three countries and eight themes was aggregated to give an overall picture of which areas respondents thought were working well within their TVET systems in relation to a just transition**. Details of all responses (yes, to some extent, no, and don't know) by question can be found in sections 4.1 to 4.8.

The data in Figure 2 shows that **'Yes' responses were primarily received on questions related to processes for curriculum and assessment** across all three pilot countries. However, there were some differences regarding which specific aspects respondents thought were doing well (see 4.4). Responses to the other themes were varied. After curriculum and assessment, Tanzania recorded higher percentages of 'yes' responses on policy coherence and quality assurance, Botswana on labour market intelligence and quality assurance, and Morocco on institutional strengthening and quality assurance.

Summary showing percentage of 'yes' responses
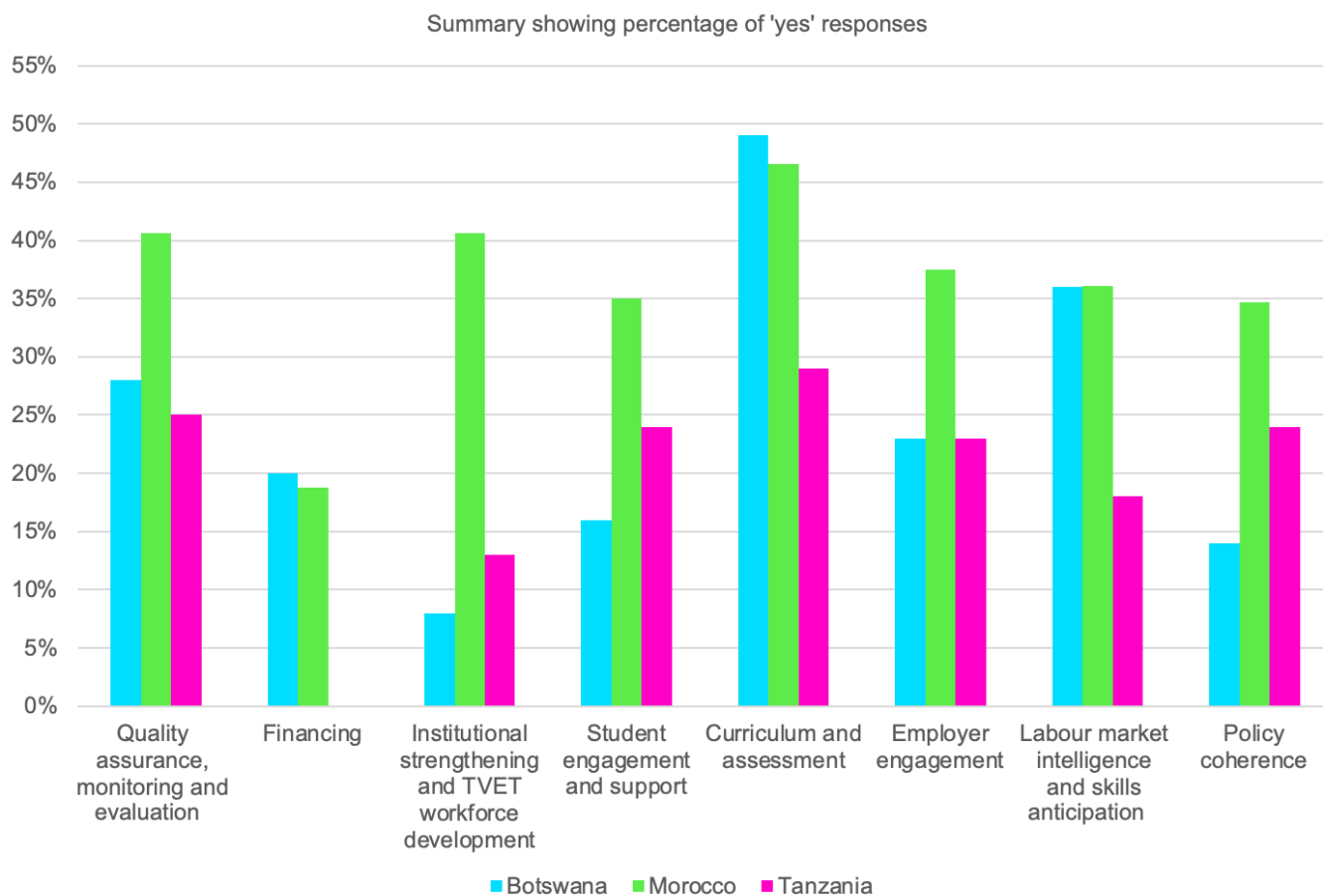
Figure 2: 'Yes' responses aggregated by country and theme

Across the countries studied, several examples of promising practice were identified:

- In Morocco, processes supporting curriculum development and assessment are supported by expertise in the field of vocational training and the integration of new developments, such as competency-based training. Further supporting this enabling environment is having processes in place to rapidly allow updating curricula. Of note is the inclusion of environmental awareness in existing curricula. Additionally, the Office for Vocational Training and Work Promotion (*Office de la Formation Professionnelle et de la Promotion du Travail*, OFPPT), Morocco's largest public TVET agency, is in the process of including content on the greening of trades (see the OFPPT's 'White Book').

- Tanzania has developed a number of policies and strategies for the green transition, which also integrate green initiatives. For example, (1) fiscal policies to regulate employers, ensuring they abide by certain standards to protect the environment or mitigate climate change, (2) TVET institutions have been instructed by the government to include some green initiatives as part of institutional activities (such as planting trees), and (3) curriculum review to ensure that they include green aspects. The green transition is seen as a cross-cutting issue that should be incorporated into all country policies. This approach can be seen, for instance, in the Tanzania Development Plan 2025 and the National Strategy for Growth and Education of Poverty II (NSGRP II).

- In Botswana, the [Human Resource Development Council](#) plays a critical role in providing market information on skills needs. Insights from the HRDC annual review of skills in demand (which draws on survey data and focus group discussions) are used to help identify green skills in demand and develop new programmes on the green economy. In addition, Botswana uses other sources of intelligence, such as outputs produced by UNESCO-UNEVOC, the International Labour Organization, and Statistics Botswana.

- In England, the response of the TVET system on a just transition/green economy is guided by the nationwide Net Zero Strategy,[1] which sets out policies and proposals for decarbonising all sectors of the UK economy to meet their net zero target by 2050. The strategy recognises the importance of building a skills base that is responsive to the changes such an ambition will require. Implementation of this strategy is supplemented by specific sectoral policies and ministerial policies. A reflection on how Net Zero is integrated into TVET systems is, for instance, visible in the Local Skills Improvement Plans driven by the Department for Education. The LSIPs are led by designated Employer Representative Bodies in cooperation with TVET providers (and other local actors such as local governments). The convening groups are tasked with providing information on how skills, capabilities and expertise required in relation to jobs that directly contribute to or indirectly support Net Zero targets, adaptation to Climate Change, or meet other environmental goals have been considered in the plans. With the presence of a widely understood strategy in place, the challenge in England is not in defining how to green TVET systems; rather it is in finding the most effective way to implement outlined interventions on the green economy without increasing inequalities between individuals, industries, and regions.

4.1. Policy coherence

Across the three countries, there is a consensus that governments are prioritising the greening of their economies, with a considerable number responding 'yes' when asked about the existence of a strategy supporting a green transition. There are varying policies and strategies across the three countries that support a green economy, and the absence of a single strategy is not an indication of a gap in this area. For instance, in Morocco, there is the National Strategy for Sustainable Development (Stratégie Nationale pour le Développement Durable (SNDD), 2017), the National Vocational Training Strategy (Stratégie Nationale de la Formation Professionnelle 2021), the National energy strategy to 2030 (Stratégie énergétique nationale à l'horizon 2030), and the Low Carbon Strategy 2050 (Stratégie bas carbone 2050).

Botswana has Vision 2036: Achieving Prosperity for All and the 11th National Development Plan, and Tanzania incorporates considerations for a

'Though the country does not have any specific national policy or strategy on the green economy, I witness various efforts made by the government in transit to such kind of economy. These include different actions (direct and indirect) already implemented in support of the green economy initiative', stated a participant from Tanzania.

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[1] [UK Government (2021). Net Zero Strategy: Build Back Greener.](#)

green economy in its growth and poverty development plans, climate change response strategy, Zanzibar Blue Economy policy etc.

However, a common challenge was how well the various greening policies link to existing TVET policies (Figure 3). In the case of Morocco, workshop discussions showed that while the government does implement interventions in support of greening TVET systems (e.g. Information Centre on Energy, including skills for greening jobs), some providers cited a lack of 'government presence' or visibility. There are multiple reasons for this discrepancy. For example, Morocco's TVET system is marked by a diversity of stakeholders and a number of training institutes (539 public and 1,382 non-public training centres), which could limit coverage.
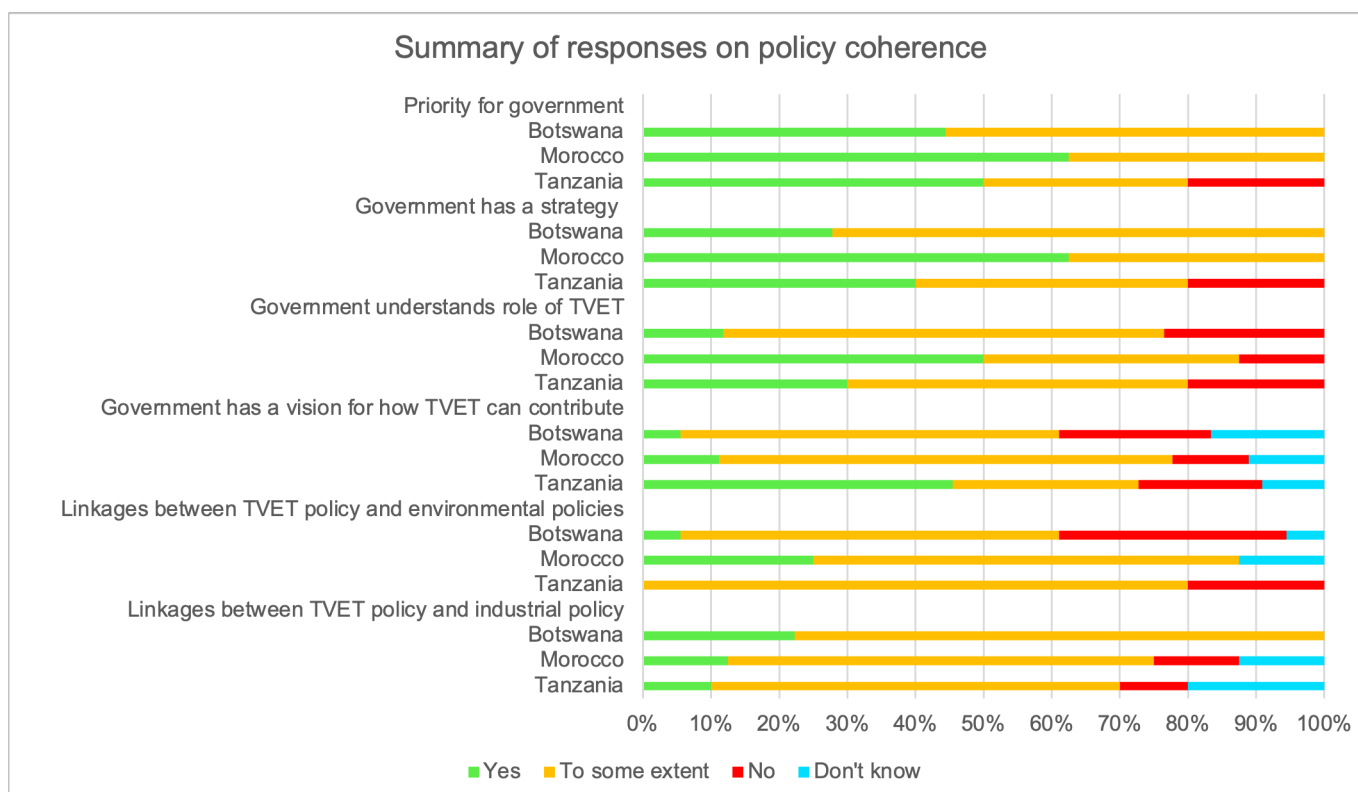
Figure 3: Summary of responses for each country on policy coherence by question

In England, in addition to the Net Zero Strategy mentioned above, there are other sectoral policies (feeding/complementing the Net Zero Strategy) such as the British Energy Security Strategy,[2] the Net Zero Growth Plan[3] and the Department for Education 'Sustainability and climate change: a strategy for the education and children's services systems'.[4] There is a considerable level of cohesion in how the government brings together these various strategies, their implementation and knowledge exchange between multiple actors. For instance, the Green Jobs Delivery Group[5] brings together 20 representatives from business and Ministers from various departments (Employment, Apprenticeships and Nature Recovery) to deliver a national

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[2] UK Government (2022). British Energy Security Strategy. Secure, clean and affordable British energy for the long term.
[3] UK Government (2023). Powering Up Britain.
[4] Department for Education (2022). Policy paper. Sustainability and climate change: a strategy for the education and children's services systems.
[5] UK Government. Press release. Green jobs delivery steps up a gear.

agenda of creating 480,000 skilled, well-paid green jobs by 2030 in alignment with the strategies. The Green Jobs Task force (GJT) is another government initiative comprised of ministers from the Department for Business, Energy, and Industrial Strategy (BEIS) and Department for Education (DfE), members from industry, trade unions and the skills sector. The task force ran between November 2020 and July 2021 with a mandate to deliver a plan on how to realise the UK's ambitions for green jobs as outlined in the national plans. Specifically:

- the skills needed to drive a green recovery from the Covid-19 pandemic.

- the skills needed to reach net zero greenhouse gas emissions by 2050.

- how the UK can ensure green jobs are good jobs and open to all.

- how workers in high carbon sectors can be supported to transition to the new green economy.

The GJT's recommendations and findings were instrumental in drawing up the Net-Zero Strategy.

4.2. Labour market intelligence and skills anticipation

Respondents across the three countries said they had a good understanding of the skills gaps within their country's economy but that the processes for engaging employers and TVET providers on anticipating skills needs due to greening could be better communicated and monitored. (Figure 4**).**

In Botswana, respondents were also less confident of which jobs were likely to be eliminated, with 1 in 3 reporting they did not have a good understanding of this. In Tanzania, despite most people agreeing that labour market intelligence informs policy, respondents said there were considerable gaps in applying that knowledge within impacted sectors and other implementation aspects (including putting in place, publicising and monitoring processes that engage TVET and employers to anticipate future skills).

'The government has set up training institutes and an agency that will ensure the link between the professional world and the need for skills training', according to a public TVET provider from Morocco.

In Morocco, participants highlighted that more knowledge about the greening of the economy with its various impacts, including on VET, is needed. For instance, the National Federation of Construction and Public Works (Fédération Nationale de Bâtiment et Travaux Publics, FNBTP) had carried out a study on the needs of companies, but the results had not factored in the need for green jobs, partially due to the lack of knowledge of the interviewed companies and other actors on what that entails.

There are examples of the pilot countries implementing actions to address some of these challenges. The Moroccan government has, for instance, set up the Moroccan Agency for Energy Efficiency (Agence Marocaine pour l'Efficacité Energétique, AMEE) to strengthen the link between employers and occupations with skills training. Botswana has a Human Resource Development Council that manages the Labour Market Observatory (LMO). The LMO observes

market trends and acts as the go-to place on the national labour market information system and the national education and skills development database.

Labour market intelligence in England is normally carried out with other foresighting bodies and government agencies like the Office for National Statistics (ONS). The ONS has been instrumental in defining green jobs. ONS is currently developing a framework to underpin the green jobs definition and data tracking points on green employment, such as whether employment activity is green; estimates of green jobs using the occupational approach; matching their Annual Business Survey and Low Carbon and Renewable Energy Economy Survey (LCREE) Survey data to explore whether LCREE jobs are replacing existing jobs; and assessing whether industries with green jobs have higher or lower greenhouse gas emissions, and whether and how this has changed over time.
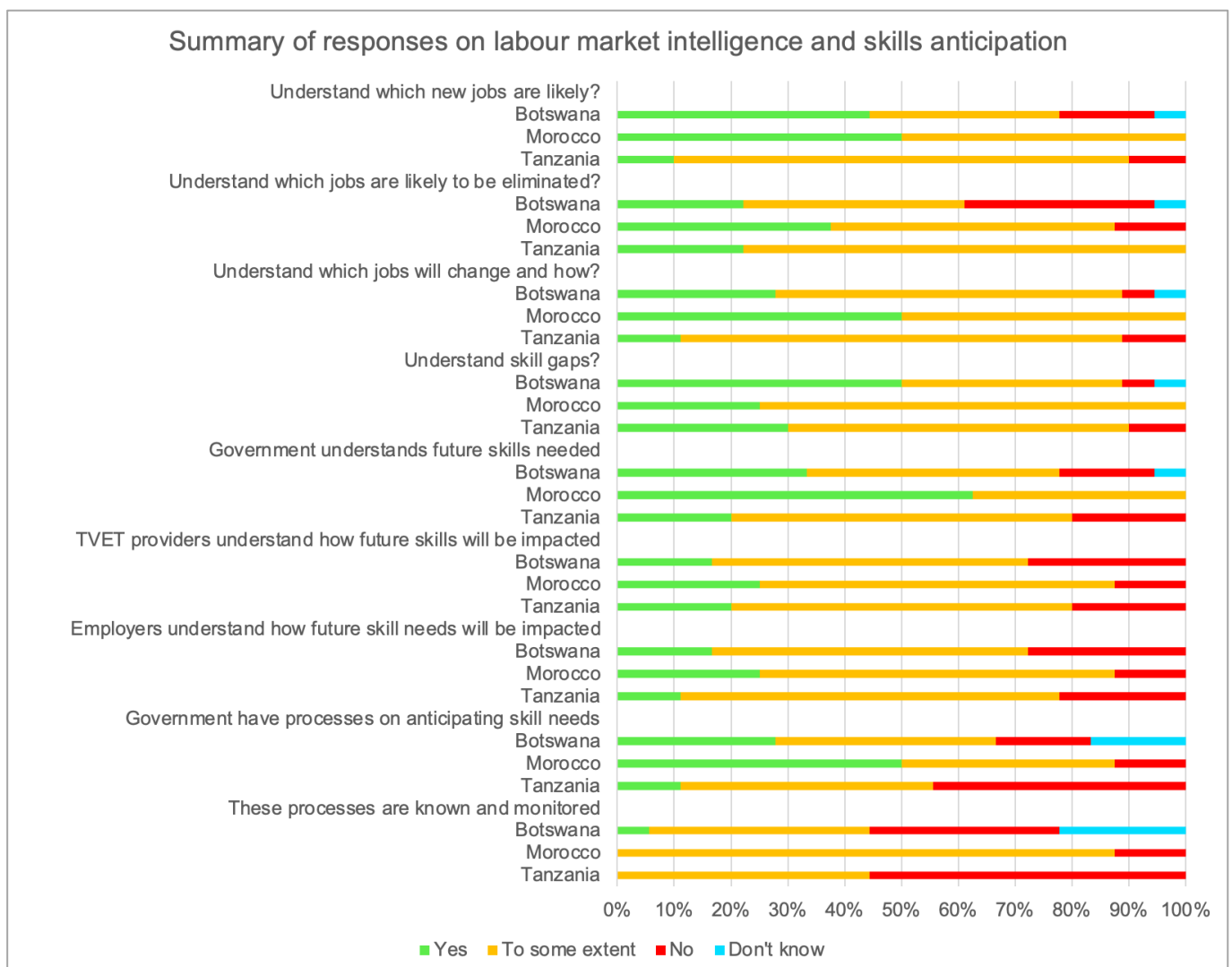
Figure 4: Summary of responses for each country on labour market intelligence and skills anticipation by question

4.3. Employer engagement

Employer engagement was one of the key areas where most respondents reported challenges (Figure 5). When asked if their TVET system had a clear, functional mechanism for engaging with employers on the green transition, Tanzania recorded a very low number of 'yes' responses, while Botswana's responses were mixed across yes, to some extent and no.

The mixed responses from Botswana could be further investigated to provide clarity. However, during, the workshop, there was some indication that changes in previously existing structures that support TVET – employer engagement may have contributed to reduced interaction between the two.

In Tanzania, though there was a lower number of 'yes' responses, participants reported in the workshop that some employers, especially those from mining, agriculture, and manufacturing, engage with the TVET system by using the sector standards to determine what green skills are needed. Their main interest is to ensure that the green transition is cost-effective and swift for their respective sectors.

'Collaborations between Employer Organisations and Public TVET Training institutions have declined through the years especially after legislation that changed the Apprenticeship Act and destruction of cooperation activities that were in place prior to repealing the Apprenticeship Act', according to a public TVET provider in Botswana.

While Morocco had a higher number of positive responses, workshop participants noted that there was still space for strengthening partnerships and relationships between VET institutions and employers.

Highlighting similarities, all three countries recorded areas of strength in:

- Employer involvement in developing the TVET curriculum and TVET training programmes.
- Employer engagement via internship or apprenticeship opportunities.

Drawing on examples from England, the Institute for Apprenticeships and Technical Education (IfATE) works closely with employers and awarding organisations to develop apprenticeships and technical qualifications. The IfATE has a Green Apprenticeships and Technical Education Advisory Panel (GATE-AP), which provides access to the independent expertise needed to deliver on their green vision. Its key functions are to:

- monitor progress against the commitments made in the Climate Change and Environmental Skills Strategy.[6]
- provide advice and challenge IfATE's strategy on green skills and their overarching green activity to ensure products are equipped to support the delivery of the UK's net zero targets.

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[6] IfATe (2023). Climate Change and Environmental Skills Strategy.
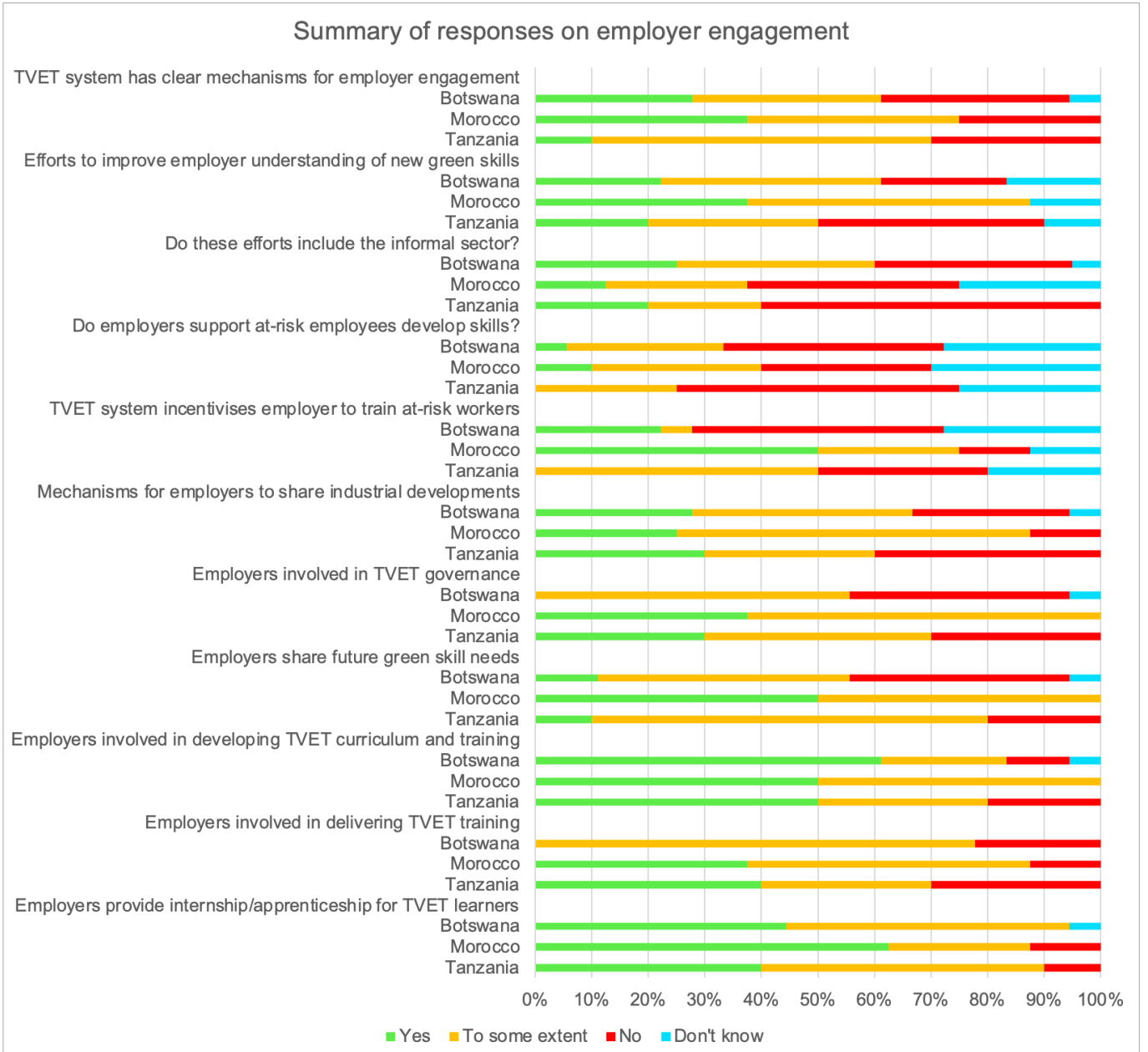
Figure 5: Summary of responses for each country on employer engagement by question

One of the key products of the climate strategy is working with employers to research whether further T-Levels are needed to help young people access high-skill and rewarding careers in tackling climate change.

The question on engaging with the informal sector had mixed responses, but Botswana recorded the highest number of 'yes' responses. There is an opportunity to delve deeper into Botswana's responses with the intention of deriving what mechanisms or examples exist that are driving closer engagement and inclusion, putting into consideration that more than 60% of Sub-Saharan's economy is driven by the informal sector.

4.4. Curriculum and assessment

This is the only theme where all three countries recorded a higher number of 'yes' responses (see Figure 6) with a varying degree across different questions. It's worth noting that in terms of types of survey respondents in the pilot countries, a majority came from TVET providers and TVET government representatives, indicating that their knowledge on this theme is higher and could have a bearing on the results.

In reference to Figure 6 and the workshops, Morocco cited having processes for updating curricula and curricula content extending beyond technical skills (hard skills) to include transversal skills, which are needed for a green economy. These updates include, for instance, content on environmental awareness. However, it was noted that the curricula of the Office for Vocational Training and Work Promotion (*Office de la Formation Professionnelle et de la Promotion du Travail*, OFPPT), Morocco's largest public TVET agency, does not yet take into account the greening of trades. There are, however, indications of the OFPPT including these in the future as per their published 'White Book' (in French).
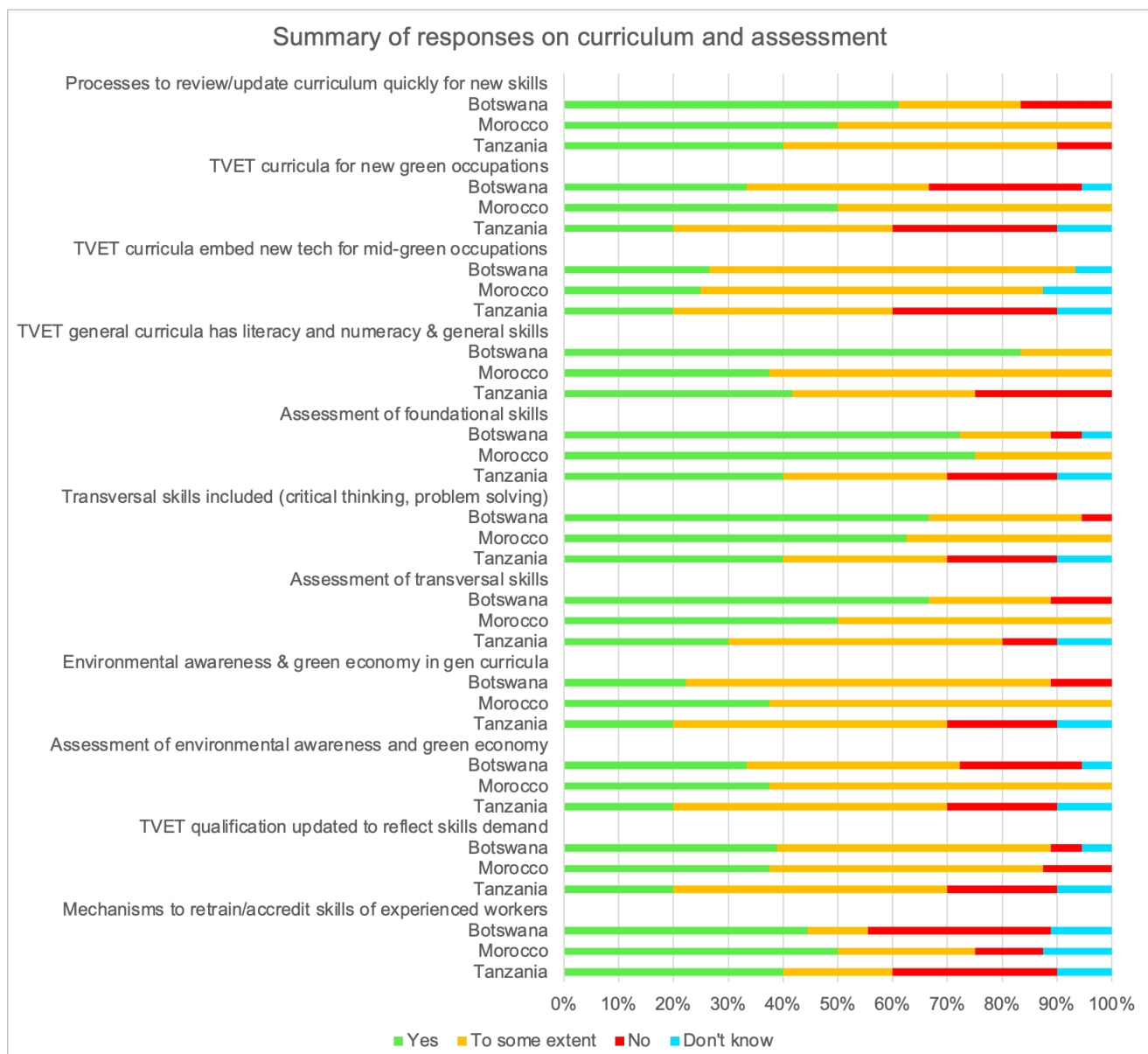
Figure 6: Summary of responses for each country on curriculum and assessment by question

Survey results for Tanzania show that while the curriculum review and updating process is in place, it has some challenges and gaps. These include:

- Availability of comprehensive surveys that identify the skills gaps.

- Difficulty in wider involvement of stakeholders. Respondents mention difficulty in getting responses to requests, including reluctance from employers to share information on the required skills.

- Inadequate human and financial resources.

- Inadequate training on curricula delivery to reflect the required changes for a green economy transition.

'It is important for our curriculum to support greening, but there is a need for players to understand the concept of greening and how it can be adopted in their respective areas. There is also a need for technical expertise', according to a representative of an employer organisation in Tanzania.

In Botswana, 61% of respondents thought that there were processes already in place to allow for the TVET curriculum to be reviewed quickly in response to new skill requirements needed to meet the needs of the green economy. Additionally, respondents agreed that the curriculum provides opportunities for learners to develop foundational skills (such as literacy and numeracy) and transversal skills, with more than 70% of respondents answering yes to those questions. Most respondents also agreed that the assessment methods used in Botswana allowed the system to test that learners have these skills. However, some challenges on curriculum development were reported to include:

- limitations in the engagement of industry – with some concerns around the extent to which there was a coherent voice from industry and the degree of engagement there had been in the most recent phase of curriculum development.

- availability of experienced curriculum developers – with some curriculum developers unfamiliar with green economy concepts.

The England interview highlighted the agile approach taken by IfATE in approving new occupational standards (new occupational standards are typically approved within one year of the occupation being identified). The process responds to needs and gaps identified in the market, after which new occupational standards are developed or existing ones updated as needed, with assessment plans for apprenticeships or technical qualifications based on the occupation being created or updated as required. Providers can then offer these pathways, developing their curricula. To further support planning for curricula development, the Education and Skills Funding Agency (ESFA) and Department for Education (DfE) provide an annually reviewed non-statutory guidance intended to help providers understand their obligations and duties on the study programmes in their institution.

4.5.   Learner engagement and support

Responses show that there are gaps in engaging learners, the public and others on the green economy. Pre-recruitment and post-study activities are not ideal, and all countries recorded having a lack of targeted efforts to increase public awareness of these opportunities or having monitoring mechanisms that measure the extent to which learners have used green skills. Figure 7 shows a summary of answers by country pertaining to student engagement.

Tanzania highlighted a lack of activities that facilitate the uptake of skills needed for a green transition:

- There are few or no efforts to increase public awareness of the opportunities that green skills offer.

- Little flexibility in offering short-duration training for at-risk workers and others.

- Low or no support for career guidance staff to sensitise on required skills.
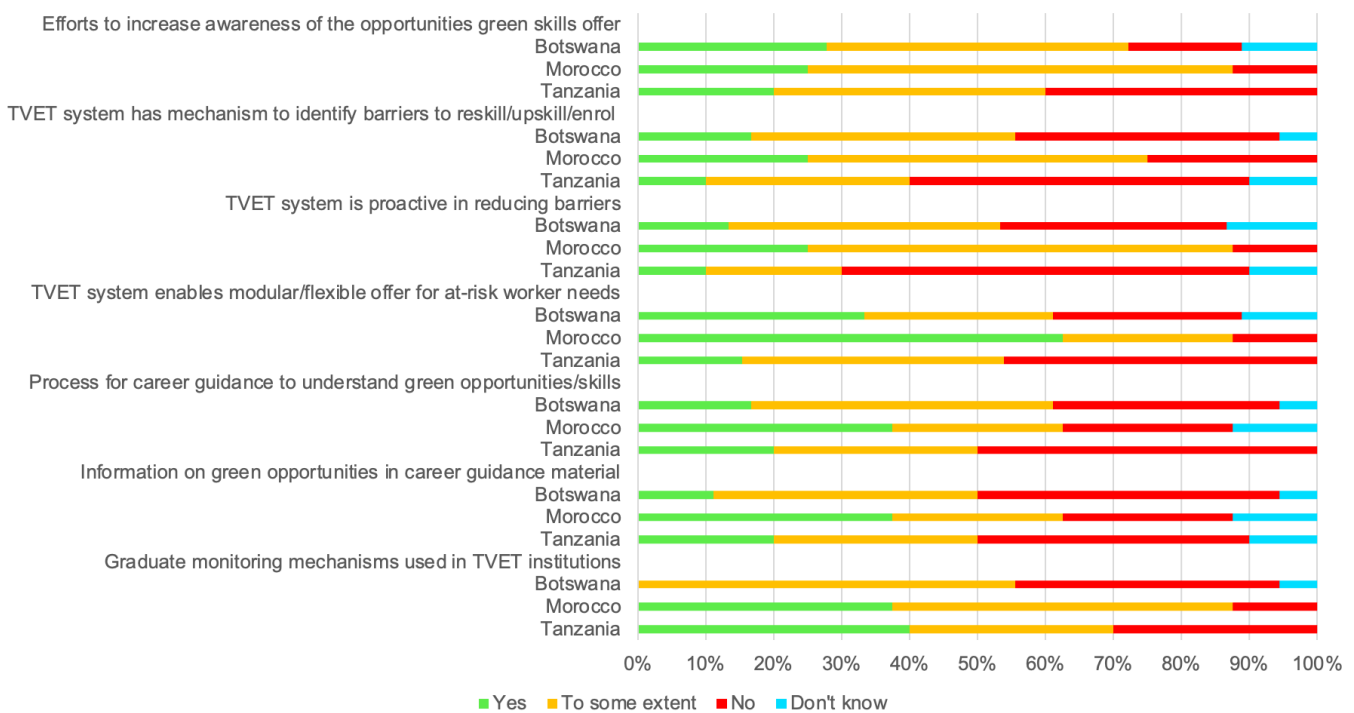
Figure 7: Summary of responses for each country on learner engagement and support by question

However, 40% of respondents in Tanzania agreed there is an existing student monitoring system which includes collecting data on employment rates and types of jobs students get. But this mechanism does not monitor the extent to which students have put into use any green skills or the competencies they've acquired during training.

In Morocco, it was cited that career counsellors do not have sufficient information to effectively orient students and job seekers on green jobs, and the lack of a single access point for TVET providers to use as an information dissemination point (e.g., a database with all TVET centres)

is lacking. This leaves learners unaware of possible TVET offers and career paths. Follow-up surveys of leavers (graduates or dropouts) are also not systematically carried out, and valuable information on the integration into the job market and, thus, the development of the sector is lost.

A third of respondents in the Botswana survey thought that there were no processes to help those giving career guidance understand the new opportunities and skills needed by the green transition. There is, however, a positive practice and example from the Human Resource Development Council, which holds career awareness clinics for prospective learners and meetings to sensitise communities on course

'The TVET workforce in this country generally needs retraining and upskilling, they are good in theory but lack up to date demonstration skills to impart to the learners', according to an NGO in Botswana.

offerings. The challenge remains with the type of content, specifically in relation to the green economy. Half of the respondents stated there was not enough content in guidance materials on opportunities and skills required for the green economy, while a third of respondents thought there were no processes to help those giving career guidance understand the new opportunities and skills needed by the green transition.

England has various mechanisms with which it engages the public and students at the pre-recruitment and enrolment stage. There are also career guidance platforms (such as the national Careers and Enterprise Company (CEC) set up by the government in 2015 and the National Careers Service), albeit not specifically targeting the TVET sector or green jobs. There are also graduate monitoring mechanisms such as the 16 to 18 qualifications dashboard, which shows detailed qualification level, employment and learning outcomes for 16- to 18-year-olds finishing study at further education institutions, and the Further education outcomes dashboard - shows qualification level, employment and earnings outcomes data for apprenticeships and adult further education.

Missing from this analysis are examples of specific interventions that are used to educate and inform the public and potential students on green skills, the green economy and career pathways on the same. This does not mean that such activities do not exist.

4.6. Institutional strengthening and TVET Workforce development

The issue of strengthening institutional and staff capacity for a green transition could be construed to be in the infancy stage across all countries based on the results in Figure 8.

However, there are some interventions in this area. In Morocco, participants stated vocational schoolteachers are sensitised on environmental issues during initial teacher training and as part of continuous professional development (CPD). CPD is however not systematically carried out by all operators, with differences evident between public and private VET schools, with the latter demanding more proficiency

'There is a need to "fast track" re-tooling and up-skilling the trainers and lectures in TVET Colleges on green skills and other future skills', according to a respondent from Botswana.

and skills development from existing trainers. In contrast, Botswana has more established processes in place for staff development (including staff development plans and in-service training) that serve all actors in the system but lack content on environmental awareness and the green economy within initial teacher training and CPD on how greening the economy impacts specific disciplines.

In Tanzania, there was a larger number of responses citing 'to some extent' and 'No' across all the questions. This result could mean that processes and mechanisms do exist, but they may not be functioning in the most effective way to meet the expectations of the different actors. The range of different responses is an opportunity to discuss further specific gaps that contribute to these challenges and approaches that countries are currently implementing in this area.
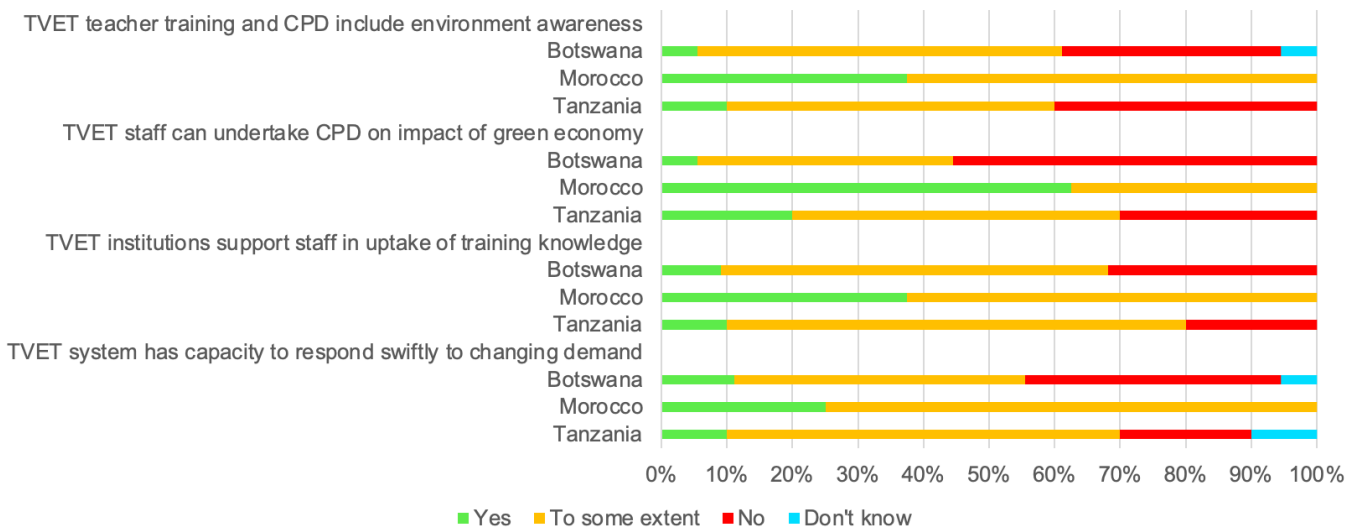
Figure 8: Summary of responses for each country on institutional strengthening and the TVET workforce by question

England has taken a more targeted approach by developing a policy paper/strategy on how it will deliver on sustainability and climate change in education. Central to the strategy is the capacity development of training/learning institutions, including that of teachers. Some of these actions include:

- developing an occupational standard for further education teaching which explicitly requires all new further education teachers to integrate sustainability into their teaching.

- providing free access to high-quality curriculum resources through the National Education Nature Park online hub.

- providing the opportunity for all staff (teaching, leadership and support) to build their understanding of climate change and sustainability by receiving shared carbon literacy training.

4.7. Financing

Results on financing in all three countries show that more could be done to increase resources for a just transition, especially in retraining at-risk workers and organisational change (Figure 9 shows the responses received on questions related to the availability of finance).

All the countries did however report having various mechanisms for the TVET system.

Botswana has the HRDC Training Levy, government funding (including funding for curriculum development and in-service training) and company funding. The Training Levy is a payroll tax paid by companies with over a turnover of BWP 1 m, from which employers can be reimbursed for their investment in training. This levy was seen by one respondent as being under-utilised, a view supported by UNESCO's international review of levy schemes, which highlights that the scheme had a USD 63m surplus.[7] Mentioned in the same report are the results of a perception study undertaken by the Human Resource Development Fund in 2019 with a representation of 250 firms that had benefited from the training fund. The results showed that 'the majority of employers (at least 80 per cent) agreed or strongly agreed that the Fund had motivated their companies to train employees, the Fund had helped to increase the skills base in organisations, the Fund had provided opportunities to have competent and motivated employees, and the Fund had facilitated the goal of cost-sharing in companies'. Clear and targeted actions, for example, by the HRDC and TVET system, may be required to incentivise companies to use this levy for skills development for the green transition.
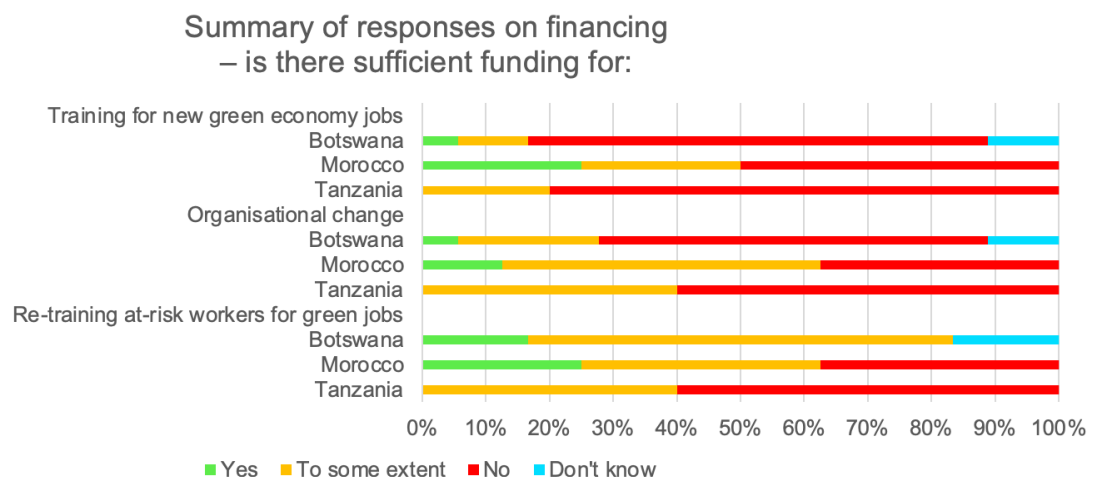
Figure 9: Summary of responses for each country on financing by question

Tanzania has the Skills Development Fund, with additional financing from the private sector available in the form of paying fees, and like Botswana, a Skills Development Levy. None of these funding contributions and allocations are, however, uniquely targeted to

'[Funds for re-training at-risk workers are] *not available, there is a need to develop these fund sources', according to a public TVET provider from Tanzania*

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[7] Global review of training funds: spotlight on levy-schemes in 75 countries. UNESCO 2022.

the green economy. 60% of respondents said that TVET funding allocation systems do not take into account changes in skills and occupations needed for a green transition. As such, funding for delivering training required for employment in a green economy or support to enable TVET institutions to implement organisational changes in response to the just transition is seen as insufficient. Additionally, 60% noted that there is no financing available to train at-risk workers. Drawing again on the same UNESCO report above, Tanzania collected an annual levy revenue of 121.8m USD between 2016 – 17. There is an opportunity here to strategically include targeted financing for a just transition and pull factors to encourage employers to think about the green economy.

In Morocco, the Ministry of Economy and Finance is responsible for funding formal and non-formal TVET. It does so through a mix of funding, mainly public, private, and development assistance. The budget allocated to the vocational training sector is estimated at around 0.5% of GDP. It is characterised by complexity in terms of the multitude of stakeholders in the sector, the diversity of funding sources, and the difficulty of identifying the actual allocation of these resources in the absence of an accounting framework specific to vocational training. However, the country has financial mechanisms to support students and job seekers:

- Qualifying or retraining courses for job seekers (Formations qualifiante ou de reconversion), usually paid by a public employment agency.

- Subsidised contracts (recruiting through public job employment agency) or special training contracts (for OFPPT students).

- Temporary unemployment benefit, government programme (e.g. AWRACH).

As with Botswana and Tanzania, including targeted actions on greening TVET systems in existing financial decisions could address the financial gaps identified.

Taking an example from England, the country also makes financing available via a levy system. Apprenticeships (offered to young people and new job entrants) are funded through the apprenticeship levy, providing access to funding for levy-paying employers and non-levy-paying employers. Employers with a pay bill of more than £3m contribute via the apprenticeship levy, while non-levy paying employers co-invest 5% to access apprenticeship funding. Additionally, individuals without a level 3 qualification can access funding for one at no cost. There are also additional schemes to target specific areas of need, such as skills boot camps in which employers co-invest to access training for their employees and which can also be accessed by eligible individuals at no cost. Specific to greening TVET systems, the Department for Education has made funding available to support organisational change (including towards a green economy) through the Strategic Development Fund.

4.8.   Quality assurance and monitoring and evaluation

Across the three pilot countries, respondents reported having a quality assurance mechanism for measuring the performance of TVETs.

All the countries, however, recorded a less positive response on how well the mechanism monitors and evaluates the TVET system against the agreed objectives of their green economy strategy/policies (Figure 10). Botswana cited mixed views on whether the mechanism effectively assesses the contribution of the TVET system to greening the economy. In Morocco, participants and respondents stated that while policies and strategies are regularly developed, the follow-up of their implementation is not well communicated – neither to stakeholders nor the general public.

' Botswana Qualification Authority as an organisation [ ] does quality assurance in TVET sector, it does provide results of their audits and thus as institutions, we can self-correct. But in so far as green economy is concerned there is nothing in place ', according to a public TVET provider in Botswana.

Summary of responses on quality assurance
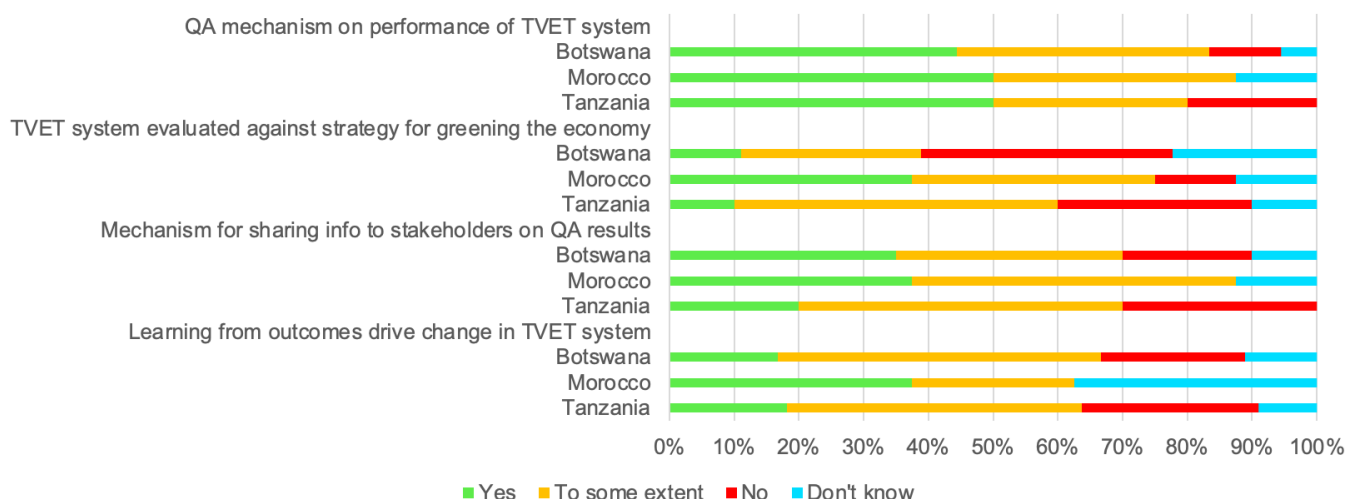
Figure 10: Summary of responses for each country on quality assurance and monitoring and evaluation by question

In England, Quality assurance of training provision in the English TVET system is conducted by Ofsted, with other quality elements being the responsibility of IfATE, the Office of Qualifications and Examinations Regulation (OfQual regulates qualifications, examinations and assessments) and the Office for Students (OfS – an independent regulator of higher education).

The challenge of monitoring and evaluating TVET systems against the agreed objectives of a green transition strategy is not unique. England's processes have only just begun to put these aspects into consideration. In October 2022, the Department for Education launched a government consultation on funding and accountability reform – they propose changing the accountability agreements to have them driven by Local Skills Improvement Plans (among

others plans). The Department would also align its skills prioritisation to areas with future opportunities for 'green' jobs to ensure a strong pipeline of skilled people into 'green' sectors.[8]

4.9.   Existing country policies contributing to a just transition

This section provides a snapshot of some key policies and project examples or interventions that the countries are using to support the greening of TVET systems. They are not exhaustive, and omission of any interventions or policies is not a reflection of their quality or suitability. Similar information can also be found in the country reports.

Botswana

Policies contributing to a just transition.
- Vision 2036: Achieving Prosperity for All
- 11th National Development Plan

Country examples of activities contributing to a just transition
- Development of new qualifications and curriculum related to renewable energy and solar energy.
- Research and insight from the Human Resource Development Council on future skills needs (see for example the HDRC's priority occupations analysis).

Morocco

(All links are in French)

Policies contributing to a just transition.

- National Strategy for Sustainable Development Stratégie Nationale pour le Développement Durable (SNDD), 2017

- National Vocational Training Strategy Stratégie Nationale de la Formation Professionnelle 2021

- National energy strategy to 2030 Stratégie énergétique nationale à l'horizon 2030, 2020

- Low Carbon Strategy 2050 Stratégie bas carbone 2050, 2021

Country examples of activities contributing to a just transition

- New generation of TVET institute with cross-sectoral approach and tripartite governance system (Cités de métiers et des compétences).

- Information centre on energy, including skills for greening jobs (video on the information centre here, on the construction of the energy efficient building itself using local knowledge, see here).

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[8] Department for Education (2022). Skills for jobs: implementing a new further education funding and accountability system. Government consultation.

Tanzania

Policies contributing to a just transition.

- Zanzibar Blue Economy Policy (2020)
- Tanzania Development Vision (TDV) 2025
- National strategies for Growth and poverty reduction (NSGPR I)
- National strategies for Growth and poverty reduction (NSGPR II)
- National Determination Contribution (2021)
- Investment guide on waste management (2020)
- United Republic of Tanzania (URT) (2021), National Climate Change Response Strategy (2021-2026)
- National Environment Policy (2021)

Country examples of activities contributing to a just transition

- Kikuletwa Renewable Energy Training and Research Centre – centre of excellence at Arusha Technical College. It is one of the centres established under The East Africa Skills for Transformation and Regional Integration Project (EASTRIP), a five-year project funded by the World Bank and the Governments of Ethiopia, Kenya. More information can be found at https://www.kretrc.ac.tz/.

England

Policies contributing to a just transition.

- Net Zero Strategy: Build Back Greener (2021)
- Skills for Jobs: Lifelong Learning for Opportunity and Growth (2021)
- British Energy Security Strategy. Secure, clean and affordable British energy for the long term (2022)
- Policy paper. Sustainability and climate change: a strategy for the education and children's services systems (2022)
- Powering Up Britain (2023)

Country examples of activities contributing to a just transition

- Local Skills Improvement Plans: To action the Skills for Jobs White Paper (see above), the Department for Education has introduced local skills improvement plans (LSIPs). In addition to other requirements LSIPs have to consider what skills, capabilities and expertise are required for jobs that directly contribute to, or indirectly support, net zero targets, adaptation to climate change or other environmental goals.

5. Tool development and piloting

This chapter provides additional information and reflections on Stages 2 (tool development), 3 (data collection) and 5 (data validation) of the research.

5.1. Tool development

Extrapolating from the insights identified during the desk study, the research team created a first version of a self-assessment tool that could be completed by policymakers, employers and TVET providers in each country. For each theme, the research team looked to identify a suggested standard of good practice against which each country's system can be compared. A series of questions were then developed that could be used to help identify the extent to which the standard has been met in each country and provide insights to government, employers, and TVET providers on how TVET systems can support the transition to a green economy.

In developing the standards of good practice, the research team were conscious of a need to take care not to develop them in a way that was unduly prescriptive or that unduly favoured particular policy interventions, given that there are different routes that countries could choose to take in greening their TVET systems. Recognising that financing and government bandwidth are finite, the team were also conscious of the need to ensure that the standard of good practice was not set at a level where they are perceived as unrealistic or unachievable for the countries participating.

The majority of the questions were designed with a three-point scale, asking participants to share their perspective on whether a particular aspect of the TVET system was in place ('yes'), partially in place ('to some extent') or not in place ('no'). A 'don't know' option was also available to help maintain data integrity.

The original intention was to provide an opportunity for those completing the self-assessment tool to also enter comments (or qualitative information on current projects and policies) for each question. Limitations in the MS Forms platform used to pilot the tool meant that this was not possible, so a section allowing for comments and examples was instead added at the end of each thematic section.

In designing the tool, a conscious decision was taken to collect and synthesise participant perspectives on the status, strengths, and weaknesses of TVET systems in each country. This choice was considered to be preferable to alternative approaches, such as requiring participants to evidence and justify the judgments they made in answering each of the self-assessment questions or commissioning a single expert to complete the tool for each country. The self-assessment tool therefore provides a mechanism to gather insights on the current status of TVET systems and the priorities of system actors, which would be difficult to achieve through desk research, particularly given that disconnect is frequently observed between systems as intended (as set out in legislation, plans and strategy documents for examples), and systems as implemented (as experienced by users and stakeholders in reality).

5.2. Piloting and testing

The tool was piloted in three countries in Africa – Morocco, Botswana, and Tanzania. Following the desk review and tool development, a three-stage process was used for the pilot: (1) stakeholders from each country were asked to complete the self-assessment survey tool; (2) the research team produced a draft analysis of the findings of the survey; and (3) a national workshop was held in each country to test and validate the draft analysis.

The purpose of the piloting and testing phase was to test the tool's content and applicability, pilot the process for using the tool, and assess the usefulness of the tool in identifying potential actions and next steps for TVET system reform.

In England, a desk-based exercise was completed, with a project researcher identifying strengths and challenges based on a review of relevant documents. The insights for England were validated by a representative of the Institute for Apprenticeships and Technical Education, who completed the self-assessment tool and took part in a key informant interview.

Online self-assessment tool and pilot mobilisation

An online version of the self-assessment tool was created on the MS Forms platform. A selection of relevant stakeholders (including government officials, TVET providers, employers, and other relevant experts) was identified and invited to complete the self-assessment tool by the local British Council country office. It was anticipated that the survey should take approximately one hour to complete. Respondents were encouraged to answer questions as frankly as possible. Data was collected anonymously with the option for respondents to provide their contact information for further engagement.

Country Workshops

A national workshop was held in each country in March to test the relevance and usability of the self-assessment tool. In Tanzania and Morocco, the workshops were held virtually using the Microsoft Teams platform. In Botswana, due to internet connectivity concerns, a hybrid workshop format was used, with stakeholders hosted face-to-face at a venue in Gaborone; the British Council headquarters and Paeradigms team joined the workshop remotely.

At each of the workshops, the initial analysis of the self-assessment tool findings was presented. Participants were then asked to:

- respond to the findings presented – including whether they agreed with the headline findings and whether the insights presented were useful and relevant.

- share their insights and perspectives on what are the biggest challenges their country's TVET system faces in supporting the green transition and what needs to happen to tackle these challenges.

- share feedback on their experience using the self-assessment tool, including any suggestions on how it could be improved.

5.3.   Insights and lessons learned from the piloting and testing process

Participants were generally positive about both the relevance and usability of the self-assessment tools. In Botswana, the general view was that the tool provided good insights into greening TVET systems. While participants were of the view that the survey was too long, the questions were not difficult to understand, and the interface was user-friendly. In Morocco, participants felt that the questionnaire covered all areas of green TVET. While there were questions raised about the representativeness of the sample, participants thought that the questionnaire was intuitive and no technical guidance was needed. In Tanzania, participants were equally positive about the relevance and need for the tool, and respondents found the questions comprehensible. Respondents cited the length of the questionnaire as a challenge. Though the tool had a question on the existence of a government strategy for greening the economy and ensuring a 'just transition', respondents felt that aspects which specifically assess the inclusion of marginalised groups in greening TVET systems were missing.

5.4.   Deployment of the self-assessment tool

Compressed timescales for the pilot impacted the representativeness of the sample of respondents. The timescales for the piloting of the self-assessment were very compressed due to a requirement for fieldwork to be completed by the end of the British Council financial and programme implementation year. This meant that participants had just one working week (Monday to Monday of the following week) to complete the self-assessment tool. While the British Council country teams worked to mitigate the impact of this compressed timescale and were able to successfully mobilise stakeholders to attend the country workshops, the limited time available for completion did affect the sample of responses obtained. Across all three countries there were significantly more responses from TVET providers than from other types of stakeholders, meaning that the conclusions presented give more weight to the TVET provider perspective.

Table 1: Overview of self-assessment tool completions by organisation type

Country	Government	Employer	TVET provider	Other	Total
Botswana	4	1	12	1	18
Morocco	0	1	5	2	8
Tanzania	2	1	5	2	10

There is a need to ensure that the sample of providers invited to complete the self-assessment tool is broadly reflective of the landscape of TVET provision in each country. TVET systems are often very heterogeneous, with different types of organisations delivering TVET provisions. In Botswana, a diversity of participants was achieved, including public technical colleges, the Brigades (informal education providers), and an industry-specific provider. In Morocco, on the other hand, it was felt by a government representative participating in the workshop that the institutions that were involved in the pilot were already more involved in

the greening of vocational training than organisations that did not participate in the survey and so were not representative.

Employer organisations across all three countries were engaged in the pilot process. While relatively few employers took part in the testing, all three country workshops were attended by at least one representative of the main employer representative group in that country.

There is a need to create routes for community perspectives to be integrated into the tool. In the Botswana and Tanzania workshops, participants highlighted the important role that communities and wider society play in greening and in the operation of the TVET system. The perspective of communities is not well represented by the three constituencies engaged in the pilot process (employers, providers, and government). Future use of the tool should, therefore, include civil society organisations in the sample of organisations invited to participate. It was also suggested that the British Council consider how the perspective of learners could be included in the self-assessment tool. To allow for learners perspective on the TVET system to be reflected, student associations or student unions could be invited to participate in the comparative analysis process. More widely, individual TVET systems should also be collecting the views of learners on the learning, advice, and support that they receive.

The country workshops provided a forum for stakeholders who had not completed the self-assessment tool to share their perspectives and insights and for those who had to provide clarity on responses.

Table 2: Overview of workshop participants by organisation type

Country	Government	Employer	TVET provider	Other	Total
Botswana	6	2	8	1	17
Morocco	2	1	4	1	8
Tanzania	4	1	3	2	10

Across all pilot countries, there was consensus that the self-assessment tool was too long. The research team have already actioned this feedback by consolidating and grouping similar questions and removing questions where the insights obtained during the pilot were judged to be less useful. The revised version of the self-assessment tool (see Appendix 1 for both the tool tested in the pilot and the updated version) is 25% shorter than the version piloted.

It was suggested in the Botswana workshop that one way of reducing length would be to have different routings within the tool for different stakeholders, such that not every participant completes each section. This suggestion was not adopted as it would not allow for triangulation and comparison of perspectives across different stakeholder types and would also significantly complicate the analysis of results.

Recommendation 1. For deployment of the self-assessment tool in the future, a sample frame should be produced, specifying the target number of responses needed from each type of

respondent. The types of respondents to be included should include providers (of a range of different types), government, civil society organisations representing communities, and employers (including, where possible, the main employer representative group).

An alternative approach, previously used in the deployment of the British Council's Apprenticeship Benchmarking Tool, would be to engage a national consultant or expert to produce an initial straw man response for each country, and for this then to be tested in a workshop. With this approach, it would still be important to ensure that a diversity of perspectives are represented through attendance at the workshop.

Recommendation 2. Sufficient time should be allocated in the work plan to allow follow-ups to be undertaken where the quota has not been met for a particular type of respondent.

Recommendation 3. The results of the self-assessment process should be validated through a further consultation with stakeholders in each country, following sharing of the international comparison.

5.5.   Platform for the self-assessment tool

Participants in the workshops identified a number of functionalities that would have been useful to aid their completion of the self-assessment tool. These include:

- a 'save' functionality that would allow respondents to complete the form over more than one session rather than have to complete the full form in one go (requested in two countries and also by another stakeholder providing an England perspective on the tool).

- an option to obtain a copy of the answers they had provided after submission of the form (requested in two countries).

- The ability to go back and change their responses after submission of the form (requested in one country).

From the perspective of the research team, the platform also had some shortcomings. It was not possible, for example, to add hover-text containing definitions of particular terms to the form, meaning this text had to be displayed at the start, away from the relevant questions. Rapid analysis of the survey responses would also be aided by using a platform that easily allows for easy segmentation and visualisation of responses by type of respondent, without manual downloading and manipulation of the dataset.

Recommendation 4: Identify an alternative survey platform, such as SmartSurvey, to host the self-assessment tool.

5.6.   Use of insights from the tool

Participants appreciated the wider view of what 'greening' means provided by the tools.
Action on the greening of TVET has been slowed by differing understandings of what 'greening' means. In designing the self-assessment tool, the research team attempted to mitigate this impact by linking the concepts to those that respondents would likely be familiar with, such as the Sustainable Development Goals. Part of the value of the tool (acknowledged directly by participants in one of the workshops) is that it helps stakeholders to take a broader view of what

creating a TVET system that supports the green transition entails – thinking beyond the narrow focus on occupational skills for particular 'green' industries that is sometimes taken.

Insights from the self-assessment tool should be triangulated with other data sources. To be able to place more reliance of insights from the tool, the perspectives shared through the self-assessment tool should be triangulated through comparison with insights from desk research.

There would be risks associated with using the tool to create numerical scores for participating countries, league tables or similar indices, which may create incentives for participants to give answers that do not reflect the reality of their system and may not take into account cultural differences that affect how the survey questions are answered. It will be important to moderate the responses (or ensure there is sufficient evidence to justify scores) if the tool was to be used in this way. The principal value of the tool comes from the qualitative insights shared and the dialogue and discussion sparked on challenges and solutions.

Cultural differences across countries may impact the likelihood that a respondent will answer 'no' to a particular question or be openly critical of the current policy landscape. In Morocco, for example, with the exception of questions in the finance theme, more than 75% of answers given by respondents were 'yes' or 'to some extent'. This is another potential limiter on the reliability of the data collected using the tool that can be mitigated through critical discussion of the initial data collected at the country workshop, as suggested above.

The scale used for the self-assessment tool requires refinement. Given the aversion to answering 'no' noted above, it is recommended that the descriptor for the 'to some extent' response should be rephrased to 'yes, to some extent' in future iterations of the self-assessment tool. This would also improve the clarity of the analysis by making it clear that a 'to some extent' answer will be counted as being a positive rather than a negative response.

Recommendation 5: The British Council should use a longer workshop format (ideally, one day, face to face) when using the tool to develop areas of potential partnership to facilitate discussion and allow participants to moderate and elaborate the answers they gave and reach consensus on priority areas for system development.

Summary of changes to the tool made as a result of piloting:

A copy of the revised tool is attached as Appendix 1. The following changes have been made to the tool as a result of the piloting process.

1. Reduction of the length of the tool by 25% through grouping similar questions, removing excessively detailed questions and removing questions where insights collected were less relevant.

2. Clarification and simplification of the language used in some questions.

3. Merger of the survey section on Quality Assurance & Monitoring and Evaluation into the section on Institutional Strengthening and the TVET Workforce

6.   Conclusion

This research provides insights into how a TVET system that supports the transition to a green and blue economy should look and what attributes should be considered. Through the desk review and analysis of the pilot of the comparative analysis tool, several key findings have emerged, both in understanding the needs of different stakeholders and the importance of the context, as well as improving the tool and how it is delivered. These findings can inform the next steps for the British Council in supporting their partners in developing green TVET systems.

6.1.   Opportunities for cross country learning

This section highlights opportunities for cross-country learning by drawing out areas of differing strengths and similarities (in strengths and challenges) to facilitate discussion and enable the pilot countries to further engage in conversations on:

1.   Which aspects of their respective strengths are working well?

2.   What are the characteristics and contextual bearing of the challenges they each face?

3.   Are there approaches they could draw upon from their strengths to address those challenges?

4.   Are there areas where joint interventions might work well?

To provide further linkages and points of learning, England has been included in the tables below.

Across the three countries, there were areas of **different strengths** and **similarities in both strengths and challenges,** which countries can draw on to ignite conversation, learn and design joint interventions. **Political commitment** is a strong factor mentioned in the survey and focus group workshops as a strength across all countries. Though operating in quite different contexts, each country also cited their **curriculum and assessment** as a strength, though this was not across all elements of that theme (see Section 4.4 and the country reports). For instance, in Tanzania, the introduction of a CBET system has stood out as a pathway for forming stronger relationships with industry (and thus address challenges on employer-TVET engagement). In Botswana, it is the inclusion of transversal skills which are critical for a just transition, and in Morocco, it is the integration of both environmental and transversal skills in curricula.

The three countries also face a series of similar challenges, which could serve as a point of kick-starting dialogue on possible solutions and joint action. These were:

- Finance and infrastructure

- Fragmentation

- Industry engagement

- Knowledge capacity

Table 3: Strengths, gaps, and challenges across the four countries

Tanzania	Morocco	Botswana	England
Different strengths			
Employment opportunities within the green economy: agriculture makes up one of the largest sectors in Tanzania's economy, making it one of the largest employers and an opportunity to strengthen the agenda for transitioning to a green economy. Restructuring current courses in agriculture to include green skills will pivot the sector towards the adoption of the green economy and prepare the workforce with future skills.	**Financing mix** with the budget allocated by the State, vocational training tax (Taxe de la Formation Professionnelle, TFP), contribution of households, and contribution of international cooperation.	**Existing activity:** Efforts to green the TVET system are already underway. Numerous greening initiatives are happening through community collaborations, including in the informal sector.	**Infrastructure and financial support:** a well-established TVET system with resource from both Government and private sector.
	Flexibility: TVET providers are flexible and respond to changing skills.		**Employer engagement:** Existing mechanism that support partnership between government, employers, and TVET providers.
Establishment of relevant training programmes: Tanzania has established a centre of excellence for renewable energy at Arusha Technical College. The centre has been pivotal in increasing citizen awareness of green technologies and the productive use of renewable energy.			**Policy coherence:** Existence of ministerial mechanisms such as the Green Jobs Delivery Group and taskforces to address specific issues such as the Green Apprenticeships and Technical Education Advisory Panel (formally the Green Apprenticeship Advisory Panel) which is tasked with identifying existing apprenticeships that best support green career pathways**.**
			Functioning mechanisms for upskilling: Free Courses for Jobs offer – training for adults to study fully-funded qualifications in subject areas crucial for green jobs, such as construction, forestry and engineering.
			Training pathways for green skills: Building on existing work to review green apprenticeships, government is mapping, reviewing and enhancing other training pathways (e.g. traineeships, T-levels, internships and skills bootcamps) to ensure they support a diverse, inclusive and net zero-aligned workforce across the UK.
Similar strengths			
Political commitment			
Political commitment to support a move to a green economy. Evidence of sectoral policies that exist that directly or indirectly target the green transition, there	**Political commitment** to greening the economy, government has a clear national vision.	**Political commitment** to greening the economy, with most respondents agreeing that greening is a	**Political commitment:** policies and strategies that guide TVET system actors on their role in achieving a just transition.

Tanzania	Morocco	Botswana	England
is evidence of political will.		priority for government.	

Curriculum

Tanzania	Morocco	Botswana	England
Curriculum: adoption of the Competence-Based Education and Training (CBET) has made it easier to involve industry and other stakeholders to shape curriculum development. The system enables industry and TVET institutions to work together in assuring that their workers / trainees / students are well trained, assessed, verified and competent.	**Curriculum:** often integrates environmental topics as well as foundational and transversal skills, further revision of curricula underway.	**Curriculum:** includes opportunities for learners to develop the foundational and transversal skills likely to be required for employment in the green economy.	

Gaps & Challenges

Finance & Infrastructure

Tanzania	Morocco	Botswana	England
Finance & infrastructure: funding and infrastructure that supports TVET institutions and systems to implement actions that contribute to a just green transition remains a challenge. Finance to retrain at risk workers who'll be impacted by the transition is especially seen as non-existent. Sufficient funding to support implementation of initiatives/strategies that enhance awareness on a just transition to key stakeholders is also lacking.	**Equipment:** Insufficient acquisition of new equipment for TVET centres, especially as the sector is rapidly changing	**Financing:** There is currently not enough financing available to deliver the training (and organisational change in the TVET sector) that will be required to achieve the green transition.	

Implementation

Tanzania	Morocco	Botswana	England
Silo approach: green initiatives are undertaken by TVET institutions, mostly with little coordination across the system. For instance, labour market intelligence and skills anticipation are	**Governance**: lack of coordination of actors, unclear understanding of roles and responsibilities, including mechanisms for	**Fragmentation:** There is fragmentation in the efforts of different actors and stakeholders to green the economy. 1 in 3 respondents said	**Policy implementation at local level:** Effective implementation of policies that support skills development and employment in the green economy at local level.

Tanzania	Morocco	Botswana	England
conducted, but each institute does its own.	engaging employers and more visibility of the Department on TVET.	there were not clear linkages between the government's TVET policy and environmental policies and programmes.	

Employer engagement

Tanzania	Morocco	Botswana	England
Employer engagement: employer engagement is not substantial and TVET system do not have a clear function and strategy for this type of engagement. There are gaps especially in how well the system engages with the informal sector and supports.	**Employer engagement:** however, the mechanisms do not always seem to be clear.	**Employer engagement**: To date, there has been only limited involvement of industry in the greening of the TVET sector.	**Availability of green jobs:** there is limited evidence around how many green jobs are available in the UK and it is unclear whether their availability is a barrier to more people being in green jobs.

Knowledge capacity

Tanzania	Morocco	Botswana	England
TVET trainers: TVET trainers and teachers lack a good understanding of the skills and knowledge that are essential to drive a just transition. Particularly, understanding on the learning content needed for future skills, how to integrate it in existing courses and delivery and transversal soft skills. **Employers:** Lack of wider knowledge on the just transition and awareness on the importance of the green economy for every sector, including improving employer understanding on the relevance of new skills for the green economy.	**Teacher training**: Insufficient train the trainers programmes, especially as the sector is rapidly changing. **General public:** information on greening the economy and new occupations and skills.	**Workforce:** There is a need to upskill TVET sector staff, to improve their understanding of how the green economy will impact their area of practice. **General public and staff:** There is limited awareness of the green economy among citizens and among staff in the TVET sector.	**Awareness of green jobs:** many workers, including younger workers, do not know what green jobs entail, what green skills are, or how to get more information on how to get a green job. **Attractiveness of green jobs:** attitudes towards green jobs and how these jobs compare to other roles in terms of salary, location and other features. There is also evidence of demographic challenges in some areas e.g. infrastructure of the energy sector, which lacks diversity in the workforce.

In addition, case examples of existing activities and policies could further reinforce cross-learning and opportunities for building better country strategies for a green transition. These can be seen in the info boxes above.

6.2.   Key considerations

The purpose of this research was to develop and pilot a comparative analysis tool across three countries in Africa. The findings of the comparative analysis presented here draw upon insights from those three pilot countries and may not be indicative of the challenges faced in greening TVET systems more broadly across Africa and globally. Wider use of the tool across other countries in the future will add to knowledge and understanding of the current state of play in greening TVET globally.

Key considerations to bear in mind when interpreting the results include:

- The **pilot focused on three countries**, offering a snapshot of how specific TVET systems are navigating the green transition. Due to the difficulty in reaching different stakeholder types within the time constraints, the 37 participants may not fully represent the diverse perspectives and characteristics of all stakeholders in the respective pilot countries. The research team sought to mitigate this potential limitation by triangulating findings from multiple sources (survey, desk research, country workshops).

- **Workshops** played a pivotal role in the result analysis and validation process. They served as a complementary measure to the other data collection methods, reinforcing the validity of the findings.

- **Including England** in the research was strategic, aiming to test the tool's applicability in developed systems. Feedback indicates that the tool is indeed suitable for such contexts, even though England's unique circumstances might differ from other countries.

6.3.   Implications for future use of tool

Key benefits – the comparative analysis tool could be used in the future to support:

- Identification of strengths, enablers, opportunities, needs, and gaps in stakeholder organisations, which can help prioritise areas that need to be addressed.

- Development of country-specific action plans to address any areas prioritised, which can help organisations become more effective in achieving their goals.

- Enhancement of performance through providing a framework for continuous improvement.

- Promotion of international exchange of experience and good practice, which also promotes transparency and accountability by allowing institutions to share their findings with other stakeholders and demonstrate their commitment to continuous improvement

- International dialogue as a basis for future international exchange of experience and good practice.

- Introduction of the tool to more and different countries can continuously add to the value of its knowledge-sharing capability.

Future considerations

- Feedback during the workshops suggested that in the pilot countries, local communities, civil society, and the informal sector play a strong role in supporting students to understand skill needs due to green initiatives.

- The online platform for data collection can play a role in the flexibility and usability of the tool, which can also affect the quality of the data collected. Therefore, the platform employed should be chosen carefully. Even with the best platform, independent responses obtained through online surveys or tools may be subject to self-reporting bias or incomplete responses, potentially affecting the accuracy and reliability of the collected data.

7.   Recommendations

The findings of the research and the pilot include a number of challenges that TVET stakeholders face when considering the transition to a green economy. An unintended positive consequence of the small sample of participants in the pilot was that the workshops became a highly interactive forum for discussion among stakeholders with different roles in the TVET ecosystem. The dialogue was lively, and not only challenges, but ideas for how to approach these challenges, arose. The country reports include recommendations from each country's participation in completing the tool and attending the workshop.

The TVET sector is an essential actor in achieving the green agenda. It can enhance its engagement with other actors and contribute effectively to sustainable development in various ways. The following recommendations are intended the foster ideas among participants and should not be taken as directives. It is important that TVET stakeholders adapt potential solutions to the context in which they are active and work to translate the planned strategies into tangible actions and outcomes.

7.1.   Fragmentation

There was a shared view that there was strong political will and interest from governments in greening their economies, but sometimes a disconnect and fragmentation between greening initiatives and the TVET system. There is more that TVET systems can do to respond to the greening imperative.

Where this is a challenge, the following actions could be considered:

- **Develop a joint vision of greening TVET:** The government, TVET sector, and employers could collaborate to develop a shared vision that outlines the role of TVET in supporting the transition to the green economy. This joint vision will help raise awareness and align efforts towards a common goal.

- **Strengthen linkages with TVET sectoral policies:** Improve linkages between other sector policies contributing to the green economy and the TVET sector. Enhance coordination and collaboration between policymakers, training institutions, and employers to ensure that TVET initiatives align with and support the broader sector policy goals and programmes of the government.

- **Clarify roles and responsibilities:** Clearly define and communicate the roles and responsibilities of different actors, including employers, within the TVET system. This clarity will help develop a shared understanding of expectations and foster effective engagement and participation in greening initiatives.

7.2.   Finance and infrastructure

Strong views were expressed on financing, with the vast majority of respondents believing that there was not sufficient financing in place for the TVET system to meet the demands (in terms of

training delivery and organisational change that greening will demand of it). Where this is a challenge, the following actions could be considered:

- **Align financial mechanisms with policy objectives:** There would be value in looking at the extent to which the priority that governments place on greening is reflected in the financial incentives and resourcing available to TVET providers. This involves aligning financial initiatives and resources with policy objectives, emphasising the importance of a just transition, and providing adequate funding to support awareness and capacity-building activities among key stakeholders.

- **Expand financing mechanisms for green TVET provision:** Explore ways to expand the availability of financing for delivering green training, organisational change, infrastructure and capacity development within the TVET sector. This could involve identifying and engaging funders interested in climate adaptation and mitigation, in addition to traditional education and employment intervention funders. Diversifying funding sources can help secure resources necessary for successful green TVET initiatives. Targeted financing will enable TVET institutions to keep pace with the rapidly changing demands of the green economy. Strengthen collaboration with international organisations to develop financial mechanisms that incentivise investment in capacity development supporting TVET's transition to a green economy.

7.3.   Industry engagement

Many respondents expressed the view that stronger **connections with industry** to address greening was an area for development and focus. The inclusion of the informal sector is a key element for a just transition.

- **Strengthen employer engagement:** Review the existing structures for employer engagement within the TVET system to identify ways to enhance industry involvement in greening initiatives. This could also include exploring strategies to actively engage employers in the development and implementation of green training programmes, curriculum design, and skills development, and establishing formal mechanisms for ongoing dialogue and collaboration between employers and TVET institutions.

- **Include the informal sector and communities:** Consider tailored approaches that address the unique characteristics and needs of informal workers, such as recognition and validation of skills and competencies acquired through informal work, contextualising curricula (for example, providing entrepreneurship and business skills development), and collaborating with trade associations and community-based organisations.

7.4.   Knowledge capacity

Building knowledge and understanding on the implications of greening on jobs, skills and TVET was also identified as an area for future focus. This has multiple dimensions. Where this is a challenge, the following actions could be considered:

- **Strengthen career guidance and employer engagement:** Bridge the gap between green skills initiatives and green job opportunities by providing students with clear information on

the practical application of their skills in the green economy. Enhance student recruitment and career guidance efforts by engaging in practical conversations about the specific skills needed in the green economy, beyond basic examples like solar panel repair. Foster collaborations with employers who hire based on these skills, highlighting the potential career paths and entrepreneurial opportunities available to students. By raising awareness and providing practical guidance, students can make informed decisions about their training choices and career prospects in the green economy.

- **Enhance staff development:** Provide TVET sector staff with opportunities to upskill and improve their understanding of the green economy. Implement Continuing Professional Development (CPD) that specifically addresses the fundamentals of the green economy and its impact on the respective disciplines. Staff from the whole system could participate, including facilities (to understand the "green campus"), services (such as careers), administration (to lead and support the green transition), and instructors. Strengthen Initial Teacher Training (ITT) and train-the-trainers (ToT) programmes to include content required for future skills and transversal (soft) skills. Include employers in developing and delivering training, thus sensitising employers to the opportunities and challenges of greening. This holistic capacity development can support efforts to effectively integrate green concepts and practices into the TVET system.

7.5.   Recommendations for improving the comparative analysis tool

- Scale up the project by using the comparative analysis tool in more countries.

- Develop a comprehensive sample frame for future deployment of the comparative analysis tool, clearly outlining the desired number of responses from different respondent types, including providers, government, civil society, and employers (including main employer groups, if feasible).

- Consider engaging a national consultant in each country – already familiar with the national TVET system – to produce an initial ''straw man'' response for each country for discussion by stakeholders to ensure sufficient time is allocated in the work plan to accommodate follow-up activities in case response quotas are not met for specific respondent types.

- Validate the results of the self-assessment process in each pilot country through further consultation with stakeholders after sharing the international comparison. Enhance the effectiveness of the tool by incorporating longer, face-to-face workshops (ideally one day) to foster meaningful discussions, encourage participants to elaborate on their responses and facilitate consensus-building on priority areas for system development and potential partnerships.

8. Glossary

Green transformation (green transition)

Green transformation is sustainable and inclusive socio-economic structural change that allows the economy and society to move from the current environmentally unsustainable situation towards a new sustainable environment. The plan of action for achieving this transformation is Agenda 2030. The terms "green transformation" and "green transition" are often used interchangeably, however, transition refers to the multiple, interrelated, and simultaneous processes involved in this shift, while transformation emphasises the structural and systemic change. Green transformation demands rethinking economic, environmental, and social policies and how they interrelate. It focuses on the competence of the process – efficient, responsible, rational, and respectful use of available resources – combining economic growth with environmental consciousness to achieve a high quality of life for present and future generations. The transformation encompasses all spheres of society and the economy. There is no single approach to green transformation because approaches depend on the context and different perspectives within a context. Progress in one field can cause unintended consequences in another. Thus, green transformation requires strong collaboration across multiple stakeholders. The term "green transformation" is increasingly linked to the concept of "just transition" which reflects the comprehensive approach and paradigm shift.[1–3]

Agenda 2030

On 25 September 2015, the 193 member states of the UN approved the 2030 Agenda for Sustainable Development, an ambitious plan to achieve prosperity that is respectful of the planet and its inhabitants. This endorsement of Agenda 2030 and its 17 Sustainable Development Goals (SDGs) reaffirms the world community's commitment to all three dimensions of sustainable development, namely, economic, social, and environmental. The overarching goal is to leave no one behind. Education is perceived a public good and is an essential step in the process of achieving a green transformation.[4]

Education for Sustainable Development (ESD)

ESD empowers learners with knowledge, skills, values, and attitudes to take informed decisions and make responsible actions for environmental integrity, economic viability, and a just society. It includes people of all genders while respecting cultural diversity in a lifelong learning process and is an integral part of quality education that enhances cognitive, social, and emotional, and behavioural dimensions of learning. It is transformational and holistic, encompassing learning content and outcomes, pedagogy, and the learning environment itself. ESD is recognised as a key enabler of all SDGs and achieves its purpose by transforming society.[6]

Green economy

Several definitions of green economy have been defined by different organisations, but the central idea of improved human well-being and social equity while significantly reducing environmental risks and ecological scarcity appears to be common. One of the most cited and generally agreed definitions derives from the UN Environment Programme (UNEP), which defines the green economy as low carbon, resource efficient, and socially inclusive. According to UNEP, in a green economy, growth in employment and income is driven by public and private investment into economic activities, infrastructure, and assets that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services. These green investments need to be enabled and supported through targeted public expenditure, policy reforms, and changes in taxation and regulation. UNEP promotes a development path that recognises natural capital as a critical economic asset and a source of public benefit, especially for poor populations whose livelihoods depend on natural resources. The notion of green economy does not replace sustainable development but creates a new focus on the economy, investment, capital and infrastructure, employment and skills, and positive social and environmental outcomes.[7,8]

Green growth

Green growth is a paradigm in which green policies, innovation, and investments drive sustainable economic development. More broadly, green growth is an approach for achieving a number of simultaneous objectives of sustainable development: (1) avoiding and curbing greenhouse gas emissions, (2) building resilience to climate extremes and longer-term change, (3) using resources more efficiently, (4) providing sustainable and equitably distributed increases in GDP and standards of living, and (5) valuing the often economically invisible natural assets that have underpinned economic success over the centuries. The concept of green growth has been informed by leading international organisations (e.g. UN, EU, OECD) involved in green growth planning and development. From a theoretical viewpoint, green growth advocates point out that GDP only measures the value of traded goods and services; it does not measure their environmental impact. Some economic activities have much higher energy and resource content and waste impact per dollar than others. Consequently, a gradual shift to less environmentally harmful activities (e.g. using renewable energy and organic materials, increasing energy efficiency, shifting consumption from material to digital products) would decouple GDP growth from environmental damage and greenhouse gas emissions. Technological innovation, along with social organisation and a change in consumption patterns, can make such a shift possible. Yet, ecological economists argue that technological progress has its limits. First, the level of production (global GDP) is limited by the resources, land, and energy needed. And second, technological progress is unable to sufficiently mitigate the impact of economic production on the Earth's critical ecosystems that regulate our climate, pollinate our plants, and clean our water. Also, critics of green growth highlight that green growth approaches do not fully consider the underlying economic system change needed to address the climate crisis, biodiversity crisis, and other environmental degradation. They point instead to alternative frameworks for economic change such as a circular economy, degrowth, doughnut economics, or similar systemic changes that better account for planetary boundaries. It is worth mentioning

that the concepts of green growth, green economy, and low carbon development are often used interchangeably.

Green jobs

ILO defines green jobs as decent jobs that contribute to preserving or restoring the environment. These jobs can be in traditional sectors such as manufacturing and construction or emerging green sectors such as renewable energy and energy efficiency. Green jobs thus help to (1) improve energy and raw materials efficiency, (2) limit greenhouse gas emissions, (3) minimise waste and pollution, (4) protect and restore ecosystems, and (5) support adaptation to the effects of climate change. At the enterprise level, green jobs can produce goods or provide services that benefit the environment, for example, green buildings or clean transportation. However, these green outputs (products and services) are not always based on green production processes and technologies. Therefore, green jobs can also be distinguished by their contribution to more environmentally friendly processes. For example, green jobs can reduce water consumption or improve recycling systems. Yet, green jobs defined through production processes do not necessarily produce environmental goods or services. As illustrated by the diagram below, a distinction can thus be drawn between employment in green economic sectors from an output perspective and job functions in all sectors from an environmentally friendly process perspective. For ILO, green jobs are all those jobs that fall in the dashed area.

Source: International Labour Organization 2016[9]

Green knowledge

Green knowledge is a person's capacity to understand and evaluate practices and strategies of sustainability for the development of greener performance trajectories in society and the environment.

Green recovery

Green recovery is the expression used for public and private economic recovery measures aligned with long-term climate change and sustainability objectives. These measures target structural reforms and transformative change necessary to move towards sustainability, resilience, and climate neutrality (e.g. as economic and social life gets back on track post-Covid-19). Green recovery leads to long-term green growth while ensuring that natural livelihoods are preserved for future generations. Green recovery measures should therefore have a twofold effect: on the one hand, they should be quick, time-limited and target group-

specific, and geared to acute needs; on the other hand, they should set the course for socio-economic and ecological transformation in the medium and long term.[10,11]

Green technology

The term green technology (also green tech) can be broadly defined as technology that has the potential to significantly improve environmental performance relative to other technology.

Just transition

ILO defines "just transition" as the need for nations and businesses to transition towards greener, more resilient and climate-neutral economies and societies in order to tackle pressing environmental challenges like climate change, pollution, and plummeting biodiversity. The term "just transformation" is used interchangeably. It means greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities, and leaving no one behind. a just transition involves maximising the social and economic opportunities of climate action while minimising and carefully managing any challenges – including through effective social dialogue among all groups impacted and respect for fundamental labour principles and rights.[12]

Skills anticipation in TVET

Skills anticipation is a process of identifying the skills that will be needed in the future, to prepare individuals and organisations to meet those needs. In the context of TVET, skills anticipation is crucial in ensuring that programmes are relevant and up-to-date, and that they equip learners with the skills needed for current and future labour market demands. Steps could include:

- **Analyse labour market trends:** TVET providers should closely monitor the labour market and identify emerging trends in the types of jobs and skills that are in demand. This can be done through analysing job vacancy data, conducting surveys of employers, and monitoring industry news.

- **Conduct skills assessments:** TVET providers should assess the skills of their current students and graduates to determine if they are meeting the needs of the labour market. This can be done through surveys, interviews, and focus groups with employers.

- **Engage with employers:** TVET providers should engage with employers to understand their specific skill needs, including both current and future needs. This can be done through industry partnerships, advisory boards, and apprenticeship programmes.

- **Monitor technological advancements:** TVET providers should stay up-to-date on technological advancements and their impact on the labour market. This can be done through attending industry conferences, monitoring news and industry reports, and engaging with technology providers.

- **Develop flexible curricula:** TVET providers should develop flexible curricula that can be easily updated to meet changing labour market needs. This can be done through incorporating modular and stackable credentials, using competency-based education, and providing opportunities for lifelong learning.

Skills for the green economy or skills for green jobs (green skills)

Internationally, the terms "green skills" or "skills for green jobs" are widely used. However, as these are not actually green skills, but the environment and framework in which they are used, it is preferable to use the phrase "skills for the green economy" rather than "green skills". ILO defines "skills for green jobs" as an overarching term for the knowledge, competence, and experience needed to successfully perform tasks for <u>green jobs</u> and to make any job greener. The term includes both core and technical skills and covers all types of occupations that contribute to the process of greening products, services, and processes, not only in environmental activities but also in other sectors. The UNIDO definition of green skills is also widely accepted: "Green skills are the knowledge, abilities, values and attitudes needed to live in, develop, and support a sustainable and resource-efficient society."[14]

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Appendices

Appendix 1 Final Comparative Analysis Tool

Pre-questions

Q01: Please provide the name of your organisation

Q02: Which of the following categories best describes your organisation?

- Government representative
    - o Ministry responsible for TVET or related agency
    - o Labour Ministry or related agency
    - o Environment Ministry or related agency
    - o Other Ministry or related agency
- Employer
    - o Large employer (more than 250 employees)
    - o Small or Medium Sized employer (1 – 249 employees)
    - o Employer representative organisation (e.g. sector association)
- TVET provider
    - o Public institution
    - o Private institution (for profit)
    - o Other provider
- None of the above

Q03: For employers, please indicate your sector.

Policy coherence and vision

A government that is committed to moving towards a green economy has defined supporting national priorities, policies with clear objectives, and monitors its progress. This section asks you to reflect upon the extent to which your government is moving towards a green economy.

	Yes	To some extent	No	Don't know
Q04: Is there strong evidence that greening of the economy[9] is a priority for government?				
Q05: Does government have a clear strategy for greening the economy and ensuring a 'just transition'?[10]				
Q06: Is the strategy effectively implemented?				
Q07: Does government have a good understanding or plan for how TVET can support greening of the economy?				
Q08: Are there clear linkages between the government's TVET policy and environmental policies and programmes?				
Q09: Are there clear linkages between the government's TVET policy and industrial policy?[11]				

Q10: Please provide examples, further information, or comments about your government's approach to greening the economy, including:

- mechanisms to ensure join-up with other ministries responsible for environmental, industrial, and sectoral policies and programmes.

- linkages between TVET and environmental / industrial policy.

Labour market intelligence & skills anticipation

This section focuses on the extent to which you think your organisation understands changes in the labour market that are likely to occur due to greening the economy. Changes include reskilling and upskilling existing jobs and new jobs that emerge from new technology.

Q11: How is data on future skills demand from skills anticipation being used? (select all that apply)

- to inform policy development and funding

- to inform sector planning and funding

- to inform design and implementation of training

- to inform planning by businesses/employers

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[9] GREENING THE ECONOMY – changing the economy to become less carbon-intensive, more resource efficient.

[10] JUST TRANSITION – greening the economy in a way that is as fair and inclusive as possible to everyone concerned. In TVET, this may involve, for example, enabling fair access to green TVET and green employment.

[11] INDUSTRIAL POLICY – policy or interventions that attempt to improve the business environment, or to alter the structure of economic activity towards certain sectors, technologies, or tasks.

- to inform careers information, advice, and guidance for citizens
- other [free text]

	Yes	To some extent	No	Don't know
Q12: Does your organisation have a good understanding of which new jobs are likely to be created in your country's economy due to the green transition?				
Q13: Does your organisation have a good understanding of which jobs are likely to be eliminated in your country's economy due to the green transition?				
Q14: Does your organisation have a good understanding of which existing jobs will change due to the green transition and how?				
Q15: Does your organisation have a good understanding of the main skill gaps in your country's economy?				

Q16: Please provide examples, further information, or comments about the data/research (and sources) your organisation uses to understand how the green transition will impact skill needs in your country. [free text]

Employer engagement

This section of the tool asks questions about employer engagement with your TVET system. Since greening has implications most of the workforce, please answer these questions thinking about all employers, not just those who will be most intensely impacted or those directly involved in the green sector.

	Yes	To some extent	No	Don't know
Q17: Does the TVET system have a clear, functional mechanism for engaging with employers on how transition to a green economy may impact on their skills needs?				
Q18: Does engagement on the green economy include the informal sector?				

	Yes	To some extent	No	Don't know
Q19: Is there evidence of employers supporting at-risk employees (whose jobs will be impacted through the green transition) to develop their skills and adaptability (e.g. through on-the-job training and access to short-form TVET)?				
Q20: Are employers involved in the governance of TVET institutions?				
Q21: Are employers involved in the development of the TVET curriculum and TVET training programmes?				
Q22: Do employers regularly contribute to the delivery of TVET training programmes?				
Q23: Do employers regularly provide work based learning or apprenticeship opportunities for TVET learners or graduates?				

Q24: Are there other mechanisms or examples of engagement with employers on greening the economy that you'd like to highlight? Please provide any comments, links or examples. [free text]

Curriculum and assessment

	Yes	To some extent	No	Don't know
Q25: Are there processes in place that allow for the curriculum to be reviewed and updated quickly in response to new skills requirements?				
Q26: Have new TVET curricula been developed for new occupations related to the green economy?				
Q27: Has the TVET curriculum related to mid-green occupations been updated to embed new knowledge and skills required to enable the use of new green technologies and approaches? ('mid- green' – occupations in which the core elements will remain the same, but new knowledge is likely to be required)				

	Yes	To some extent	No	Don't know
Q28: Does the general curriculum for TVET learners include opportunities to continue to develop foundational skills such as literacy and numeracy?				
Q29: Do the assessment methods used in the TVET sector provide an opportunity to judge learners' foundational skills?				
Q30: Does the general curriculum for TVET learners include opportunities to continue to develop transversal skills (non-technical, soft skills) such as critical thinking, problem solving, leadership and communication skills?				
Q31: Do the assessment methods used in the TVET sector provide an opportunity to judge learners' transversal skills (non-technical, soft skills)?				
Q32: Does the general curriculum for TVET learners include opportunities to develop environmental awareness, and an understanding of the fundamental elements of the green economy?				
Q33: Do the assessment methods used in the TVET sector provide an opportunity to judge learners' environmental awareness, and their understanding of the fundamental elements of the green economy?				
Q34: Have TVET qualifications been updated to reflect changes in the curriculum and skills demand?				
Q35: Are there mechanisms in place that allow providers to assess and accredit the skills of experienced workers looking to retrain?				

Q36: What challenges have you faced in revising curriculum and assessment methods to respond to new skill demands? [free text]

Learner engagement and support

	Yes	To some extent	No	Don't know
Q37: Are there targeted efforts to increase public awareness of the opportunities that green skills offer? (for example among potential learners and the existing workforce)				
Q38: Does the TVET system enable TVET providers to provide modular, flexible, and short-duration training for at-risk workers and others?				
Q39: Are there processes to help those giving career guidance understand the new opportunities and skills needed by the green transition?				
Q40: Do career guidance materials include information on these opportunities and required skills?				
Q41: Is there evidence of effective graduate monitoring mechanisms being used across TVET institutions to track student employment destinations (e.g. tracer studies)?				

Q42: Please provide examples, further information, or comments about initiatives, barriers, enablers for student engagement and support.

Institutional strengthening and TVET workforce development

	Yes	To some extent	No	Don't know
Q43: Do the TVET system's initial teacher training and continuing professional development programmes include content on environmental awareness and the green economy?				
Q44: Do TVET staff in relevant disciplines have opportunities to undertake continuous professional development on how greening the economy impacts their discipline?				
Q45: Does the TVET system give TVET providers sufficient capacity and flexibility to be able to respond swiftly to changing demands for skills?				

	Yes	To some extent	No	Don't know
Q46: Is there a quality assurance mechanism that assesses the performance of the TVET system in your country?				
Q47: Is there a mechanism for monitoring and evaluating the contribution the TVET system is making to supporting greening of the economy?				

Q48: Please provide examples, further information, or comments about activities that strengthen or develop the capacity of the workforce and institutions in relation to the green transition. [free text]

Financing

Q49: What financing and funding (if any) is available to support young people and new entrants to the labour market to develop the skills required to find employment in the green economy? [free text]

Q50: What financing and funding is available (if any) to support the re-training of at-risk workers, whose jobs will be impacted through the green transition? [free text]

Q51: What financing and funding is available (if any) to support organisational change required in the TVET sector to respond to new demands of green transition? [free text]

	Yes	To some extent	No	Don't know
Q52: Do you think there is sufficient financing and funding available in your country (from all sources including government, employers, citizens (where appropriate), and international sources) to cover organisational change required in the TVET sector				

	Yes	To some extent	No	Don't know
Q53: Do you think there is sufficient financing and funding available in your country (from all sources including government, employers, citizens (where appropriate), and international sources) to cover re-training at-risk workers for green jobs?				
Q54: Do you think there is sufficient financing and funding available in your country (from all sources including government, employers, citizens (where appropriate), and international sources) to cover the costs of delivering training required for new green economy employment?				

Q55: In what ways are employers and other private sector stakeholders contributing to the cost of skills development for green jobs? [free text]

	Yes	To some extent	No	Don't know
Q56: Do TVET funding allocation systems take into account changes in skills and occupations needed due to the green transition?				

Q57: If you responded "yes" or "to some extent", – please provide details.

General questions

Q58: Overall, what are the strengths of your TVET system that will help your country transition to a green economy? [free text]

Q59: Overall, what are the gaps and challenges in your TVET system that will need to be addressed to support the transition to a green economy (and that are not already being addressed)? [free text]

Q60: What support does your TVET system need to help accelerate the transition to a green economy? What action or changes would you like to see? [free text]

Appendix 2 Pilot Comparative Analysis Tool

Pre-questions

Q01: Which of the following categories best describes your organisation?
- Government representative
    - Ministry responsible for TVET or related agency
    - Labour Ministry or related agency
    - Environment Ministry or related agency
    - Other Ministry or related agency
- Employer
    - Large employer (more than 250 employees)
    - Small or Medium Sized employer (1 – 249 employees)
    - Employer representative organisation (e.g. sector association)
- TVET provider
    - Public institution
    - Private institution (for profit)
    - Other provider
- None of the above

Q02: For employers, please indicate your sector.

Policy coherence and vision

A government that is committed to moving towards a green economy has defined supporting national priorities, policies with clear objectives, and monitors its progress. This section asks you to reflect upon the extent to which your government is moving towards a green economy.

	Yes	To some extent	No	Don't know
Q03: Is there strong evidence that greening of the economy[1] is a priority for government?				
Q04: Does government have a clear strategy for greening the economy and ensuring a 'just transition'?[2]				
Q05: Is the strategy effectively implemented?				
Q06: Does the government monitor, assess, and communicate the strategy and goals?				
Q07: there evidence that government has a good understanding of the role that TVET can play in supporting the greening of the economy?				
Q08: Does government have a vision or plan for how TVET can help move towards a green economy?				
Q09: Does government monitor, assess, and communicate this plan?				

	Yes	To some extent	No	Don't know
Q10: Are there clear linkages between the government's TVET policy and environmental policies and programmes?				
Q11: Are there clear linkages between the government's TVET policy and industrial policy?[3]				

Q12: Please provide examples, further information, or comments about your government's approach to greening the economy, including:

- mechanisms to ensure join-up with other ministries responsible for environmental, industrial, and sectoral policies and programmes.

- linkages between TVET and environmental / industrial policy.

Labour market intelligence & skills anticipation

This section focuses on the extent to which you think your organisation understands changes in the labour market that are likely to occur due to greening the economy. Changes include reskilling and upskilling existing jobs and new jobs that emerge from new technology.

Q13: How is data on future skills demand from skills anticipation being used? (select all that apply)

- to inform policy development and funding

- to inform sector planning and funding

- to inform design and implementation of training

- to inform planning by businesses/employers

- to inform careers information, advice, and guidance for citizens

- other [free text]

	Yes	To some extent	No	Don't know
Q14: Do you have a good understanding of which new jobs are likely to be created in your country's economy due to the green transition?				
Q15: Do you have a good understanding of which jobs are likely to be eliminated in your country's economy due to the green transition?				
Q16: Do you have a good understanding of which existing jobs will change due to the green transition and how?				
Q17: Do you have a good understanding of the main skill gaps in your country's economy?				

	Yes	To some extent	No	Don't know
Q18: Do you agree with the following statements:				

	Yes	To some extent	No	Don't know
Government has a good understanding of how greening will impact future skills needs in the economy.				
TVET providers have a good understanding of how greening will impact future skills needs in the economy.				
Employers have a good understanding of how greening will impact their future skills needs.				
Does the government have processes in place to engage TVET providers and employers in anticipating skill needs due to greening?				
These processes known and monitored?				

Q19: Please provide examples, further information, or comments about the data/research (and sources) your organisation uses to understand how the green transition will impact skill needs in your country. [free text]

Employer engagement

This section of the tool asks questions about employer engagement with your TVET system. Since greening has implications most of the workforce, please answer these questions thinking about all employers, not just those who will be most intensely impacted or those directly involved in the green sector.

	Yes	To some extent	No	Don't know
Q20: Does the TVET system have a clear, functional mechanism for facilitating engagement with employers on transition to a green economy?				
Q21: Are there efforts to improve employer understanding of the relevance of new skills for the green economy?				
Q22: Do engagement efforts with employers on green skills and the green economy include the informal sector?				
Q23: Is there evidence of employers supporting at-risk employees (whose jobs will be impacted through the green transition) to develop their skills and adaptability (e.g. through on-the-job training and access to short-form TVET)?				
Q24: Does the TVET system provide employers with incentives to facilitate training support for at-risk employees?				
Q25: Are there mechanisms in place enabling employers to share developments in industrial practice (e.g. new green technologies) with TVET providers, thus informing ongoing curriculum review, teaching, and learning?				
Q26: Are employers involved in the governance of TVET institutions?				
Q27: Do employers regularly share perspectives and insights on their future green skills requirements?				
Q28: Are employers involved in the development of the TVET curriculum and TVET training programmes?				

	Yes	To some extent	No	Don't know
Q29: Do employers regularly contribute to the delivery of TVET training?				
Q30: Do employers regularly provide internship or apprenticeship opportunities for TVET learners or TVET graduates?				

Q31: Are there other examples of engagement with employers on greening the economy that you'd like to highlight? Or national/organisational strategies guiding employer engagement? Please provide any comments or links to any national/organisational strategy documents guiding employer engagement, or case examples of where and how this is taking place. [free text]

Curriculum and assessment

	Yes	To some extent	No	Don't know
Q32: Are there processes in place that allow for the curriculum to be reviewed and updated quickly in response to new skills requirements?				
Q33: Have new TVET curricula been developed for new occupations related to the green economy?				
Q34: Has the TVET curriculum related to mid-green occupations been updated to embed new knowledge and skills required to enable the use of new green technologies and approaches? ('mid- green' - occupations in which the core elements will remain the same, but new knowledge is likely to be required)				
Q35: Does the general curriculum for TVET learners include opportunities to continue to develop foundational skills such as literacy and numeracy?				
Q36: Do the assessment methods used in the TVET sector provide an opportunity to judge learners' foundational skills?				
Q37: Does the general curriculum for TVET learners include opportunities to continue to develop transversal skills (non-technical, soft skills) such as critical thinking, problem solving, leadership and communication skills?				
Q38: Do the assessment methods used in the TVET sector provide an opportunity to judge learners' transversal skills (non-technical, soft skills)?				
Q39: Does the general curriculum for TVET learners include opportunities to develop environmental awareness, and an understanding of the fundamental elements of the green economy?				
Q40: Do the assessment methods used in the TVET sector provide an opportunity to judge learners' environmental awareness, and their understanding of the fundamental elements of the green economy?				
Q41: Have TVET qualifications been updated to reflect changes in the curriculum and skills demand?				

	Yes	To some extent	No	Don't know
Q42: Are there mechanisms in place that allow providers to assess and accredit the skills of experienced workers looking to retrain?				

Q43: What challenges have you faced in revising curriculum and assessment methods to respond to new skill demands? [free text]

Student engagement and support

	Yes	To some extent	No	Don't know
Q44: Are there targeted efforts to increase public awareness of the opportunities that green skills offer? (for example among potential learners and the existing workforce)				
Q45: Does the TVET system have a mechanism for identifying barriers for existing workforce to reskill/upskill and new entrants to enrol in courses on green skills?				
Q46: Does the TVET system have a proactive approach to reducing these barriers?				
Q47: Does the TVET system enable TVET providers to provide modular, flexible, and short-duration training for at-risk workers and others?				
Q48: Are there processes to help those giving career guidance understand the new opportunities and skills needed by the green transition?				
Q49: Do career guidance materials include information on these opportunities and required skills?				
Q50: Is there evidence of effective graduate monitoring mechanisms being used across TVET institutions (e.g. tracer studies)?				
Q51: Does the monitoring mechanism measure student employment rates?				
Q52: Does the mechanism monitor the types of jobs graduates get?				
Q53: Does the monitoring mechanism measure the extent to which learners have used green skills and competences acquired in their education/training?				

Q54: Please provide examples, further information, or comments about initiatives, barriers, enablers for student engagement and support.

Institutional strengthening and TVET workforce development

	Yes	To some extent	No	Don't know
Q55: Do the TVET system's initial teacher training and continuing professional development programmes include				

	Yes	To some extent	No	Don't know
content on environmental awareness and the green economy?				
Q56: Do TVET staff in relevant disciplines have opportunities to undertake continuous professional development on how greening the economy impacts their discipline?				
Q57: Do TVET institutions effectively support staff in the adoption/uptake of the knowledge acquired during training?				
Q58: Does the TVET system give TVET providers sufficient capacity and flexibility to be able to respond swiftly to changing demands for skills?				

Q59: Please provide examples, further information, or comments about activities that strengthen or develop the capacity of the workforce and institutions in relation to the green transition. [free text]

Financing

Q60: What financing and funding (if any) is available to support young people and new entrants to the labour market to develop the skills required to find employment in the green economy? [free text]

Q61: What financing and funding is available (if any) to support the re-training of at-risk workers, whose jobs will be impacted through the green transition? [free text]

Q62: What financing and funding is available (if any) to support organisational change required in the TVET sector to respond to new demands of green transition? [free text]

	Yes	To some extent	No	Don't know
Q63: Do you think there is sufficient financing and funding available in your country (from all sources including government, employers, citizens (where appropriate), and international sources) to cover organisational change required in the TVET sector				
Q64: Do you think there is sufficient financing and funding available in your country (from all sources including government, employers, citizens (where appropriate), and international sources) to cover re-training at-risk workers for green jobs?				
Q65: Do you think there is sufficient financing and funding available in your country (from all sources including government, employers, citizens (where appropriate), and international sources) to cover the costs of delivering training required for new green economy employment?				

Q66: In what ways are employers and other private sector stakeholders contributing to the cost of skills development for green jobs? [free text]

	Yes	To some extent	No	Don't know
Q67: Do TVET funding allocation systems take into account changes in skills and occupations needed due to the green transition?				

Q68: If you responded "yes" or "to some extent", – please provide details.

Q69: Please provide examples, further information, or comments about employers or other private sector partners contributing financially to the cost of skills development for green jobs. [free text]

	Yes	To some extent	No	Don't know
Q70: Is there a quality assurance mechanism on the performance of the TVET system in your country?				
Q71: If your country has a strategy for greening the economy, is there a mechanism for monitoring and evaluating the TVET system against the agreed objectives?				
Q72: Is there a mechanism for sharing information on the results derived from quality assurance, outcomes, and impact monitoring to stakeholders in the TVET system?				
Q73: Is there evidence that the learning from outcomes and impact monitoring affects and drives change in the TVET system?				

Q74: Please provide examples, further information, or comments of how monitoring and evaluation has been used to positively contribute to TVET system change in the context of green economy. [free text + upload]

General questions
Q75: Overall, what are the strengths of your TVET system that will help your country transition to a green economy? [free text]

Q76: Overall, what are the gaps and challenges in your TVET system that will need to be addressed to support the transition to a green economy (and that are not already being addressed)? [free text]

Q77: What support does your TVET system need to help accelerate the transition to a green economy? What action or changes would you like to see? [free text]

Q78: Are there any other points you wish to share with the research team and British Council that have not been covered elsewhere in this tool? [free text]

Q79: Are you happy to be contacted to further discuss or clarify your responses to this survey?
[If yes - please provide your preferred email address / No]