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PRACTICAL GUIDE FOR WITED CHAPTERS AND INDIVIDUAL CHAMPIONS FOR

increasing girls' and women's participation in STEM-TVET

CAPA – ATUPA

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In partnership with

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The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies.

Acknowledgements

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The Guidelines have been compiled by Ms. Sarah Meath based on desk research, data collected from TVET colleagues, and regular feedback from the Advisory Group established for the CAWS project: Mrs. Jahou S. Faal, Dr. Consolata Mutisya, Mrs. Conceptor N Bamusi, Dr. Adaku Achilike, Ms. Mildred Terry, Prof. (Mrs.) Smile Dzisi.

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List of Abbreviations

AU	African Union
CAPA-ATUPA	(Commonwealth) Association of Technical Universities in Africa
COL	Commonwealth of Learning
CAWS WITED	COL ATUPA Women in STEM
GDP	Gross Domestic Product
ILO	International Labour Organisation
NGO	Non- government Organisation
STEM	Science, technology, engineering, and mathematics
TVET	Technical vocational education training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-UNEVOC	International Centre for Technical and Vocational Education and Training
WITED	Women in Technical Education and Development

There is a Glossary of Gender Terms at the end of this document before the Annex.

Executive Summary

What is the 'CAWS WITED Project'?

The Commonwealth of Learning (COL) and the Commonwealth Association of Technical Universities and Polytechnics in Africa (CAPA ATUPA) are working together on a project to increase girls and women's participation in science, technology, engineering and mathematics (STEM) technical and vocational education and training (TVET). The main group involved from CAPA ATUPA is the Women in Technical Education and Development (WITED) Chapters. The project title is called the COL ATUPA Women in STEM TVET WITED project – abbreviated to CAWS WITED.

The aim of the project is to strengthen the capacity of WITED Chapters and individual champions in TVET institutions to assess, deliver and monitor actions with the aim of increasing girls and women's participation in STEM-TVET, and reducing the complex influences of societal, cultural, and economic reasons that impede girls and women's participation in STEM-TVET.

What is this Guide for?

We have developed this guide as an interactive document - you can either print it out or engage with it digitally. This guide is the first part of a two-stage project:

(1) The first stage (this guide) offers practical steps to support WITED chapters and individual champions in TVET institutions to better understand their current practice through a self-assessment toolkit (Part 2.1) and offers guidance to plan actions with the aim of increasing girls and women's participation in STEM-TVET (Part 2.3).

(2) The second stage is an online Community of Practice where WITED chapters and individual champions will share challenges, opportunities, resources and work together to plan, deliver, and evaluate actions in seven key areas.

How has this guide been put together?

COL and CAPA ATUPA have worked together to develop this guide. COL has compiled this guide based on desk research, data collected from TVET colleagues in 76 institutions, and regular feedback, interviews and input from the CAPA ATUPA Advisory Group established for the project:

- Mrs Jahou S. Faal, Secretary General, CAPA ATUPA, Nairobi
- Dr Consolata Mutisya, PhD, Chairperson WITED Kenya, Nairobi
- Mrs Conceptor N Bamusi, Regional Service Centre Manager - South, TEVETA Malawi
- Dr Adaku Achilike, National Vice Coordinator, WITED-Nigeria
- Mildred Terry, Legal office, CAPA-ATUPA
- Prof. (Mrs.) Smile Dzisi, West Africa WITED Coordinator, Ghana

What is included in this Guide?

Part One gives the reasons **why** we have put this guide together. It includes a summary of relevant facts and trends, and challenges and opportunities for increasing the number of girls and women in STEM-TVET. This is followed by an overview WITED and of the CAWS WITED Project.

Part Two focuses on **how** to plan actions. It provides guidance on how to:

(1) Assess the current action in your WITED chapter or institution to identify gaps, celebrate success and gather data (part 2.1)

(2) Prioritise actions (part 2.2)

(3) Plan actions (part 2.3)

Part 1 - Overview

1.1 Girls and women in STEM-TVET

1.1a What are we talking about when we say 'STEM'?

According to UNESCO (2017)[1], the following three areas, and sub-areas, are included in the field of STEM (science, technology, engineering, mathematics):

(1) Natural sciences, mathematics and statistics

- Biological and related sciences e.g. Biochemistry
- Environment e.g. Natural environments and wildlife
- Physical sciences e.g. Chemistry
- Mathematics and statistics

(2) Information and communication technologies e.g. Database and network design, Software and applications development and analysis

(3) Engineering, manufacturing and construction

- Engineering and engineering trade e.g. Chemical engineering and processes, Environmental protection technology, Motor vehicles, ships and aircraft
- Manufacturing and processing e.g. Food processing, Materials, Mining and extraction
- Architecture and construction e.g. Architecture and town planning, Civil engineering

1.1b Facts and trends

The future of work is changing. Current jobs are being modified and new jobs are emerging. Many of these new jobs are in the areas of science, technology, engineering, and mathematics (STEM). These jobs are seen as key contributors toward innovation, sustainable economic growth, and social development. The role that STEM-sectors play within society is vital, yet the links between STEM, the future of work, and human capital development largely discounts the contribution of women and girls[2]. Globally, men outnumber women as students, educators, researchers, and workers in STEM fields[3]. This is also true for Africa. A recent study conducted by the African Academy of Sciences[4] found that even when women do move into STEM-related careers, very few (six per cent) hold managerial positions (Table 1). This means that valuable knowledge and human assets are underutilised.

1 UNESCO (2017) Measuring Gender Equality in Science and Engineering: the SAGA Toolkit

2 UNESCO-UNEVOC (2020) Boosting gender equality in science and technology - A challenge for TVET programmes and careers

3 UNESCO-UNESCO (2015) Towards 2030. Perspectives on Emerging Issues - Universities: increasingly global players

4 The African Academy of Science (2020) Factors which Contribute to or Inhibit Women in Science, Technology, Engineering, and Mathematics in Africa

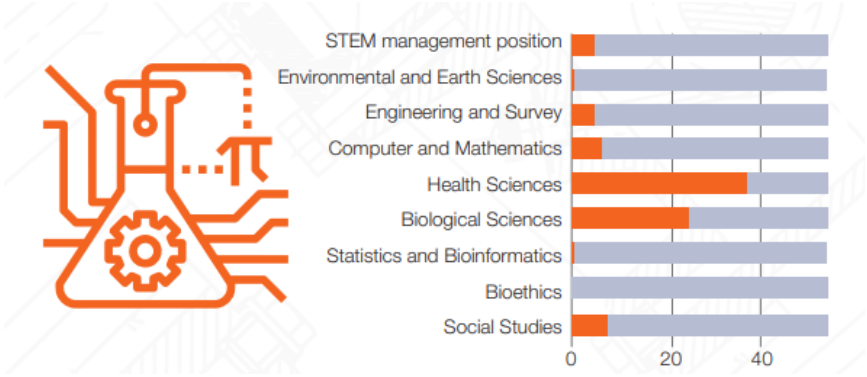


Table 1: Field of science represented by women in study (Source: The African Academy of Sciences)

Most women and girls rely on income-generating opportunities that are outside of the formal sector in jobs that are more likely to be replaced by technology and are lower-paid. Consequently, there has been an increasing determination to centralise female participation in STEM-TVET. 'Agenda 2063: The Africa we Want'[5] is the Africa Union's plan for transforming the continent into a global powerhouse. In-line with Agenda 2063, one of the four key strategies for the African Union and International Centre for Girls and Women's Education in Africa is: *"Building African Young Women's Capacity through STEM education-focused TVET in male-dominated Fields"*[6].

Building this capacity spans three stages in the TVET journey:

(1) **Recruitment or enrolment into training:** Recruitment and enrolment of women, girls, boys, and men is influenced by many different factors. For example, girls and women often choose, and are offered, gender stereotypical soft skills training and occupations e.g. tailoring, secretarial studies, cooking. This is influenced by socio-economic and cultural factors that shape girls' preference and confidence when choosing training courses. The gender gap in academic attainment is also problematic. It begins at upper primary school when girls are less likely to achieve proficiency in mathematics and science, and is even more pronounced at the secondary level. For example, in the Eswatini General Certificate of Secondary Education, 22 per cent of girls achieved a pass grade in mathematics compared to 35 per cent of boys[7]. Of the girls who complete secondary education, many lack the proficiencies in numeracy, science and digital skills to enrol or excel in STEM related programs at the tertiary education level.

(2) **Support, retainment, and completion of training**: For girls and women who do move into STEM-TVET, staying in the programmes and completing them remains challenging. A recent study in Kenya[8] found that 51 per cent of study participants 'strongly agreed' that there is a significant drop-out trend amongst girls and women in STEM-TVET (compared to male students). The study identified two important elements to build a strong and supportive environment for girls and women: (1) Setting the right policies and practices; (2) Training colleagues to understand gender inclusive practices and putting them into action. For example, the presence of a gender policy.

5 African Union (2013) Agenda 2063: The Africa We Want Overview

6 African Union (2018) Progress Report of the African Union/International Centre for Girls and Women's Education in Africa (AU/CIEFFA) towards Promoting Girls' and Women's Education in Africa (2018-2019)

7 WeForum (2021) Why we need more girls in Africa in STEM - and how to get them there

8 Were, C. (2020) Factors Influencing the retention of girls and women students in STEM courses at the Technical University of Kenya

(3) Transitioning into STEM-related careers: Existing data shows that globally, there is a "leaky pipeline" between girls and women moving from STEM training into STEM-related careers, and sub-Saharan Africa is no different. In a survey of 2000 graduates in Tanzania[9], girls and women reported having considerable difficulty utilising their occupational knowledge and skills in the formal sector compared to men. Even when skilled trades women move into self-employment, gender issues remain. In Ghana[10] female owners of micro, small and medium enterprises in STEM-sectors were constrained by lack of confidence in their skills from their community, lack of capital, inadequate equipment and machinery, and inadequate training.

While changes are slowly occurring across the continent, there is still some way to go. For women and girls to equally contribute toward development and innovation, it is vital to identify the factors that prevent them from pursuing training opportunities and careers in STEM.

The next section explores these factors across three levels: personal, institutional, and societal.

1.1c Challenges: Where, when, and how does exclusion happen?

This section summarizes where, when, and how exclusion happens at the different stages of STEM-training and employment across three different levels: the personal level (individual student and family/ peers), the institutional level (TVET institutions and labour market organizations), and the societal level (society). The below diagram (Figure 1) is taken from the UNESCO-UNEVOC (2020) Report[11] and gives a brief overview of factors that influence girls and women's participation, achievement, and progression in STEM-related TVET.

9 Bennell, P., Mukyanuzi, F., Kasogela, M., Mutashubirwa, F., & Klim, M. (2006). Artisan training and employment outcomes in Tanzania. Compare: A Journal of Comparative and International Education.

10 Asare, R., Akuffobea, M., Quaye, W., & Atta-Antwi, K. (2015) Characteristics of micro, small and medium enterprises in Ghana: Gender and implications for economic growth. African Journal of Science, Technology, Innovation and Development

11 UNESCO-UNEVOC (2020) ibid

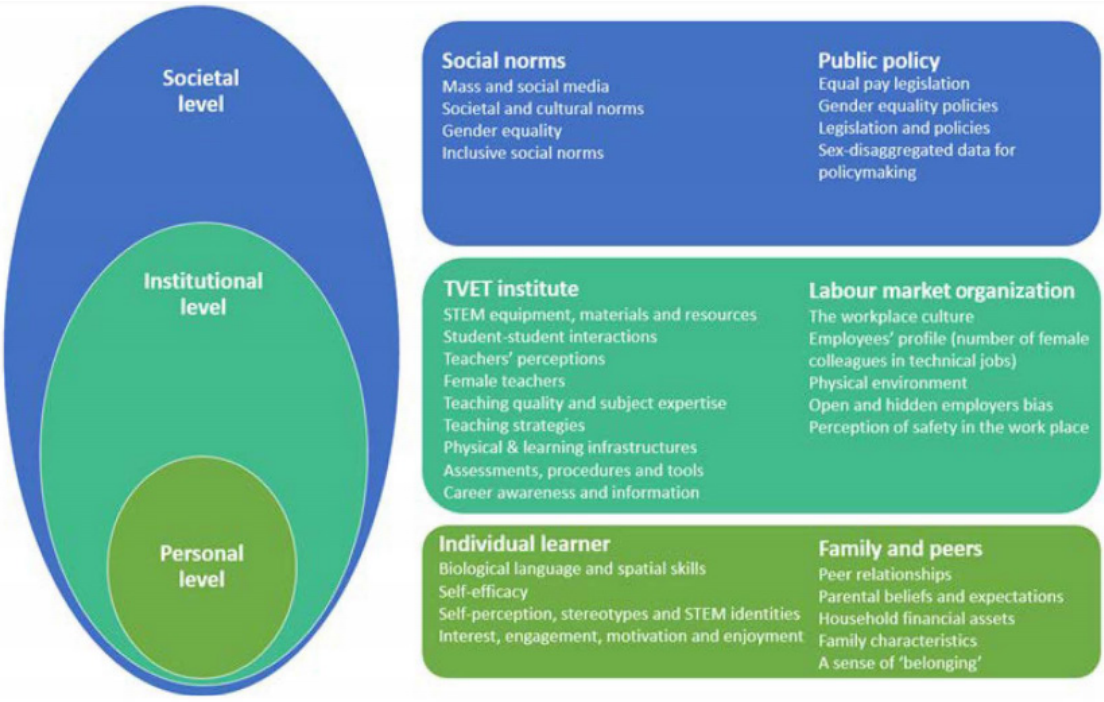


Figure 1: Overview of factors influencing girls and women's participation in STEM-TVET (Source: UNESCO-UNEVOC, 2020)

The table below expands further on these factors. These are summarised from the UNESCO-UNEVOC (2020) Report.

Societal Level

On the societal level, social norms and public policies affect the participation and achievement of girls and women in STEM-TVET. Social norms that result in unequal access to educational opportunities, early marriage rates among young women, and responsibilities for unpaid care and housework are some of the factors that contribute toward gender disparity in STEM-TVET. These are often the result of biased gender norms, a lack of information about opportunities in male-dominated sectors, psychosocial factors and limited role model and networks. The idea that STEM-TVET needs a high-level of physical strength is also a factor. It is not clear, however, whether girls and women really do struggle with the physical demands involved in some STEM-related TVET occupations or whether this is an example of a gender stereotype.

Institutional level: TVET Institute

TVET institutional-level factors are significant in girls' participation and achievement in STEM-TVET. These include the factors highlighted above, as well as the following:

- **Gender stereotyping within the training environment:** Teachers and trainers play an important role in both perpetuating and challenging gender stereotypes. For example, evidence shows that when women and girls act in more masculine ways in the classroom, they are less likely to be discriminated against – and when they act in more feminine ways, they are more likely to be discriminated against. The way that teachers and trainers act in the learning environment sets the tone for the class.
- **A lack of career awareness and information:** Career awareness and quality career information in STEM areas is crucial for both female and male students. Female students often have fewer STEM-role models and are less aware of the content of STEM fields of study and careers. Career guidance, coaching and mentorships in STEM-TVET can support girls to develop realistic and attractive images of STEM careers, make well-informed choices, and discuss how to overcome gender-specific challenges in their educational journey.
- **The gender-friendliness of infrastructure:** Curricula, learning materials and access to equipment play an important role in promoting girls' engagement in STEM and sense of belonging. Textbooks often fail to show female STEM professionals or portray women in subordinate roles, and the gender-friendliness of infrastructure also plays a key role in the experience of girls and women (e.g. PPE equipment in female sizes, the ability to adjust machines for different body sizes).

Institutional level: Labour market organizations

Labour market organizations: The level of gender-friendliness of organisations offering internships and placements plays an important role in the well-being and acceptance of girls and women in STEM-related employment. There are specific effects that influence the participation and performance of girls and women in STEM training and jobs including:

- **A lack of female colleagues in the workplace:** Girls and young women gain their first experiences with work during internships, and gender stereotyped or sexist environments (e.g. sexual harassment at work, a lack of female representation in advertising, the use of gendered language to describe occupations) that lead to negative experiences will result in a decreased interest and participation in future opportunities. A recent study[12] found that in a company where more than three women worked in a technical function, there was a positive influence on the workplace culture and on the feeling of safety of female interns.
- **An unsafe environment challenges girls and women's participation:** The remoteness of technical/industrial plants and related transport issues, as well as inappropriate sanitary facilities and the lack of female supervisors for students may have an equal (if not greater) impact than similar issues in the training environment as students are more vulnerable. In addition, of people experiencing sexual harassment, many chose not to report it due to fear of reprisal or reputational damage.

Personal level: Individual student

- **Biological factors.** Girls and women sometimes have an internal belief that biological factors will determine their success in STEM-TVET programs. However, research[13] that analysed the performance of male and female participants in STEM-TVET assignments clearly showed that there are no gender differences in performance.
- **Psychological factors.** Psychological factors can influence males and females interest and abilities in STEM subjects. For example, there is misinformation about the value of STEM-TVET and the opportunities that it presents and misunderstanding about the working conditions in STEM-related careers. This seems to impact the choice of students and drive them toward gender-stereotyped professions.

Personal level: Family and peers

- **Influence on girls' sense of belonging.** Beliefs, expectations and norms among family and peers influence the choices that girls and women make in pursuing (or not pursuing) STEM-TVET. Peers and family will let young women know that it is not appropriate to be in a male-dominated classroom. Exposure to high-performing female peers in STEM subjects has proven to increase the likelihood of girls and women choosing STEM-TVET and increases girls' sense of belonging.
- **Family expectations of gender roles**: In many societies, women are regarded as the ones who care for the home and family. This means that families sometimes provide more support to boys and men in pursuing education. Parental attitudes are shaped by lack of information and misinformation about the 'appropriateness' of STEM-TVET for girls, and what courses entail, which drives girls and women away from STEM-TVET.
- **Financial effects on girls' participation in STEM-related TVET:** This can work in two ways: the first is that families do not believe the perceived cost of sending a girl through STEM-TVET will have a strong financial return. The second, is where families do understand the financial returns that STEM-related employment bring, and positively encourage girls and women to pursue STEM-TVET.

12 Vhto (2019) More girls in MBO Technology
13 Beking, T (2018) Two sides to every story. Sex hormones, brain lateralization and gender development

1.1d Opportunities: The benefits of including girls and women in STEM-TVET

The loudest message coming out of Africa is that inclusion can be achieved. In the past ten years, Africa has implemented the most reforms promoting gender equality of any region globally (71 in total)[14]. While this may reflect a wider gap to being with, it shows the commitment and drive of the continent to make change. Governments are strengthening their political understanding around the benefits of including women for sustainable economic growth and promoting an active and socially cohesive society. The inclusion of girls' and women in STEM-TVET is starting to be seen as a key contributor toward poverty alleviation, better social cohesion, increased political stability and a more efficient use of human capacity. McKinsey Global Institute (MGI)[15] reported that Africa could add $316 billion to its GDP (the equivalent of 10 per cent) by 2025 if every country improved its gender parity score - a key element of which is women's productive involvement in the labour market.

Inclusion in STEM-TVET and STEM-related employment goes far beyond benefitting the individual and their family. Employers need the best talent available, regardless of gender. Despite a general belief that hiring people from under-represented social groups does not benefit employers, there is evidence that it does. According to 'Women Count' (2019), companies with 25 per cent or more women on their executive committees achieved a much higher return on profit (up to 16per cent more) than businesses that were made up only of male executives. Employers benefit from recruiting more diverse applicants because diverse employees are more likely to bring innovative ideas based on their understanding of the needs of a broader range of consumers.

By 2030, between 40 million and 160 million women will need to transition between occupations[16]. This will probably be into more skilled roles requiring complex digital, cognitive, social, and emotional skills. If girls and women do not navigate these transitions successfully, they will lose more productive and better-paid work opportunities. This means less income for individuals and families, a larger burden on the national social security system and a less productive and less competitive economy. In a world where scientific and technological solutions are desperately needed, excluding half of the world's talent limits opportunities and growth for everyone.

The next section provides guidance on how you, your institution and your communities can contribute toward increasing the number of girls and women enrolling and completing STEM-TVET, and moving into STEM-related careers.

14 World Bank (2019) Women, Business and the Law
15 McKinsey Global Institute (2019) The power of parity: Advancing women's equality in Africa
16 World Bank (2019) Women, Business and the Law

1.2 WITED
(Women in Technical Education and Development)

1.2a WITED Background

In 1988, the Commonwealth Association of Polytechnics in Africa (CAPA, now CAPA-ATUPA) partnered with the International Labour Organisation (ILO) to establish the "Women in Technical Education" (WITED) pilot project. The project was split into two phases: the first phase included an action-research activity in fifteen countries across Southern/Central, Eastern and Western Africa. The research findings informed the second phase, which started in 1991, and included activities with the overall goal of increasing the number of girls and women enrolled in TVET programmes and promoting their employment in the labour market[17]. The International Labour Organisation funded the initial pilot phase, and CAPA incorporated the recommendations into the 1992 – 1997 Five-year action plan. WITED Chapters were formed in several CAPA member institutions to implement recommendations. The original ILO/CAPA research in 1991 recommended four main areas of focus for WITED including (see Annex 1 for full details):

(1) The implementation of national policies

(2) Scholarships for girls and women

(3) Stronger relationships between TVET institutions and primary and secondary schools, and industry

(4) Setting quotas for female enrolment and completion of programmes.

Since 1991, WITED Chapters have either operated independently, or have slowed activity completely. Some WITED Chapters have moved forward with affirmative action between governments, institutions, and non-governmental agencies which has resulted in small pockets of activity. For example, in Nigeria, WITED Chapters have organised regular annual conferences and have formed the 'International Journal of Women in Technical Education and Employment' at the Federal Polytechnic Ilaro[18]. In 2019, the CAPA-ATUPA Secretary General discussed the revival of WITED with TVET representatives and the Commonwealth of Learning. COL has since played an instrumental part in the revival of WITED and has partnered with CAPA-ATUPA to develop the CAWS WITED Project.

1.2b WITED challenges and opportunities

WITED chapters represent a body of qualified and experienced TVET trainers who are active and working in their institutions, communities, and industries. In several countries, WITED chapters are well-integrated into national systems, knowledgeable of complex and intersecting social, political, and economic dynamics and can leverage influence and support. Established WITED structures consist of national executive committees (at country level) and institutional chapters (at institution level). Some national committees have individual constitutions which provide guidelines for their WITED chapter. However, this is not a consistent picture across the continent. A recent study[19] found that between 2013 – 2018, most respondents from a TVET institute reported that the WITED programme was 'weak' or 'moderately weak'.

When WITED chapters are unsupported, they present an under-utilised opportunity for increasing female participation in STEM-TVET. In view of this, the Commonwealth of Learning and CAPA-ATUPA commissioned a review of WITED to identify the

17 Leigh-Doyle, S. (1992) Increasing women in Technical Fields. A Pilot Project in Africa. Training Discussion Paper No. 90. International Labour Organisation

18 International Journal of Women in Technical Education and Employment, Federal Polytechnic Ilaro, Nigeria

19 Najoli, E. K. (2018) The Effectiveness of Wited Programme on Enrollment of Women in Technical and Vocational Education and Training (TVET)

current needs of the WITED Chapters. These needs included:

- More effective sharing of knowledge, good practice and resources across WITED Chapters
- More effective processes for systematic monitoring, evaluating and capturing impact of activity
- Increased expertise in planning, funding, delivering, and monitoring gender interventions for WITED Chapter champions.

There is also a clear and identified need for effective resourcing of WITED Chapters to safe-guard regular and impactful activity across the continent.

1.2c WITED and the CAWS WITED Project

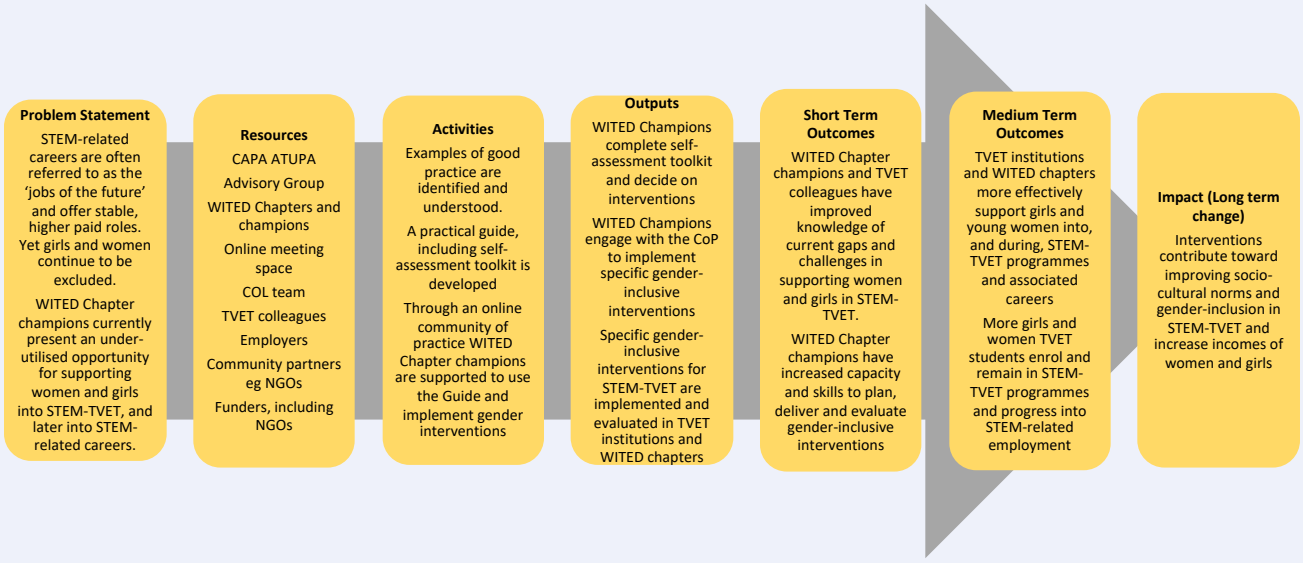
Since 1991, the overall goal of WITED has largely remained the same. That is, to increase the number of girls and women enrolled in TVET programmes and promote their employment in the labour market. WITED recognises, and aims to reduce, the complex influences of societal, cultural, and economic reasons that impede girls and women participating in TVET, with a particular focus on STEM programmes. The specific objectives of WITED include:

- Increase girls and women's enrolment in all training programmes in TVET institutions
- Promote equity in education and training
- Empower girls and women with skills that are necessary for economic development, which would consequently improve the quality of their livelihoods.

In 2021, CAPA-ATUPA and COL have committed to supporting WITED chapters and individual champions to revive activity and work together in a continent-wide network to increase the number of girls and women in STEM-TVET programmes and transitioning into STEM-related careers. This new initiative, the 'CAWS WITED Project', will be supported by a technical Advisory Group and aims to build on existing knowledge and strengthen the capacity of WITED chapters and individual champions in TVET institutions. This guide is the first of two stages for the project:

(1) The first stage (this guide) offers practical steps to support WITED chapters and individual champions in TVET institutions to better understand their current practice through a self-assessment toolkit (Part 2.1) and offers guidance to plan actions with the aim of increasing girls and women's participation in STEM-TVET (Part 2.3).

Table 2: CAWS WITED Project- Shortened Theory of Change



(2) The second stage is an online Community of Practice where WITED chapters and individual champions will share challenges, opportunities, resources and work together to plan, deliver, and evaluate actions in seven key areas.

Below is the Theory of Change for the CAWS WITED Project (Table 2) (see Annex 8 for full Theory of Change):

1.2d Rapid Data Collection Findings

The Commonwealth of Learning has compiled this guide based on desk research, data collected from 76 TVET colleagues, data collected from one-to-one interviews, and regular feedback with the CAPA-ATUPA Advisory group. Primary and secondary data was compiled to identify seven key focus areas for increasing participation of girls and women in STEM-TVET. These focus areas were agreed and are outlined in 'Part 2.3 Planning Actions'. Table 3 and Table 4 (below) give an overview of some responses received from TVET institutions.

Table 3: Number of institutional responses from STEM-WITED colleague survey (by gender)

Total number of responses	76
Total number of female responses	38
Total number of male responses	36

Table 4: Overview of institutional responses from STEM-WITED colleague survey

Question	Responses
How does your institution currently support girls and women in STEM-TVET?	Five activities with the **most** responses: • It has career advisors that support girls and women into STEM careers • It has a Gender Policy • It includes women and men when planning and delivering gender inclusive projects • It has a Gender Committee • It does community campaigns that encourage families to enrol girls and women in STEM-TVET
Which two activities would you like your institution to start doing, or get better at doing, to support girls and women in STEM-TVET?	Five activities with the **most** responses: • Create a WITED Chapter • Apply for funding to support gender inclusive projects • Develop a Gender Policy • Do community campaigns to encourage families to enrol girls in STEM-TVET • Do STEM-TVET open days for girls from local schools
How does your institution currently support girls and women in STEM-TVET?	Five activities with the **least** responses: • It is connected to local STEM-related employers to support girls and women into jobs (73 / 76 do not currently do this) • It matches girls in STEM-TVET with girls and womens in their industry for coaching (73 / 76 do not currently do this) • It offers discounted fees or scholarships for girls and women STEM-TVET students (72/ 76 do not currently do this) • It has girls and women-only clubs for girls to discuss challenges (71/ 76 do not currently do this) • It has successfully applied for funding to support gender inclusive projects (70 out of 76 do not currently do this)

Part 2 – Self- assessment, Prioritising actions, and Planning actions

2.1: Self-assessment

What is this self-assessment for? This section provides two self-assessment tools that will guide you to better understand, and review, what your institution and WITED chapter currently does to support girls and women in accessing and completing STEM-TVET and moving into STEM-related careers. There are two self-assessment tools:

- Institution – This is for WITED chapters and individual champions in TVET institutions to complete with institution colleagues
- WITED Chapter – This is for existing WITED chapter members

The aim of these self-assessment tools is to:

- Identify gaps and challenges
- Celebrate successes
- Act as a baselines for the project
- Gather data and information
- Use as a resource to prioritise and plan actions for your institution and WITED chapter

ACTION

After completing the self-assessment, set a date for prioritising what action your institution wants to take. The same committee should be present for this meeting. Follow the steps outlined in Section 2.2 below.

2.1a Self-Assessment for your institution

Who should complete this self-assessment? A range of individuals, as agreed by management. This could include, for example: board members, management, deans, sectional heads and coordinators, WITED representatives, gender or inclusion committee representatives, teaching staff, administrators, student leaders, representatives from the community and local industry.

What is included in this self-assessment? This self-assessment tool has seven short sections. It asks about your current activities, and asks for data from your institution. Where available, data should be obtained from official documentation. This is important information for your institution to use as a starting point, and to review progress. Answer each question and total your number of 'yes', 'no' and 'unsure' answers at the end of each box.

How long will it take? If the data is available, it should take about 45 minutes to complete.

ACTION

- Write to the senior management of the institution and request for support putting together a committee to complete the self-assessment tool. This committee should include a range of individuals, for example: board members, management, deans, sectional heads and coordinators, WITED representatives, gender or inclusion committee representatives, teaching staff, administrators, student leaders, representatives from the community and local industry. A senior leader should be present. Work together to complete these steps.
- If applicable, communicate with your WITED Chapter and request a meeting to complete the self-assessment tool.

Governance and Policy			
Does your country have a policy or strategy on inclusive TVET?	Yes	No	Unsure
Does your institution have a written and approved Gender Policy?	Yes	No	Unsure
Do gender equality initiatives in your institution have their own sufficient budget?	Yes	No	Unsure
Totals	Yes	No	Unsure
Selection and enrolment			
Number of students enrolled in STEM-TVET this year:	Male:	Female:	
Does your institution directly support girls and women to enrol in STEM-TVET? (e.g scholarships, discounts)	Yes	No	Unsure
If yes, does your local community know about these support measures for girls and women?	Yes	No	Unsure
Does your institution work with the local community to support girls and women to enrol in STEM-TVET? (e.g. sensitisation campaigns)	Yes	No	Unsure
Totals	Yes	No	Unsure

Management and Leadership			
Number of colleagues in management positions:	Male:	Female:	
Number of discrimination, bullying or abuse incidences reported in the past 2 years: (leave blank if unknown)			
Does your institution have an equal number of males and females in management positions?	Yes	No	Unsure
Are proactive measures taken to recruit or promote women into management positions?	Yes	No	Unsure
Does your institution have a clear system for colleagues to report discrimination, bullying or abuse?	Yes	No	Unsure
Totals	Yes	No	Unsure
Attendance and drop-outs			
Number of students who passed STEM-TVET assessments this year:	Male:	Female:	
Number of students dropping out of STEM-TVET courses this year:	Male:	Female:	
Average attendance rate (per cent) for STEM-TVET:	Male:	Female:	
Does your institution document the reasons for drop-out?	Yes	No	Unsure
Is there a person or division responsible for gender issues in your institution?	Yes	No	Unsure
Do students report discrimination, bullying or sexual harassment?	Yes	No	Unsure
Totals	Yes	No	Unsure
Learning environment			
Number of colleagues in STEM-TVET teaching and technical roles:	Male:	Female:	
Do STEM-TVET trainers have the necessary knowledge, skills and attitudes to carry out their teaching with gender awareness? (e.g. ensuring female representation in classroom resources)	Yes	No	Unsure
Do girls and women have access to female bathrooms in STEM departments?	Yes	No	Unsure
Do girls and women have access to Personal Protective Equipment in female sizes?	Yes	No	Unsure
Totals	Yes	No	Unsure
Transitioning into work			
Number of graduates from the past 2 years working in STEM-related employment:	Male:	Female:	
Number of students who completed their attachment this year:	Male:	Female:	
Number of industry partners who have rejected a female on placement in the past 5 years: (formally or informally)	Male:	Female:	
Number of discrimination, bullying or sexual harassment incidences reported in the past 2 years on attachment: (leave blank if unknown)	Male:	Female:	
Does your institution invite women from industry to encourage girls and women in STEM-TVET? (e.g. career/ graduation talks)	Yes	No	Unsure
Does your institution trace graduates once they have moved into employment?	Yes	No	Unsure
Does your institution ensure that all girls and women in STEM-TVET are placed in a meaningful attachment?	Yes	No	Unsure
Totals	Yes	No	Unsure

2.1b Self-assessment for your WITED Chapter

Who should complete this self-assessment? WITED Chapter members. This will act *only* as a baseline for your WITED Chapter.

Statement				
Our WITED chapter has an agreed constitution	Yes		No	
Our WITED chapter has a strategic plan	Yes		No	
Our WITED chapter has secured funding in the past	Yes		No	
Our WITED chapter has a Monitoring and Evaluation plan	Yes		No	
Our WITED chapter has influenced policy or processes in our institution, community, or country	Yes		No	
Our WITED chapter effectively makes changes for girls and women in STEM-TVET	Not at all	A little	A lot	Yes, completely
We feel confident planning and delivering a gender equality project	Not at all	A little	A lot	Yes, completely
We feel confident finding and applying to funding sources for gender projects	Not at all	A little	A lot	Yes, completely
We feel confident building and implementing a Monitoring, Evaluation and Learning plan	Not at all	A little	A lot	Yes, completely
We feel confident negotiating and lobbying at community, institutional and government levels	Not at all	A little	A lot	Yes, completely

2.2 Prioritising actions: Next steps

This section offers guidance on how to prioritise what actions your institution wants to focus on, based on your self-assessment baseline and your discussion as a team. The following six steps offer some guidance:

(1) Bring together the committee who completed the self-assessment.

(2) Write the total number of yes, no, unsure in each box below from the institutional self-assessment:

Section from self-assessment tool	Totals		
Governance and Policy	Yes	No	Unsure
Selection and enrolment	Yes	No	Unsure
Management and Leadership	Yes	No	Unsure
Attendance and drop-outs	Yes	No	Unsure
Learning environment	Yes	No	Unsure
Transitioning into work	Yes	No	Unsure

(3) Look at the difference in males and females for the 'number of' questions in the self-assessment. Recognise areas where you have equal male/female data and more 'yes' answers. These are your areas of strength and should be celebrated. They might also be areas that you want to improve.

(4) Reflect on areas where you have unequal male/girls and women data and more 'no' or 'unsure' answers. These are your areas with potential for improvement.

(5) Use the table below to rank which areas are the most important (1 – Most important, 7 – Least important). Actions have been included alongside the self-assessment areas that match those found in Part 2.3 'Planning actions'. Consider:

- Where did your institute have the most 'no' and 'unsure' answers?
- Where did your institute have the most 'yes' answers?
- Where does the committee want to prioritise action?
- Which action does the committee think will contribute the most to increase girls and women's participation in STEM-TVET in your institution?
- What strengths does the institution have that will result in the biggest impact? (e.g. strong industry partnerships, an effective counselling system)
- Where are the biggest improvements needed?
- Which actions align with your institutions strategic plan?

(6) Write to your senior management with an update on the agreed actions, and read through the guidance under your specific action in the next section to plan activity.

Sections from self-assessment tool	Rank (1 – 7)	Action
No WITED Chapter		Create a WITED Chapter
Governance and Policy		Creating a Gender Policy and encouraging commitment to the agenda
Selection and enrolment		Working with our local community on sensitisation campaigns
Management and Leadership		Increasing girls and women representation in management and leadership in STEM-TVET
Attendance and drop-outs		Creating or strengthening reporting and counselling systems
Learning environment		Creating a gender inclusive learning environment
Transitioning into work		Increasing access to STEM-related jobs and opportunities for girls and women

2.3 Planning actions

This section highlights seven key actions which align with your self-assessment answers. Each key action includes further information, and offers guidance on how to beginning implementing in your institution.

2.3a Creating a WITED Chapter

Why create a WITED chapter? After completing the self-assessment baseline, you should have a clear idea of what is needed in your institution. Creating a WITED chapter offers a pathway to meeting some of these needs by providing structure, governance, and accountability. Active and functioning WITED chapters can offer institutions the opportunity to be more inclusive, better engaged with industry and more able to meet the needs of their students, leaders, and colleagues. They offer a space to discuss and address gender equality for male and female colleagues.

Is the WITED Chapter just for girls and women? Gender includes male, female, and non-binary people, and although 'WITED' does begin with the word 'women', *it is not just for girls and women*. Male colleagues, family, friends, and students are crucial contributors to the success of WITED chapters and gender equality. For example, a project in Kenya[20] engaged adolescent boys in training that raised awareness of gendered social norms about sexual violence. One year after the project, the evaluation found that more than half of the boys successfully intervened to stop physical or sexual assault against a girl or woman in their classroom or community. When men and boys understand their own needs and the needs of their female colleagues, they can act as strong voices, role models and allies for gender equality and WITED chapters.

20 Sinclair, J; Githua, O; Omondi, B; Kapphahn, C; Sinclair, L; Mulinge, M; and Golden, N. (2013) The Impact of a Six-Week School Curriculum on Boys' Attitudes and Behaviours Related to Gender Based Violence (GBV) in Kenya

Example of good practice – WITED Kenya

Context: WITED in Kenya was not vibrant until much later after the initial 1988 regional set-up, when, in 2019, the Secretary General of CAPA-ATUPA wrote to Principals of TVET institutions across Kenya to request the revival of WITED, and the selection of Committee members to represent WITED. This was followed by a democratic election of Regional Coordinators and Representatives for the WITED National Executive Committee Kenya.

Outcome: The WITED structure in Kenya provides an organised support system to discuss challenges, celebrate successes, plan projects, communicate effectively, maintain accountability and move the agenda forward with one united voice.

Lessons learnt: (1) Management and leadership at institution and national levels need to be part of the conversation and support the agenda to make progress; **(2)** The election was coordinated by WITED members from Kenya Technical Trainers College which meant that it was easy to manage and then responsibilities were received by Regional Coordinators.

ACTION PLAN: How do you set up a WITED Chapter?

- ❑ Contact your WITED National Executive Committee (see Annex 2) and request support to set up a Chapter.
- ❑ If there is not a National Executive Committee in your country, draft a letter to the senior management team in your institution requesting support to set up a WITED Chapter (see Annex 4). This could include:
  - » The reason why you want to set up a WITED chapter
  - » Who has shown an interest
  - » Ideas that you are interested in implementing
  - » Your requests from the institution (e.g. commitment to WITED aims. You might want to include Section 1.2 from this guide)
- ❑ When you receive approval, set a date for your first WITED meeting. Request attendance from leadership. Request a copy of the WITED National Constitution (if available).
- ❑ Create an agenda for your first meeting. This could include:
  - » History of WITED
  - » WITED in your country and Constitution (if available)
  - » Reasons for setting up a WITED chapter
  - » Nomination of Secretary, Treasurer and Chair
  - » Discussion of self-assessment baseline
  - » Agreeing one key action
  - » Setting a date for your next meeting
  - » Agreeing communication platform (e.g. WhatsApp)
- ❑ Create an agenda for your second meeting. This meeting could include:
  - » Setting mission, vision and values
  - » Discussing strategic actions (see Annex 3)
  - » Developing a Monitoring and Evaluation framework (see Annex 6)

2.3b Creating a Gender Policy and encouraging commitment to the agenda

Why do we need a Gender Policy and Action Plan, and what does commitment look like?
A Gender Policy is a guiding document that recognises gender issues and proposes strategies to reduce them. A Gender Action Plan puts the Gender Policy in action. It includes specific results that are assigned to a department or individual to complete, within a specific timeframe. Gender policies show commitment to gender equality and provide one, united statement from the institution that is recognised and agreed by governing bodies. Making a policy commitment is an important step to meet (and understand) the responsibility that your institution has to human rights. It shows – internally and externally – that the institution takes its responsibilities seriously. The steps needed to develop a policy also raise awareness of gender equality. For example, the first stage of creating a Gender Policy includes consulting with colleagues about the content of the policy and reflecting on what they believe is important for the institution. When there is commitment to a policy, leadership are accountable to implementing and managing it (e.g. requesting updates and supporting financial inclusion in the budget).

What is the role of male leaders, trainers and students in the Gender Policy and Action Plan?
The gender equality policy area is traditionally dominated by women. Research shows that men find it difficult to enter the gender policy area and have genuine concerns that it is not appropriate for them to speak out about equality. Often, men experience 'imposter syndrome'. Yet, *gender equality is not equality without the contributions of everyone*. Men who listen, understand, and want to play their part make real change happen. This could be through leading by example (e.g. sharing the responsibilities of childcare, challenging sexist behaviours in the classroom or workplace, openly supporting gender projects and speaking about the role of male champions and allies).

Example of good practice – WITED Ghana

Context: WITED Ghana was launched 12 years ago with the support of CAPA (now CAPA-ATUPA). In 2015, all heads of technical universities were asked to nominate WITED representatives, and WITED committees were formed. In 2018, Koforidua Technical University (KTU) took part in a Gender Mainstreaming Audit and identified the need to develop a Gender Policy. The institution assigned the task to the policy committee, who are responsible for developing all policies for the institution. The work of the policy committee included a consultation process with stakeholders, researching best practice and a literature review. Stakeholders included management, deans, sectional heads, and coordinators, teaching staff, administrators, junior staff, and student leaders. The document was submitted to an external gender consultant for a review. In 2020, the Gender Policy was submitted to the council for approval.

Outcomes: The Gender Audit supported KTU to identify the need for a Gender Policy; The work was led by an internal policy committee who know the institution well and could ensure that the Gender Policy was aligned with other policies; Each institution in Ghana is now working toward having a Gender Policy for approval by the council.

Lessons learnt: (1) Working with males leaders to champion gender issues is very beneficial; (2) There was difficulty in reaching key stakeholders in the policy formulation process.

ACTION PLAN: How do you develop a Gender Policy?

- ❑ Contact your WITED National Executive Committee (see Annex 2) and request support to develop a Gender Policy and Action Plan. They may have a template.
- ❑ Research the policies of your institution, country, and region. These might include:
  - » National Gender Policy
  - » National TVET Policy
  - » Your institutions Strategic Plan or policies
- ❑ Write a letter to the senior management of your institution requesting support to draft a Gender Policy and Action Plan (see Annex 4). This letter could include:
  - » Highlighting how a Gender Policy and Action Plan will contribute positively toward national commitments
  - » Information about how the Gender Policy will strengthen other policies in the institution (e.g. enrolment rates)
  - » Timeline for consultation process
  - » Team who are responsible (e.g. if your institution has a Policy Committee)
- ❑ When you receive approval, those responsible can begin a consultation process. This includes speaking with different people within your institution to understand gender issues and prioritize which strategies to include in the policy
- ❑ The Gender Policy acts as a guiding document for the Action Plan, so the policy is drafted first. The Action Plan proposes specific results, assigns results to a department or individual and gives a timeline for completion.
- ❑ A draft policy should be submitted to senior management for comments, and then redrafted
- ❑ The final approved Gender Policy and Action Plan should be publicly available, sent to everyone involved in the consultation process, and to all stakeholders e.g. industry partners, TVET authorities, WITED colleagues. This shows the institutions commitment to gender equality.
- ❑ Agree meetings to regularly review the action plan (e.g. every quarter), recognise colleagues for their successes and discuss ways forward for completing actions that have not been met.

2.3c Working with your local community and industry on sensitisation campaigns

What is a sensitisation campaign, and how do you know if it has been successful? A sensitisation campaign is a planned communication activity that sends an impactful message out to grab attention and get people talking. Raising **a**wareness of gender issues amongst local industry (formal and informal), colleagues and students and their families, traditional and religious leaders and other stakeholders is a critical first step. There may be misinformation, or unawareness of what gender means and how it relates to individuals, families, and livelihoods. It is important to create a campaign that is targeted at a specific audience. You will know if it has been successful when you review if the campaign has reached the target audience, how many people it has reached, and any direct impacts (e.g. parents contact the institution about STEM-TVET courses for girls).

How do sensitisation campaigns support girls and women to enrol and complete STEM-TVET, and move into STEM-related jobs? An impactful message delivered through a sensitisation campaign leads to word-of-mouth conversations, which in turn, leads to action. Finding the right communication method and working with people who have influence in your community is key (Think about: Who do people respect and listen to in your institution, local industry, and wider community? Which messages do people most read and trust?). There are many different types of sensitisation campaigns which target different audiences e.g. campaigns targeted at families to support female enrolment, campaigns targeted at communities to support women-led technical businesses, campaigns targeted at primary school girls to encourage interest in maths and science.

Example of good practice – WITED Malawi

Context: WITED Malawi has been running gender inclusion projects since 2013. Guided and implemented by the TEVETA Regional Service Centre Managers and TVET colleagues, gender sensitization campaigns have taken many different forms. This has included:

- Choir Competitions with all-girls schools where content was provided to compose an original song and a musician supported with music and composition. Both boys and girls were invited to watch the competition. The finalist school was invited to Scotland to showcase innovation and raise awareness. Institutional managers contacted industry partners to request donations of prizes. Most companies responded positively pointing out that it was also a way for them to give back to their client by supporting girls schools.
- Inspirational talks at secondary schools where qualified STEM-TVET women speak about their lived experience of training and working in a male-dominated environment. They arrive to schools in their PPE technical equipment and boots and encourage girls and women students in ways that are accessible and recognizable to them.

Outcome: The sensitization campaigns helped to send an impactful message about women in STEM-TVET through communication methods that were accessible to their audiences. Some girls approached the role models and pointed out they wanted to be like them which is a positive declaration.

Lessons learnt: (1) Industry partners are happy to support with sensitization campaigns; (2) Girls more easily identified with inspirational speakers when they 'dressed the part' and spoke about successes that are local and relevant.

ACTION PLAN: How do we deliver a successful sensitisation campaign?

- ❑ Discuss what type of campaign might be needed – this includes who the audience are, communication methods (e.g. print, digital, word-of-mouth) and what the message is (See Annex 3)
- ❑ Write to senior leadership for support with the campaign (See Annex 4)
- ❑ Assess the resources available to you and how they can support the campaign. Consider:
  - » Expertise e.g. colleagues or students with skills in media, digital design or public speaking
  - » People of influence e.g. role models or well-respected leaders who could act as ambassadors. The best ambassadors are often people who have had a personal experience of the issue.
  - » Partners and networks e.g. connections to industry, government
  - » Finances e.g. assessing the marketing budget at your institution for a campaign, requesting support from local businesses, schools, religious groups, NGO's; or writing a funding bid (see Annex 5)
  - » Time e.g. colleagues who have time to dedicate to the campaign
- ❑ Set up a steering committee and agree the indicators of a successful campaign (See Annex 6)
- ❑ Begin to plan based on the type of campaign and the resources available. Consider:
  - » Keeping the message simple and consistent
  - » Using language that your target audience understand
  - » Using communication methods that your target audience access regularly
  - » Using hard-hitting and emotional facts, or personal case studies to get your message across
  - » Plan to repeat the message. It can take an audience multiple times to retain and act.
- ❑ Ensure that your institution can support the action behind your message (e.g. enrolling more girls in STEM-TVET means there needs to be enough spaces at your institution for girls to be accepted)
- ❑ Set a date to review the success indicators of your campaign

2.3d Increasing female representation in management and leadership in STEM-TVET

What is female representation, and why aren't females represented equally? A recent study conducted by the African Academy of Sciences found that very few women (6 per cent) hold managerial positions in STEM-related careers. Female representation is about closing this gender gap. It ensures that the different experiences of girls and women are recognised. The reasons outlined earlier in this document evidence a "leaky pipeline" for girls moving from STEM training into employment. For those who successfully progress, the requirement of leadership roles can act as barriers (e.g. balancing work against care responsibilities, obtaining the funds for further study). However, female representation is not only important for recognising the ability of girls and women in STEM-TVET but also for the effectiveness of the institution and retention of staff and students. Research[21] shows that there is a strong, positive relationship between institutional effectiveness, personnel performance and leadership that is gender-balanced.

How can male leaders and colleagues support female representation in management and leadership? STEM-TVET is traditionally male-dominated which means that it is built on male-dominated gender rules, norms, and practices. Therefore, male champions who actively support female leaders are vital to a more inclusive environment. Proactive measures by male leaders to support a female leader might include: recognising female colleagues successes, verbally supporting gender-related actions in meetings, speaking in public gender-focused events, intervening in bullying or harassment incidents, sharing career development opportunities etc.

21 Hill, C., C. Corbett, and A. St. Rose. Why So Few? Women in Science, Technology, Engineering, and Mathematics.

Example of good practice – WITED Ghana

Context: During the covid-19 pandemic, WITED Ghana organised online webinars to maintain connection and learning. In October 2020, WITED Ghana hosted its first online webinar: 'Empowering in the Pandemic: Keeping the Work-Life Balance', followed by a second in March 2021: 'Technology Innovation for Women in Academia: A paradigm shift in the covid era'. These webinars are organised through the WITED WhatsApp group, which invites proposals for topics and nominates a planning committee. Vice chancellors and guest speakers are always invited to attend and show support. The WITED WhatsApp group also acts as a space for WITED champions to share funding opportunities, scholarships, and support each other in career development.

Outcomes: Online learning opportunities encourages regular engagement with the agenda. The Whatsapp group also monitors the number of women who have published research, received funding, or progressed in their career. It acts as a support for women who previously had not felt comfortable or confident to take leadership positions and provides the space for WITED chapters to team up to support research and career progression.

Lessons learnt: (1) Adapting engagement from in-person to an online space has worked well; (2) Using an online platform is helpful for quick and easy sharing of opportunities and supporting individuals in their institutions.

ACTION PLAN: How do we increase female representation in leadership?

- ❑ Write to leadership with information highlighting the strengthens and areas for improvement in female representation in the institution. Refer to your institutional self-assessment for data. (See Annex 4)
- ❑ Contact your WITED National Executive Committee (details in Annex 2) and request support or ideas for this area.
- ❑ Request to set a target for how many girls and women you want to represent in leadership positions – consider students and staff.
- ❑ Discuss what the barriers and enablers look like for female leaders in your institution. For example:
  - » Qualifications for career progression
  - » Mentors or career coaches
  - » Networks with industry
  - » Funding for research
  - » Participation in conferences, public speaking events, competitions
  - » Reporting bullying or harassment
  - » Male champions
  - » Childcare facilities
  - » Awards or recognition for leadership
  - » Student/ class representatives
  - » Student unions/ clubs/ societies
- ❑ Assess the resources available to you. Consider:
  - » Expertise e.g. colleagues or students with research or coaching skills
  - » Partners and networks e.g. connections to industry professionals who would be happy to mentor staff; career days in industry; online platforms that share career development opportunities
  - » Finances e.g. assessing whether your institution has any budget for specific needs e.g. childcare; or writing a funding bid (See Annex 6)
  - » Time e.g. colleagues who would be happy to mentor student-leaders
- ❑ Begin to plan based on the key barriers and enablers for female leaders and the resources available to you. Agree on an area to focus.
- ❑ Set a date to review the target (e.g. every quarter), recognise colleagues for their successes and discuss ways forward if targets are not being met.

2.3e Creating or strengthening reporting and counselling systems

What does a strong reporting and counselling system look like? Reporting and counselling systems in TVET institutions are crucial components for the positive experience of all staff and students. Research in Eastern Africa[22] shows that under-resourced counselling departments result in poor trainee-instructor relationships and increased drop-out rates. In addition, the UNESCO-UNEVOC (2020)[23] report stated that of people experiencing sexual harassment, 70 per cent had chosen not to report it due to concerns about the adequacy of procedures and fear of reputational damage. A strong counselling system can provide support to staff and students by operating in three critical areas: academic, personal/social, and career. It should be equipped to adequately handle issues, be held in high regard and include qualified counsellors. While they are sometimes useful, short counselling courses are often unable to provide enough training for staff to manage critical issues with confidentially and a solution-oriented approach.

Why is a strong reporting and counselling system important for gender inclusion? Reporting gender issues, discrimination, bullying, and harassment is often very challenging for everyone. The presence of a qualified counsellor represents an institutional commitment to support staff and students. While professional counselling and guidance is a relatively young profession in sub-Saharan Africa, guidance itself is a long-standing and highly respected tradition. There are many ways in which this can translate into a strong reporting and counselling system that supports gender inclusion, for example, finding appropriate formal or informal measures to report and mediate issues; sensitively and discreetly handling complaints and ensuring that people being harassed aren't the ones who get punished (e.g. demotion, isolation); facilitating access to social services for staff or students; supporting leaders to take a strong public stand against discrimination; providing guidance for leaders to chair committees that are tasked with solving discrimination issues; raising awareness of what gender issues, discrimination, bullying and harassment looks like (offline and online e.g. Facebook and Whatsapp) and monitoring incidents across the institution.

22 Hosea Kiplagat, H., Ferej, A. and Kafu, P. (2018) Institution-Based Factors Influencing Trainees' Completion Rate in Vocational Training Centres in Kenya: A Case of Selected Counties.; Nyaundi Nyarangi, E., & Edwin Obwoge, M. (2015). Impact of Attitudes and Facilities in Effective Implementation of Guidance and Counselling Programmes in Selected Institutes of Technology in Nyanza Province, Kenya.

23 UNESCO-UNEVOC (2020) Boosting gender equality in science and technology A challenge for TVET programmes and careers

Example of good practice – WITED Kenya

Context: Nyandarua National Polytechnic have a simple but effective strategy for recognising excellence and offering a space for female students to engage with teachers and trainers. For any female students who score a credit and above in their exam, a teacher will take the time to informally sit down them, offer them a cup of tea and recognise their achievement.

Outcomes: Female students are recognised for their achievements and encouraged to continue working towards completion in a way that is manageable for colleagues and effective for students.

Lessons learnt: (1) Small acts of encouragement can make a big difference; (2) Informal conversations can build trust and build a system for students to discuss challenges or issues that need addressing.

ACTION: How do we encourage and support a strong reporting and counselling system in our institution?

- ❑ Review the data of your institution to understand the strengthens, opportunities and needs of colleagues and students e.g. reasons for high dropouts or low attendance. Review, for example:
  - » Availability of counsellors
  - » Implementation of policies
  - » Follow-up procedures
- ❑ Write to leadership with information about the strengths, areas for improvement and reasons for working together to support a stronger system (See Annex 4)
- ❑ Contact your WITED National Executive Committee (details in Annex 2) and request ideas for this action.
- ❑ Request support from the counselling office or an external facilitator to discuss and define what gender discrimination looks like for colleagues. Consider including incidents that other marginalised groups (including males) have experienced.
- ❑ Discuss what the barriers and enablers look like for *everyone* in the institution. E.G.:
  - » Location of counselling office
  - » Gender of counsellors
  - » How often counsellors are accessed
  - » Training opportunities for staff
  - » Actions taken when an incident is reported
  - » Ease of reporting (who, how, when)
- ❑ Assess the resources that are available to you and agree on an area to focus. Resources could include:
  - » Expertise e.g. colleagues or students with skills in gender inclusion
  - » People of influence e.g. leaders who will speak publicly about discrimination
  - » Finances e.g. assessing whether your institution has budget for training colleagues; or writing a funding bid (see Annex 5)
  - » Working through systems that are already in place e.g. student union
- ❑ Agree the indicators that show the institution is strengthening its reporting and counselling system (see Annex 6). Initially, this might include an increase in reported incidents because colleagues and students feel comfortable.
- ❑ Set a date to review the indicators (e.g. every quarter), recognise colleagues for their successes and discuss ways forward for indicators are not being met.

2.3f Creating a gender inclusive learning environment

What is a gender inclusive learning environment? Gender inclusion is about improving the ability, opportunity, and dignity of disadvantaged individuals to take part in the learning environment.[24] It gives particular attention to women and girls as a marginalised group. The benefits and importance of including women and girls in STEM-TVET is highlighted earlier in this document. Gender inclusion is best understood through training (such as Gender Responsive Pedagogy) and awareness raising amongst colleagues at all levels of TVET. A gender inclusive learning environment could include checking that PPE equipment is available in female sizes or offering flexible, online learning. The most important element is that the learning environment is suitable to your students, local industry, and institutional needs.

How are male trainers, technicians and students included in this agenda? Having the necessary knowledge, skills, and attitude to carry out teaching with gender awareness applies to both male and female colleagues. Inclusion is part of delivering a quality learning environment and ensuring that all students have the opportunity and ability to take part. The role of male and female teachers and technicians is to understand what a gender inclusive environment is, and how to effectively implement it within their own delivery of a quality learning environment. STEM-TVET is traditionally male-dominated which means that males dominate the STEM-TVET space and therefore, are well placed to be champions of a gender inclusive learning environment.

24 ILO (2020) Guide on making TVET and skills development inclusive for all

Example of good practice – WITED Malawi

Context: TEVETA Malawi wrote a successful proposal to European Union (2017) to bid for the introduction of solar into the TVET curriculum. At that time, solar was not male-dominated. The bid concentrated on training women in the informal sector to install solar panels. The cohort of women were trained in their local language and the curriculum was 2 days per week to accommodate women's care work. When the cohort graduated, they first installed solar at the chiefs house; then grade 8 in a local school (who needed the light to pass exams), then a local clinic for support with births at night; and then their own homes.

Outcome: During the bid development, it was female leaders in TEVETA Malawi who requested that the training was flexible to the care responsibilities of women. In addition, TEVETA were able to take advantage of a new industry that does not yet have stereotypical gender roles.

Lessons learnt: (1) Female leadership offers invaluable insight into the unique needs of women; (2) Students have individual inclusion needs beyond gender e.g. teaching in a local language increased access; (3) Older students acted as role models to girls in technical training.

Example of good practice - Gender and Diversified funding (Gambia)

Context: Gambia Technical Training Institute (GTTI) saw that the disparity was too wide in the recruitment of males/females in STEM-TVET. To be more gender inclusive and encourage female enrolment, a discount/scholarship for girls was introduced. This initiative was implemented 10 years ago by a male leader and approved by the Board of Directors (which has 30 percent female representation).

Outcomes: A tracer study shows that this initiative has effectively contributed toward increasing the number of girls and women enrolling in STEM-TVET in GTTI.

Lessons Learnt: (1) The initiative was not replicated in other institutions because of budget implications. However, GTTI is an enterprising institute and was able to cover the budget shortage through innovations in their production unit (e.g. by taking on sub-contracts to repair vehicles, build schools etc). GTTI were also donated casting equipment from Turkey and it is the only casting machinery in Gambia so creates significant additional income for the institution; (2) Male leaders are strong and effective champions in the pursuit of a gender inclusive learning environment.

ACTION PLAN: How do we encourage a gender inclusive learning environment?

- ❑ Look at the data of your institution to better understand your learning environment, including its strengths and areas for improvement. Consider:
  - » Correctly sized PPE
  - » Affordability of fees
  - » Promotional materials showcasing positive female role models in STEM
  - » Induction of new staff
  - » Peer support networks
  - » Type of behaviour or language used by teachers and students
  - » Availability of childcare facilities
  - » Quality and availability of female bathrooms
  - » Flexible and blended learning
  - » Timing of assessments
- ❑ Write to leadership with information about the strengths and areas for improvement and reasons for working together to create a gender inclusive learning environment (See Annex 4)
- ❑ Contact your national training institute for any updated curriculums or training for gender responsive pedagogy. Assess if this relevant in your institution.
- ❑ Contact your WITED National Executive Committee (details in Annex 2) and request support or guidance on this topic.
- ❑ Agree on an area to focus and assess the resources that are available to you. Resources could include:
  - » Expertise e.g. colleagues who have trained in gender responsive pedagogy
  - » Funding and finances e.g. assessing whether your institution has budget for training colleagues; or writing a funding bid (See Annex 5)
  - » Partners and networks e.g. connections to industry, NGO's or government who run training courses that colleges could join
- ❑ Agree what indicators show that the institution is working on creating a gender inclusive learning environment (See Annex 6)
- ❑ Set a date to review the indicators regularly (e.g. every quarter), recognise colleagues for their successes and discuss ways forward if targets are not being met.

2.3g Increasing access to STEM-related jobs and opportunities for girls and women

Why is there a lack of jobs (for everyone)? The availability of formal and informal STEM-related employment is largely driven by the state of the economy. This includes, for example, government budgets, healthy environments for private sector growth, and the availability of a skilled workforce. There is also a reported skills gap between STEM-graduates and the needs of industry. Research[25] shows that innovation- and export-oriented firms demand more skilled workers with TVET credentials, higher-level skills, and hands-on experience. This includes cognitive skills (e.g. digital literacy) and non-cognitive skills (e.g. critical thinking, interpersonal and socioemotional skills, such as resilience). STEM-TVET students who are trained to work in dynamic and innovative ways are recognised as key contributors towards sustainable economic growth and social development. Meaningful engagement between training institutions and industry can contribute toward closing the reported skill gap.

How can we support girls and women in STEM-related placements and employment opportunities? A study by the African Academy of Science[26] found that women's success in STEM is influenced by individual, family, and societal level factors. For example, nearly 80 per cent of respondents that were surveyed reported dealing with obstacles in the work environment that men don't deal with (e.g. inflexible working hours to respond to care work). One of the biggest influencing factors for women's success in STEM-related employment was the personal influence from other women e.g. girls who knew successful women in STEM through their family or close circles were motivated to take up STEM courses. The recruitment process, promotion and gender relations within industry also played a great role in women's success. Recognising this, two key areas for supporting girls and women in STEM-related placements is to support recruitment and identify strong, female role models.

25 World Bank (2018) Enterprise firms and skills performance in Zambia

26 The African Academy of Science (2020) Factors which Contribute to or Inhibit Women in Science, Technology, Engineering, and Mathematics in Africa

Example of good practice – WITED Kenya

Context: While trying to find an attachment, three female students and three male students from a Kenyan TVET institution went for an interview with a potential employer. All three male students successfully passed the interview but unfortunately, the girls were unsuccessful. The female students updated their institution on the outcome and were encouraged to apply to other attachments, but they were unable to find appropriate attachments that were within safe travelling distance to their homes. After four weeks, a trainer from the institution went to greet the employer, and better understand the reasons for the unsuccessful interviews. The employer was hesitant to work with the female students because he usually worked with males. With encouragement and support from the trainer, he agreed to take two of the female students.

Outcomes: Towards the end of the attachment, the employer informally remarked that the females had 'out-performed' the male students, and that they had worked hard. The conversation with the trainer, and the support that was offered, means that the employer will now consider girls for future attachments and job opportunities.

Lessons learnt: (1) Female and male students have different needs for attachments e.g. safe transport is especially important for girls; (2) Understanding employers and offering encouragement and a support system is an important part of attachments.

ACTION PLAN: How can we work with industry to increase the number of jobs and meaningful attachments available for girls and women?

- ❑ Look at the data of your institution and review your relationship with industry, its' strengths, and areas for improvement. This could include the industry or placement coordinator for your institution. Consider how industry and your institution is involved in:
  - » Developing curriculums
  - » Engaging in tracer studies
  - » Engaging with alumni
  - » Discussions on the future of work
  - » Career days
  - » Networking events
  - » Mutually beneficial facilities (e.g. new equipment or technology)
  - » Attending industry events e.g. trade fairs
- ❑ Write to leadership with information about the strengths and areas for improvement and reasons for improving engagement with industry (See Annex 4).
- ❑ Contact your WITED National Executive Committee (details in Annex 2) and request support or guidance.
- ❑ Map the industries in your local area (formal and informal) and your relationship with them. Your institution may already have a database. This could include:
  - » Number of students engaged per year
  - » Number of students recruited after graduation
  - » Relationship with industry supervisor
  - » Equipment and technology available
  - » Provision of industry-relevant training or qualification
  - » Areas of expertise (e.g. a strong female leader with a particular skill set)
  - » Support in kind
  - » Attendance at events
- ❑ Match the needs of your institution against the resources available in your local industry partners E.G:
  - » A strong technical female leader may be an excellent role model or mentor
  - » An industry partner that has consistently taken on several female students for placements could be showcased locally as an example of excellence and inclusion.
  - » Engaging female students in trade fairs
- ❑ Agree what indicators show that the institution is working with industry to increase the number of jobs and opportunities available for women and girls (See Annex 6)
- ❑ Set a date to review the indicators regularly (e.g. every quarter), recognise industry and colleagues for their successes and discuss ways forward if targets are not being met

Glossary of Gender Terms

Gender	Gender refers to the roles and responsibilities of men, women, boys and girls that are created in our families, our societies, and our cultures. Gender roles and expectations are learned. They can change over time, and they vary within and between cultures. Social systems modify gender roles - such as political status, class, ethnicity, physical and mental disability and age. The concept of gender is vital because it reveals how women's subordination (or men's domination) is socially constructed. As such, the subordination and domination can be changed. It is not biologically predetermined nor is it fixed for ever[27].
Gender Action Plan	A Gender Action Plan (GAP) serves to reinforce the commitments to gender found in strategic plans. The document should specify how an institution intends to promote gender equality across all of its' work in alignment with the Strategic Plan[28].
Gender balance	Gender balance concerns the equal participation of women and men in all areas of work including in education, projects and training events[29].
Gender bias	Gender bias refers to the unfair difference in the way women and men are treated and perceived based on their gender.
Gender-blindness	Gender-blindness is the failure to recognise that women and men have specific roles and responsibilities assigned by social, cultural, economic and political contexts and expectations. For example, gender-blind curricula reinforces gender inequalities and stereotypes by using terms such as "mankind," "chairman,". Gender blindness also includes the failure to use female role models in modules and case studies[30].
Gender Committee	A Gender Committee is a voluntary or nominated group of individuals from both genders and all levels of the institution who ensure the Gender Policy and Gender Action Plan are actioned. It also provides men and women an appropriate and confidential complaint mechanism against any inequality issue or unwelcome behaviour in any manner.
Gender equality	Gender equality means that women, men, boys and girls would experience the same advantages and disadvantages in educational and training access, treatment, and outcomes. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, while also acknowledging the diversity within groups. It goes beyond having an 'equal number' of men and women. The achievement of full gender equality in education would imply: equality of opportunities; equality in the learning process; equality of outcomes; and equality of external results[31].

27 UNESCO (2019) Training Trainers on Gender Responsive Pedagogy
28 UNICEF Glossary of Terms and Concepts
29 UNICEF, UNFPA, UNDP and UN Women (n.d.), "Gender equality, UN coherence and you." Glossary.
30 Gender stereotypes (2021) UN Women Training Centre, Gender Equality Glossary
31 UNESCO (2019) Training Trainers on Gender Responsive Pedagogy

Gender inclusive learning environment	A gender inclusive learning environment includes a wide spectrum of programs, initiatives and practices, all of which are important components of achieving gender equality. For example, gender responsive pedagogy.
Gender mainstreaming	Gender mainstreaming is gender-specific intervention and activities that enable all persons to participate in and benefit equally. In the context of TVET, it is also a strategy for making the concerns and experiences of people of different gender identities an integral part of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and social spheres, so that people of all gender identities benefit equally. The ultimate goal of mainstreaming is to achieve gender equality.
Gender Policy	A Gender Policy is a guiding document that recognises gender issues and proposes strategies to reduce them. The policy creates a framework that will assist the institution to encourage gender equality in all staff and student activities. It should ensure equitable participation and appropriate representation of both genders in all its decision-making processes.
Gender-responsiveness	Gender-responsiveness means taking action to correct gender bias and discrimination to make sure gender equality is consciously achieved. For example, in the context of curricula development, gender responsiveness means there is careful consideration of the different learning needs of women, girls, men and boys in the planning, development and implementation of learning materials and activities, with the intent to ensure equal involvement of all learners[32].
Gender responsive pedagogy	Gender responsive pedagogy (GRP) refers to teaching and learning processes that pay attention to the specific learning needs of women, men, girls and boys. These can be identified by assessing the challenges and gaps in skills and knowledge for both genders[33].
Gender stereotypes	Gender stereotypes are generalizations about the gender attributes, differences and roles of women and men. For example, that women are nurturing and should be concerned with looking after their family, and men are aggressive and should be concerned with working hard to earn money to support their family. Gender stereotypes are often used to justify gender discrimination more broadly and can be reinforced by traditional and modern practises[34].
Sex	Sex refers to the natural biological characteristics that human beings are born with, which categorise them as female or male. In contrast to "gender," sex is not influenced by culture or time[35].

32 Commonwealth of Learning (2019) Gender Evaluation Learning Rubric
33 UNESCO (2019) Training Trainers on Gender Responsive Pedagogy
34 Gender stereotypes (2021) UN Women Training Centre, Gender Equality Glossary
35 Commonwealth of Learning (2019) Gender Evaluation Learning Rubric

Annex

Annex 1 – Summary of Recommendations from ILO/CAPA Pilot WITED Project (1992)

Reccomendations were made across five different spheres (the primary and secondary school systems; polytechnic and training institutions; enterprises; policy-making organisations; and in the family and community as a whole):

1. At the national policy level, education ministries to review and examine the reasons for the poor performance of girls in STEM and take appropriate action including:
   (i) special awards and scholarships
   (ii) steps to recruit more women into technical teacher training programmes
   (iii) equality issues to become part of the curriculum of all teacher training courses
   (iv) reviews of curriculum content, training materials and delivery methods to eliminate gender-stereotyping
   (v) women's units set up in the ministries of education and labour to be responsible for drawing up, implementing and annually reviewing and monitoring policy initiatives
2. All primary and secondary schools to have adequate equipment and facilities to teach science and technical subjects, and:
   (i) Mandatory exposure to technical subjects
   (ii) Special efforts made by ministries of education to select and recruit women to teach technical subjects to serve as role models and ensure a balanced representation
   (iii) Girls at primary and secondary schools more exposed to technical opportunities through career counselling, information leaflets, videos and brochures on new employment openings, and through visits to technical and vocational institutions and enterprises
3. Within TVET, specific policies for enrolling women in technical courses to be developed and recruitment strategies explored, including:
   (i) increased sponsorship by government and employers
   (ii) top-up and bridging programmes set up in the short term for female students
   (iii) a media and promotional campaign to attract women to technical and scientific careers
   (iv) system of annual scholarships and awards to enable a selected number of women
   (v) accommodation and other support facilities
   (vi) industrial liaison officers in training institutions to be trained to ensure they do not convey biases and encourage and assist employers to recruit qualified women
   (vii) heads of institutions ensure that a sufficient number of females are employed in technical teaching and instructing posts to act as role models
   (viii) set and adhere to quotas or targets for higher female participation
   (ix) systematic staff development programmes could be established within training

institutions, taking into account the special needs of women staff

(x) workshops to increase awareness of gender equality issues should be attended by all teaching and management staff.

4. In the formal sector, national federations of employers create awareness amongst their members of the need for increased sponsorship and recruitment of women into technical training and jobs including ensuring that women employed in technical jobs have the same access to promotion, further training and career development opportunities as their male counterparts.

Strategies to promote greater participation of women in technical education and training should aim to achieve a minimum of 30 per cent female representation in the next ten years, including support facilities in technical and vocational training institutions, including guidance, counselling, employment placement services, hostel accommodation child-care facilities and transportation.

Annex 2 – WITED Chapter Contacts

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Annex 3 – Strategic Planning Guidance

Strategic project planning focuses on developing and delivering basic strategies for achieving project aims. This includes understanding your current situation (institution, community, and country), having effective governance structures, communication strategies and the right resources in place, and managing accountability.

A 'SWOT' analysis is a good way to start understanding your current situation. It highlights how you can take action to reduce the weaknesses or threats to your project and take advantage of the opportunities and strengths. You can complete SWOT analysis by writing down:

- Strengths – internal factors that can help achieve the project aim (e.g. supportive leadership)
- Weaknesses – internal factors that could be obstructive to achieving the project aim (e.g. a leadership team that are stretched)
- Opportunities – external factors that could be helpful in achieving the project aim (e.g. an institutional alumni who wants to volunteer time to support the project)
- Threats – external factors that could be obstructive to achieving the project aim (e.g. difficulty funding the project).

Effective governance structures need to be simple and straightforward. Creating a strong governance structure often starts with the creation of an Executive Committee, who are dedicated to aligning all levels of the institution with the aim of the project. Activities to do with governance may include formulating and reviewing policies, action plans and guidelines that help shape the project and ensure it achieves what it set out to achieve.

Accountability is also part of governance structures. It includes personal accountability as well as institutional accountability. There are three areas that make up accountability:

- Transparency, which involves collecting information and making it available to everyone
- Participation, which involves fair and equal participation
- Evaluation or feedback, which involves evaluating what you are doing, why you are doing it and how well it is being done (normally through the Monitoring and Evaluation framework)

Discussing accountability in meetings can help you evaluate the commitment and capacity of your project team against the aims of your project.

A communication strategy is a plan to achieve effective communication and has four. major components: communication goals (what are you communicating); target audience (who are you communicating to); communication plan (what type of communication – verbal, nonverbal, visual); and channels (what channels are you using).

Resources come in many different shapes and sizes. Annex 5 outlines financial resources. However, there are also other types of resources that can be included in strategic planning:

- Expertise e.g. colleagues or students with specific skills or knowledge
- People of influence e.g. role models or well-respected leaders who could act as ambassadors
- Partners and networks e.g. connections to professionals, local or national government
- Finances e.g. funding or requesting support from local businesses, schools, religious groups, local government, NGO's
- Time e.g. colleagues who have time to dedicate to the project.

Annex 4 – Negotiation and lobbying Guidance

Negotiation and lobbying are two different skills. Lobbying is about getting to the decision-making table and being persuasive once you are there. Negotiation is about advancing your issue and how to present your ideas, deal with opposition and better understand, and manage, power dynamics. Here are some top tips that can help you to get started in your institution[36].

Firstly, you will need:

- A clear issue including why it is a problem, the social and economic costs of the problem, and realistic solutions
- Specific proposals that you want to be supported
- A map of power e.g. understanding 'who is at the table and who has influence'
- An understanding of the controversies surrounding your issue

Lobbying 'Getting to and being persuasive at the table'

Lobbying involves direct one-on-one communication with decisionmakers and people who have influence on decisionmakers. Lobbying conversations are aimed at educating and convincing these people to support and advance your agenda. Lobbying can occur formally through official meetings or informally through conversations in corridors, cafes, shops etc. There are four key steps which will help your lobbying to advance:

(1) Familiarise yourself with the power dynamics, the system, procedures, timelines, and key leaders and decisionmakers (Ask yourself: Who makes the decisions? Who influences these decisions? Which decisions are acted upon quickly?)

(2) Rank the key leaders and decisionmakers based on where they stand on your issue, and how much influence they have on making decisions, or influencing others (Ask yourself: Who is interested in our issue?)

(3) Build relationships through regular formal or informal meetings to help decisionmakers better understand your issue, and to gain trust as a reliable representative

(4) Get attention and show your commitment by timing activities so that decisionmakers are aware of what you are doing and the support you already have.

Negotiating 'Advancing your issue'

Negotiation does not only occur at the decision-making table. It is a constant feature within meetings, events, conferences etc. The work that you do before getting to the negotiating table is as important as what happens at the table. Here are some top tips:

- Be knowledgeable and able to provide decisionmakers with expertise on the issue, including credible documentation to back up the expertise
- Be able to articulate your goals and messages very clearly and simply
- Speak with one voice on the issue
- Recognise that the actual activity is often implemented by a few committed and dedicated people, but can be supported by many
- Use individual skills appropriately for a powerful case - expertise in an issue itself does not necessarily translate into expertise in negotiating
- Formulate action plans with deadlines
- Always communicate key developments and follow up so that the goals of the action plans are achieved, which builds momentum and excitement.

36 Just Associates (2007) The Action Guide for Advocacy and Citizen Participation. Chapter 15: Manoeuvring on the Inside: Lobbying and Negotiating

Annex 5 – Funding Proposal Guidance

There are different ways that you can fund your WITED projects. One way is to submit funding proposals for projects, research, or professional development opportunities. It can be helpful to keep an ongoing database of funding opportunities. Begin to build your database by:

- Reviewing similar projects that have previously received funding in your institution, country or region and research how they were funded
- Speak to colleagues in government, training and industry about opportunities that they are aware of
- Connect with university alumni who may have secured funding for professional development or further study
- Research online for open calls and upcoming funding (LinkedIn is a good platform for this)
- Attend conferences, meetings, and network events to understand possible upcoming funding opportunities

For any funding bid, the following six points are important:

(1) Check the eligibility criteria

(2) Allow yourself time – preparing a draft, consulting on the draft, reviewing and submitting takes a significant amount of time

(3) Study your funding source – different funders have different goals, and therefore, different criteria for their funding

(4) Read the guidance documents – requests that are not fulfilled will normally be rejected

(5) Discuss your proposal – consult with others who have completed proposals before for support

(6) Justify your costings –realistic costings are more likely to be funded than overpriced costings

Professional and career development funding – Examples

Professional and career development could be in the form of training, fellowship opportunities, scholarships etc. Some examples include:

- African Women's Development Fund: https://awdf.org/
- Chevening Scholarships: https://www.chevening.org/
- Commonwealth Distance Learning Scholarships: https://cscuk.fcdo.gov.uk/scholarships/commonwealth-distance-learning-scholarships-information-for-candidates/
- Visibility STEM Africa Scholarship and Funding Database: https://www.visibilitystemafrica.com/opportunities/
- Visiola Foundation https://www.visiolafoundation.org/stem-funding/

Research grant proposal

UKRI Economic and Social Research Council (ESRC) has some guidelines on how to write a good research grant proposal. Although it is specific to ESRC, the content is helpful for developing other research grants: https://esrc.ukri.org/funding/guidance-for-applicants/how-to-write-a-good-research-grant-proposal/

Project grant proposal – Examples

The type of funding you apply for will depend on the type of project you are doing. The UNESCO-UNEVOC 'Agencies for International Cooperation in Technical and Vocational Education and Training: A Guide to Sources of Information' is a good place to start: https://unevoc.unesco.org/home/If+you+are+looking+for+a+donor&context=

Annex 6 – Monitoring and Evaluation Guidance

Monitoring and evaluation (M&E) processes help to improve the performance of your project, support decision making and provide information on whether your project is achieving what it set to achieve. The aim of your project should be decided before you begin, captured in a written format, and agreed by everyone involved. The steps below provide a process for setting up and running an M&E framework.

1. **Set specific aims and objectives for your project:**
    - Overall aim: The wider change that you want to contribute toward e.g. 'increase the number of women and girls in STEM-TVET'
    - Specific aim: The change that you want to create in your institution e.g. 'to increase the number of girls successfully completing STEM-related attachments'. Using the phases 'to improve,' to reduce', 'to increase' at the start will help.
    - Specific objectives: The activity that you will deliver to complete your aim e.g. 'to organise one-to-one conversations with employers to request their support for girls on attachment'

2. **Describe your outputs and set your output indicators:**
    - Outputs are what you will deliver. You can create a list of outputs by looking at your objectives e.g. the output for the objective 'to organise one-to-one conversations with employers to request their support for girls on attachment' could be 'one-to-one conversations with employers'.
    - Output indicators describe what will be measured to keep track of the work that you are doing e.g. 'Number of one-to-one conversations with employers'.

3. **Understand your outcomes and set your outcome indicators:**
    - Outcomes describe the changes that you want to create. You can create a list of outcomes by writing down the changes related to your specific aims e.g. an outcome for the aim 'to increase the number of girls successfully completing STEM-related attachments' could be 'improved knowledge in employers about how to support girls on STEM attachments'
    - Outcome indicators tell you whether you are achieving your outcomes and how much change has happened e.g. if the outcome is 'improved knowledge in employers about how to support girls on STEM attachments' then the outcome indicator needs to be about the change e.g. 'girls reporting employers support during STEM-attachments'.

4. **Decide on your collection methods:**
    - You will need to decide on how, and how often, this information will be collected.

The four steps above briefly outline how to develop a Monitoring and Evaluation Framework, below is an example of how these fit into a framework:

Overall aim	Increase the number of women and girls in STEM-TVET						
Specific aim	To increase the number of girls successfully completing STEM-related attachments						
	Indicator	**Data collection**	**Baseline**	**Target**	**Frequency**	**Responsible**	**Reporting**
		How will it be measured?	Current position	Target position	How often will it be monitored?	Who will measure this?	Where will this data be reported?
Outcome: Improved knowledge in employers about how to support girls on STEM-attachments	Girls report employers support during STEM-attachments	During evaluation, girls give a clear example of how they were supported.	X % of girls report support	X % of girls report support	Every year (during attachment evaluation)	Trainer managing attachments	Report to COL and CAPA-ATUPA, Institution annual report
Output: Deliver one-to-one conversations with employers	Number of one-to-one conversations organised with employers	Attachment coordinator reports conversations with employers	0	10	Every year (during pre-attachment)	Attachment coordinator	Report to COL and CAPA-ATUPA, Institution annual report

Annex 7 – Potential Areas of Focus for the Community of Practice

The following section references key skills for strengthening the delivery of actions, as identified through the Advisory Group. They are useful for the delivery of all projects but make specific reference to gender inclusion. These are areas that could be focused on during the Community of Practice.

Strategic planning and budgeting

- Setting up governance structures, communication and decision-making processes
- Agreeing a mission, vision and values
- Completing a SWOT Analysis
- Managing risks and threats
- Creating an annual budget, monitoring finances and financial reporting
- Creating and implementing an action plan
- Communication strategies
- Monitoring and reviewing an action plan
- Managing accountability and reviewing governance

Monitoring and evaluating impact

- Reviewing WITED chapter activity to date: challenges and successes
- Why collect data?
- Setting SMART indicators
- Building a Theory of Change
- Creating and agreeing a Monitoring and Evaluation Framework
- Creating a project baseline, midline and endline
- Collecting data and setting up reporting structures
- Tracer studies

Negotiation, lobbying, leading, and influencing

- Understanding (self) positionality
- Understanding power and gender dynamics: societal and community
- Understanding power and gender dynamics: institutional and government levels
- Community and stakeholder mapping
- Building relationships
- Lobbying: 'Getting to the table'
- Formal and informal lobbying
- Presenting your case
- Negotiation: 'Advancing your issue'

Resourcing - Income generating, developing funding applications and financial reporting

- Finding funding opportunities
- Funding requirements – policy, data, and governance
- Institutional funding – gender budget line and public funds
- Institutional funding - alternative funding streams e.g. income generating revenue
- Funding for women's professional development – training, scholarships, PhD, fellowships, awards
- Funding for projects - major trusts and foundations
- Funding for projects – grant funding
- Funding for female students – awards, scholarships, competitions
- Local philanthropy (individuals or companies) and support-in-kind
- Financial sustainability and reporting

Annex 8 - Theory of Change: CAWS WITED Project

Element	Notes	Assumptions
Problem	1. Science, technology, engineering and mathematics (STEM)- related TVET has a significant role to play in providing the skills and competencies required to support innovation, productivity, international competitiveness, and social development. STEM-related careers are often referred to as the 'jobs of the future' and offer stable, higher paid roles. Yet, according to the United Nations (2020), girls and women continue to be excluded from fully participating in training and employment. This is due to complex and intersecting factors, including but not limited to, socio-cultural norms and stereotypes of women in STEM-related training and employment. 2. WITED chapters represent a body of trained and experienced TVET teachers and instructors who are active and working in their institutions and communities. However, they have identified the need to better understand, share and increase their expertise in planning, funding, delivering and monitoring gender interventions, and currently present an under-utilised opportunity for supporting women and girls into STEM-TVET, and later into STEM-related careers.	
Input/ Resources	• CAPA ATUPA • Advisory Group • WITED chapters and individual champions • Online meeting space • COL team • TVET colleagues • Employers (including governing bodies - Ministries, national bodies e.g. trade organisations, institutions' connections) • Community partners e.g. NGOs • Funders, including NGOs	• WITED chapters are accessible and interested in actively participating
Activities (deliverables)	• Examples of local and international good practice are identified and understood. • A practical guide, including self-assessment toolkit, to support prioritised actions for increasing girls and women's participation in STEM-TVET is developed • Through an online community of practice WITED chapter champions, and other relevant parties, are supported to use the Guide and implement actions for increasing girls and women's participation in STEM-TVET	• Surveys are disseminated effectively and designed in a clear and cohesive manner. • WITED chapter champions and TVET colleagues have the time, interest and resources to complete the survey • WITED chapter advisory group actively critique and provide feedback on the guide • WITED chapters highlight examples of good practice

Outputs (Impact of activities)	• WITED chapters and individual champions complete self-assessment toolkit with their institutions (BASELINE) • WITED chapters and individual champions match self-assessment scores with potential actions in Practical Guide and implement actions for increasing girls and women's participation in STEM-TVET • WITED chapters and champions engage with the CoP for support to use the Guide to implement actions • Specific actions for increasing girls and women's participation in STEM-TVET are implemented and evaluated in TVET institutions	• WITED chapters and individual champions have the time and resources to complete self-assessment • Self-assessment toolkit effectively supports WITED to identify potential actions • Recommendations are realistic and achievable • Actions are supported by the wider institution
Short-term outcomes (Benefits of outputs)	• WITED chapters, individual champions and TVET colleagues have improved knowledge of current gaps and challenges in supporting women and girls in STEM-TVET and gender-inclusion in their institutions • WITED chapters and individual champions have increased capacity and skills to plan, deliver and evaluate actions	• Guide and planned actions effectively support WITED chapters and individual champions to improve skills and capacity
Medium-term outcomes	• TVET institutions with WITED chapters more effectively support girls and young women into, and during, STEM-TVET programmes and associated careers • More girls and women TVET students enrol and remain in STEM-TVET programmes and progress into STEM-related employment	• Planned actions successfully achieve their aim
Impact (Long term change)	• Actions contribute toward improving socio-cultural norms and gender-inclusion in STEM-TVET and increase incomes of women and girls	

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