

TORINO PROCESS REVIEW OF POLICIES FOR LIFELONG LEARNING IN EGYPT - 2025

Internationalisation of Applied
Technology Schools (ATS) in Egypt

Disclaimer

This report was prepared on behalf of ETF by Ahmed El Ashmawi, lead expert for Egypt, and William Bartlett, international expert.

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PREFACE

In 2022, the European Training Foundation (ETF) launched the sixth round of its Torino Process – a biennial review of vocational education and training (VET) in countries in East and South-East Europe, Central Asia and the South and East Mediterranean region. The Torino Process (TRP) describes and analyses country developments, identifies challenges in the domain of human capital development, and describes the ways in which countries mobilise their VET systems to address these challenges.¹

In this round, the focus of the Torino Process is twofold, looking at:

- The performance of education and training systems, in particular VET, with respect to the creation of good and equitable opportunities for lifelong learning (TRP Level 1); and
- The analysis of policies that influence the performance of education and training systems, with the purpose of identifying areas in need of improvement and to generate hands-on advice on the transition towards responsive lifelong learning systems (TRP Level 2).

The focus of this review is on the second level of country participation (TRP Level 2). This level facilitates a review of what countries do to influence and improve the performance of their policies and systems from a lifelong learning perspective. This means documenting and interpreting the effectiveness of policies and systemic arrangements in countries against the backdrop of a) demand for learning opportunities, and b) relevant socioeconomic and demographic developments which may influence that demand.

The review process comprised four phases:

- Preparatory phase: formal expression of interest by the country, joint identification of issues, priorities, and stakeholders by the partner country and ETF;
- Desk research phase: review of primary and secondary data and documentation produced by the country or other organisations (including the ETF);
- Field phase: during a mission to the country in February 2025, mapping key informants and conducting interviews, focus groups, and discussion groups;
- Report preparation: report drafting, quality assurance, validation, and dissemination.

Following a request by the Ministry of Education and Technical Education (MoETE) in Egypt, the focus of the review conducted in Egypt is on lifelong learning with a specific focus on the internationalisation of Applied Technology Schools (ATS). The issues and recommendations in this report were discussed and fine-tuned with MoETE and other stakeholders during a validation workshop held on 26 May 2025 in Cairo. The Torino Process defines “lifelong learning” as any learning activity undertaken throughout life with the aim of improving knowledge, skills/competences and/or qualifications for personal, social and/or professional reasons. “Applied Technology Schools (ATS)” are a model of Public-Private-Partnerships technical secondary schools with work-based learning (WBL) opportunities launched in Egypt in 2018 where private sector partners play a leading role in co-managing the schools with the MoETE.

The report was prepared by Ahmed El-Ashmawi and Will Bartlett, experts for the ETF. The ETF team supervising the research was led by Mihaylo Milovanovitch and included Abdelaziz Jaouani and Cristiana Burzio, ETF experts, under the overall coordination of Hugues Moussy, Head of Intelligence Unit at ETF. The team would like to thank all the stakeholders in Egypt who have been engaged throughout the process and provided valuable input for its finalisation. Particular gratitude goes to Dr. Amr Bosila, Head of the Central Administration for the Reform of Technical Education, and his team from the Ministry of Education and Technical Education in Egypt.

¹ A full overview of the Torino Process framework can be found here: [Microsoft Word - Guidelines TRP 2022-24 framework FINAL EN Updated](#).

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EXECUTIVE SUMMARY

This Policy Review provides a comprehensive assessment of the Egyptian Ministry of Education and Technical Education (MoETE)'s efforts to expand and internationalise the Applied Technology Schools (ATS) model within the broader context of Egypt's evolving labour market and technical and vocational education and training (TVET) system. Conducted by the European Training Foundation, the review critically examines the ATS model as a Public-Private Partnership (PPP), focusing on its design, quality, sustainability, and potential for internationalisation, with the overarching goal of enhancing lifelong learning opportunities and aligning technical education with national economic priorities and international standards.

These national priorities have emerged in response to underlying demographic trends and the structural features of the economy. The large and youthful population generates substantial pressure on the labour market with an annual influx of around 800,000 new entrants and a rising trend in labour migration, particularly to Gulf countries and Europe. Remittances from Egyptian migrants are a vital source of foreign currency, emphasising the importance of equipping workers with internationally recognised skills and qualifications to improve their employability abroad. Egypt's diverse economy is marked by rapid growth and structural reforms, which demand a highly skilled workforce capable of supporting sectors such as ICT, agriculture, renewable energy, manufacturing, construction and tourism. However, persistent skills mismatches, high youth unemployment estimated at 25% and a significant informal economy challenge the effectiveness of current TVET offerings. The labour market's increasing demand for specialised technical competencies, soft skills, and digital literacy underscores the urgency of reforming and expanding the TVET system to meet these needs.

The inherited TVET system in Egypt faces significant challenges, as outlined in the 2018 MoETE's Technical Education 2.0 Strategy (TE 2.0). These include low-quality provision and underdeveloped standards, assessments, quality assurance and accreditation mechanisms, compounded by an inactive National Qualifications Framework (NQF). The system is characterised by a limited number of high-quality TVET institutions and a mismatch between skills supply and labour market demand, partly due to the absence of effective labour market information systems and insufficient employer engagement. Governance and coordination among stakeholders are weak, hampering coherence and effective monitoring, with curricula being outdated and not aligned with current and future workforce needs. Additionally, there is a shortage of qualified teaching staff, especially in practical skills, while the financing models for TVET are unsustainable given the high costs and increasing student numbers amid limited financial resources. Public-private partnerships are relatively limited, and mechanisms to facilitate students' transition to employment or further education are inadequate, despite the establishment of Technological Universities in 2019. Furthermore, societal perceptions of TVET and its graduates are generally negative, affecting enrolment and prestige.

Various reform efforts have been made over the past decade, including the brief establishment of a dedicated Ministry for TVET in 2015, but none have fully realised the ambitious goals set out in Egypt's 2014 Constitution to develop TVET to meet international standards and labour market needs. Since 2018, MoETE has prioritised transforming TVET into an attractive and relevant option through the implementation of the TE 2.0 strategy. In 2024, this strategy was expanded from five to ten reform pillars, focusing on improving quality and governance, relevance through competence-based curricula, teacher training, private sector partnerships, enhancing the system's image, expanding enrolment, fostering research and technological innovation, utilising assets for self-sufficiency, developing digital infrastructure, and promoting industry and technology localisation. Despite these efforts, systemic issues such as recruitment freezes for teachers, limited financial resources, and the need for more sustainable industry linkages continue to pose challenges to realising a modern, effective TVET system in Egypt that meets international standards.

The ATS model, launched by MoETE in 2018, addresses the growing demand for skilled labour by aligning technical education with labour market needs. As a cornerstone of the broader TE 2.0 strategy, the ATS contributes to the modernisation of Egypt's technical education through industry

collaboration, PPPs, and a shift toward practical, competency-based learning. Building on the dual education system introduced in the 1990s, the ATS model emphasises sector-specific curricula tied to economic priorities. While critics caution against overly narrow curricula tailored to specific corporate partners, some schools—particularly the international ATSs (IATS) that were supported by USAID—demonstrate cross-sector collaboration and broader sectoral content development. The ATS network expanded from three schools in 2018 to 90 schools by April 2025, including 10 IATS featuring innovation labs, language labs, and sustainability initiatives like solar energy and water reclamation. The IATS aim to foster community ties and achieve ISO certification. With 14,600 students enrolled (less than 1% of MoETE's total learners), both ATS and IATS programmes blend classroom instruction with hands-on industry training. IATS further distinguish themselves through Career Development Centres, partnerships with entities like Berlitz for language training.

The governance of the ATS model is rooted in a strategic PPP framework designed to align technical education with labour market needs. The Ministry's ATS Unit oversees strategic directions, school selection, quality assurance, curriculum development, and financing policies. Following organisational restructuring in 2021, the Unit became part of the General Administration reporting to the Central Administration for the Reform of Technical Education, overseeing both ATS and related WBL models like Dual System schools and Centres of Competence. Despite these administrative changes the ATS Unit remains the primary body, having limited coordination with other models. Its operational management collaborates closely with private sector entities, which co-manage schools through protocol agreements typically lasting six to ten years. These agreements regulate the partners' responsibilities: MoETE provides the buildings, utilities and teachers and navigates bureaucratic processes, while the private partners co-manage the school, develop business plans for financial sustainability, upgrade the facilities, promote school branding, support workforce training and cover international accreditation costs. The private companies also participate directly in curriculum development, internships, and employment placement, also often employing specialised teachers and staff, paying performance-based incentives for MoETE teachers, while some partners outsource management to specialised service providers. The overall aim of these arrangements is to ensure industry-relevant, practical education aligned with labour market demands.

The ATS model emphasises work-based learning, allowing students to gain practical skills through real-life workplace experience with industry partners, although the degree of implementation varies across schools. Furthermore, private sector partners play a vital role in promoting a culture of professionalism, productivity, and quality within the schools, fostering systemic change that emphasises a work ethic and efficiency. Quality assurance is fundamental to the ATS model, involving partnerships with international accreditation bodies, internal MoETE units, and external agencies like the Egyptian TVET Quality Assurance and Accreditation Authority (ETQAAN). Yet, these external bodies are not fully engaged across all ATS schools, highlighting a need to strengthen quality oversight and institutional capacity.

Funding for the ATSs is derived from both government budgets and contributions from industry partners. This PPP structure aims to attract private investment into public education, strengthening the links between education and industry. Most ATS schools currently do not charge student fees with a few exceptions such as the WE ATSs - WE is the national mobile telecommunication company owned by Telecom Egypt - which have received approval to charge nominal fees to cover some costs. Industry partners often provide allowances to students during on-the-job training but, overall, the costs of operating ATS schools are high with estimated costs paid by the private sector ranging from EGP 35,000 to 50,000 annually per-student, excluding the cost paid by the government.

The sustainability of the ATS model faces multifaceted challenges, balancing high initial investments and operational costs—including educational materials, teacher salaries, and international accreditation—against the need to demonstrate long-term financial viability through clear return on investment. Beyond finances, operational stability requires sustained private sector commitment, which is vulnerable to economic fluctuations and shifting corporate priorities, underscoring the importance of engaging partners with strong labour needs or aligned corporate social responsibility goals. Diversifying funding sources is critical, yet income-generating solutions (e.g., establishing fee-based Vocational Training Centres) face legislative barriers, and student fees—currently limited to

some ATSs —are politically contentious due to Egypt’s constitutional guarantee of free public education. Underutilised tax incentives and uncertain private sector investment further complicate sustainability, with some schools prioritising low-cost access over quality, while others operate as high-quality corporate social responsibility initiatives rather than profitable ventures. Inconsistent quality standards, weak regulation, and operational gaps in accreditation and governance threaten the model’s reputation and long-term viability. To secure their futures, the ATSs should strengthen their institutional coordination, enforce rigorous oversight, diversify funding, and integrate more effectively with broader TVET reforms under the TE 2.0 strategy.

A primary challenge for the MoETE is to expand the ATS model to meet the increasing demand for highly skilled labour and to foster a critical mass that can drive positive changes within Egypt’s TVET ecosystem. Currently, the ATSs’ capacity is limited in terms of the number of students they can accept although the demand is very high thus the number of students within the ATS is still a very small fraction of total number of technical education students. The MoETE aims to expand the ATS network significantly to double the target beyond the initial targets set in the initial version of the TE 2.0 Strategy, which envisioned 100 ATSs by 2030. Although MoETE has almost reached the target already, expanding to reach 200 ATSs or more might face significant challenges. For example, there is a risk that private sector partners may reconsider their collaborations necessitating the recruitment of new partners, which could be difficult given the large proportion of small and medium-sized enterprise in the economy. This economic structure complicates partnerships, as most such enterprises lack the resources or willingness to sponsor schools at the scale currently expected, prompting a need for innovative partnership models. The proposed expansion also raises questions about the optimal school size; currently, ATS schools enrol on average around 180 students, far fewer than the over 700 students in conventional TVET secondary schools. Deciding whether to transform larger conventional TVET schools into smaller ATSs or to establish new schools will have an impact on funding, infrastructure needs and the capacity of private sector partners to provide WBL opportunities.

Furthermore, scaling up the ATS model would require a substantial increase in qualified teachers and instructors, with a need for both initial recruitment and ongoing capacity building. The current reliance on private sector partners for hiring teachers often with better pay and specialised profiles presents financial and logistical challenges for the MoETE, which may struggle to recruit sufficient staff at scale. Such an expansion would necessitate increased budgets for teacher training, staff management, and quality assurance systems, including establishing regional branches of the central ATS Unit to oversee the larger network. International development partners are expected to support these efforts, but additional projects and funding will be necessary. Expansion also entails significant human resource needs at central and regional levels, requiring investments in staff recruitment, training, and advanced monitoring and evaluation systems. To secure their futures, the ATSs should strengthen their institutional coordination, enforce rigorous oversight, diversify funding, and integrate more effectively with broader TVET reforms under the TE 2.0 strategy. Aligning with other WBL initiatives and ensuring cohesive sector-wide implementation will be essential to maintaining the ATSs’ role in producing skilled graduates and advancing Egypt’s technical education system.

While expansion will be a substantial challenge, internationalisation is perhaps an even greater challenge since it is the weakest aspect of the ATS model as it currently stands. Although responsive to domestic labour market needs through the PPP approach, it lacks the inherent flexibility to adapt to the international demand for skilled labour. To address this, curriculum internationalisation, teaching methods, accreditation processes, and links to global business and labour markets, including intergovernmental agreements on skilled labour mobility, are essential for achieving targets related to international employment and mobility. On the positive side, Egypt’s education system has benefited significantly from international aid projects over the years, providing a strong foundation for expanding and internationalising the TVET system, particularly the ATS model.

Considering current internationalisation practices, ATSs have a solid technical education foundation but exhibit limited exposure to international TVET standards. Except for some collaborations, such as with the German-Arab Chamber of Commerce and Industry (AHK), curricula are not well aligned with international benchmarks and lack full compatibility with the competencies required in potential destination countries. Additionally, not all ATSs cooperate with international quality assurance bodies

in line with their agreements with MoETE. Despite these challenges, the ATS model holds significant potential for internationalisation, particularly through modern, industry-aligned curricula and training programmes, with the overarching goal of supporting graduates' preparedness for employment in international labour markets.

The review also explores international best practices for internationalising TVET, emphasising strategies such as enhancing teacher development through innovative methods like Collaborative Online International Learning (COIL), which fosters cross-border curriculum co-design and cultural exchange. It highlights the importance of international partnerships, such as those funded by Erasmus+ which facilitates cross-country collaboration in teacher training and industry-aligned skills development. The analysis underscores the role of international accreditation frameworks like the European Qualifications Framework (EQF) in ensuring international standards and facilitating labour mobility, as exemplified by Morocco's successful alignment and bilateral agreements that have improved migrant employment outcomes. A comparative analysis of labour mobility schemes from countries like South Africa, India, the Philippines, Estonia, and Poland reveals common strategies—such as establishing National Qualifications Frameworks, forming bilateral agreements, and sector-specific training—to enhance the recognition of qualifications and facilitate legal migration. Pre-departure training, digital credentialing, and innovative technology play crucial roles in improving migrant preparedness and the portability of qualifications. Relevant ideas for Egypt include activating the NQF and completing its registry, expanding bilateral labour agreements, leveraging training levies, and adopting digital credential systems to modernise its TVET sector. A centralised, strategic approach akin to models in South Africa or the Philippines is recommended to unify efforts across Ministries, align skills development with labour migration objectives, and effectively tap into international labour markets, thereby reducing youth unemployment and boosting economic gains.

This review provides key recommendations, covering the development of a strategic framework for the ATS model including its expansion and internal capacity development, supporting the sustainability of the model, the internationalisation of the ATSs and alignment with labour market needs. The following is a summary of the key recommendations categorised under specific themes:

Strengthening the Foundations of the ATS Model: Governance, Management and Sustainability

A. Developing the ATS model's strategic outlook

1. To expand the model and ensure its long-term sustainability, the **MoETE should articulate its vision for the ATS model into a clear and operational strategy** addressing systemic challenges while leveraging opportunities for growth and resilience.
2. A well-thought out ATS strategy, closely **aligned with the TE 2.0 strategy** and wider economic development aspirations, should be developed and communicated. This will help the MoETE build support for the model's expansion and sustainability among high-level decision makers, the private sector and international development partners.
3. The ATS strategy should be informed by a clear vision, mission and set of objectives all framed within the guiding principles upon which the ATS model was developed. It should have **clear key performance indicators (KPIs), monitoring mechanisms and an implementable action plan**.
4. Guidelines should be developed on how ATSs could become **"lighthouses", "knowledge hubs" or "resource centres" for regular Technical Secondary Schools (TSS)**.

B. Improving ATS governance structures

1. **An ATS Board** should be established to include the private sector and other stakeholders.
2. The various **WBL models (ATS, Dual System, Centres of Competence) should be consolidated** under a unified framework to streamline operations and improve outcomes, while **expanding schools' autonomy**.

3. Processes for monitoring and evaluating the work of the ATS and the **links with Technical Education Reform Office (TERO) should be improved.**
4. A **comprehensive quality assurance framework** should be developed to ensure better synergies between internal and external partners. The framework could be designed to make the ATS model more time, effort and cost effective.

C. Management development

1. **More staff should be employed within the ATS Unit and regional branches** should be established to manage the envisioned hundreds of ATS.
2. Indicators for both ATS and the rest of the system should be developed to track ATS delivery against a set of basic expectations and needs. The **Task Forces that were responsible for each pillar of the strategy should be reactivated** to discuss and approve the indicators.
3. The **ATS Unit staff (both current and new) will require capacity building** interventions to enable them to better manage the planned expansion. A detailed Training Needs Assessment will be required, and training may include developing skills in the fields of management, monitoring and evaluation, quality assurance, assessment, ICT as well as exposure to international best practice. The funding of such capacity building should be negotiated with international development partners and long-term development consultants should be contracted to support the ATS expansion and internationalisation plans.

D. Financing and sustainability of the ATS model

1. As part of the diversification of funding sources, the ATS Unit should develop a clear policy or strategy for introducing school fees and developing income-generating activities to ensure long-term sustainability. This could include guidelines for the industry partners on best practices, the role of MoETE, the use of the revenues and financial management.
2. A comprehensive cost analysis for ATSs should be carried out which would include the costs accrued by the MoETE and the industry partners. The aim would be to understand the real costs of operating an ATS, so that future partners are aware of the investment needed to sponsor an ATS and to effectively plan for expansion.
3. The government (not just MoETE on its own) should introduce procedures to ensure inter-ministerial coordination in support of the ATS expansion and sustainability and to identify additional and alternative funding sources.
4. The ATS should lobby the government for such additional and alternative funding, especially with the newly established National Council for Education, Research and Innovation which includes among its membership several advocates of the ATS model.
5. The possibilities for long-term funding from international development partners should also be explored, focusing on those willing to support the ATS model based on the comprehensive ATS strategy developed under recommendation A above.
6. Income-generating projects to increase schools' self-sufficiency and resource use, further enhancing quality should be developed by ATSs with support from the ATS Unit.

Advancing Internationalisation: Curriculum, Mobility and Global Partnerships

E. Internationalisation of the curriculum

1. The ATSs **curriculum should be internationalised** through the inclusion of international case studies, international projects and international collaborations. The teaching of foreign languages should become an essential element of an internationalised curriculum, including teaching in foreign languages as far as feasible and appropriate.

2. **Intercultural learning should be integrated into the curriculum.** This would enable ATSS to teach students about different cultures, communication styles and perspectives, which would facilitate their integration into the societies where they find their future jobs abroad.
3. The ATSS' **curricula should integrate internationally relevant skills and competencies** in order to support their graduates' international job search and future international career paths.
4. **Online learning in partnership with foreign TVET schools** should be encouraged. To support this, investments are needed in modern technology and infrastructure including in high-speed internet, digital learning platforms and well-equipped laboratories. One source of funding for this would be the KfW Digitalisation Fund, while other sources of investment funding should also be explored.

F. International exchange programmes

1. **ATS teachers should be encouraged and supported to become involved in international exchange programmes** to gain experience of up-to-date teaching methods in TVET schools where work-based learning is practiced. This should be carried out in a relevant European country, or a country in another target region such as the Gulf Cooperation Council countries.
2. **Options for teacher exchange programmes should be explored,** and advantage taken of the available opportunities. In addition, consideration should be given to the employment of international teachers from abroad on a temporary exchange basis to broaden the expertise of domestic teaching staff through knowledge transfer. This could be done through international initiatives such as EU ERASMUS+ and other programmes.
3. **Students should be involved in international student exchange programmes** to gain experience of working in an international environment, in another relevant country targeted by the ATS programme such as Germany or UAE. This could also be done on a partnership basis with other TVET schools abroad.
4. **ATSS should facilitate internships** for periods of work experience for their students **in international companies or organisations** whether in Egypt or abroad.
5. **The ATSS Unit should introduce** dedicated career guidance teams focused on **international career guidance and support services for graduates** who wish to find jobs abroad. This team should have expertise in international job markets, visa processes, and intercultural communications.

G. National and International accreditation

1. **ATSS should be encouraged and supported by MoETE and CEQAT to apply for accreditation by ETQAAN** as this will pave the way to international accreditation and make the process much easier.
2. A **comprehensive plan should be developed to ensure that all ATSS comply with the requirements of international accreditation/certification.** MoETE should pursue international accreditation through an overarching agreement with a limited number of reputable, internationally recognised bodies in relevant technical fields to be used by all ATSS. This would be cost-effective and would ensure that all ATSS find the right international partner and could significantly enhance the credibility and recognition of the ATSS and their graduates.
3. The **activation of the National Qualification Framework** should be fast-tracked and aligned with the European Qualification Framework to facilitate international accreditation and recognition to support the labour mobility of ATS graduates.

H. International partnerships

1. A **systemic plan to encourage partnerships with counterpart international TVET institutions** and industry stakeholders should be developed to promote general knowledge exchange and facilitate involvement in staff and student mobility programmes. This could include initiatives like the EU ERASMUS+ scheme and the ETF Network of Excellence.

2. **MoETE or Ministry of Labour (MoL) should develop country-specific Guides with information about those countries that have job openings for ATS graduates.** The Guides should include information on in-demand sectors and specific roles within them; up-to-date guidance on requirements for legal entry and work permits; guidance for graduates to plan their finances; and insights into foreign cultures, workplace norms and communication styles.
3. The **ATSs should establish strong links with partner-country organisations** like the Egyptian-German Centre for Jobs, Migration and Reintegration, and the Government should support the creation of similar centres by other countries.
4. **ATS students should participate in international skills competitions** at national, regional and international levels. This would elevate the reputation of Egypt's TVET graduates and students in the international labour market.

In conclusion, Egypt's TVET reform trajectory, exemplified through the ATS expansion and internationalisation, presents a significant potential to elevate the quality, relevance, and recognition of technical education. Strategic policy actions focusing on sustainable financing, private sector partnerships, international accreditation, and comprehensive stakeholder engagement are required to realise these objectives. By aligning TVET reforms with Egypt's economic development and labour market demands, the country can foster a resilient, skilled workforce that supports sustainable growth, regional competitiveness, and social inclusion. **Chapter 6 of this review provides a practical guide for implementing the above-mentioned recommendations** and achieving this transformative journey of expanding and internationalising the ATS model.

LIST OF ACRONYMS

ACQF:	African Continental Qualifications Framework
ACTIVE-ATS:	Advanced Competencies of Teachers to Improve Vocational Education in Applied Technology Schools
AHK:	German-Arab Chamber of Commerce and Industry
ANQR:	National Agency for Qualifications Recognition (Morocco)
AQRF:	ASEAN Qualifications Reference Framework
ASEAN:	Association of Southeast Asian Nations
ATS:	Applied Technology Schools
AU:	African Union
AUC:	African Union Commission
BLAs:	Bilateral Labour Agreements
BMZ:	German Federal Ministry for Economic Cooperation and Development
CBE:	Competency-Based Education
CBE:	Central Bank of Egypt
CBT:	Competency-Based Training
CDS:	Career Development Centres
CEQAT:	Centre for the Enhancement of Quality Assurance of Technical Education
CIS:	Council of International Schools
CLIL:	Content and Language Integrated Learning
COIL:	Collaborative Online International Learning
CoC:	Centres of Competence

CoVE:	Centres of Vocational Excellence
CVET:	Continuing Vocational Education and Training
DS:	Dual System
EBRD:	European Bank for Reconstruction and Development
ECML:	European Centre for Modern Languages
EDU-Tech:	Technical Education Conference (Egypt)
EEQF	Estonian Qualifications Framework
EFIA:	Egyptian Federation of Investors Associations
EFVET:	European Forum of Technical and Vocational Education and Training
EGP:	Egyptian Pound
ENQF:	Egyptian National Qualifications Framework
EOO:	Egypt Occupational Outlook
EQAVET:	European Quality Assurance in Vocational Education and Training
EQF:	European Qualifications Framework
ETF:	European Training Foundation
ETQAAN:	Egyptian TVET Quality Assurance and Accreditation Authority
EU:	European Union
FEI:	Federation of Egyptian Industries
GCC:	Gulf Cooperation Council
GiZ:	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)
IATS:	International Applied Technology Schools
IEAC:	International Education Accreditation Council

IHK:	Chamber of Industry and Commerce (Germany)
ILO:	International Labour Organization
IOM:	International Organization for Migration
IPS:	International Public Schools
ISO:	International Organisation for Standardisation
ISP:	International Skills Partnerships (British Council)
IVET:	Initial Vocational Education and Training
KfW:	German Development Bank
KNQA:	Kenya National Qualifications Authority
KNQF:	Kenya National Qualifications Framework
KYEOP:	Kenya Youth Employment and Opportunities Project
LMIS:	Labour Market Information System
LLL:	Lifelong Learning
M&E:	Monitoring and Evaluation
MENA:	Middle East and North Africa
MKI-DS:	Mubarak Kohl Initiative - Dual System
MoETE:	Ministry of Education and Technical Education (Egypt)
MoHE:	Ministry of Higher Education (Egypt)
MoHP:	Ministry of Health and Population (Egypt)
MoL:	Ministry of Labour (Egypt)
MoPEDMiC:	Ministry of Planning, Economic Development and International Cooperation (Egypt)
MoTI:	Ministry of Trade and Industry (Egypt)

MSDE:	Ministry of Skill Development and Entrepreneurship (India)
NAQAAE:	National Authority for Quality Assurance and Accreditation in Education (Egypt)
NCVET:	National Council for Vocational Education and Training (India)
NEET:	Neither in Employment, Education, or Training
NQF:	National Qualifications Framework
NSDC:	National Skill Development Corporation (India)
NSDP:	National Skills Development Plan (South Africa)
NSQF:	National Skills Qualification Framework (India)
NSS:	National Skills Passport (Sri Lanka)
OECD:	Organisation for Economic Co-operation and Development
OEC:	Overseas Employment Certificate (Philippines)
PDOS:	Pre-Departure Orientation Seminars (Philippines)
PMKVY:	Pradhan Mantri Kaushal Vikas Yojana (India)
POEA:	Philippine Overseas Employment Administration
PPP:	Public-Private Partnership
PQF:	Philippine Qualifications Framework
PVTD:	Productivity and Vocational Training Department (Egypt)
QAHE:	International Association for Quality Assurance in Pre-Tertiary and Higher Education
ROI:	Return on Investment
RPL:	Recognition of Prior Learning
RUDS:	Regional Units of the Dual System
SADC:	South African Development Community

SLBFE:	Sri Lanka Bureau of Foreign Employment
SLQF:	Sri Lanka Qualifications Framework
SMPs:	Skills Mobility Partnerships
SSC:	Sector Skills Councils
STED:	Skills for Trade and Economic Diversification (ILO)
TE 2.0:	Technical Education 2.0 Strategy (Egypt)
TERO:	Technical Education Reform Office
TESDA:	Technical Education and Skills Development Authority (Philippines)
THAMM:	Towards a Holistic Approach to Labour Migration Governance and Labour Mobility in North Africa
TNA:	Training Needs Assessment
TRP:	Torino Process Report
TSS:	Technical Secondary Schools
TVETA:	Technical and Vocational Education Teachers' Academy (Egypt)
TVET:	Technical and Vocational Education and Training
UNESCO:	United Nations Educational, Scientific and Cultural Organization
USAID:	United States Agency for International Development
VET:	Vocational Education and Training

1. Introduction and background

1.1. General introduction, aims and policy background

The Egyptian Ministry of Education and Technical Education (MoETE) agreed with the European Training Foundation (ETF) to take part in the sixth cycle of the Torino Process Report (TPR). Level 1 of the TPR which took place between 2022 and 2024 focused on monitoring the performance of Technical and Vocational Education and Training (TVET) in providing opportunities for Lifelong Learning (LLL).

Level 2 of the TPR, the subject of the current policy review, gave the MoETE the opportunity to review their policies and practices in areas pertaining to the internationalisation of Applied Technology Schools (ATS) and the benefits this process could provide to the labour market and the rest of the national TVET system from an LLL perspective.

This policy review report sets out the status quo of the ATS model as a Public-Private Partnership (PPP) scheme in terms of its design features, quality, links with other TVET models and reforms, finance, impact and sustainability. It focuses on key issues related to the expansion and internationalisation of the ATS approach. The policy review addresses the following key questions, among other key policy issues identified in this report:

1. How can the ATS model be expanded in a way that really impacts the quality and relevance of the TVET system in Egypt? The review has shown that this has strong and direct implications on the model's governance, management and operations.
2. What are the policies and practical tools that would address the operational and financial sustainability of the ATS model and guarantee that the private sector is not only engaged but also committed to its sustainability?
3. How can all the MoETE work-based learning (WBL) models, which include the ATS, but also the Dual System, School in Factory and Centres of Competence, be integrated to collectively make technical education more responsive to labour market needs and effectively collaborate with employers of different sizes each according to their needs, capacity and resources?
4. What is the definition of Internationalisation of TVET and which elements of "Internationalisation" of the ATS model should be addressed and prioritised?
 - Is it to create a workforce benchmarked with international standards to support the local economy and attract foreign direct investment (Internationalisation of TVET)? OR is it to facilitate the further international education of the graduates through recognising qualifications and increase their opportunities to find jobs abroad (International labour mobility)? OR both?
 - Is it to internationalise the accreditation of ATSs?
 - Is it to foster collaboration between Egyptian and international TVET providers in terms of teacher training, student exchange programmes and participation in joint international projects?

One of the key objectives of the MoETE is to internationalise the ATS model and this has been explicitly communicated to the ETF team to be a key part of the current TPR review.

Internationalisation is currently the weakest link in the ATS model. While the PPP approach ensures that the skills taught in the ATS are responsive to domestic labour market needs in particular sectors, the model does not have an inherent potential to adapt to changes in the international demand for skilled labour. While the MoETE is clear about the objective of internationalisation, which is to create real and quick opportunities for ATS graduates in international labour markets, this review identified key aspects and activities that need development. These are (i) internationalisation of the curriculum, (ii) internationalisation of teaching staff, (iii) international accreditation, recognition and quality

assurance, (iv) strengthening international career support and mobility pathways for TVET graduates and (v) pursuing international bilateral partnerships and agreements.

In this policy review report, the ETF review team identified the key Issues/challenges to be addressed as part of the ATS mode's evolution during the past six years since their launch and the potential for expansion and internationalisation of the model.

1.2. The labour market in Egypt –employers' demand for skilled workers

Egypt's economy is quite diverse with many important sectors that drive investments and employment. During the past decade, Egypt's economic landscape has undergone significant changes, driven by structural reforms, foreign investments, and efforts to stabilise the economy. This transitioning phase has seen growing emphasis on non-agricultural sectors such as construction, transport, infrastructure, manufacturing, energy, services, tourism, and information technology.

In recent years, Egypt has experienced robust economic growth, averaging 4.9% from 2016-2019 and 4.3% from 2020-2023.² The COVID-19 pandemic in 2020 led to a temporary contraction and recent years have seen challenges due to international and regional conflicts, high inflation, the currency depreciation, and soaring public debt. Meanwhile, the labour market continues to face challenges, including high unemployment rates among youth (Estimated at 25% for individuals aged 15-29)³, skill mismatches, and a significant informal economy. Many reports and analyses by international organisations highlight that a substantial portion of the Egyptian workforce lacks the necessary skills required by employers, leading to underemployment and job dissatisfaction. Furthermore, the rapid technological advancements in various sectors necessitate a workforce that is adaptable and equipped with relevant digital and language skills.

With a total workforce of approximately 30 million people⁴, Egypt's labour market faces additional dual pressures: a temporary decline in workforce participation and an impending surge in labour supply from the "echo generation" (children of the youth bulge born between 2006–2014), who will enter the workforce by the mid-2030s⁵. While fertility rates have dropped (from 3.5 births per woman in 2014 to 2.2 in 2023), the labour force participation rate has steadily declined from 51% in 2012 to 45% in 2023 (72% for men, 18% for women), driven by discouragement among youth and educated women. Overall unemployment rates fell to 6.3% in 2023, but this reflects reduced job-seeking activity rather than robust job creation. Youth that are neither in employment nor in education or training (NEET) account for 35% of the (19% for men, 89% for women) and an annual labour force growth of 2.2% is projected between 2025–2030⁶.

Employers increasingly demand skilled workers in sectors like information and communication technology (ICT), renewable energy, and advanced manufacturing, yet structural mismatches persist. For instance, 58% of tech job openings in 2025 require advanced software development skills, while 49% mandate English proficiency⁷. The ICT sector as an example, contributing 5.8% to GDP in 2025 and targeting 8% by 2030, exemplifies this demand, with roles in artificial intelligence (AI), cybersecurity, and cloud computing growing rapidly. To address this, the MoETE is also expanding the number of WE ATSS⁸ to cover these skills across all governorates in Egypt.

Employers interviewed during the current policy review process prioritised specialised technical competencies, language skills and transferable soft skills. These soft skills include communication,

² World Development Indicators online data

³ Fatma Fouad, 2024

⁴ Fatma Fouad, 2024

⁵ Krafft et al, 2024

⁶ Krafft et al, 2024

⁷ Ludo Fourrage, 2025

⁸ WE company is the national mobile telecommunication company owned by Telecom Egypt.

teamwork, and critical thinking and effective project management. Some of the International Applied Technology Schools (IATS) visited during the mission give these skills priority as part of the formal training of students.

Furthermore, The Ministry of Planning, Economic Development and International Cooperation (MoPEDMiC) in collaboration with GiZ established the Egypt Occupational Outlook (EOO) which is a reliable digital platform that offers comprehensive labour market information⁹. This includes details on rapidly expanding occupations, their regional distribution, average salaries, necessary educational credentials, as well as the essential market-driven skills, knowledge, and competencies.

1.3. Supply of labour – excess supply and need for planned migration

Egypt is one of the most populous Arab countries and has one of the fastest growing populations in the world, operating an education and training system that by 2025 is expecting to generate more than 800,000 new entrants to the labour market annually¹⁰, putting high pressure on the economic system to create job opportunities for the unemployed and the newcomers. Accordingly, high levels of migration for work have made Egypt a major labour exporter since the early 1970s, and the largest labour exporter in the MENA region. Since then and until today, migration has been considered a tool for socio-economic development for two main reasons. The first is reducing the job-creation pressure on the Egyptian labour market, and the second the significant amount of remittances received and its contribution to the economy at the macro and the micro levels. According to a 2022 working paper by the Economic Research Forum, remittances are Egypt's largest source of foreign currency, five times more than the revenue from the Suez Canal (Fouad, 2024). Furthermore, the Central Bank of Egypt (CBE) data indicate that remittances grew by 74% year-on-year in May 2024 to reach \$2.7 billion and by 66% to reach \$2.6 billion in June 2024¹¹.

Egyptian migration can be classified into two categories, (i) temporary migration to the Gulf countries, and (ii) permanent migration to the OECD countries, mostly Europe, the former being more prevalent. In recent years, the changing political conditions in the GCC countries, Libya and Jordan, have directed migration towards Europe¹².

With a “shortage of skills” in Europe and in high-growth regional countries like Saudi Arabia, the need for a skilled workforce from the Middle East and elsewhere, is likely to increase¹³. This may put Egyptian workers in direct competition with workers from other countries for decent jobs in Europe. One of the factors that facilitates the integration of migrants into the labour markets of other countries is the quality of their skills, and the role of assessments and accreditation for the purpose of skills recognition by destination countries. This has always been a requirement for employment in most European countries and is currently being introduced by other countries, such as Saudi Arabia, a major destination country for Egyptian migrants. It is therefore in the best interests of the Egyptian government to ensure that migrants from Egypt can meet the skills needs and standards of external labour markets.

The economic and labour market developments of recent years have increased both the pressure on and the opportunities for the TVET system in Egypt. The TVET system must stay relevant to the needs of employers and be aligned to national economic development plans, and so the government has shown commitment to reforming the TVET system. This commitment is demonstrated through the development and implementation of the Technical Education (TE) 2.0 Strategy and by offering public schools for partnership with the private sector to encourage their involvement in the TVET reform.

⁹ <https://occupational-outlook.mped.gov.eg/>

¹⁰ Assaad, 2023

¹¹ Fatma Fouad, 202

¹² EBRD, 2022

¹³ IOM report, 2023

However, it should be noted that the private sector's support for ATS partnerships may be challenged during periods of economic slowdown, since the sustainability of the model is dependent on the private sector's financial well-being.

The government has set ambitious targets of 10% of TVET graduates to be prepared for the international labour market. To initiate this, immediately after the COVID-19 pandemic, the MoETE commissioned an in-depth international labour market study funded by the European Bank for Reconstruction and Development (EBRD). The study investigated the needs, regulations and working conditions of 10 countries of destination with high potential for Egyptian young workers. Parallel to this and in collaboration with the German government, Egypt established the Egyptian-German Centre for Jobs, Migration and Reintegration, to formalise labour mobility between Egypt and Germany and support young people prepare for working in Germany. The government is currently working to establish a similar centre with Italy.

As Egypt continues to navigate global economic uncertainties, its strategic focus on diversification and sustainable development will be crucial for long-term stability and growth. The ATS model and its internationalisation perspective aims to address these economic challenges by providing students with the skills that are in demand in the local and international labour markets, thereby reducing unemployment, improving livelihoods and enhancing productivity.

Box 1: Review of findings from Chapter 1.

Positive achievements to build upon:

- Clear national TE strategy led by the MoETE and ongoing action plan
- High-level commitment for TVET and the role it plays in achieving economic development
- Study commissioned by MoETE on international labour market and what it means for Egyptian youth
- Ministry of Planning has recently launched the Egypt Occupational Outlook (EOO).
- On-going bilateral discussion underway with key countries of destination like Germany and Italy
- Establishment of the Egyptian-German Centre for Jobs, Migration and Reintegration

Areas that need further development:

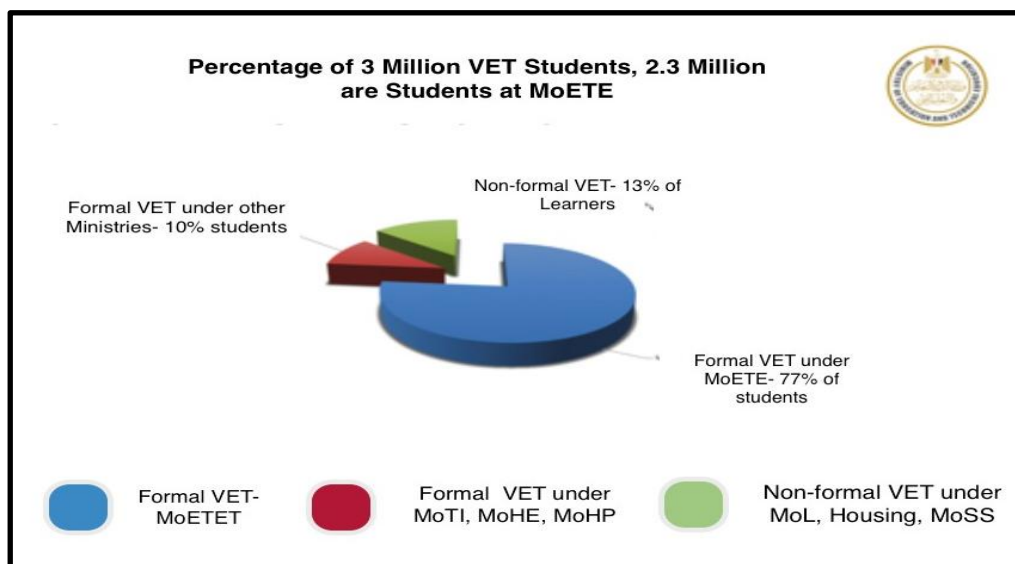
- Concrete bi-lateral agreements on labour mobility with some countries of destination still undeveloped with no clear or coordinated Egyptian vision and operational plan.
- Unavailable and unreliable labour market information with an absence of a labour market information system (LMIS).

2. The TVET ecosystem in Egypt

2.1. Overview of the TVET system – governance, structures, levels

TVET in Egypt has a large and complex landscape. Governance and delivery is fragmented between numerous national stakeholders who are responsible for serving around three million active learners within formal and non-formal TVET institutes and other providers. The TVET system is mainly composed of a large number of formal Initial Vocational Education and Training (IVET) schools/institutions and a smaller number of non-formal Continuing Vocational and Training (CVT) centres/programmes. The following diagram illustrates the size of the TVET system divided by the different types and stakeholders.

Figure 1: Enrolment in TVET by programme (formal and non-formal) and responsible Ministry (in percent) 2022/23



Source: MoETE Presentation, "Reform of Technical Education", 2023

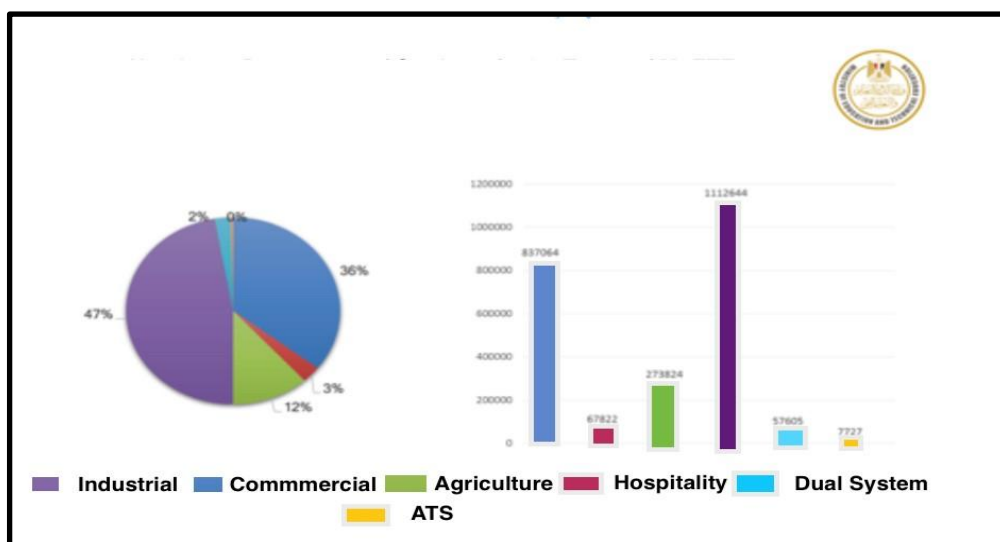
The formal IVET system includes a number of programmes at secondary and post-secondary level and more recently also including tertiary university level through the new Technological Universities that started operations in the academic year 2019/20. The Ministry of Education and Technical Education (MoETE) is by far the largest provider with 2.3 million active learners within the formal initial TVET (IVET) system which currently administers around 3,000 technical secondary schools¹⁴ offering 3- and 5-year programmes granting technical diploma and technical advanced diploma in four main economic sectors; industry, agriculture, commerce and hospitality. These programmes are offered through a number of models/schemes including:

- Traditional Technical Secondary Schools (TSS)
- TSSs that implement CBT
- Dual System Schools
- School in Factory

¹⁴ These include 1300 stand-alone technical schools, and the rest are affiliated classes within other types of schools.

- Labour System¹⁵
- Applied Technology Schools (ATS) (including the International Applied Technology Schools)
- Sectoral Centres of Competences (CoC)¹⁶

Figure 2: Number and percentage of students in the different types of MoETE Schools (2022/23)



Source: MoETE Presentation, "Reform of Technical Education", 2023

In addition to the MoETE, several stakeholders are also active in providing formal IVET services. These stakeholders include the following Ministries and entities:

- **The Ministry of Higher Education and Scientific Research (MoHE):** At the post-secondary and tertiary education level, TVET is offered within 45 middle technical institutes (2-year programmes) affiliated to 8 Technical Colleges¹⁷. In addition to four Industrial Education Colleges (IECs) and 15 Technological Universities¹⁸ (4-year programmes in addition to post graduate degrees).
- **Productivity and Vocational Training Department (PVT) affiliated to the Ministry of Trade and Industry (MoTI):** A network of 45 vocational training centres offering a 3-year apprenticeship programme mandated to qualify workers to participate in the industrial sector labour market. In addition to these centres, the PVT oversee more than 100 training stations in cooperation with the private sector. The diplomas granted are recognised by the MoETE.

¹⁵ The MoETE also runs a competence recognition system (labour/workers' system) where dropouts in employment can acquire a TE diploma (equivalent to that of the 3-year TE programme) after paying the required fees and passing the exams over the course of three years

¹⁶ Currently operating two pilots and the rest under establishment with support from the German Government.

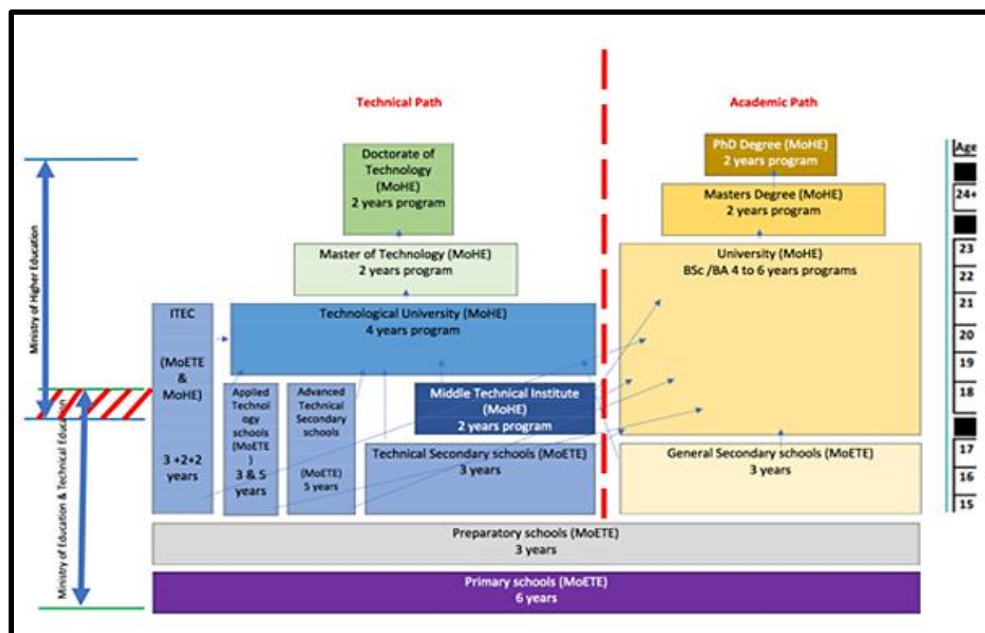
¹⁷ There are ongoing plans to integrate these colleges within the Technological Universities.

¹⁸ 12 Public and 3 private Technological Universities.

- **The Ministry of Health and Population (MoHP):** The Ministry offers a 3+2 year technical education programme for Nursing and medical technicians; implemented in over 200 schools¹⁹ with around 46,000 students. The programme aims to prepare qualified graduates, able to practice basic nursing tasks related to the health of the individual, family and society. The programme also offers a Technical Diploma in Nursing after the 3 years and an Occupational Licence for Nursing following the 2-year work-based learning in a hospital.
- **Private Sector Technical Education:** Different from the TVET schools and institutions in partnership with the public sector, there are around 200 TVET schools and institutions (secondary and post-secondary) with varying quality of provision. Depending on their level they are licensed and regulated by either the MoETE or MoHE. In addition, there are three new private Technological Universities that started operation in the academic year 2023/24.

The following diagram illustrates the education system in Egypt, including formal TVET provision and includes the position of the ATSSs.

Figure 3: Education and training System in Egypt



Source: Developed by the authors of this report.

On the other hand, **non-formal or Continuing Vocational Training (CVET)**, which is regulated by the Ministry of Labour (MoL), remains the most underdeveloped element in the Egyptian TVET system. Unlike IVET, monitoring and evaluation of the quality and effectiveness of TVET programmes under the auspices of the MoL is mainly absent. Several initiatives have been implemented at project level in cooperation with international development partners, but the sustainability of these interventions is not ensured by national stakeholders.²⁰ However, in its latest reform initiatives the government has required that CVET institutes, post-secondary technical education institutions, and Technological Universities should be accredited by the new Egyptian TVET Quality Assurance and Accreditation Authority (ETQAAN). Around 600 public and private vocational training institutions

¹⁹ CAPMAS: Annual Bulletin of Education and Training Statistics in Government and Private Sector, 2018-2019

²⁰ Education, Training and Employment Developments 2018, ETF, 2018

offering short- and long-term vocational training programmes (up to one year duration) are administered by various ministries and organisations (Ministry of Labour, Ministry of Social Solidarity, Ministry of Housing, Ministry of Electricity and Renewable Energy, Ministry of Transport, Ministry of Petroleum, Ministry of Water Resources and Irrigation, NGOs and the private sector). These vocational training centres serve around 390,000 trainees a year.²¹

2.2. TVET Key Challenges and recent reform initiatives

2.2.1. Key Challenges

According to the MoETE's published 2018 Technical Education 2.0 Strategy (T.E 2.0), the following are the most pressing challenges of the TVET system which the strategy was developed to address:

- Low quality of TVET provision and under developed standards, assessments, quality assurance and accreditation mechanisms including an inactivated National Qualifications Framework (NQF). Limited number of high-quality TVET institutions.
- Mismatch between the supply of and demand for skills leading to low TVET relevance in the labour market, due to the lack of labour market information systems and employer engagement.
- Weak governance and coordination structures among the different stakeholders including, coherence, transition for students with respect to LLL, monitoring and evaluation.
- Outdated content-driven curricula and programmes that do not address the future of work.
- Low capacity and number²² of teaching/training staff especially in the practical competencies.
- Unsustainable models for financing this relatively costly type of education and training. The increasing number of students and the limited financial resources remain the biggest challenge for the Egyptian education system, which is also facing major challenges in terms of quality and equity.
- Until recently, limited public-private-partnerships (PPP) in the planning and operation of TVET institutions.
- Underdeveloped mechanisms for students' transition to employment or further training/education pathways, even with the introduction of the Technical Universities in 2019, there are still challenges in alignment between the secondary and tertiary TVET.
- The traditional negative image of the TVET system and its graduates in Egypt.

2.2.2. Attempts to reform the TVET system

There have been attempts during the last decade to address the above challenges, including through the establishment of a short-lived Ministry dedicated to TVET in 2015. However, none of these efforts gained enough momentum to approach the goals described in the 2014 constitution (Article 20): "The State shall encourage and develop technical and technological education as well as vocational training and expand all their types in accordance with international quality standards and labour market needs".

²¹ MoETE updated TE 2.0 Strategy, 2023.

²² There has been a freeze on the recruitment of civil servants including teachers for decades which hugely affects the education system including TVET. When the situation becomes quite severe, MoETE seeks special approval from the Prime Minister to recruit teachers, however it is seldom enough.

For its part, MoETE as the largest TVET provider took the initiative to transform technical education in 2018. Since then, the transformation of TVET into an attractive choice for learners became a policy priority and a matter of national importance. In order to achieve this objective, MoETE has embarked, with the support of international development partners on the implementation of five major transformation pillars under what has been labelled as the Technical Education 2.0 Reform Strategy (TE 2.0). In 2024, T.E 2.0 was reviewed by the MoETE with the support of ETF²³ and five further reform pillars were added to the strategy by the Ministry. The following are the current 10 pillars:

1. Pillar 1: Transformed Quality of Technical Education and Improving Governance, Monitoring and Evaluation
2. Pillar 2: Transformed Relevance of Technical Education, Aligned to Market- Needs, Through Competence-Based Curricula and the Expansion in Digitalization Aligned with Future Jobs
3. Pillar 3: Transformed Teachers and Management Staff through Training & Qualification
4. Pillar 4: Transformed Schools and Educational Systems through Private Sector Partnerships & Expansion of the Work-Based Learning Models
5. Pillar 5: Transformed Image of Technical Education through Enhancing Social Perception
6. Pillar 6: Expand the Enrolment base in Technical Education
7. Pillar 7: Develop Scientific Research and Enhance Technological Application in Technical Education
8. Pillar 8: Leverage Technical Education Assets and Resources to Realize Self- Sufficiency Through Private Sector Partnerships
9. Pillar 9: Develop Technological Infrastructure to Enable Digitalization of Technical and Technological Education
10. Pillar 10: Enhance Local Industries and Promote Technology Localization.

2.3. TVET models of public-private-partnerships (PPP)

This section of the report provides a summary of the different models of PPP in TVET in Egypt and provides some of the examples that are currently being provided within the TVET system.

Many international analysts consider WBL schemes in TVET as a form of public private partnerships aimed at improving the outputs of the system and bridging the gap between supply and demand for skilled workers. Egypt has a long history of providing apprenticeship and WBL schemes, both formal and non-formal, and currently provides a variety of models, mostly for young learners but with limited pilot schemes for adult apprentices²⁴. Table 1 below, summarises the different PPP and WBL schemes in Egypt.

Table 1: Models of PPP and WBL in the TVET System

Name of PPP TVET Model	Description of Model	Concerned authority/governance	Remarks
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²³ With request from MoETE and the EUD, ETF has conducted an in-depth assessment of the implementation of the strategy between 2018 and 2023 and reference to the findings and recommendations can be used for the current TPR review.

[Assessment of the Progress of the Egyptian Strategy for Technical Education \(TE 2.0\) | ETF](#)

²⁴ UNESCO, 2019

<p>Dual System Education and Training</p>	<p>Formally known as the Mubarak Kohl Initiative (MKI-DS), the Dual System (DS) was introduced to Egyptian technical secondary schools in 1994, with the support of the German Federal Ministry for Economic Cooperation and Development. Participating companies are responsible for the practical training component, during which students spend four days a week in factories/enterprises and two days at school.</p> <p>The are 22 DS schools and some classes in 127 other TSS schools serving around 60,000 students.</p>	<p>MoETE Decree No. 162 of 2011, complementing Ministerial Decree No. 62 of 2007 for “Regulating and Developing Procedures and Controls for the dual education and training system in secondary technical education three years”.</p>	
<p>Integrated TVET scheme collaboration with public and private companies (School within Factory)</p>	<p>The Integrated TVET Scheme, also now known as the “School within Factory” is about establishing joint schools between MoETE and companies within the premises of the partner company or as a part of the company training centre. Started in 1972, with a limited number of public sector companies and then in 2008 the private sector was introduced.</p> <p>By 2024 there are around 47 operating and 77 under establishment serving 8,000 students.</p>	<p>Implemented according to protocol agreements between the MoETE and individual private and public companies.</p>	<p>This model is managed under the Dual System department at MoETE.</p>
<p>Applied Technology Schools (ATS) including International Applied Technology Schools (IATS)</p>	<p>the MoETE introduced in 2018 the ATS model as a new “Brand” of technical education. Focusing on improving the quality of provision, making it more responsive to the needs of the economy while promoting public-private partnerships (PPP) to drive engagement from the private sector. The partner company sponsors and co-manages a school that is owned by MoETE. In 2021, the IATS was introduced with support from USAID.</p> <p>There are 79 operating ATSS serving around 14,600 students.</p>	<p>Based on a Ministerial Decree establishing the ATS Unit, MoUs are signed between the MoETE and the partner company to govern the relationship.</p>	<p>More details about this model is provided later in the report.</p>
<p>Labour System (Nezam El Oumal).</p>	<p>This model services around 16% of the 2.2 million (350,000) students enrolled in technical education and it could be considered a combination of WBL and Recognition of Prior Learning (RPL). In its formal governing regulations, this is intended for adults (over 18 years of age) who dropped out of the formal system and who can prove they are</p>	<p>MoETE decree No. 562 of 2014</p>	<p>Although at face value it looks like a very positive option for learners, however, the implementation over the years has seen serious defects in terms of target group (now students under 18 opt for this easy way out), in terms of transparency</p>

	working in formal economic establishments, and they only attend the exams to get their formal technical secondary qualification. They are offered some short training in the weekends against some fees but this is not common.		and verification that the candidates are actually working in the same area they are applying for to get assessed. This system is currently undergoing serious reform in terms of regulations including assessments, however it is still not finalized or implemented.
Sectoral Centres of Competence (CoCs)	CoCs are special educational service providers in the TVET system, that have a sectoral focus and are aiming at developing their respective sector. They are technical secondary schools which are transformed into centres of excellence branded as Centres of Competence and offer a high quality WBL scheme. The majority will be supported by the German government through KfW and GiZ. As a sectoral hub, the CoC will support a network of other schools in the same sector.	They be governed by a board from the private sector and the MoETE. The formal decrees are under development.	The CoCs are yet to be fully operational. There are two pilots supported by GiZ already operating serving around 310 students. The rest of the CoCs will be supported by KfW are still under establishment. The KfW CoCs will have state-of-the art facilities, infrastructure and equipment.
Industrial Apprenticeship Scheme, Productivity and Vocational Training Department (PVTD) including Training Stations in companies	The PVTD was established in the 1950s and is considered as the second largest provider of formal secondary vocational and technical education and training for the Egyptian Industrial sector. Serving around 51,000 students and operating through 42 vocational training centres (VTCs) and 100 training stations distributed nationally . The three-year apprenticeship diploma programme emphasises practical skills where the students spend the entire third year, as an apprentice, working in a company with one day per week he/she is required to attend classes in his/her VTC. In 1982 they introduced the Training Station model which is similar to the MoETE school within factory where the public or private sector establish VTCs within their companies for the entire 3-year programme.	Governed by the Ministry of Industry through Presidential Decree 1470 dated 20/4/1964.	
Traditional Apprenticeship (El tadarrug el meheni)	Under this scheme, an apprenticeship contract is signed between the worker or his guardian and the employer (specifying a progressive wage), apprentices (age 13 to 17 years old), are engaged with employers for the purpose of learning a certain vocation for 1 to 3 years divided into 3 stages. Apprentices are prohibited from working in	Governed by the Ministry of Labour, Ministerial Decree No. 175 of the Year 2003 Concerning the Rules and Procedures Regulating Vocational Apprenticeship	This is often referred to as regulated “Traditional Apprenticeship”.

	<p>vocations not suitable for children. This is monitored by the Department of Inspection for Child Labour. The scheme is currently only workplace-based and does not involve formal training institutes.</p> <p>Reports indicate that there are around 10000 such apprenticeship contracts a year²⁵.</p>		
<p>Private Sector Technical schools (e.g. German Hotel School in El Gouna, Sewedy Technical Academy-STA)</p>	<p>This is a model of private sector investment in TVET. However, they collaborate with the MoETE in terms of licensing the schools, approving curricula, issuing diplomas and some cooperation in terms of training teachers or students on a limited scale.</p> <p>There are around 51 such private schools serving around 18,000 students²⁶.</p>	<p>License for a private school from the MoETE.</p>	<p>Although it may not be considered PPP due to the absence of direct involvement of the public sector beyond providing permits and recognizing certificates, considering private TVET providers also gives insight on the motivations and the business models which could be useful when developing a sustainable and profitable PPP model for TVET.</p>

Source: Adopted by the authors from the UNESCO, Enhancing Institutionalizing Partnerships between TVET Institutions and the World of Work in the Arab Region- Egypt Report, 2019.

The establishment of the Applied Technology Schools (ATS) was included under Pillar 4 described in section 2.2 above, with a target to establish 200 ATSs by 2030. The next sections of this report describe the ATS model in more detail.

Box 2: Review of findings from section 2.

Positive achievements to build upon:

- The MoETE has achieved many success stories in implementing the TE 2.0 Reform Strategy and created important milestones in employer engagement and private sector partnerships.
- The updated TE strategy has expanded in the number of pillars which the ATS model will be linked to and contribute towards the achievement of these pillars.
- MoETE has created a positive brand for ATS with commitment to expansion of the model from high-level decision-makers and the private sector.
- The ATS Unit has developed a tracer system for ATSs to identify graduates' progress. The data are collected through the schools and the ATS Unit, and not through the Technical Education Reform Office (TERO).

Areas that need further development:

- Mis-coordination in the TVET system due to the many players.
- The Ministry of Planning initiative the Sector Skills Councils to align skills with the labour market has been delayed in setting them up.

²⁵ ILO, 2017

²⁶ MoETE updated TE 2.0 Strategy, 2023

- Challenges in Higher Education Admission for ATS Graduates: Most students aspire to continue to attend higher education (HE) abroad. However, if they want to attend, HE in Egypt, admission to higher education or technical higher education institutions is not smooth even if by law Technological Universities should accept 80% of admissions from among TVET graduates

3. Organisation of the ATS model

3.1 Overview of the ATS Model

In response to the increasing demand for skilled labour and the need for alignment between education and labour market requirements, the MoETE introduced in 2018 the Applied Technology Schools (ATS) model as a new “Brand” of technical education. This initiative was part of the broader T.E. 2.0 strategy to modernise technical education, focusing on improving the quality of provision, making it more responsive to the needs of the economy while promoting public-private partnerships (PPP) to drive engagement from the private sector.

The ATS model represents both an enhancement of the dual education and training system that was introduced in Egypt in the mid-1990s as well as a shift from traditional educational approaches, focusing on practical skills, industry collaboration, and a curriculum aligned with Egypt’s modern economic development aspirations in priority sectors.

Under this model, the private sector partner signs a protocol agreement with the MoETE for six to ten years, with a possibility of extension for the same period (UNESCO, 2019). The MoETE provides the building and pays the salaries of teachers, while the industrial partner provides the management expertise and the international accreditation of the training for the students (Magdy, 2022). Due to the involvement of the private partner, the technical education provided is within the scope of work-based learning and is highly responsive to the needs of employers. The private sector partner has a large say in the scope of the curriculum, which according to some analysts may lead to a rather narrow curriculum focused on the needs of the individual partners rather than providing a more broadly based curriculum designed around the provision of transferable skills which could offer students more choices and opportunities on the labour market. However, during the site visits and interviews with schools and industry partners, it was evident that this was not the case, and that some ATSs in the same sector were sharing the same curricula. In IATSS, with support from USAID, it was not just the partner company that was involved in curricula development, but companies in the same sector were collaborating to develop a broader curriculum that could eventually benefit the whole sector not just the partner company.

Three ATSs²⁷ started operations during the academic year 2018/19 and by April 2025 there were 90²⁸ ATSs including 10 International ATSs (IATS) with support from USAID’s Workforce Egypt Project. The IATS follow the same model as the ATS but have innovative laboratories and digital systems. They are environmentally friendly green schools using solar energy, water reclamation and energy conservation technologies. They promote stronger links with the community and aspire to obtain ISO certification in addition to the national accreditation.

Annex 1 of this report provides a complete list of the current ATSs, the industry partners, the number and gender of students, sector, trades provided, location and date of establishment. To date around 14,600 students are enrolled in these 79 operating ATS schools. This represents less than 1% of active learners in all MoETE schools.

Both the ATSs and the IATS have been established through agreements between the MoETE and the private sector companies who support the schools. They both integrate competency-based classroom learning with practical training that will prepare students for immediate employment upon graduation (USAID, 2022). Graduates from both types of schools receive a nationally accredited and an

²⁷ The first is Al Araby Applied Technology School in Quesna, the second is Metwaly Shaarawy Applied Technology School in New Cairo in partnership with Talaat Moustafa Group (TMG), and the third is Badr Applied Technology School in Badr City with Elmaco and Egytrafco who formed a consortium to manage the school.

²⁸ According to the data provided by MoETE, there are 79 operating schools and 11 that are under establishment with agreements signed.

internationally accredited certificate equivalent to a technical school diploma. In addition to their focused attention to soft skills, languages and innovation, IATs distinguish themselves from the ATS by having Career Development Centres (CDSs) as key elements of the model. IATs have also partnered with Berlitz to administer English assessments for teachers and have partnered with the RMG Chamber to sponsor student uniforms and attire for schoolteachers and management (USAID, 2022). Although the IATs were supported by USAID²⁹, it was clear to the review team during the site visits that despite their name there was no specific approach to internationalisation within the IATs.

3.2 Main operational features of the ATS model (quality, curricula, teachers and WBL)

The MoETE, through the Applied Technology Schools (ATS) unit has established a robust framework integrating quality assurance, teacher development, curriculum innovation, and work-based learning to align technical education with labour market demands. The ATS (including the IATs) model is one of the most advanced in Egypt, and has a strong reputation, therefore maintaining high-quality education and training is paramount for the model. There is a risk, however, that in the pursuit of expansion and achieving the targeted number of schools, educational quality may be compromised. Continuous assessment and evaluation of the curriculum, teaching methods, and training outcomes will be necessary to uphold the standards expected from ATS schools. The challenge will be to expand while focusing on quality and consistency.

According to MoETE, the main operational features or guiding principles on which the ATS model was built include the following:

- **Learner-centred-** The ATS model is intended to produce young graduates who are competent, productive, role models in their community and proud of their schools and technical education. The graduates would be ready to compete in the local and international labour market. The review and mission have confirmed that ATS students are indeed at a level above their peers in other models of technical education. They are proud of themselves and their schools, this is reflected in their confidence during focus groups and the fact that the ATS schools are only accepting 10% of applications demonstrating the huge demand for this model.
- **Demand-Driven through competency-based curricula-** Employers become real and committed partners in the system to ensure it continues to be driven by local and global industry demands, trends and priorities. Curricula are developed jointly. This partnership model plays a major role in enhancing the business environment itself with a new developed workforce that targets transforming Egypt into a global investment destination.

The ATS model emphasises an industry-driven competency-based training (CBT) curriculum that predominantly addresses the needs of the industrial partner. However, the MoETE is ensuring that curricula can be used by other ATs in the same sector. For the ATS model to have more impact on the TVET system as a whole, it requires that the MoETE ensures that new curricula incorporate key cross-cutting themes such as digital transformation, greening, and gender equality across all occupations, not just those explicitly linked to these areas. This approach will ensure that the ATs prepare students for the evolving demands of the modern workforce, not just the needs of specific partners, including the growing importance of sustainable practices and the digital economy. Embracing digital tools to streamline CBE student assessments and conducting post-implementation curriculum assessments will also help align TE programmes with evolving labour market demands³⁰.

²⁹ During the mission, the team was informed that the USAID-funded Workforce Egypt project has been officially terminated.

³⁰ ETF Assessment of TE 2.0 Strategy Report, 2024

Comprehensive labour market studies, through bodies like Sector Skills Councils working with the ATSs are important in improving relevance. While the ATS unit has recently introduced the concept of tracer studies at the ATS level, more analysis of the outcomes of these studies are needed and nationwide graduate tracking systems are recommended to ensure that ATS programmes continue to meet the needs of both the domestic and international job markets. Here the challenge is further emphasised whenever the private sector partner who is investing in the ATS starts to question the educational outcomes, and a lack of clarity on aims becomes apparent: is it to address the company's needs or the needs of the international labour market for example? Most of the interviewed ATS industry partners see no conflict in these aims, the ATS model can serve both objectives and ultimately it is the graduate who will choose where to go, especially that the supply is still greater than the local demand for skilled workers.

Quality oriented- The system is built on an uncompromising focus on quality through partnership with international awarding/quality assurance bodies which the private sector partner contracts. Establishing quality assurance mechanisms is crucial for maintaining standards within the ATS model. The ATS unit has established its own quality assurance unit which is focused on institutional quality assurance while the industry partner is more focused on programme quality assurance. This involves regular evaluations of educational outcomes, student performance, and overall programme effectiveness. By implementing rigorous quality assurance processes, the ATS model can ensure that it meets the expectations of students, employers, and the government.

However, this process should not only be the responsibility of the ATS unit, but also other internal MoETE departments like the Centre for the Enhancement of Quality Assurance of Technical Education (CEQAT) and external bodies like the Egyptian Technical Quality Assurance and Accreditation Authority (ETQAAN). Although these bodies ought to be fully engaged in ensuring quality of ATS activities this is not happening at present. Even international quality assurance bodies are not consistently engaged in all ATS schools as indicated in the concept of the Model and the agreements between the MoETE and the partner.

To enhance the quality of technical education in general and ATS in particular, it is essential to activate and strengthen the capacity of CEQAT and ETQAAN as well as to develop and implement occupational standards and the National Qualifications Framework (NQF) currently mandated to the National Authority for Quality Assurance and Accreditation in Education (NAQAAE). These institutions and practices are pivotal in maintaining high-quality standards across all the ATS schools and programmes.

- **Teacher training and retention:** To ensure the effectiveness of the ATS model, there is a need for ongoing professional development and training for teachers. This includes equipping educators with the skills and knowledge required to implement the new curriculum and engage effectively with industry partners. Addressing the challenges in teacher training and qualification is crucial for the success and expansion of the ATS model. In addition to the limited pool of qualified MoETE teachers available for the ATS sector, there is a pressing need to enhance both initial and continuous training for these teachers, particularly in developing advanced technical skills that align with industry standards, English language proficiency and evolving technological demands. The quality of teaching is directly linked to the effectiveness of these training programmes, making it essential to provide robust support through the TVETA and other institutions.

Furthermore, the issue of low salaries poses a significant challenge to teacher motivation and retention. Low compensation not only affects the attractiveness of the teaching profession but also undermines efforts to recruit and retain highly skilled educators. To address this, MoETE should explore innovative compensation models, including performance-based incentives and financial support mechanisms, to improve teacher motivation and satisfaction. When the private sector partner recruits teachers from outside the MoETE pool and pays them more, tensions arise between MoETE teachers (who also receive financial incentives for the

partners) and non-MoETE teachers within the same school, Furthermore, this approach would not be sustainable were the partner to decide to exit the partnership.

- **WBL-** The ATS model represents both an enhancement of the dual education and training WBL system that was introduced in Egypt in the mid-1990s as well as a shift from traditional educational approaches, focusing on practical skills, industry collaboration, and a curriculum aligned with Egypt’s modern economic development aspirations in priority sectors. The model also maintains a good balance between work-based and classroom learning to produce a competitive pool of graduates with a strong knowledge base, in-depth practical competencies and first-hand exposure to real-life work ethics and discipline.

During the field visits, it was confirmed that WBL is a main feature of the ATS model, where students are given real-life practical skills at the workplace either by the sponsoring partner or other companies. The model also allows for flexibility in terms of how this is done and when. However, in some programmes in some ATSs (e.g., WE ATSs) this does not happen because the partner sends their executives to train the students on the school premises, especially in cases where the school has sufficient IT equipment.

- **Promoting real change-** Private sector partners enhance the management of the school to promote a culture change in the system where work ethics, productivity, efficiency and quality are the norm.

Figure 4: Main Features of the ATS



Source: MoETE presentation on ATS, 2023

3.3. ATS governance, financing and sustainability through PPP

3.3.1. Governance

The governance of the ATS reflects a strategic public-private partnership model designed to align technical education with labour market demands. The ATS governance structure was initially framed within Ministerial Decree # 114 for 2019 establishing the ATS unit. The decree centralised governance under the ATS unit which oversees strategic oversight, selecting schools and partners to become part of the model, supervising quality assurance, outlining student selection criteria, ensuring curricula development adheres to international standards and determining the financing policies. The unit initially reported to the Minister directly, however when the Ministry’s organisational configuration was

re-structured in 2021 in preparation to the move to the New Administrative Capital, the unit became permanently embedded in the new structure as a General Administration reporting to the Head of the Central Administration for the Reform of Technical Education. It also includes oversight of the Dual System schools and Centres of Competence (CoCs). Despite these administrative changes, it is still widely referred to as the ATS unit and surprisingly little coordination or alignment with the other models is evident.

On the operational and management side, the ministry works closely with private sector entities, which co-manage the schools and contribute expertise in specialised fields and economic sectors. The partnership is governed based on a protocol agreement signed between the MoETE and the private sector company for a duration of between 6 and 10 years (with possibility of extensions for the same period as the initial agreement duration). This collaborative framework is reinforced by presidential and prime ministerial directives emphasising the role of ATS in advancing TVET and national development,

Based on this agreement, the responsibilities of each partner are as follows:

- Responsibilities of the MoETE
 - Provide an existing or new school premises, training equipment and labs in good condition (if available).
 - Cover basic utilities/operating costs for the school.
 - Provides a pool of teachers and administrators for selection by a joint committee from the MoETE and the partner company. Including an Academic Manager for the school
 - Cover current salaries for selected MoETE teachers and administrators.
 - Facilitate all bureaucratic processes and permits, issue relevant legislation and decrees to empower the new system and to enable the partners to engage and commit like have a special admission and selection criterion for the students.
 - Partners with international accreditation bodies to provide international level accreditation and certifications for the new schools and their graduates.
 - Establish qualification units to help qualify the teachers and staff to the required standards. Create new branding and communication identity for the new brand of Applied Technology Schools to improve the image of technical education to attract the best students.

- Responsibilities of the private sector partner
 - Recruit an Executive manager for the school to manage the operation with the Academic School manager provided by the MoETE.
 - Develop a business plan in collaboration with Schools Management Council that ensures the financial sustainability of the school while maintaining its not-for-profit nature.
 - Cover running costs of operations according to the business plan (including bonuses and incentives for the MoETE teachers, salaries for new teaching personnel according to performance)
 - Facilitate the work-based learning and on-the-job training portion of the study programme for all students, whether at own establishments or at others within school geographic vicinity
 - Support and promote the employment opportunities and networking for the school graduates.
 - Upgrade the school facilities, educational resources and equipment if needed to meet the appropriate standards of operation.

- Establish and operate Vocational Training Centres (VTCs) within the ATSS to generate income and serve the community in terms of training for jobseekers through the employment unit and continuous training for in-service local workers.
- Promote the school amongst the business community and other stakeholders to secure on-the-job training placements and scholarships for the students.
- Support HR development and capacity building of school teams (e.g. teachers and administrative personnel certifications, periodic training and professional development, etc.)
- Cover the cost of international accreditation.

Through this model, private companies are involved in various aspects of the education process, including curriculum development and the provision of training and internship opportunities. By leveraging the expertise and resources of the private sector, ATS schools can offer students a more relevant and practical education that meets the needs of employers. The model provides a lot of flexibility for the partner. The private sector partners may employ professional staff (like the Executive School Manager mentioned above) or a professional educational entity (e.g., another experienced school, NGOs, Educational Funds, an Education Association or a private sector service provider) to undertake the operational and management responsibilities which include the following:

- Establish a management and operational structure for the school that follows the business plan and the required quality standards.
- Qualify the teachers and manage their continuous development, pay incentives to MoETE teachers as well as recruit and pay for specialised non-MoETE teachers and trainers.
- Provide the management oversight to ensure the school maintains its accreditation at all times.
- Prepare and manage the evaluation of the students in cooperation with the MoETE Assessment Unit
- Manage and operate the school training facilities and VTCs according to the approved business Plan.
- Manage the employment unit of the school to link graduates with work opportunities.

3.3.2. Financing

The Egyptian ATS and IATS models are set up as public private partnerships, comprising of public annual budgets allocated to the MoETE and in turn to technical education as well as contribution from the industry partner. In part this is intended to bring private finance into the realm of public education, in addition to creating stronger links between education and industry to better meet the skill needs of the industrial sector. There are strong indicators that this aim has been achieved. However, the balance between public and private financing of the model differs between individual ATSS, based on what the industry partner is willing to spend and how many students they wish to enrol in their ATS. Some ATS schools are financed on a per student basis, introducing competition between schools for student applicants while others are pre-determined by the partner based on the value of the investment they allocate to the school. The balance between public and private financing and the form of financing whether block financing (the school receives a block payment based on the scale of inputs) or per student financing has implications for the quality and effectiveness of the ATS model and the nature of the PPP arrangement, where the more the private sector invests, per student, the more likely they will contribute to as for less students per school. This is perhaps different from the government's objective which wants more students per school and this obviously affects quality.

Until now, almost all ATS schools do not charge student fees (except for the WE ATSS who obtained an exceptional approval from the Prime Minister to charge a nominal fee that covers some of the costs incurred by the company). A limited number of companies pay an allowance during on-the-job training

(the value depends on the company, but a minimum is set in the agreement). Although the ATS model is costly to operate compared to other models because of the need to maintain high quality standards, the real cost for a student to attend an ATS is not known. The review team was given information by industry partners of costs that range from EGP 35,000 to 50,000 per student per year (depending on the sector), not accounting for the costs covered by the MoETE³¹. Better information about the comprehensive real costs is needed in order to effectively plan for improvements and expansion of the ATS model.

The ATS model also benefits from technical and financial support from international development partners. This started with funding from the Italian government through a debt-swap mechanism and the funding was used to set-up the ATS unit, provide funding for experts and staff, capacity building and establishing operational systems and tools. Later USAID provided support in establishing 10 IATSS. Other funded projects (GiZ and EU) occasionally provide technical assistance and capacity building in teacher training or quality assurance frameworks.

3.3.3. Sustainability

The ATS model has high initial investment and relatively higher operating costs of educational materials, teacher salaries and incentives, as well as the cost of international accreditation. It is therefore important for the MoETE and the industrial partners to consider the return on investment (ROI) and build the case for sustainability. The ATS sustainability is not only financial, it is also operational in terms of consistency of the ATS features and the sustainability of keeping the private sector partners committed and motivated to the model. Reliance only on private sector partnerships can lead to inconsistencies in funding, especially during economic downturns. Ensuring a steady flow of resources and support from both the government and private sector is crucial for the long-term success and sustainability of the ATS model. The following key issues related to sustainability have been analysed during the review:

- **Type of private sector partnership:** The reason why a private sector company is interested in the ATS model affects future sustainability. While the MoETE has allowed for flexibility and variety in terms of the type of partners and their motives, this indeed has implications for the long-term sustainability of the model. For example, partners fall within one of these categories; (1) private sector companies who have a need for a large number of skilled workers and have definite business expansion plans and therefore need a continuous flow of qualified workers, (2) companies that establish ATSS as part of their Corporate Social Responsibility (CSR) initiatives and do not need qualified workers for their operations³², (3) companies with owners/CEOs who want to be seen as supporting national development priorities that serve their own political or business agenda, (4) NGOs³³ who have mandates for education development and who partner with private sector companies who may not contribute financially in the ATS model and relay on the NGO, (5) Line Ministries, government entities and public sector companies that have a vested interest in advancing their sector or have traditionally been involved in education and training³⁴. This means that some of these types of partners have stronger sustainability guarantees while the motivation of others towards the ATS model can change if their interest or situation changes.
- **Income generating activities:** While the ATS agreements stipulate that the partner can set up income generation activities, such as establishing a Vocational Training Centre (VTC) or production unit, this has only happened in a few schools. Some legislative bottlenecks limit schools' autonomy and ability to reinvest such income in the school and so reduce the contribution from the partner. Activating and mainstreaming the VTC option would reinforce the

³¹ This also includes some funding from international development partners allocated to the MoETE.

³² Many of the agreements signed with the MoETE are signed with the companies' charitable foundations and NGOs, not with the business side of the company.

³³ Examples include El Alfy Foundation, Misr El Khair Foundation and the Education for Life Fund.

³⁴ Examples include the Ministry of Military Production and the Ministry of Communication and Information Technology (the WE ATSS).

lifelong learning features of the ATS model as it would enable the school to offer upskilling and reskilling services for adults in the surrounding communities.

- **Charging fees:** Until now, only the WE ATSs charge student fees (LE 6000 per year) paid in instalments. This represents around 10% of the cost per student according to the average cost indicated by the industry partners during the interviews. Many partners would like to be able to charge fees, although they would not be able to cover full costs with such fees. The decision to introduce student fees for this type of schools might face political and constitutional opposition as the constitution stipulates that public education is free until the end of the secondary stage. The MoETE would have to convince legislators that quality education is expensive and that charging fees would ease the burden on the private sector partner and thus support the sustainability and expansion of the ATS model.
- **Tax incentives in the investment law:** The current Investment Law (#72 for year 2017) highlights TVET as one of the priority development areas in which investors can obtain tax reliefs when they spend up to 10% of their net profit on TVET initiatives. However, none of the ATS partners benefit from this; they see it as unclear and would only benefit from it if they make very large investments in TVET. The MoETE attempted several times to amend this clause in the law to create more incentives for the private sector by segmenting the companies into different sizes and different contributions, but all their attempts were rejected by the Ministry of Finance. This will require more stakeholder dialogue and lobbying. It might also require more inter-ministerial coordination to explore how the National Training Levy administered by the Ministry of Labour can also contribute to the ATS model especially that companies are already required to pay into it.
- **Private sector investment model:** There is a common public misconception towards the ATS model and many people assume that these are private sector TVET schools owned by the partner. In Egypt, there are private TVET schools, however they are divided into two distinct categories. The first category focuses on occupations that do not require large initial investments in equipment and facilities and could be delivered in classrooms and limited labs (e.g. business/administrative, ICT, tourism) and they often charge affordable fees while still making a profit. The second category focuses on high investment and high-quality TVET (for example El Sewedy Technical Academy and EL Gouna Tourism School). However, although these schools charge relatively high fees, they do not make profits as the costs associated with the quality they deliver is very high and the target segments of society cannot afford the actual cost plus a profit margin. Thus, although these are private schools they still fall under the CSR initiatives of the owning companies.
- The problem with the first category of such private TVET schools is that the quality of provision is very low and the regulations, monitoring and evaluation activities are limited from the side of the MoETE. These schools target students who would not be accepted in public schools and are willing to pay to get a recognised secondary school diploma regardless of the quality of the education provided. This private sector investment in TVET requires an in-depth analysis and discussions about how to make them affordable and profitable at the same time. In order to be sustainable, the initial set-up costs (in addition to all the running costs) in terms of land, buildings and equipment must be covered by the private sector investor, unlike the ATS model. The industrial partners' ability to sustain such operations will be impacted if the expected return on investment is not realised. According to the ETF report on the Assessment of the TE 2.0 Strategy, the annual cost per student exceeds EGP 50,000 (before the recent EGP devaluation) which means that if the investor is to make some profit and pay taxes, the fees per student would be no less than EGP 65,000 which is highly unrealistic considering the purchasing power of the targeted social segment in society.
- **Operational sustainability:** As we highlighted above, the main features of the ATS model earlier in the report, they look very impressive and well thought out on paper, however after the review it was clear that not all these features are actually being implemented in all ATS schools in the same way. Key issues concern whether ATS schools have an international awarding body to issue a second certificate, whether they have an active Board of Trustees, whether all schools receive the same level of monitoring from the ATS Unit, and whether the ATS unit has enough qualified staff to overlook the existing schools as well as the growing number of new schools. Analysis during the review has indicated that these issues are indeed inconsistent in the model

and this might affect the reputation of the model and hence its funding sources and its sustainability.

3.4. Links between the ATS model and T.E reform initiatives

The ATS model is part of a broader initiative to reform the technical education at the MoETE. During the past six years, the ATS model has been a leading feature of the TE 2.0 strategy that has received a lot of visibility and contributed towards the continuous journey of changing the quality and image of TVET in Egypt. The model continues to be a key pillar of the reform strategy even with the recent introduction of other key pillars when the current Minister assumed leadership. However, it was evident to the review team that the model needs to build stronger links with other elements/pillars of the reform for the MoETE to achieve greater impact. Other elements of this reform include curriculum development, digitalisation, industrialisation, innovation, teacher training, and the establishment of quality assurance mechanisms.

Additionally, the model needs to integrate and provide stronger coordination with other WBL models delivered within the MoETE.

3.4.1. Links with the overall TE Strategy

In the context of integrating the ATS activities into the broader reform agenda, the following are some of the issues to consider while developing the next stage of the ATS model:

- **The impact on the Technical Secondary Schools (TSSs):** Traditional TSSs, which encompass the majority of schools and students, should be central to the reform process alongside the ATS, DS, and CoC models. While these new models offer extensive WBL experiences, the bulk of Egypt's TSS students are enrolled in traditional, school-based, technical education. Focusing reform efforts on these schools ensures that improvements in quality, relevance, and outcomes reach the largest segment of the student population. The review team, saw little evidence regarding any influence of the ATs to support or influence the development of the traditional TSSs.
- **Quality assurance:** ATs are recognised for a higher quality of provision, compared to other models of technical education, including the Dual System school visited and even more the TSSs. However, the criteria against which ATs' performance is assessed were not completely clear to the review team. ATs schools may be recognised as "good" or "bad" even when they deliver the same curricula. This lack of clarity is reflected by the visible lack of coordination between the dedicated quality assurance team within the ATs Unit and the Central Unit for QA and Accreditation Support (CEQAT) and other monitoring mechanisms within MoETE like Technical Education Reform Office (TERO). The mission team also observed signs of lack of alignment between the different quality assurance, certification and accreditation frameworks. Within this context, the Egyptian TVET Quality Assurance and Accreditation Authority (ETQAAN) has a critical role to play in the accreditation of WBL schools, setting quality standards for business/private sector entities working with WBL schools, and setting selection criteria for business/private sector CBE assessors. More links with CEQAT. TERO and ETQAAN are advised going forward.
- **Teacher training:** The relationship between the ATs Unit and the Technical Education and Vocational Teachers' Academy (TVETA) was not seen as prominent. Most teacher capacity building is organised by the ATs unit or the industry partner with occasional support from development partners. More concrete links with TVETA are strongly recommended especially if efficiency and economies of scale is considered, ATs teachers could participate in training with other teachers if the training is relevant to their needs.
- **Changing the image of TVET:** the ATs model has contributed positively to changing the overall image of TVET in Egypt in recent years. The ETF assessment of the TE 2.0 Strategy showed increased business/private sector engagement in the reform process, particularly in establishing and scaling the ATs model. Meetings with business/private sector

representatives affirmed their awareness of and engagement with the ongoing reform process. These developments have positively impacted the social perception of technical education, evidenced by the popularity of the ATS model. For instance, as highlighted in the assessment, one ATS had 225 students selected out of 2,000 applicants and overall, in 2021, 8,000 students were selected from 40,000 applications, indicating the increasing demand and perceived value of this new generation of Technical Education (TE) schools. As highlighted by several interviewed stakeholders, these students also include many who qualify for general education, but they intentionally choose TE out of a belief in its labour market value. Hence, the newly introduced ATS schools serve as a model for increasing the popularity of other, traditional, TE schools through quality enhancement and the adoption of WBL.

- **Links to higher education:** Despite the positive developments in facilitating pathways to higher education, stronger linkages between technical secondary education and technical higher education, especially the Technological Universities (TUs), are still needed. The specialisations and programmes in ATS and the newly established TUs do not always fully align. This misalignment creates challenges for students transitioning from secondary to higher technical education (examples mentioned during the mission include retail and trade). According to TU law, 80% of TUs' students should come from technical education schools and 20% from general secondary schools. However, in some years a much higher percentage of general secondary education graduates have been admitted to the TUs. This issue is further compounded by the rapid expansion of Egypt's technical education sector and the increasing and diverse range of specialisations and programmes offered. It is important to create a more integrated curriculum development process that accounts for both secondary (technical) and higher education, adequately preparing students for advanced studies.
- **Links to the new pillars of the TE Strategy:** Although the five new pillars of the TE strategy have been recently developed by MoETE, more attention will be needed in future by the ATS Unit to align its work in supporting the implementation of the strategy. The ATS model has direct potential to advancing innovation, digital transition and research in TVET (for example, expanding the idea of the innovation hubs introduced in the IATS and make them open to other schools), expand the base of TVET enrolment by continuing to change perceptions and encouraging partnerships to build new TVET schools. Finally, it must continue attracting the private sector and improve local industrialisation in Egypt among other sectors. At present, there is no clear plan or strategy by the ATS unit to integrate into the overall all reform, mainly because the focus over the past six years has been on setting-up and building the brand for the model.

3.4.2. Links between the ATS and other forms of work-based learning

Although the ATS model, and later the Centres of Competence (CoCs) were developed to enhance and complement the earlier Dual System (DS) model, it seems that the ATS model has developed more independently within the MoETE although they are all managed within the same General Administration. There is potential for more complementarity and integration between these WBL models especially when one looks at it from the point of view of the private sector partners and how best to address their needs.

Currently, all WBL models are operating independently with limited coordination and synergies which may confuse private sector companies who want to select the most suitable option for their needs. This represents a challenge to be addressed in the next phase of the ATS and WBL development. Annex 2 provides highlights of the DS and CoC models.

Although these models are perceived as different forms of WBL that offer strong workplace engagement, they tend to operate as independent brands, increasing the risk of creating parallel structures. This risk is further increased by the fact that these models are often supported by different donors with different modes of operation. This fragmentation can also lead to inconsistencies in the quality and outcomes of TE among the different models, as well as inefficiencies in resource allocation and management. To mitigate these risks, developing a coherent and integrated framework that ensures alignment and coordination among these models (in terms of curricula, assessment, and certification/qualification) is crucial.

More effort could be exerted in marketing these models in an integrated manner in relation to potential private sector partners. For example, Dual System (DS) schools could be seen as targeting smaller companies willing to take a small number of apprentices with almost no initial investment by the partners, while the CoC could target medium-sized companies willing to work with other companies in the same sector to govern and manage the CoCs, while larger companies willing to sponsor TVET schools could be targeted by the ATSs. However, the key issue is that the message should be that all companies will get the same service and quality.

Moreover, consolidating various WBL models under a unified framework will streamline operations and improve outcomes, while expanding the schools' autonomy and income-generating project will increase schools' self-sufficiency and resource use, further enhancing the quality. The MoETE management are also contemplating the option of transferring the schools to the private sector partner to completely manage not just co-manage with the ATS Unit as is the case now. This may include giving companies more than one school in this process. In developing the ATS model in this direction consideration would need to be given to private sector companies willingness to finance such arrangements, whether student fees would be charged, the number of students that could be enrolled in such schools, and what the structure of school governance would be required.

The three WBL models (DS, CoC, ATS) are making a difference in terms of quality provision and in improving the traditionally negative image of TVET in Egypt. However, a key challenge is the number of students that can be covered in relation to the overall size of the TVET system. Despite the significant expansion in terms of enrolment to 51,867 DS students in 2023/24 from 20,890 in 2017/18, and 14,600 ATS students in 2023/24 from only 363 in 2018/19³⁵, the percentage of students involved is still very low at just 3% (excluding the labour system).

Box 3: Review findings relevant to chapter 3.

- Positive achievements to build upon:
 - The MoETE is serious and open about improving quality assurance, since only 10 of the 30+ ATSs with cohorts already graduated have scored an “A” (compared to 17 with a score of “C”) in a readiness assessment for national accreditation, developed by the MoETE - Central Unit for QA and Accreditation Support (CEQAT), in collaboration with international development partners (GiZ and USAID).
 - In most ATSs, the industry partners are heavily investing in hiring the right teachers especially for the technical subjects where the MoETE does not have a sufficient pool of teachers with the right qualifications to offer..
 - Positive collaboration across ATSs in teacher training and exchanging knowledge and experience. While it is still limited in scope, it is a start to creating a network of knowledge among the ATSs that in future could include conventional Technical Secondary Schools (TSSs). To facilitate this development, income-generating activity would need to be more mainstreamed for the ATSs.
 - WBL has been confirmed as a main feature of the ATS model where students are given real-life practical skills at the workplace either by the sponsoring partner or other companies. The model also allows for flexibility in terms of how this is done and when.
 - The International Applied Technology Schools (IATS) demonstrated an impressive emphasis on providing students with complementary “Transferable” or “Soft” skills. These skills focus on innovation, problem-solving, communication, languages, digital skills. art, drama, music and project-based activities in addition to the technical skills acquired. They also adopt the Capstone36 programme.

³⁵ ETF Assessment of T.E 2.0, 2024

³⁶ A final assignment by a group of students who apply their knowledge to real-world problems through research, design, or performance.

- All ATSS and ITASs visited were well equipped with training equipment and workshops provided by the industry partner as well as state-of-the art language training labs provided by the MoETE.
- Areas in need of attention:
 - The criteria against which ATSS' performance is assessed were not completely clear. ATS schools may be recognised as "good" or "bad" even when they deliver the same curricula. This lack of clarity is reflected by the visible miss-coordination between the dedicated quality assurance team within the ATS Unit and the Central Unit for QA and Accreditation Support (CEQAT) and other monitoring mechanisms within MoETE like TERO.
 - Limited integration/coordination of the ATS model with the overall TE reform and alignment with the different MoETE entities.
 - Although the ATS model is costly to operate compared to other models because of the need to maintain high quality standards, the real cost for a student to attend an ATS is not known. The review team was given information by industry partners of costs that range from EGP 35,000 to 50,000 per student per year (depending on the sector), not accounting for what the costs covered by the MoETE are.
 - The review team noticed that income-generating activities taking place in the ATSS are rather limited. There are inconsistencies among the ATSS even though the MoU between the MoETE and the industry partner allows for this especially in the form of establishing vocational training centres for continuous training.
 - The sustainability of the ATS model raises an issue. While industry partners are currently strongly committed to the model and are willing to support it, they have concerns about its long-term sustainability. Most would like to charge fees and expand their income-generating activities to reduce their costs and develop their activities.
 - Inconsistent School Management: The review team noticed a lack of clarity and consistency in the operational relationship between MoETE Principals, Executive Directors from the industry partner and the educational service providers if involved. The schools differ in this respect. In some cases, the industry partner representative is dominant and clearly in control, in other cases it is the MoETE Principal who is leading, and in yet other cases the educational service provider is coordinating and influencing operations.
 - Limited Coordination in WBL Models: The team observed limited coordination between the different models of WBL (Centres of Competence (CoCs), Dual System (DS) and the ATS Unit. Responsible bodies are not aware of the processes adopted by each model, even though there is plenty of room for more integration and greater efficiency.
 - Termination of USAID-Funded Workforce Egypt Project supporting IATSS: During the mission, the team was informed that the USAID-funded Workforce Egypt project has been officially terminated. The project provided technical and financial support for the 10 IATSS and this termination disrupted the operations of the IATSS.
 - Governance and management challenges in the ATS Unit: The MoETE has expressed its concern about the capacity of the ATS Unit to coordinate its functions within the overall structure of the MoETE while managing an expansion of its responsibilities with the existing number of staff. Effective management is essential for the successful implementation and expansion of the ATS model.

4. Current ATS expansion and internationalisation practices

Egypt has received strong support in developing its education system through international aid projects. In 2024, the total overseas development for education assistance amounted to \$114 million, provided by USA, Germany, Korea, Canada, EU, Japan and Switzerland.³⁷ This collaboration to develop education in Egypt provides a strong basis for the expansion and internationalisation of the TVET system. One of the main challenges and key priorities for MoETE is the expansion of the ATS model to meet the growing demand for highly skilled labour and to create a critical mass for positive change in the TVET ecosystem in Egypt. Indeed, two of the key objectives of the MoETE is to expand and internationalise the ATS model, and this has been explicitly communicated to the ETF to be a key part of the current TPR review.

Internationalisation is currently the weakest link in the ATS model. While the PPP approach ensures that the skills taught in the ATS are responsive to domestic labour market needs in particular sectors, the model does not have an inherent potential to adapt to changes in the international demand for skilled labour. For this reason, the internationalisation of the ATS curricula, teaching methods, accreditation, and links to international business and labour market experience as well as intergovernmental agreements to manage skilled labour mobility are all crucial to meet the targets for skilled worker mobility and employment abroad.

4.1. Expansion of the ATS model

Currently, the number of ATS schools is limited when compared to the total number of schools (90 ATSs out of 1,300 standalone technical schools), and more critically serves only 14,600 ATS students out of 2.3 million students in the system (representing 0.65%). The MoETE aims to expand the ATS model while also balancing quality, equitable access, attracting the right private sector partners and allocating the required resources. According to interviews with various stakeholders during the review process, expanding the ATS model requires significant re-thinking of the model:

- The T.E 2.0 Strategy originally had set a target of 100 ATSs by 2030 which will most likely be overachieved, however the new Minister has set much more ambitious targets for the number of ATS schools, students and private sector partners involved for the same period. At the same time, the MoETE have expressed concern that many of the existing private sector partners are reconsidering if they will renew the agreement or not. This means that the MoETE will have to find new companies to meet the target of new ATSs as well as find companies to replace the companies thinking of ending the current partnerships with the MoETE. This is indeed a challenge especially when one looks at the structure of the Egyptian economy which consists of more than 90% small and medium enterprises and a limited number of large companies who have the resources and willingness to sponsor technical schools as required in the ATS model. The smaller companies will need different partnership schemes or models.
- The expansion plan will require the MoETE to re-think carefully the average number of students per school. Currently the average number of students in ATS is around 180 students in all years of study while the average number in conventional TSSs is more than 700 students. If the Ministry decides to transform a large number of TSSs into ATSs to meet the new target, which average will they use? Will the private sector be able to fund the 700 students and find WBL opportunities for all in their facilities? If they go for the small number of students per ATSs, then they need to build more schools to accommodate the number of students that were previously enrolled in the schools before the transfer into ATS. As

³⁷ <https://moic.gov.eg/page/annual-report-2024>

illustrated in Annex 1 there are ATSs that accept as few as 14 students in the first year of operation.

- The expansion will require a large number of additional qualified teachers and instructors. This will require recruitment of new teachers with different qualifications to meet the standards of the ATS, therefore it is not just a question of quantity but also of quality. Almost half the teachers in the current ATS schools are hired by the private sector partner with a special profile and higher pay scale and if this continues at a larger scale, the MoETE may be unable to recruit sufficient teachers on the same salary scale. Therefore, there are also huge financial implications for ATS expansion even if the private sector will support it.
- The new teachers and instructors as well as in-company trainers will require initial and continuous capacity building. Again, this will require more budgets allocated to TVETA.
- The large number of additional ATS schools will require additional staff at the Central ATS unit and will probably need to establish regional branches to enable the unit to effectively and efficiently manage and monitor the schools. Additionally, this will require additional budgets for new recruits, staff capacity building as well as advanced systems of quality assurance, M&E, stakeholder management etc. Some of this support will come from international development partners, but even this will require new projects and MoETE back-up budgets.

4.2. Current ATS practices of internationalisation

The ATSs have a strong foundation in demand-led PPP technical education but have limited exposure to global TVET quality standards. With the exception of the ATSs that have contracted the German-Arab Chamber of Commerce and Industry (AHK), the curricula are not aligned with international benchmarks and lack compatibility with the global competencies required in potential countries of destination. Furthermore, not all ATSs cooperate with international quality assurance bodies as stipulated in the Memorandums of Understanding (MoUs), resulting in both diversity in international standards/certification and inconsistency in outputs across ATSs. In addition, the ISO certification that was planned for the International IATSS is at risk due to the termination of the USAID project.

The ATS model has an evident potential for internationalisation, with a focus on modern curricula and industry-aligned training programmes. While the MoETE is clear about the objective of internationalisation, which is to create real and quick opportunities for ATS graduates in international labour markets, the only internationalisation features of the model at present include curriculum development and partial international accreditation.

Before highlighting the current elements of the internationalisation of TVET and the pursue of international labour mobility by the MoETE through the ATS model, it is important to introduce a comprehensive definition of internationalisation of TVET to frame the analysis.

Box 4. Internationalisation of TVET- a definition

The internationalisation of TVET schools necessitates a strategic integration of international and intercultural dimensions into school practices and curricula to enhance the quality and relevance of TVET provision. This goes beyond simply hosting international teachers or students or sending a few students abroad. It is a comprehensive policy aimed at preparing students for the international labour market by equipping them with the language skills, intercultural competencies, international awareness and adaptability needed for successful job search and engagement in those labour markets. Graduates from such programmes should have a good understanding not only of their specialised field of study but also of international industry standards and diverse workplace cultures. Governments and TVET providers can achieve this outcome by benchmarking against international best practices, collaborating with international partners and incorporating international perspectives into curriculum development. In this way, TVET systems and individual schools can ensure their programmes are up-to-date, innovative and responsive to evolving international skill demands.

As identified in the report, key aspects and activities typically involved in the internationalisation of TVET schools include five key dimensions. These are (i) internationalisation of the curriculum, (ii) internationalisation of

teaching staff, (iii) international accreditation, recognition and quality assurance, (iv) strengthening international career support and mobility pathways for TVET graduates and (v) pursuing international bilateral partnerships and agreements.

The internationalisation of the curriculum involves activities such as integrating international and intercultural content in the curriculum, developing foreign language components relevant to specific vocational fields, promoting intercultural communication skills within the classroom and school environment and inviting international guest lecturers or industry experts.

The internationalisation of teaching staff involves sending TVET teachers and trainers abroad for professional development, the observation of international practices, networking with international colleagues and hosting international teachers and trainers to share expertise and enrich domestic TVET provision. Digital tools and platforms can be used to enable virtual exchanges, collaborative online international learning (COIL) and access to international resources.

International accreditation, recognition and quality assurance, involves working towards the mutual recognition of VET qualifications and learning outcomes across borders to facilitate student and worker mobility.

Strengthening international career support and mobility pathways for TVET graduates involves sending TVET students abroad for internships, work placements, study visits, or exchanges to gain practical experience, develop language skills and acquire intercultural competence. It involves welcoming international students to TVET schools, enriching the learning environment with diverse perspectives and fostering intercultural interaction.

The pursuit of international bilateral partnerships and agreements involves establishing collaborations with TVET institutions, businesses, and organisations in other countries for joint programme development and exchange of best practices as well as participating in international networks.

All of the above require governments to develop a clear internationalisation strategy and allocating sufficient resources to foster an internationalisation culture within TVET institutions. In essence, the internationalisation of TVET schools is about preparing the international readiness of their graduates and fostering an educational environment that is globally aware, culturally sensitive and internationally connected.

The following sections of the report look at key areas for MoETE to consider in its pursuit of internationalising the ATS model.

4.2.1. Internationalisation of the curriculum

The MoETE claims that ATS curricula are developed according to international standards for the trades in question. However, this claim has not been implemented in a systematic way. While the AHK interventions in some ATs compare the curricula to those in Germany and grant a level (A, B or C) according to the degree of uniformity with the German equivalent, the ability to find a job based on this certificate is not guaranteed, although according to AHK it facilitates the process. To meet international standards, general transferable skills should be included in the curriculum such as critical thinking, problem solving, communication, team working, digital literacy, entrepreneurship skills and appropriate language skills. Furthermore, stakeholders have also emphasised the importance of integrating international occupational health and safety standards in the process of ATS curricula development.

4.2.2. Delivery of programmes in foreign languages

Some teaching programmes in ATs are delivered in foreign languages, mainly English. A few schools deliver most of their programmes in English and their results are much better than those delivering English as a separate subject. Some schools have also started teaching the German language. The language skills of the students in some of the visited schools are quite impressive and would facilitate the process of legal migration of graduates to destinations like Europe, Canada or the Gulf States, where English is widely spoken. The ATs have language labs but there are not enough qualified teachers to teach languages; most language teachers are hired by the industry partners rather than by MoETE.

The ETF has supported MoETE in assessing the mainstreaming of language teaching along with a clear strategy for doing so. The ETF assessment report recommends a language programme that will

be delivered as an extracurricular activity. To reach the expected number of learners, the programme will be made available in two modalities, meaning that learners will be allowed to follow the programme in two ways³⁸:

- A fully online mode: Motivated TVET students will register on the online platform (selecting “online delivery”), take an entry-level test, follow the course individually, develop their competencies, and take a final test to assess their foreign language capacity. An online tutoring system will be made available to improve the learning experience and to limit drop-out. This modality will allow learners to study at their own pace, through pre-recorded video lessons, interactive exercises, and quizzes for self-assessment.
- A hybrid mode: For this mode, several TVET schools, both ATS and traditional TSS schools, that will be selected for their level of digital equipment/connectivity and foreign language teachers’ capacity. In some cases, ATS could work as hubs for other TVET schools. In these schools, students will enrol through the platform (selecting “presential modality”), and take the entry-level test, and teachers will use the online content to improve the quality and relevance of their face-to-face training sessions, meaning that the training will represent an integrated add-on to the curricular foreign language teaching. Each teacher will be allowed to select the ratio between online and face-to-face training, but it is recommended to have the following ratio: 30% face-to-face,70% online.

The online platform will provide certificates for the level achieved, once learners take the corresponding test. This will be a certificate, accompanied by a digital badge, that will specify the level achieved, the activities conducted, and the number of hours worked.

In addition to this, those students interested in passing an official exam via certified organisations (British Council Goethe Institute, Foreign Language Centers in Egyptian government Universities, Accredited language academies, etc.) will have to be provided with this option, which might be financed via scholarships for top achievers.

4.2.3. International accreditation, recognition and quality assurance

MoETE seeks to mainstream international recognition and accreditation of the ATS programmes and the MoETE is encouraging the international certification of the ATS programmes. Some ATSs are working closely with international quality assurance partners with recognised certificates and programmes, but this is only implemented in a limited number of ATSs (19% of operating ATSs) and needs to be mainstreamed. The international awarding partners at present include City & Guilds, Pearson and the German Arab Chamber of Industry and Commerce (AHK). However, the partnership with these international bodies has so far not succeeded in providing graduates with a guaranteed passage to the international labour market. To achieve the internationalisation of the ATSs, the mainstreaming of international accreditation for all ATSs should be achieved and delivered in accordance with international standards. The MoETE is serious and open about improving quality assurance and international recognition, however a more comprehensive and streamlined framework is needed.

4.2.4. Labour mobility and target countries

The private sector partners who are investing in the ATSs support the MoETE's objective of encouraging international labour mobility, and most are committed to supporting graduates in seeking employment abroad. However, they understand that not all graduates will be able to travel, and they often provide incentives to the graduates they want to recruit at home. Some industry partners are also willing to sponsor some graduates to attend Technological Universities in Egypt and work at the same

³⁸ ETF, Technical Specifications for the Development of a Language Training Programme for TVET Egyptian Students, 2025

time at the sponsor's workplace). The review team understand international labour mobility is not the most significant issue for most private partners.

Nevertheless, the private sector partners are willing to support graduates to find jobs abroad by financing the international recognition of their qualifications and investing in language skills development. Their main motivation in supporting this effort is that in the long term they will not be able to employ all the ATSs' graduates themselves; while recognising that in the short term they will be able to employ most of those willing to stay and work in Egypt or who are unable to travel. Some industry partners emphasised that their support to graduates finding jobs abroad would be part of their Social Corporate Responsibility (CSR) efforts.

Target countries for mobility

While the MoETE commissioned an important international labour market study back in 2022 funded by EBRD, it is not entirely if the ATS or the MoETE have built on this and is following the analysis and recommendations especially with the list of countries in the report. The report provided in-depth analysis and information on the potential for receiving Egyptian workers in the following countries:

- Germany
- Italy
- UK
- Canada
- Romania
- Saudi Arabia
- Czech Republic
- United Arab Emirates
- France
- Russia

The ATS unit does not have a list of target countries for graduate labour mobility and has not as yet directly negotiated any bilateral agreements to facilitate the recognition of qualifications of potential Egyptian workers (this is usually done through the Ministry of Foreign Affairs). However, the Government is starting to work with the Germans and Italians on this issue. For example, the THAMM Plus Programme ("Towards a Holistic Approach to Labour Migration Governance and Labour Mobility in North Africa") is funded by the EU and implemented by GiZ and the Italian Agency for Development Cooperation (AICS). It is a regional initiative funded by the European Union (DG MENA)). The programme aims to strengthen employability and facilitate regular, sustainable labour mobility pathways between Egypt, Morocco, Tunisia and EU Member States leading to decent work opportunities.

Additionally, in March 2025, the MoETE signed a Memorandum of Understanding (MoU) with the Italian Government, to experiment the bridging of ATSs and the Italian Higher Technical Institutes (ITS). The MoU between the two Ministries of Education, through Letters of Intent paves the way for the design of a "Bridge School Year". Work is currently underway on the design of a fourth ATS foundation year to connect the three-year ATS Egyptian schools with the Italian ITS, in order to foster the creation of study paths in Egypt where STEM – Science, Technology, Engineering, Mathematics – and language skills are strengthened for access to the labour market in cutting-edge sectors, also developing skills oriented towards technological specialisation. In October 2025 the first two integrative years on Mechatronic and ICT will start allowing around 50 Egyptian students to be enrolled in the corresponding ITS courses. The overall objective of the initiative is to link the ATS model with the Italian ITS providing Egyptian students with a European Degree equivalent to the European Qualification Framework 5 (EQF 5).

Furthermore, Egypt established the Egyptian-German Centre for Jobs, Migration and Reintegration, to formalise labour mobility between Egypt and Germany and support young people prepare for working in Germany. The government is currently working to establish a similar centre with Italy.

4.2.5. Long term partnerships

Some ATSs have long-term partnerships with international counterparts to facilitate the process of labour mobility and knowledge exchange. However, such partnerships are quite limited and only one or two examples were encountered during the site visit. There is a strong potential for developing such partnerships and this can be supported through initiatives like the EU ERASMUS+ scheme (please see next section) and the ETF Network of Excellence.³⁹

4.2.6. International good practice in internationalising TVET

Annex 3 examines international good practice strategies to internationalise Technical and Vocational Education and Training (TVET), emphasising teacher development, collaborative networks, and accreditation frameworks. A key focus is enhancing teacher readiness through innovative methods like Collaborative Online International Learning (COIL), which enables educators from different countries to co-design curricula, share best practices, and deepen cultural awareness. Programmes in countries like the Netherlands integrate international perspectives into teacher training, preparing educators to manage diverse classrooms and globalise their teaching content.

International partnerships and projects, such as those funded by Erasmus+, play a pivotal role in fostering cross-border collaboration. Examples like the ACTIVE-ATS project highlight how Egyptian, Finnish, and German institutions collaborate to train teachers in industry-aligned skills. Networks like the European Forum of TVET (EfVET) further connect institutions to share strategies. Accreditation and qualification frameworks, such as the European Qualifications Framework (EQF) and Morocco's alignment of its national framework with the EQF, ensure TVET programmes meet global standards. This alignment facilitates labour mobility by making qualifications recognisable abroad, as seen in Morocco's success in improving migrant employment outcomes in Europe through standardised curricula and bilateral agreements.

Annex 3 also presents a comparative analysis of labour mobility schemes across several countries—Morocco, South Africa, Kenya, India, the Philippines, Sri Lanka, Estonia, and Poland—highlighting their policies, outcomes, and lessons applicable to Egypt. These nations share a common focus on aligning their Technical and Vocational Education and Training (TVET) systems with international labour market demands, facilitating legal migration through bilateral agreements, and enhancing the portability of qualifications. For instance, South Africa's National Skills Development Plan (NSDP 2030) prioritises aligning vocational training with global standards, while India's Skill India Mission emphasises industry-relevant certifications and partnerships with Gulf countries. The Philippines, a global leader in labour export, leverages its Technical Education and Skills Development Authority (TESDA)-certified programmes and pre-departure orientation to prepare workers for high-demand sectors abroad. Estonia and Poland stand out for integrating digital credentials and EU-aligned qualifications frameworks, streamlining cross-border recognition. Across all cases, outcomes include increased employment abroad, enhanced remittance flows, and improved global recognition of national qualifications.

The success of these schemes hinges on three interconnected strategies: institutional alignment with international standards, strategic partnerships, and targeted skill development. First, countries like Morocco, South Africa, India, and Poland have established National Qualifications Frameworks (NQFs) to harmonise domestic certifications with regional and global benchmarks, ensuring qualifications are recognised abroad. For example, Poland's alignment with the European Qualifications Framework (EQF) has facilitated youth mobility within the EU. Second, bilateral

³⁹ https://www.etf.europa.eu/sites/default/files/2020-07/etf_network_for_excellence_leaflet_en.pdf

agreements and participation in regional bodies (e.g., The South African Development Community-SADC in South Africa, and the Association of Southeast Asian Nations- ASEAN in Sri Lanka) have created formal migration pathways, reducing irregular migration. Kenya's partnerships with the International Organisation for Migration (IOM) and the Gulf States exemplify how structured collaborations can secure employment opportunities. Third, sector-specific training—such as the Philippines' focus on healthcare and hospitality or Estonia's digital skills programmes—ensures skills meet the precise demands of destination countries.

Notably, pre-departure training emerges as a critical component, combining language proficiency, cultural orientation, and rights awareness. Kenya's Youth Employment and Opportunities Project (KYEOP) and India's Pradhan Mantri Kaushal Vikas Yojana project (PMKVY) demonstrate how such training improves migrant preparedness and employment outcomes. Meanwhile, digital innovations, like Estonia's blockchain-based certifications and Sri Lanka's National Skills Passport, highlight the growing role of technology in enhancing credential portability.

Lessons for Egypt include the need to fully activate its NQF to align with international standards, expand bilateral labour agreements (particularly with Gulf and EU nations), and leverage training levies to fund mobility-focused programmes. Emulating India's scale or the Philippines' integration of social impact metrics (e.g., remittance tracking) could bolster Egypt's economic gains. Additionally, adopting Estonia's digital credentialing systems could modernise Egypt's TVET sector. Crucially, a centralised strategy—akin to South Africa's NSDP or the Philippines' TESDA—would unify efforts across ministries, ensuring coherence between skills development and labour migration objectives. By prioritising sector-specific training, pre-departure support, and international accreditation, Egypt can mitigate youth unemployment while tapping into global labour markets effectively.

More details about international good practice in internationalising TVET and labour mobility can be found in Annex 3 of this report.

Box 5: Review findings relevant to Chapter 4.

- Positive achievements to build upon:
 - The ATS model demonstrates strong potential for internationalisation, with a focus on modern curricula and industry-aligned training programmes. This is evidenced by the fact that some are working closely with international quality assurance partners with recognised certificates and programmes. Additionally, the language skills of the students in some of the visited schools is quite impressive and would facilitate the process of legal migration of graduates to destinations like Europe, Canada and even the Gulf States.
 - Private sector partners' commitment and ownership is impressive, as also evidenced by the willingness to support graduates to find jobs abroad (by financing international recognition of qualifications and investing in language skills development) especially since in the long term they will not be able to employ all the ATSs' graduates they currently support. Nevertheless, in the short term they are able to attract those willing to stay and work in Egypt or unable to travel. Some industry partners emphasised that their support to graduates finding jobs abroad would be part of their Social Cooperate Responsibility (CSR) efforts. The issues paper highlighted that some industry partners are thinking of not renewing the agreement with MoETE when it expires due to the economic downturn. While this was not the message that was received by the review team during the mission.
 - It was observed that students have strong sense of belonging to their schools and pride in their ATSs and their programmes of study. This was demonstrated through the presentations they did of their schools, their practical projects and the national and international competitions they participated in. Most of the ATSs visited reported that they have a large demand for enrolment and often accepting only 10% of the eligible applications received.

- Most students (both male and female), once graduated, would like to combine higher education studies with working at the same time. This is seen as a positive development compared to past years when students wanted to get a higher education degree before entering the world of work. Some industry partners offer scholarships to top graduates to attend Technological Universities and offer them the flexibility to simultaneously work at their company. However, most students aspire to continue education and work abroad (e.g., in Germany, the Gulf states and Canada) in alignment with the government's plans to encourage labour mobility of TVET graduates).
 - There are many international good practices in internationalising TVET and labour mobility that Egypt can learn from especially in institutional alignment with international standards, strategic partnerships, and targeted skill development.
- Areas in need of attention:
- ATs demonstrate moderate readiness for internationalisation with a strong foundation in technical education but limited exposure to global VET quality standards. With the exception of the ATs that contract the German-Arab Chamber of Commerce and Industry (AHK), curricula are not aligned with international benchmarks and lack compatibility with global competencies required in potential countries of destination. Furthermore, not all ATs cooperate with international quality assurance bodies as stipulated in the Memorandums of Understanding (MoUs) resulting in both diversity in international standards/certification and inconsistency in outputs across ATs. In addition, the ISO certification that was planned for the IATs is at risk due to the termination of the USAID project.
 - Considering the potential for internationalisation related to the language skills taught to the AT students, the review team noticed that the level of English language proficiency is inconsistent across schools, and that students from schools that deliver technical subjects in English have better language skills than students in the ATs that only offer English as a second language. It was also noted that delivering technical subjects in a foreign language requires a much better profile of teachers than the ones available within the MoETE.
 - Few ATs have established strategic long-term partnerships with international counterparts or collaborated in joint or exchange programmes that would support their graduates in finding a job abroad. The only exception visited was "Ghabour 2" AT which has a long-standing partnership with Saxony in Germany.
 - The ATs that implement this are very limited. Furthermore, there is untapped potential for the ATs to become knowledge hubs for other TSSs, training centres, and NGOs to train students, jobseekers and teachers which will also reinforce the LLL focus of the model.

5. Policy recommendations

It has become clear during this review process that the ATS model has a positive reputation within the TVET ecosystem in Egypt and is considered to be a successful Public-Private Partnership (PPP) model. It is also given high-level government support and commitment as is evident from the regular mention of the ATS by the President and Prime Minister as an important contributor to Egypt's economic development. It was also evident during the 2025 EDU-Tech conference and exhibition where the ATSs and their students were highly visible and appreciated. However, the review team observed areas where further development can be envisaged for the model's improvement in **governance, management, financing as well as internationalisation and expansion of the ATS model**.

This chapter outlines a series of recommendations at different levels resulting from the discussions, consultations and analysis during the review process.

5.1. Developing the ATS Model's strategic outlook

The ATS model has emerged as a cornerstone of MoETE's overall Technical Education reform strategy (TE 2.0) and one of its success stories for the past seven years. The model aligns TVET with labour market needs, fosters private sector collaboration and improves the image of TVET by focusing on quality and relevance. To expand the model and ensure its long-term sustainability, the Ministry must articulate its vision for the ATS model into a clear and operational strategy addressing systemic challenges while leveraging opportunities for growth and resilience.

Annex 4 of the report provides a suggested outline for a comprehensive strategy for the ATS Model for the next seven years. The ATS Strategy outline highlights the main components required to advance, expand and monitor the ATS model. This is a preliminary draft proposal, however MoETE must assume ownership in developing the strategy in collaboration with other national stakeholders.

A well-thought and communicated ATS strategy should be closely aligned with the national TE strategy. This will help the MoETE build support for the model's expansion and sustainability among and the high-level decision makers, the private sector and international development partners.

In this chapter of the report, we highlight the recommendations on key components of the proposed strategy focusing on its objectives, the governance, management and sustainability of the ATS model as well and the internationalisation of the model as a core component of the proposed strategy.

5.1.1. Strategic direction and objectives of the ATS model

The ATS strategy will be informed by a clear vision, mission and set of objectives all framed within a number of guiding principles upon which the ATS model was developed.

- **Example vision statement:** The ATS model to be a regional leader in transformative TVET, empowering Egypt's workforce with globally competitive skills, driving sustainable economic growth in partnership with the private sector, and fostering innovation aligned with national development goals and international standards.
- **Example mission statement:** To deliver high-quality, industry-relevant technical education through dynamic partnerships, cutting-edge curricula, and lifelong learning opportunities, ensuring graduates meet local and global labour market demands.
- **Proposed strategic objectives:** The following are the strategy's proposed or recommended objectives to be fine-tuned or further developed by MoETE:

- Enhance ATS’s educational quality and relevance aligned with current and future industry needs. Pursue accreditation from recognized national and international bodies to ensure the programs meet high educational standards. Invest in the continuous professional development of faculty to keep them updated with the latest industry trends and teaching methodologies
 - Increase Employability: Ensure that graduates are highly employable by providing them with practical experience and industry certifications.
 - Foster Innovation and Entrepreneurship: Encourage students to develop innovative solutions to real-world problems and support entrepreneurial ventures.
 - Establish sustainable governance and management systems that ensure operational excellence.
 - Secure diversified and innovative funding mechanisms for long-term sustainability.
 - Foster robust collaboration among government, industry, academia, and communities.
 - Strengthen international recognition and partnerships to promote global mobility and best practices.
 - Build institutional capacity to adapt to technological and labour market changes. Embed a culture of continuous improvement and innovation.
 - Contribute to changing perceptions of TVET and improving its image and in turn its enrolment rates.
 - Support and align with the overall transformation of technical education in Egypt.
 - Position ATSs as regional hubs for TVET excellence, actively supporting the transformation of Egypt’s broader TVET ecosystem (providing structured peer-learning, capacity development, and mentorship for traditional Technical Schools.
- **Guiding principles of the ATS strategy:** Building on the original main features of the ATS model, the following are key guiding principles that will drive the strategy and its implementation:
- **Continuous Improvement:** Regularly review and update curricula based on feedback from industry partners, students, and faculty. Pursue accreditation from recognized national and international bodies to ensure the programs meet high educational standards.
 - **Collaboration:** The ATS model is built on partnerships and strong collaboration with the private sector, other ministries and international partners to make the model demand driven. Also, the encouragement to collaboration between ATS schools among themselves and other national and international counterparts to better serve the national and international labour market.
 - **Community-centred:** The ATS focuses on its overall beneficiaries. How to become truly learner-centred, addressing students’ aspirations for further education and transition to employment both nationally and internationally. Also, supporting local communities and adults through LLL and continuous training services. How ATS schools can support other traditional TSSs within its sphere of influence.
 - **Coordination:** The ATS strategy will only be effectively implemented through close coordination between the ATS unit and other elements and bodies responsible for TE reform. This will include CEQAT and ETQAAN for quality assurance issues, TERO for strategic oversight, TVETA for teachers and staff development, and other WBL models (DS, CoCs) to achieve synergies. Also important is coordination with external national stakeholders to support the strategy, these include the Prime Minister, the new National Council for Education, Research and Innovation, NAQAAE for the NQF alignment, Ministry of Higher Education on facilitating student pathways and aligning

programmes, Ministries of Foreign Affairs and Labour for migration issues and the Ministries of Finance and Planning for funding reforms to finance the strategy.

- **Communication:** The ATS unit must master the art of communication. Allowing the team to communicate effectively the success stories, the reform achievements as well as lobby effectively with stakeholders and decision-makers for more resources and support. The MoETE must also develop a communication strategy to improve awareness about quality TVET, PPP and improving the social image of technical education. Also improve the unit's social media and website to provide information on ATSS, sectors, as well as national and international employment and career prospects.
 - **Contribution:** Eventually, the ATS model will effectively contribute to the overall reform of the TVET sector, by improving access to better quality TVET, innovation, teacher capacity building, private sector engagement and expanding WBL, as well as improving the image of TVET. The ATS will also contribute to economic development improved industrialisation and localisation of industry as well as provide a good reputation of Egyptian workers in international countries of destination.
- **Key performance indicators (KPI):** Some of the KPIs for the strategy may include the following:

Short-Term (1–3 Years):

- Establish 20 new ATSS annually in key economic sectors (e.g., manufacturing, construction, ICT, tourism).
- Develop new competency-based curricula aligned with the European Qualifications Framework (EQF).
- Recruit 100 teachers annually seeking diversified sources of funding (government and private sector)
- Train up to 500 teachers and instructors annually via international certification programmes in collaboration with TVETA.
- Achieve at least 80% graduate employment within six months.
- Support the employment of 2,000 ATS graduates a year in international countries of destination.
- Establish an ATS Sustainability Fund to finance expansion.
- Accredite 10 ATS schools a year through ETQAAN and international awarding bodies.
- Establish an ATS or WBL Knowledge Forum for the exchange of ideas and information. This would include ATSS, CoCs and DS as well as private sector companies involved. This could also be linked to the establishment of Sector Skills Councils and the importance of fostering the roles of high-quality and flexible WBL models like the ATS.

Long-Term (4–7 Years)

- Establish 30 new ATSS annually in key economic sectors (e.g., manufacturing, construction, ICT, tourism)
- Secure international accreditation (e.g., ISO).
- Position Egypt as a regional TVET hub for Africa and the Middle East.
- Position Egypt as a good source and model of highly skilled workers for the international labour market
- Expand the integration of green technologies and digital skills into all programmes.
- Support the employment of 10,000 ATS graduates a year in international countries of destination.

A detailed work-plan should accompany the AST Strategy and can be **built on the template currently being developed for the updated TE strategy work-plans** by the MoETE with the support of the EU and ETF.

5.1.2. Enhancing governance and management of the ATS model

As stated earlier in various sections of the report, there are some issues related to the governance and management of the ATS model and unit which need to be addressed. The following are some of the key recommendations under each:

Improving ATS governance structures:

- The governance of the ATS Unit should be considered and improved. This could be done by establishing an ATS Board to include the private sector and other stakeholders.
- Improve monitoring and evaluating the work of the ATS and the links with TERO. The improvements could encompass models for assessing the recruitment and capacity-building needs of the ATS Unit and improve the use of existing mechanisms within the Ministry. This monitoring should also cover a graduate tracer system that includes international job placements to monitor labour mobility outcomes and inform policy refinement.
- Consolidating various WBL models (ATS, DS, CoC) under a unified framework will streamline operations and improve outcomes, while expanding the schools' autonomy and Capital project will increase schools' self-sufficiency and resource use, further enhancing the quality.
- There is a need for a more comprehensive quality assurance framework that could ensure better synergies between internal and external partners. The framework could be designed to make the ATS model more time-, effort- and cost-effective. This should include better coordination and engagement between the ATS Unit and other ministerial units like CEQAT and TERO.
- Develop clear guidelines on how ATSs could support other TSSs to reform and provide coaching and mentoring support along with access by TSS students to relevant equipment. ATSs should be encouraged and motivated to become "lighthouses", "knowledge hubs" or "resource centres" for regular TSS schools. This could be linked to income-generating activities by the ATS. The industry partners are open to this idea.

ATS management development:

- The addition of more staff within the ATS Unit and perhaps establishing regional units to manage the hundreds of ATS will require financial resources from the government because while international development partners are willing to support capacity building of new and existing staff, they will not directly support salaries of the unit staff.
- Introduce indicators for both ATS and the rest of the system to track ATS delivery against a set of basic expectations and needs. Reactivate the Task Forces that were responsible for each pillar of the strategy to discuss and approve the indicators. Special consideration should be given to overcoming the challenge of coordination among them.
- Capacity Building: The ATS current and new staff will require capacity building intervention to better manage the expansion. A detailed Training Needs Assessment (TNA) will be required, and actual training may include, management skills, M&E, quality assurance, assessment methodologies, ICT skills and exposure to international best practice. Annex 5 provides a list of suggested capacity building programmes targeting the ATS unit management and staff based on the interactions and consultants of the current review process. The start is a comprehensive TNA that can be funded by one of the international development partners.
- TERO staff should be offered training and capacity-building opportunities, including their contact points in the various units and institutions responsible for different parts of the TVET system. TERO should be required to collect the same evidence and indicators for the TSS and for the ATS, including international job placements to monitor labour mobility outcomes and inform policy refinement.

- Negotiation with international development partners the funding of capacity building and the funding of long-term development consultants to support the ATS expansion and internationalisation plans.

5.1.3. Financing and sustainability of the ATS model

While the ATS model presents a promising approach to advancing TVET in Egypt, improving quality, fostering real collaboration between schools and employers as well as having a positive potential for internationalising TVET, guaranteeing the needed financial resources and ensure its sustainability remain challenges. The following are some of the key recommendations to address financing and sustainability of the ATS model:

- As part of the diversification of finding sources, the ATS unit is advised to develop a clear policy/strategy for introducing school fees and income-generating activities to ensure sustainability. This could include guidelines for the industry partners on best practices, the role of MoETE, use of the revenues, financial management etc.
- Conduct a comprehensive cost analysis for ATSs to include the costs spent by the MoETE and by the industry partners. The aim is to understand the real cost so that future partners are aware of the investment needed to sponsor an ATS and to effectively plan the desired expansion of the model.
- The MoETE should explore the lessons to be learned from the financing regulations of the International Public Schools (IPS) within general education, since they have a good model for sustainability and autonomy.
- To support the ATS expansion and sustainability plans the government should introduce procedures to ensure inter-ministerial coordination to secure additional and alternative funding sources. This is not a task for the MoETE on its own, it must be government policy. The ATS should be lobbying for this especially for this with the newly established National Council for Education, Research and Innovation which includes in its members several advocates of the ATS model. The following are some of the possible funding sources to be explored and pursued:
 - Establish an “ATS Sustainability Fund” seed funding from the private sector where interest from redeemable contributions is used to fund the ATS, similar to the Education for Life Fund but exclusively used for TVET or the ATS.
 - Reach an understanding with the Ministry of Labour to use funds from the National Training Levy to finance the internationalisation efforts especially that these funds are provided by the employers.
 - Work on amending the current investment law to review the tax incentives for partner companies supporting TVET initiatives and especially the ATS model.
- Explore long-term funding from international development partners willing to support the ATS model especially after the development of a clear and comprehensive ATS strategy as recommended earlier.
- The MoETE and IATS should discuss the theme “What next for the IATS after Workforce Egypt Project has terminated?” The lessons learnt from this experience should be analysed along with a consideration of the actual differences between ATS and IATS.
- Allocate increased government funding for ATS infrastructure and teacher recruitment and training.

5.1.4. ATS partnerships and collaboration

Partnerships and collaboration are fundamental to the ATS model; however, it is not just about the partnership with the private sector to co-manage the schools it also includes collaboration and coordination with other key stakeholders. In this section, specific recommendations are provided on how the MoETE could address this issue of broader collaboration:

- Review the MoUs between the MoETE and the industry partners to make sure the relationship is broader and provide more details regarding governance and activating the school boards to give more autonomy to the ATS.
- Enhance and expand the partnership to organisations like EBDA and the Federation of Egyptian Industries (FEIs) and other sectoral employer associations
- Collaborate with the Ministry of Planning, Economic Development and International Cooperation and the Ministry of Labour to respectively activate the Sector Skills Councils and coordinate for the monitoring of international job placements and labour mobility outcomes.
- Ensure greater synergy between MoETE and the Ministry of Higher Education to make sure that what is offered at the ATSs has a clear pathway for further education at the Technological Universities (Alignment with the ATSs specialties). This could improve the image of the TVET and ATS.
- Strengthening the collaboration between MoETE, ATS and the PVTD (Ministry of Industry) as well as the VTCs of the Ministry of Labour especially in areas on continuous vocational training.
- Consider introducing practical regulations that would facilitate the possibility of studying at university and working at the same time.

5.2. Advancing the ATS's internationalisation policy

5.2.1. Internationalisation of the curriculum

The internationalisation of the curriculum could be achieved through the inclusion of global case studies, projects, and collaborations in the curriculum. In addition, teaching foreign languages should be an essential element of an internationalised curriculum. Considering the potential for internationalisation related to the language skills taught to the ATS students, the review team noticed that the level of English language proficiency is inconsistent across ATSs, and that students from schools that deliver technical subjects in English have better language skills than students in the ATSs that only offer English as a second language. It was also noted that delivering technical subjects in a foreign language requires a much better profile of teachers than the ones typically available within the MoETE.

Foreign language skills should be emphasised. Beyond incorporating some international content, ATSs should actively promote the development of proficiency in relevant international languages (e.g., English, French, German, depending on target job markets). This could involve dedicated language courses, immersion programmes, and language support services. Where feasible, consider offering some technical subjects in a foreign language to enhance both language skills and subject matter understanding in an international context. The following are related recommendations:

- **Develop intercultural competences:** Intercultural learning should be integrated into the curriculum. ATSs should teach students about different cultures, communication styles, and global perspectives. This would prepare them to work effectively in diverse international environments. Opportunities for cross-cultural interaction should be grasped. ATSs should facilitate interactions with international students, teachers, and industry professionals through virtual exchange programmes, guest lectures, and cultural events.
- **Focus on integrating globally relevant skills and competencies in curricula and by fast-tracking the NQF and aligning it with the EQF:** Egypt must fast-track the activation of the NQF and align it with the European Qualification Framework (EQF) to facilitate labour mobility. MoETE must lobby for this and coordinate with all relevant government ministries and organisations. ATSs should ensure their curriculum meets international standards for the specific advanced technology fields. This includes incorporating internationally recognised certifications and qualifications where applicable. Soft skills, including languages, for international work should be emphasised. ATSs should develop students' communication, teamwork, problem-solving,

adaptability, and critical thinking skills, which are highly valued in international workplaces. Entrepreneurship and innovation should be taught to ATS students, who should be encouraged to think about international markets and develop innovative solutions with global applicability.

- **Capitalising on online resources and learning:** Options to provide online learning from foreign institutions and TVET schools could be explored and agreed. This should be done in connection with investments in modern technology and infrastructure including investment in high-speed internet, digital learning platforms, and well-equipped laboratories through the KfW Digitisation fund about to start. This includes also digital platforms for language training, assessing qualifications and information on recognition. Capitalisation on AI technology would also be highly recommended.
- **Develop a comprehensive plan to ensure that all ATSS comply with the requirements to acquire international accreditation/certification.** This may include that the ATS Unit establishes a shortlist of approved international awarding bodies and negotiates reasonable fees, so that all ATS industry partners can select from this list.

5.2.2. Internationalisation of teaching staff

- **Enhance teacher training programmes to align with international standards for teacher competencies** and investigate the possibility to recruit high-performing ATS graduates as teachers and instructors. This will require more collaboration with the Technical and Vocational Education Teachers' Academy (TVETA).
- **ATS teachers should be encouraged and supported to become involved in international exchange programmes** to gain experience of teaching methods in a TVET school environment where work-based learning is practiced. This should be carried out in a relevant European country, or a country in another target region such as the Gulf Cooperation Council countries.
- **Professional development programmes should be provided for Egyptian ATS teachers** to learn about international teaching methodologies, intercultural communication, and global best practices. This could involve an element of teacher training on a formal basis as well as more informal international study tours to learn about different approaches adopted in other countries. The latter would enable teachers to gain an insight into different ways of organising and practicing dual education in TVET.
- **Options for teacher exchange programmes should be explored and advantage taken of the available opportunities.** In addition, consideration should be given to the employment of international teachers from abroad, perhaps on a temporary exchange basis to widen the experience of domestic teaching staff. This could be done through international development partners schemes like ERASMUS and other programmes.

5.2.3. International accreditation, recognition and quality assurance

The MoUs between MoETE and the industry partners stipulate international recognition and accreditation, but not all ATSS comply and MoETE needs a comprehensive strategy to address this. International accreditation by internationally (or EU) validated accrediting bodies would be a feasible way to support this objective. To achieve this, it is strongly recommended that MoETE considers the following:

- **ATSS should be encouraged and supported by MoETE and CEQAT to apply for accreditation by ETQAAN** as this will pave the way to international accreditation and make the process much easier.
- **MoETE should pursue accreditation by having an overarching agreement or deal with a limited number of repeatable internationally recognised bodies** in relevant technical fields to be used by all ATSS. This will be more cost-effective and guarantees that all ATSS find the right international partner from the start. This can significantly enhance the credibility and recognition of the schools and their graduates.
- **MoETE should consider the use of benchmarking against international best practices.** This exercise should regularly compare TVET school programmes, teaching methodologies, and

student outcomes with leading international institutions. Consideration should be given to establishing an international advisory board with international experts from academia and industry to provide guidance and feedback on the internationalisation strategy.

- **Develop a systemic plan to encourage partnerships with counterpart international TVET institutions** and industry stakeholders to promote knowledge exchange and mobility programmes. This could include initiatives like the EU ERASMUS+ scheme and the ETF Network of Excellence.

5.2.4. Strengthening international career support and mobility pathways for TVET graduates

The ATSS unit should introduce and/or further develop dedicated career guidance teams focused on international career guidance and support services for graduates who wish to find jobs abroad. This team should have expertise in international job markets, visa processes, and intercultural communication.

Individualised counselling should be provided to students interested in working abroad. This could include career exploration and skills assessment. Career exploration could help students identify international jobs relevant to their vocational skills. The students could be helped to assess their skills and qualifications against international standards and address any gaps that need to be filled. Students could also be assisted to develop their CVs that meet international standards (e.g. Europass CVs). Students could also be taught to use international networking platforms (like LinkedIn), and recruitment agencies that specialize in international placements. Training could be provided in developing interview skills for international companies, for example using mock interviews which should be videoed and reviewed together with a skilled career counsellor to identify any improvements needed in interview techniques. Information should be provided on visa processes and work permits. Also provide orientation on cultural integration, knowledge on labour laws in the country of destinations and support in handling possible discrimination.

- **Provide information and resources on working abroad:** MoETE or MoL should develop country-specific guides with information about specific countries that are potential job markets for graduates. The Guides should include information on in-demand sectors and specific roles; clear and up-to-date guidance on the necessary legal requirements; information to help graduates plan their finances; insights into foreign cultures, workplace norms, and communication styles.
- **ATSS should create dedicated sections on the school's website or learning management system with all relevant information**, links to international job search websites, visa information websites, and cultural resources. They should also organise regular workshops and seminars on topics related to working abroad, featuring guest speakers from international companies, immigration lawyers, and alumni working overseas. Practical advice should be offered on day-to-day matters such as finding accommodation, opening a bank account, and navigating the initial stages of settling in a new country.
- **The ATS should establish strong links and MoUs with centres like the Egyptian-German Centre for Jobs, Migration and Reintegration** and work on establishing similar centres for other countries.
- **Student exchange programmes:** Students should be involved in international exchange programmes in order to gain experience of working in an international environment, or in an environment in another relevant country targeted by the ATS programme such as Germany or UAE. It could also be done on a partnership basis with other TVET schools abroad. In addition, ATSS could facilitate internships for periods of work experience for their students in international companies or organisations either in Egypt or abroad.
- **Participation in WorldSkills:** MoETE and the ATS unit should be a frequent participant in all possible World skills competitions at national, regional and international events. This will support elevating the reputation of Egypt's TVET graduates and students as potential workers on the international labour market.

5.2.5. International outreach and bilateral agreements

- **The ATs should be promoted internationally through marketing campaigns, international education fairs, and online platforms.** Partnerships could be established with international companies, TVET schools in other countries and other relevant organisations abroad to enhance international recognition and collaboration.
- **ATs should establish partnerships with reputable TVET schools, universities, and research institutions in other countries.** This can facilitate joint curriculum development, joint certificate programmes, faculty and student exchanges, collaborative research projects, and knowledge sharing. ATs should explore the possibility of offering joint qualifications with international institutions, making the graduates' credentials more recognised and valued globally. They should also forge connections with international companies in relevant advanced technology sectors. This can lead to internships, guest lectures by industry experts, curriculum alignment with international industry standards, and potential job placements for graduates.
- **International networks for career support:** ATs should collaborate with international employers and proactively reach out to companies abroad that hire individuals with the vocational skills taught at the school. This can be done by organising online events where international employers can connect with students and graduates. Webinars or virtual sessions could be hosted where international companies present their opportunities and hiring processes. Connections should be built with the Egyptian diaspora of professionals working internationally who should be invited to share their experiences and job opportunities with ATs students.
- **ATs should establish formal agreements (MoUs) with international companies for internships, apprenticeships, and potential job placements.** Additionally, they should collaborate with reputable international recruitment agencies that specialise in placing skilled workers abroad. ATs should collaborate in joint exchange programmes that would support their graduates in finding a job abroad. A rare exception visited was the “Ghabour 2” ATs which has a long-standing partnership with Saxony in Germany.
- **ATs should build international alumni networks** by establishing and actively maintaining a network of their graduates working abroad. This network can provide mentorship, career advice, and potential job opportunities for current students.
- **Bilateral agreements:** Given the constraints on labour mobility into the EU from third countries, bilateral agreements are an appropriate way to manage the expected expanded flows of skilled labour from Egypt to EU countries, and indeed to other countries considered as recipients of skilled workers from ATs such as the GCC countries.⁴⁰ This could follow in the footsteps of the Egyptian-German Centre for Jobs, Migration and Reintegration, established in 2020, with the aim to formalise labour mobility between Egypt and Germany. An Egyptian-Italian Center for Jobs and Immigration was announced in June 2024 with the intention to establish it in the near future. This will also be done in close coordination with the Ministry of Foreign Affairs and the Ministry of Labour.

6. Next Steps: A Practical Guide for Implementation

The recommendations outlined in Chapter 5 present a robust framework for enhancing, expanding, and internationalising the Applied Technology Schools (ATS) model, solidifying its position as a cornerstone of MoETE's TVET transformation (TE 2.0). Translating these recommendations into tangible results requires decisive action, clear ownership, and a structured implementation approach by MoETE. This chapter provides a practical guide for the Ministry to take these key recommendations forward.

The ATS model enjoys strong political support and a positive reputation, but its full potential – particularly regarding sustainable expansion, systemic efficiency, and international impact – requires well-designed and focused intervention. The core recommendations converge on (i) developing a

⁴⁰ See: <https://www.egypttoday.com/Article/1/132150/Egypt-qualifies-workers-for-employment-in-Italy-Greece>.

clear, operational 7-year ATS Strategy (building on Annex 4) and integrating all different types of WBL, (ii) strengthening governance through an inclusive ATS Board and streamlined oversight, (iii) diversifying funding via innovative mechanisms like an ATS Sustainability Fund and leveraging national levies, and (iv) embedding internationalisation across all facets – from curriculum and teacher development to accreditation, graduate mobility, and strategic bilateral partnerships.

Success hinges on MoETE's ATS Unit and TERO assuming leadership, securing cross-governmental commitment (especially from Finance, Planning, Labour, Foreign Affairs, and Higher Education), deepening private sector engagement, and mobilising international development partners strategically. Immediate priorities include finalising the ATS Strategy, establishing the governance structure, initiating critical financing reforms, and launching targeted internationalisation pilots.

6.1 Practical Next Steps: Key Actions for MoETE

To systematically implement the recommendations, the Ministry should prioritise the following actions:

1. Develop and Launch a Comprehensive ATS Strategy:

Action 1.1: Convene a dedicated task force (led by MoETE, involving ATS Unit, TERO, CEQAT, TVETA, private sector reps from the ATS network, development partners) to finalise the 7-year ATS Strategy draft (Annex 4) within 3 months. The strategy should also integrate all WBL models implemented by the MoETE.

Action 1.2: Integrate detailed annual work plans, budgets, and clear KPIs (building on TE 2.0 templates) aligned with the short-term (1-3 yrs) and long-term (4-7 yrs) targets outlined in section 5.1.1. of this report.

Action 1.3: Officially launch the strategy under the auspices of senior leadership (Minister/Prime Minister/President) to secure high-level buy-in and visibility.

Action 1.4: Develop and execute a dedicated communication strategy for the ATS Strategy internally and externally.

Action 1.5: develop a Monitoring and Evaluation framework for the ATS Strategy to be led by TERO.

2. Establish Robust Governance & Management Structures:

Action 2.1: Formally establish an ATS Governing Board within 6 months, with clear Terms of Reference, including representatives from MoETE (senior leadership), key line ministries (Labour, Planning/International Cooperation, Higher Education Industry, Investment), major industry partners (FEI, EBDA, sector associations), and potentially international partners. Empower this board for strategic oversight.

Action 2.2: Develop a comprehensive recruitment plan for the ATS Unit and its regional outlets.

Action 2.3: Conduct a comprehensive Training Needs Assessment (TNA) for the ATS Unit and relevant TERO staff within 4 months. Secure partner funding (e.g., EU, GiZ) for subsequent capacity building programmes (management, M&E, QA, internationalisation) based on TNA results (referencing Annex 5).

Action 2.4: Develop and implement standardised monitoring frameworks within 6 months, integrating graduate tracer studies (including international placements) across all ATSs and linking effectively with TERO's system-wide M&E.

Action 2.5: The internationalisation of teaching staff: Issue clear guidelines and incentives within 9 months for ATSs to function as "lighthouse schools" or "resource centres" for traditional Technical Secondary Schools (TSS), including mechanisms for equipment sharing and mentorship.

3. Develop Sustainable Financing:

Action 3.1: Commission an independent, comprehensive cost analysis of the ATS model (including MoETE and industry partner costs) within 6 months to inform funding requests and partner recruitment.

Action 3.2: Develop and approve a clear policy on school fees and income-generating activities for ATSs within 9 months, including governance, revenue use, and financial management guidelines.

Action 3.3: Proactively lobby the National Council for Education, Research and Innovation and key ministries (Finance, Planning, Labour) to:

- Establish the ATS Sustainability Fund (exploring models like IPS/Education for Life Fund).
- Secure agreement to utilise National Training Levy funds for ATS internationalisation efforts.
- Advocate for reviewing tax incentives in the investment law to favour TVET/ATS partnerships.

Action 3.4: Develop a funding proposal based on the finalised ATS Strategy to present to international development partners (e.g., EU, KfW, bilateral donors) within 12 months.

4. Drive Systemic Internationalisation of the ATS Model:

Action 4.1: Immediately task the ATS Unit (with support from CEQAT/ETQAAN) to:

- Support ATS schools to apply for ETQAAN accreditation and step to international accreditation.
- Finalise a shortlist of approved international awarding bodies and negotiate framework agreements for cost-effective accreditation within 6 months.
- Develop a mandatory roadmap for international accreditation for all ATSs, aligned with the strategy's KPIs. The objective is to achieve recognition of TVET qualifications and learning outcomes for priority occupations across borders to facilitate student and worker mobility within 24 months.
- Review ATS curricula to integrate international and intercultural content, promoting intercultural communication skills within the classroom and school environment and inviting international guest lecturers or industry experts.
- Create a comprehensive plan for enhancing English/German language delivery (including technical subjects where feasible) and intercultural competence, linked to teacher recruitment/training (TVETA).
- Develop a plan for the internationalisation of teaching staff within 6 months.

Action 4.2: Establish dedicated International Career Support Teams within the ATS Unit/Pilot ATSs within 9 months, equipped to coordinate with entities that provide counselling, visa/legal info, CV/interview training (Europass), and cultural orientation for graduates seeking international employment.

Action 4.3: Develop country-specific guides (in collaboration with MoL, MFA, GiZ) for key destination countries (Germany, GCC, Italy, Greece etc.) within 12 months.

Action 4.4: Formalise partnerships with centres like the Egyptian-German Centre for Jobs and the planned Egyptian-Italian Centre, and actively pursue bi-lateral agreements with other target countries.

Action 4.5: Leverage programmes like ERASMUS+ and ETF Network of Excellence for teacher/student exchanges and institutional partnerships. Initiate pilot exchanges within 18 months.

Action 4.6: Systematically participate in WorldSkills competitions and increase visibility at international education/trade fairs.

5. Enhance Coordination & Partnerships:

Action 5.1: Review and update MoU templates with industry partners within 6 months to strengthen governance (School Boards), autonomy, and long-term commitments.

Action 5.2: Formalise coordination mechanisms with the Ministry of Higher Education to ensure clear articulation pathways from ATs to Technological Universities.

Action 5.3: Activate collaboration with MoL and MoPEDIC to establish Sector Skills Councils and integrate labour mobility data into planning.

Action 5.4: Strengthen operational links with PVTD (Ministry of Industry) and MoL VTCs for continuous vocational training programmes.

6.2 Implementation Roadmap & Governance

The following list constitutes a summary of the implementation roadmap and governance considerations outlined in the report.

- **Timeline:** Align all actions with the phased KPIs (Year 1-3, Year 4-7) outlined in the ATS Strategy.
- **Ownership:** The MoETE (Deputy Minister for TVET) must provide overall leadership. The ATS Unit is the primary operational driver, requiring significant strengthening.
- **Coordination:** The proposed ATS Governing Board is crucial for cross-ministerial and private sector coordination and resolving systemic barriers. TERO retains vital strategic oversight and M&E coordination roles.
- **Resources:** Implementation requires dedicated budget allocation from MoETE/Government, complemented by leveraged private sector investment and targeted international development partner support aligned with the strategy.
- **Monitoring:** Track progress rigorously against the ATS Strategy KPIs and annual work plans through TERO and the ATS Unit, reporting regularly to the ATS Governing Board and senior leadership.

By decisively acting on these next steps, MoETE can transform the promising ATS model into a globally recognised engine for skilled workforce development, driving Egypt's economic growth and enhancing the international mobility and reputation of its graduates. The time for strategic implementation is now.

REFERENCES

- Assaad, R. (2022). Labour force projections: Egypt anticipates a resumption of demographic pressure.
- Assaad, R. (2023). Demographic pressures on the Egyptian labour market
- Bastiaannet, H. (2017). Internationalization in senior secondary vocational education in the Netherlands. In: Tran, L., Dempsey, K. (eds) *Internationalization in Vocational Education and Training. Technical and Vocational Education and Training: Issues, Concerns and Prospects*, vol 25. Springer, Cham. https://doi.org/10.1007/978-3-319-47859-3_12
- CAPMAS, Annual Bulletin of Education and Training Statistics in Government and Private Sector, 2018-2019
- CAPMAS, (2024). Statistical yearbook (Education). https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=5104&Year=23561
- Cedefop, Glossary (2024). Terminology of European education and training policy,
- El-Ashmawi, A. (2024). Supplementary Report on the Lessons Learnt from Developing and Implementing the MoETE Technical Education Strategy 2.0.
- East African Community (EAC). (2018). Regional Qualifications Framework Alignment
- ETF (2025): Assessment of the Progress of the Egyptian Strategy for Technical Education (TE 2.0) | ETF
- ETF (2011). Skills Matching for Legal Migration: in Egypt
- ETF (2018), Education, Training and Employment Developments.
- ETF (2018). Work-based learning: A handbook for policy makers and social partners in ETF partner countries. https://www.etf.europa.eu/sites/default/files/2018-09/Work-based%20learning_Handbook.pdf
- ETF (2025) Assessment of the MoETE TE 2.0 Strategy: <https://www.etf.europa.eu/en/document-attachments/assessment-progress-egyptian-strategy-technical-education-te-20>
- ETF (2024). Policy analysis and progress monitoring – Torino Process. <https://www.etf.europa.eu/en/what-we-do/policy-analysis-and-progress-monitoring-torino-process>
- ETF (2025). *A Taste of Vocational Excellence: International Recipes for Skills Development*. Torino: European Training Foundation.
- Fouad, Fatma (2024) Egyptian Workforce Migration: Boosting Remittances and Supporting GDP Growth, Egypt Today.
- International Labour Organization (ILO). (2017). Apprenticeship in Egypt- Towards a unified system?
- International Labour Organization (ILO). (2019). Skills for a Changing World: The Philippines' Skills Development System.
- IOM (2023). Skills Assessment Frameworks and Tools in Egypt: Review and Recommendations.
- Kenya National Bureau of Statistics (KNBS) (2022). Kenya Population and Household Census
- Krafft, C, Assaad, R., Mckillip, Z., & Mahmoud, E. (2024). The Evolution of Labour Supply in Egypt, Economic Research Forum.
- Fourrage, Ludo (2025). Getting a Job in Tech in Egypt in 2025: The Complete Guide
- Kučerová, K. (2023). Benefits and challenges of conducting a collaborative online international

learning class (COIL). *International Journal on Studies in Education*, 5(2), 193-212.
<https://doi.org/10.46328/ijonse.110>

Magdy, Y. (2023) *Public-Private Partnerships (PPP) in Technical Education: The Case of Egypt's Applied Technology Schools (ATS)*, Cairo: American University in Cairo

Ministry of Skill Development and Entrepreneurship (MSDE). (2022). *Annual Report*. Government of India

MoETE (2019). Ministerial Decree # 114 for Establishing the Operating and Managing Unit for the Applied Technology Schools (ATS).

MoETE (2019). *Technical Education 2.0: Principles, Pillars, Priorities and Planning*.

MoETE (2022). *Protocol Agreement between MoETE and Linah Farms for Establishing an ATS*.

MoETE (2023). *Technical Education 2.0: Transformation Policy Paper (First Edition)*.

MoETE (2024). *List of International certified ATS Students Between 2021 and 2024*.

MoETE (2025). *Protocol Agreement between MoETE and Arias for Establishing an ATS*.

Moroccan Ministry of Foreign Affairs. (2022). *Annual Migration Report*.

Philippine Overseas Employment Administration (POEA) (2022). *Annual Report*.

South African Department of International Relations and Cooperation (DIRCO)(2022). *South Africa's Skills Migration Policy and International Agreements*.

Sri Lanka, Ministry of Skills Development, Employment and Labour Relations. (2022). *National Skills Development Policy*

OECD. (2021). *International Migration Outlook*. OECD Publishing

OECD (2024). *Improving Egypt's business climate to revive private sector growth*.

UNESCO (2018). *Reviewing Work-based Learning Programmes for Young People, in Egypt*

UNESCO (2019). *Enhancing Institutionalized Partnerships between TVET Institutions and the World of Work in the Arab States Region*.

UNESCO. (2020). *Global Education Monitoring Report*. UNESCO Publishing

USAID (2022) *USAID Workforce Egypt, FY22- Quarter 2 Report*

USAID (2024). *Workforce Egypt Internal reports on International Applied Technology Schools*

World Bank (2022). *Migration and Development Report*

World Bank (2022). *Remittances and Development in Sri Lanka*

<https://occupational-outlook.mped.gov.eg/>

Annex 1: List of Applied Technology Schools

	Name of School	Year started	Industrial Partner	Specialisations	Sector	Governorate	Number & Gender of Students		
							F	M	T
1.	El-Araby Applied Technology School	2018-2019	El Araby Group of Companies and Factories	<ul style="list-style-type: none"> • Electrical Technology • Mechanical Technology • Refrigeration and Air Conditioning Technology • Logistics 	Industrial/Commercial	Menoufia	0	525	525
2.	Imam Mohamed Metwally Al-Shaarawy Applied Technology School	2018-2019	Talat Moustafa Group	Cooling and air conditioning Specialised networks for facilities Integrated electrical systems Architectural finishing and maintenance	Industrial	Cairo	101	273	374
3.	Mechatronics (Badr) Applied Technology School	2018-2019	Egy Travo Company	Mechatronics Systems	Industrial	Cairo	53	83	136

4.	Helwan Applied Technology School	2019-2020	Ministry of Military Production	<ul style="list-style-type: none"> • Car maintenance and repair (light vehicles) • Metal forming and welding • Mechanical and hydraulic maintenance • Metal plumbing and heat treatment • Metal working • Electrical equipment • Electronics • Computers and information technology • Refrigeration and air conditioning • Petrochemicals and industrial chemistry • Electrical installations • Wooden furniture 	Industrial	Cairo	0	471	471	
5.	Al-Salam Applied Technology School	2019-2020	Ministry of Military Production	<ul style="list-style-type: none"> • Electrical and Electronics Technology • Mechanical Technology 	Industrial	Cairo	31	116	147	
6.	Al-Shaheed Ahmed Hamed Taalab Hospitality Applied Technology School	2020-2021	Americana/ Misr El Khair Foundation	<ul style="list-style-type: none"> • Restaurant management and operation • Complementary business capabilities 	Hospitality	Cairo	36	183	219	
7.	I -Tech Secondary School for Applied Technology	2019-2020	IBM and El Alfy Foundation	Information Technology and Computers	Industrial	Cairo	34	127	161	
8.	El-Sewedy Applied Technology School	2019-2020	El Sewedy Foundation for Development	<ul style="list-style-type: none"> • Electrical Technology • Mechanical Technology 	Industrial	Sharkia		305	305	
9.	Electro Misr Applied Technology School	2019-2020	French Chamber of Commerce and European Institute for Cooperation and Development	<ul style="list-style-type: none"> • Electrical maintenance • Industrial automation 	Industrial	Cairo	76	163	239	
10.	Egypt Gold Applied Technology School	2019-2020	Egypt Gold Company	Jewelry manufacturing	Industrial	Qalyubia	95	95	190	

11.	Al-Salehiya Agricultural Applied Technology School	2019-2020	El Salhia Company for Agricultural Investment	<ul style="list-style-type: none"> • Animal and poultry production technology • Agriculture and irrigation technology 	Agricultural	Eastern	0	99	99	
12.	B.Tech Applied Technology School	2020-2021	B-Tech Company for Trade and Distribution	<ul style="list-style-type: none"> • Supply and Logistics • Marketing and Product Display • Sales and Customer Service • Computer Applications (Retail Technology) 	Commercial	Cairo	97	100	197	
13.	Riyada Agricultural Applied Technology School	2020-2021	Port Said Company for Food Manufacturing - Riyada	Dairy production and processing technology	Agricultural	Port Said	48	64	112	
14.	NTG Applied Technology School	2020-2021	NTG Company	Information Technology and Software Development	Industrial	Cairo	27	49	76	
15.	Volkswagen Applied Technology School	2021-2022	Volkswagen Group	Car maintenance and repair (light vehicles)	Industrial	Cairo	36	118	154	
16.	Applied Arts ATS	2020-2021	Academy of Arts	<ul style="list-style-type: none"> • Technology of manufacturing and moving decorations for artistic shows • Technology of installing and operating lighting devices • Technology of installing and operating photography devices • Technology of makeup, disguise and masks • Technology of tricks and artistic effects • Technology of tailoring clothes and costumes for artistic shows • Technology of installing and operating sound devices • Visual and heritage arts • Technology of manufacturing and moving dolls and puppets 	Industrial	Giza	160	141	301	

17.	Ghabbour 1 Applied Technology School (15 th May City)	2021-2022	Ghabbour Foundation for Development	<ul style="list-style-type: none"> • Car maintenance and repair (light vehicles) • Car body maintenance and repair (painting) • Car body maintenance and repair (bodywork) • Car maintenance and repair (transport and buses) • Electric car maintenance and repair • Network maintenance and technical support 	Industrial	Cairo	67	347	414	
18.	Ghabbour 2 Applied Technology School (6 th October City)	2021-2022	Ghabbour Foundation for Development	<ul style="list-style-type: none"> • Car maintenance and repair (light vehicles) • Car body maintenance and repair (painting) • Car body maintenance and repair (bodywork) • Electric car maintenance and repair • Software and website development and maintenance 	Industrial	Giza	60	341	401	
19.	Zahr Applied Technology School (Industrial-Commercial)	2021-2022	El Sewedy Technical Academy, Egyptian Natural Gas Holding Company, and IOC Production B.V.	<ul style="list-style-type: none"> • Electrical Maintenance • Networks and Information Technology • Operation and Maintenance of Energy Equipment • Maintenance and Repair of Cars (Light Vehicles) • Logistics 	Industrial/Commercial	Port Said	164	642	806	
20.	Martyr Amr Mostafa/ WE Applied Technology School- Nasr City	2020-2021	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development • Computer Technology • Information Technology 	Industrial	Cairo	170	262	432	
21.	WE Applied Technology School - Sheikh Zayed	2021-2022	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Giza	162	287	449	
22.	WE Applied Technology School - Mansoura	2021-2022	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Dakahlia	250	253	503	

23.	WE Applied Technology School - Alexandria	2021-2022	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Alexandria	138	249	387	
24.	WE Applied Technology School - Minya	2021-2022	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Minya	176	251	427	
25.	WE Applied Technology School - Suez	2021-2022	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Suez	219	209	428	
26.	WE Applied Technology School - Damanhour	2023-2024	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Beheira	84	140	224	
27.	WE Applied Technology School - Assiut	2023-2024	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Assiut	73	137	210	
28.	WE Applied Technology School - El-Tor	2023-2024	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	South Sinai	53	71	124	
29.	WE Applied Technology School - Qena	2023-2024	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Qena	124	142	266	

30.	WE Applied Technology School - Toukh	2023-2024	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Qalyubia	82	110	192	
31.	WE Applied Technology School - Port Said	2024-2025	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Port Said	26	28	54	
32.	WE Applied Technology School - Ismailia	2024-2025	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Ismailia	40	49	89	
33.	WE Applied Technology School - Damietta	2024-2025	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Damietta	17	20	37	
34.	WE Applied Technology School - Kafr El-Sheikh	2024-2025	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Kafr El Sheikh	55	62	117	
35.	WE Applied Technology School - Sohag	2024-2025	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Sohag	37	94	131	
36.	WE Applied Technology School - Gharbia	2024-2025	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Gharbia	71	93	164	

37.	WE Applied Technology School - New Valley	2023-2024	Ministry of Communications and Information Technology and Telecom Egypt	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	New Valley	86	64	150	
38.	WE Applied Technology School - Sharkia	2024-2025	Egyptian Telecom Company	<ul style="list-style-type: none"> • Communication Systems • Networks and Information Security • Website and Software Development 	Industrial	Sharqia	10	24	34	
39.	MCV Applied Technology School	2021-2022	MCV Company	<ul style="list-style-type: none"> • Welding • Electrical and mechanical equipment maintenance • Bus assembly and finishing 	Industrial	Sharqia	0	148	148	
40.	Fresh International Applied Technology School	2022-2023	Fresh Electric Company	<ul style="list-style-type: none"> • Manufacturing and maintenance of plastic stamps • Manufacturing and maintenance of sheet metal stamps • Manufacturing and maintenance of metal injection stamps 	Industrial	Sharqia	0	262	262	
41.	Ahmed Daif Allah International Applied Technology School	2022-2023	Hajj Ahmed Daif Allah Hassan Sons Company for Contracting and Trade	Information Technology and Artificial Intelligence	Industrial	Assiut	141	144	285	
42.	Misr Insurance International Applied Technology School	2022-2023	Misr Insurance Co.	Financial Services Marketing	Commercial	Minya	145	149	294	
43.	El-Sewedy International School for Applied Technology School for Software	2022-2023	El Sewedy Electrometer Company - Egypt	<ul style="list-style-type: none"> • Software Development • Integrated Software Development • Information Technology 	Industrial	Giza	113	172	285	
44.	Fatah Allah International Applied Technology School	2022-2023	Fathallah Company	<ul style="list-style-type: none"> • Modern Commerce/retail • Integrated Software Development • Information Technology 	Industrial/Commercial	Alexandria	146	244	390	

45.	Medhat El-Sweedy Applied Technology School	2021-2022	Medhat El Sewedy Printing House	Printing technology	Industrial	Sharqia	13	44	57	
46.	Ever Grow International Applied Technology School	2023-2024	Evergrow Fertilizers Company	<ul style="list-style-type: none"> • Operation and maintenance of advanced heavy industry equipment • Electrical maintenance of advanced heavy industry equipment • Mechanical maintenance of advanced heavy industry equipment 	Industrial	Menoufia	41	156	197	
47.	Mobica International Applied Technology School	2023-2024	Mobica Integrated Industries Company	Operating CNC machines Robotics	Industrial	Giza	56	119	175	
48.	Eva International Applied Technology School	2023-2024	Dr. Mounir Armanious Foundation for Development	<ul style="list-style-type: none"> • Operation and maintenance of pharmaceutical and food industry facilities • Operation and maintenance of production equipment for pharmaceutical and food industries • Integrated software development • Information technology 	Industrial	Giza	69	138	207	
49.	CFC International Applied Technology School	2023-2024	CFC Feed and Chemicals Company	Chemicals production and Technology	Industrial	Qena	38	151	189	
50.	Mountain View International Applied Technology School	2023-2024	Mountain View Real Estate Development and Investment Company	<ul style="list-style-type: none"> • Landscape technology • Facility management technology 	Industrial	Qalyubia	44	155	199	
51.	Ammar Applied Technology School	2022-2023	Ammar Company	<ul style="list-style-type: none"> • Housekeeping services • Food and beverages • Specialized network works • Architectural finishing works • Architectural carpentry works 	Hospitality/Industrial	Giza	93	136	229	

52.	Nahr El-Khair Agricultural Applied Technology School	2022-2023	Al-Ahly Agricultural Group Company with support from the Education for Life Fund	<ul style="list-style-type: none"> • Agricultural technology • Animal Production • Plant Production 	Agricultural	Minya	0	30	30	
53.	STEP Applied Technology School	2024-2025	El Alia Egypt Company	Artificial Intelligence	Industrial	Sohag	0	14	14	
54.	Nahdet Misr Applied Technology School	2023-2024	Nahdet Misr Company	<ul style="list-style-type: none"> • Chef • Food and beverages in tourist facilities • Maintenance of tourist facilities 	Industrial/hospitality	Giza	64	78	142	
55.	Mahmoud Anani Applied Technology School	2022-2023	Al-Anani Foundation for Development with support from the Education for Life Fund	<ul style="list-style-type: none"> • Agricultural Technology • Poultry Production • Plant Production • Food Industries and Dairy Products 	Agricultural	Minya	0	31	31	
56.	Sanaa El-Ghad Applied Technology School	2023-2024	Talat Moustafa Group	Landscaping Technology	Agricultural	Cairo	29	35	64	
57.	Pottery and Heritage Crafts Applied Technology School	2023-2024	Cairo Governorate, Education for Life Fund, Al-Fawakher Association	<ul style="list-style-type: none"> • Pottery and porcelain casting and shaping technology • Pottery and porcelain engraving and decoration technology 	Industrial	Cairo	43	37	80	
58.	Arab Organization for Industrialization Applied Technology School	2022-2023	Arab Organization for Industrialization	Aircraft manufacturing and maintenance	Industrial	Cairo	0	36	36	
59.	Lina Applied Technology School	2024-2025	Lina Company for Tourism and Urban Development	Date palm cultivation	Agricultural	Giza	0	30	30	
60.	Ebdaa National School for Technical Sciences - Badr	2023-2024	Ebdaa Company for Project Development	<ul style="list-style-type: none"> • Artificial Intelligence in Industrial Automation and Control • Artificial Intelligence in Engineering and Data Analysis 	Industrial	Cairo	50	115	165	

61.	Ebda National School for Technical Sciences - Damietta	2023-2024	Ebdaa Company for Project Development	Supply chains and logistics	Commercial	Damietta	0	146	146	
62.	Jeans Car Applied Technology School	2023-2024	Jeans Cars Seats Company	Integrated industries technology for upholstery of cars, yachts and aircraft	Industrial	Cairo	5	31	36	
63.	Abu Zaabal Applied Technology School	2023-2024	Abu Zaabal Company for Fertilizers and Chemicals	Phosphate fertilizer manufacturing	Industrial	Qalyubia	0	30	30	
64.	Onsi Sawiris Applied Technology School for Construction Technology	2024-2025	Orascom Construction	<ul style="list-style-type: none"> Plastering and dry construction works Installation of tiles, ceramics and industrial floors 	Industrial	Cairo	0	40	40	
65.	Bank Misr Applied Technology School for Building Materials Industry	2023-2024	Chamber of Building Materials Industry	<ul style="list-style-type: none"> Marble and granite manufacturing Marble and granite installation and maintenance 	Industrial	Beni Suef	61	91	152	
66.	Bank Misr Applied Technology School of Pharmaceutical Industries	2023-2024	Chamber of Pharmaceutical Industries	Pharmaceutical and cosmetic manufacturing	Industrial	Giza	57	97	154	
67.	Bank Misr Applied Technology School of Wood and Furniture	2023-2024	Chamber of Wood and Furniture Industry	<ul style="list-style-type: none"> Wooden furniture manufacturing Wooden furniture finishing 	Industrial	Giza	10	10	20	
68.	National Bank of Egypt Applied Technology School of Food Industries	2024-2025	Chamber of Food Industries	Food and dairy manufacturing	Industrial	Giza	10	10	20	
69.	National Bank of Egypt Applied Technology School of Mechanical, Electrical and Garment Industries	2023-2024	Chamber of Engineering Industries	<ul style="list-style-type: none"> Ready-made garment technology Electrical technology Mechanical technology 	Industrial	Cairo	39	80	119	

70.	Sidpec Applied Technology School	2023-2024	Sidi Kerir Company	<ul style="list-style-type: none"> • Petrochemicals and Industrial Chemistry • Networks and Information Technology • Industrial Automation 	Industrial	Alexandria	17	70	87	
71.	Advanced Technical School of Applied Technology in the Field of Nuclear Energy	2023-2024	Ministry of Energy	<ul style="list-style-type: none"> • Mechanics and Nuclear Technology • Electricity and Nuclear Technology • Electronics and Nuclear Technology 	Industrial	Matrouh	0	277	277	
72.	Egypt for Biotechnology Applied Technology School	2023-2024	Egypt Technology Factory MTBI Bio-Industries and Education for Life Fund	Applied Biotechnology	Industrial	Cairo	26	38	64	
73.	Hanifa El-Selhadar HST Applied Technology School	2024-2025	HST	<ul style="list-style-type: none"> • Artificial Intelligence in Monitoring and Warning • Digital Arts and Games 	Industrial	Cairo	28	33	61	
74.	New Damietta Applied Technology School	2024-2025		<ul style="list-style-type: none"> • Wooden furniture manufacturing • Wooden furniture finishing 	Industrial	Damietta	0	27	27	
75.	New El Alamein Applied Technology School	2024-2025		<ul style="list-style-type: none"> • Housekeeping services • Food and beverages 	Hospitality	Marsa Matrouh	4	23	27	
76.	Abu Bakr Applied Technology School	2024-2025	Abu Bakr Foundation	<ul style="list-style-type: none"> • Installing natural gas in homes • Converting vehicles from gasoline to natural gas • Solar energy technician 	Industrial	Giza	0	55	55	
77.	Arbakomed Applied Technology School	2024-2025	Arbakomed	Pharmaceutical and cosmetic manufacturing	Industrial	Qalyubia	8	11	19	
78.	Sheikh Saleh Kamel Applied Technology School	2024-2025	Saleh Kamel Foundation	Ready-made garment technology	Industrial	Gharbia	25	15	40	

79.	NTG2 Applied Technology School	2024-2025	NTG	Information Technology and Software Development	Industrial	Cairo	7	32	39		
80.	Tel El-Eis Applied Technology School	2024-2025	Elsewedy Electric Foundation and the Italian company IOC Production BV and the Egyptian Petroleum Corporation	<ul style="list-style-type: none"> • Kitchen services • Housekeeping 	Hospitality	Marsa Matrouh					
81.	ENI Applied Technology School of Petroleum	2024-2025	Elsewedy Electric Foundation and Damietta Liquefied Natural Gas Company	<ul style="list-style-type: none"> • Welding • Metal Forming • Electrical Installations • Logistics 	Industrial	Damietta					
82.	Ammar 2 Applied Technology School	2024-2025	Ammar Company	Real estate and tourism development	Agricultural	Giza					
83.	BSL Applied Technology School	2024-2025	Awan Al-Ward Company	Landscape	Agricultural	Cairo					
84.	Tayou School Applied Technology School	2024-2025	Tayou Company for Agricultural Investment	Agricultural Technology	Agricultural	Beheira					
TOTAL								4,340	10,327	14,667	

Annex 2: Different WBL Models at MoETE

Although the ATS model, and later the Centres of Competence (CoCs) were developed to enhance and complement the earlier WBL Dual System (DS) model, it seems that the ATS model has developed more independently within the MoETE although they are all managed within the same administration. There is potential for more complementarity and integration between these WBL models especially when one looks at it from the point of view of the private sector partners and how best to address their needs. Currently, all WBL models are operating independently with limited coordination and synergies which may confuse private sector companies who want to select the most suitable option for their needs.

This represents a challenge to be investigated during the review, however before this we briefly highlight the DS and CoC models.

The Egyptian dual system (DS)

Formally known as the Mubarak Kohl Initiative (MKI-DS)⁴¹, the Dual Education and Training System (DS) was introduced to Egyptian technical secondary schools in 1994, with the support of the German Federal Ministry for Economic Cooperation and Development (BMZ), through a bilateral Egyptian-German technical cooperation programme. The German Government still provides technical and financial support through several projects with the objective of improving the system's quality as well as expanding it to reach 10% of technical education students by 2030. The DS is highly influenced by the German dual system model and is the largest formal WBL scheme in Egypt in terms of number of students and schools. The Dual system in Egypt combines two days of formal schooling at the school with four days of in-company training, giving the students the necessary theoretical understanding⁴² and the hands-on experience demanded in the market. Today, the DS is a fully integrated scheme within the Egyptian education system, with both corporate and public sector institutions responsible for its governance and outcomes. The DS model is a three-year WBL scheme, offered in 25 out of 27 governorates in Egypt, with 22 dedicated DS schools and around 200 DS additional classes within other types of schools. Around 4000 companies accommodate and train around 55,000 students enrolled in 52 different occupations (covering the four main sectors: industrial, commercial, tourism and agriculture)⁴³. This number of students represents around 2.4% of the total number of technical education students at MoETE.

The Dual education system also includes the Integrated TVET Scheme, more commonly referred to as the "School within Factory". This scheme is usually regulated through protocols and collaboration agreements drafted between MoE and individual private or public companies, where joint schools are established within the premises of the cooperating company or as a part of the company training centre. This type of WBL model started in 1972, with a limited number of public sector companies. Then, in 2008 the private sector was introduced when one of the largest ready-made garment companies established a school within its factory in the industrial city of 10th of Ramadan. By 2012 there were 12 private sector agreements and in 2022 there are around 45 schools in factories teaching around 8,000 learners. According to the MoETE, the number of schools in factories has increased to more than 70 by January 2025, however they are not all operational yet.

⁴¹ The name was changed after the January 2011 revolution that was considered an uprising against President Mubarak and what he represented.

⁴² In addition to compulsory cultural subjects like Arabic and some English languages, religion and social studies

⁴³ IOM report 2023

The DS model encourages collaboration between business and education. Private companies (including small, medium and large) join an investors' association that participates in the implementation of a technical education programme through the Regional Units of the Dual System (RUDS), the Federation of Egyptian Industries (FEI) as well as other business associations like the Alexandria Business Association. Participating companies are responsible for the practical training component at their establishments. Apprentices receive a monthly allowance from the companies determined by the MoETE.

At the end of the three years, the graduates receive a certificate from the National Centre for Human Resource Development (NCHRD) affiliated to the Egyptian Federation of Investors Associations (EFIA) and a diploma from the MoETE⁴⁴. It has been reported that over 56% of the trainees have been offered jobs in the companies involved in their training, however because the DS students are generally better performers than their counterparts in the traditional technical secondary school system, the majority (around 80%) opt to progress to middle technical colleges and universities thus exiting the blue-collar labour market for a while or even pursuing a university degree. According to a number of focus group sessions conducted by the World Bank in 2014 with students and graduates of the DS and the traditional technical secondary school system with no WBL components, it was clear that the DS yielded better results. This included; (i) better links with labour market needs, (ii) better character building for students who were more confident and had a better idea what they wanted for their careers and addressing their needs even within the workplace, (iii) companies were more content with the skills of DS students, (iv) DS graduates had better work opportunities as well as further learning options and (v) better understanding by DS students and graduates of working ethics and condition⁴⁵.

The ATS model incorporates elements of the DS by facilitating partnerships with local businesses that provide internships and hands-on training for students, however there are also differences especially in the level of investment required by the private sector partner in the ATS model, which is much higher. Additionally, the ATS provides more flexibility in terms of timings and duration of the in-company training part according to the specificity of the partner and the sector, while the DS model is uniform across the board for all students and partners.

The ATS Unit management also sees the ATS model as much more progressive than the DS model. According to the table below which provides a comparison between the two models provided by the ATS management team, the ATS provide a more integrated and innovative model of technical education, with a strong focus on quality, employment opportunities, and continuous updating, making them more attractive to students and their families compared to the traditional dual education system.

Table: Comparison between ATS and DS provided by the ATS management team on various features in both models.

ATS	DS
Partnership with private sector and industrial institutions	
Rely on strong partnerships with major companies and institutions that provide technical and financial support, and provide real training opportunities for students.	Focuses on connecting students with factories or companies, but sometimes these partnerships are less sustainable/regular compared to ATS.
Curricula	

⁴⁴Successful completion is assessed on the basis of a national examination that includes both theoretical and practical work.

⁴⁵ IOM report 2023

Offer advanced curricula based on international standards in technical specialisations, with periodic updates to keep pace with market requirements.	Relies on traditional curricula with some practical additions.
Accredited certificates	
Grants internationally and locally accredited certificates, allowing graduates greater opportunities in the labour market inside and outside Egypt.	Certificates are often local, and may not be at the same level as international accreditations.
Employment and training opportunities	
Guarantees practical training and employment for distinguished students with industrial partners, giving students a clear advantage.	Depends on the student to find a training and employment opportunity after graduation.
Infrastructure in schools	
Provides modern equipment and advanced laboratories within schools, simulating the actual work environment.	Sometimes lacks these equipment, and relies heavily on training at the workplace.
Personal development and skills for students	
Focuses on developing students' personal skills, such as teamwork, leadership, and time management, in addition to technical skills.	Focuses more on technical skills only.
Supervision and quality assurance	
Subject to close supervision by the MoETE and industry partners, with regular monitoring and evaluation system.	Supervision by MoETE is less organised, which may sometimes affect quality.
Continuous professional development for teachers	
In addition to topped up salaried, from the partner, ATS provides training and professional development opportunities for teachers and administrators to ensure the quality of the educational process.	Professional development for teachers is less organised and depended on GiZ.

Source: Adapted from feedback received from the ATS Unit, MoETE.

Centres of Competence (CoC)

The CoCs are yet to be fully operational. There are two pilots supported by GiZ already operating, however the rest of the CoCs will be supported by KfW are still under establishment. The KfW CoCs will have state-of-the art facilities, infrastructure and equipment.

CoCs are special educational service providers in the TVET system, that have a sectoral focus and are aiming at developing their respective sector. They are technical secondary schools which are transformed into centres of excellence branded as Centres of Competence and offer a high quality WBL scheme. This means that technical education that is provided by a school is complemented by occupational training periods that take place in collaborating companies based on an education and training plan.

As a sectoral hub, the CoC will support a network of other schools in the same sector. The facilities of a CoC can be utilised by other stakeholders and schools from the sector and the geographic region, thus ensuring that they benefit from the high standards of the CoC.

To offer a demand driven and modern technical education, every CoC should have a Vocational Training Center (VTC), which provides a fail-safe learning environment. The VTC offers upskilling training programmes to TVET students, graduates and workers active in the same sector. Through a branch of the Technical and Vocational Education Teachers Academy (TVETA) which will exist within the CoC, the VTC is also utilised to train TVET staff adequately in teaching modernised competence-based curricula applying contemporary pedagogical and technical methods.

Every CoC will include a network of schools which have prioritised access to these services. This approach promotes the extension and application of specific technical and pedagogical knowledge and competences within a sector.

According to the concept note developed by the MoETE and its development partners, a CoC will be operated through a Public Private Partnership (PPP) with at least two companies in the same sector, bringing a business mindset and a sectoral approach into technical education. In order to reflect the diverse perspectives of the whole sector and to sustainably foster its development, a CoC is collectively steered by the following parties, who will jointly set up the strategic orientation of the CoC:

1. a group of private sector companies active in a particular economic sector.
2. a body representative of the sector (e.g. a chamber, Sector Skills Council, or an NGO having an impact on the sector).
3. the government, represented by the ATS Unit of the Ministry of Education and Technical Education.

Daily operations of the CoC will be jointly conducted by an academic and executive director, who will report to the steering committee.

From the side of MoETE, CoCs are administered by the “Applied Technology School Unit” (ATS Unit) and are therefore embedded in the current TVET system of the MoETE. They will be quality assured by the independent Egyptian Technical Education Quality Assurance and Accreditation Authority (ETQAAN). Based on this audit the MoETE will assign the “CoC recognition seal”. International collaboration is encouraged within the plans of the CoC⁴⁶.

Table: Services provided by the CoCs

Target group	Type of service provided by the CoC
Students of the CoC	In-company training in companies where training quality has been assured
	Career guidance
	In-school training in modern workshops and laboratories

⁴⁶ IOM report 2023

	Inter-company training to complement practical training
Students of sector schools and network schools	Inter-company training to complement practical training
	Occasional lectures and seminars
CoC staff	Technical (and didactical) trainings to become master-trainers
	In-company exposure (work-based trainings)
TVET staff	Technical (and didactical) training
Graduates	Upskilling training courses
	Access to mini employment fairs
Workers	Upskilling training courses

The sectors covered under the CoC model are as follows:

- 1 CoC in Industrial Engineering, operating (GiZ)
- 1 CoC in Automotive, operating (GiZ)
- 3 CoCs in Renewable Energy, under establishment (KfW/EU)
- 1 CoC in Furniture manufacturing, under planning (KfW)
- 1 CoC in construction under planning (KfW)
- 1 CoC in food processing and agro-business under planning (KfW)

The initial discussion between MoETE and KfW when establishing the CoCs centred around the fact that the CoCs would be transferred from existing ATSs who “graduate” into CoC status would. This has not really happened, since normal TSSs have been selected to become CoCs or new plots of land will be built into CoCs. However, there are still a lot of similarities between the ATS and the CoCs in terms PPP and WBL, but the differences include the wider scope of the CoCs to serve the whole sector, the partnership with a group of companies not one as in the ATS and the fact that the COC will support a network of other schools active in the sector.

The fact that only two GiZ CoCs are operational makes it difficult to fully assess and analyse the model especially that the GiZ and KfW models are not fully aligned and there has been tension between the two entities in terms of approach⁴⁷.

In future, by linking ATS with Centres of Competence, students can also benefit from additional training resources and expertise, enhancing their overall learning experience. The ATS model can also benefit from the idea of having network schools to achieve greater impact for the TVET system.

⁴⁷ According to discussions with MoETE officials.

Annex 3: International good practice in internationalising TVET

Various aspects of international good practice could be transferred to the ATs as part of a programme of internationalisation. In considering an appropriate approach to such policy transfer, it should be noted that adaptability to the local context is an important element of good policy design. Models from each international experience or example may need to be adapted to fit the specific context and needs of Egyptian TVET. Direct replication is not always the most effective approach. However, the following examples of international good practice can serve as a guide to developing specific policies to promote the internationalisation of the ATs in the future.

1. Internationalisation of the curriculum

While a single, universally mandated “international standard” for secondary TVET curricula is lacking, the trend is towards greater international comparability, recognition, and the adoption of globally recognised best practices and competencies. This can be achieved through benchmarking, international collaborations, integrating global skills, and aligning with frameworks that facilitate the recognition of qualifications across borders. Consequently, many secondary TVET institutions are internationalising their curricula to equip students with the skills, knowledge, and intercultural understanding necessary for success in the international labour market. A variety of approaches have been adopted, ranging from embedding international content and perspectives within existing subjects to offering specialised international programmes combined with international mobility opportunities.

1.1 Embedding international and intercultural elements in the curriculum

Throughout Europe, there is a growing emphasis on developing an “international orientation” as a key competence for TVET students.⁴⁸ This includes:

- Supporting students to acquire the necessary knowledge, attitude, and behaviour to practice their profession in an international environment
- Understanding international developments within their specific sector
- Developing proficiency in foreign languages

The European Forum of Technical and Vocational Education and Training (EfVET) promotes the embedding of international competencies in TVET curricula to ensure all students gain international experience, even without traveling abroad.⁴⁹ Their “Education without Borders” project aims to provide tools for teachers and students to integrate international learning objectives and contexts into regular lessons.

In the Netherlands, TVET institutions are encouraged to interweave international and intercultural elements into their study programmes and extracurricular activities.⁵⁰ This includes introducing students to other cultures, customs, and faiths to develop intercultural awareness; organising projects with schools or companies abroad through online collaboration tools like eTwinning; arranging guest lectures by professionals from international companies or organisations; facilitating work placements at internationally-oriented companies in the region; and adding an international dimension to lessons, such as analysing the marketing plan of an international company.

⁴⁸ <https://www.cedefop.europa.eu/en/tools/timeline-vet-policies-europe/search/43712>

⁴⁹ <https://efvet.org/how-to-incorporate-internationalisation-into-the-curriculum/>

⁵⁰ <https://www.nuffic.nl/sites/default/files/2022-11/internationalisation-at-home%20-VET.pdf>

Box 1. Interview with curriculum expert, Netherlands (<https://www.nuffic.nl/en/news/19/1/2023>)

Jolanda van de Lagemaat, a Health and Welfare lecturer, curriculum expert and international coordinator at Da Vinci College explains “In my sector I want to offer all my students an international experience. Internationalisation at home is a good way to help me achieve this. Every student can acquire international competences without physically having to travel abroad,” she says. To give one example, students of the Citizenship course get acquainted with various cultures in a low-threshold manner through the Globi-Trotter board game. When a lecturer from abroad visits Da Vinci College as part of job shadowing, the college always asks whether they would be willing to give a guest lecture. “Besides offering students new insights, this also encourages them to speak English.” While many students cannot travel abroad, the college aims to train internationally competent students and teachers. “As a student at our college, you are trained as a world citizen, and you work in a globalising world. Our students soon become flexible, enterprising and willing to tackle challenges. This increases their chances on the job market.”⁵¹

In some countries, TVET teachers collaborate across borders to jointly develop curricula that incorporate international case studies, examples, and standards relevant to their vocational area. This ensures that students are learning content that has international relevance and are exposed to different global perspectives within their field.

International partnerships between TVET schools can lead to the joint development of curricula, ensuring that the content is relevant in multiple national contexts and incorporates international best practices. Some initiatives involve partnerships between educational institutions and international companies to co-develop curricula that meet the demands of the global labour market.

1.2 Foreign language learning

International best practice provides some pointers and examples of successful integration of language learning into TVET schools. A key feature of successful language proficiency development in VET is that language learning should be linked to the specific TVET field and future career needs. Language learning also needs to be contextualised and taught and practiced in authentic, work-related settings. Language development is also often combined with TVET content, rather than being taught in isolation from as a subject. It is also important that language teachers and TVET subject teachers should work together to align content and language objectives. The use of real-world materials like technical manuals, industry publications, and workplace communication examples also facilitates successful absorption and learning of a foreign language. Language learning is doubly important for internationalisation as it can help students develop international cultural skills, enabling students to interact with people from other cultures, understand different perspectives and accept cultural diversity.

Box 2. Content and Language Integrated Learning

Content and language integrated learning (CLIL) involves teaching TVET subjects through a foreign language.⁵² The focus is on learning both the subject content and the language simultaneously. The use of CLIL approaches is increasingly common in TVET schools across Europe. For instance, in some Spanish TVET colleges, tourism or hospitality courses might be taught in English or German. Similarly, engineering modules in the Netherlands can be delivered in English. In Finland, some TVET institutions offer specific modules or even entire programmes in English to attract international students and prepare domestic students for international careers.⁵³ In Switzerland, due to its multilingual environment, some TVET programmes incorporate instruction in a second or even a third national language (German, French, Italian) alongside the TVET subject matter. In the Netherlands

⁵¹ <https://efvet.org/internationalisation-at-home-you-dont-need-to-do-it-all-by-yourself/>

⁵² <https://www.teachingenglish.org.uk/professional-development/teachers/educational-policies-practices/articles/content-and-language>

⁵³ <https://vamia.fi/en/education-and-applying/how-to-apply/>

some TVET schools work with subject teachers to increase their language awareness and integrate language support into their lessons, focusing on the specific language demands of the subject.

When using language platforms, it is highly recommended to select an Artificial Intelligence-powered platform, designed to use AI to transform any lesson content into an online lesson that has multiple items including videos, audio, quizzes, etc with minimal effort from the teacher's side⁵⁴. Examples of these platforms are GoFluent, Traninzi, Neo Academy, and Almentor. All these companies have experience in the TVET sector. Through such AI-powered platforms, teachers would be able to create online content, quizzes, and tests starting from their text-based lessons. This would save time and assist the teachers with teaching basic concepts.

1. Internationalisation of teaching staff

The internationalisation of teaching practice in secondary TVET is a growing area of focus, driven by the need to equip both teachers and students with the skills and intercultural understandings required for the internationalisation of the ATS and the graduate workforce. The internationalisation of teaching practice in TVET schools is multifaceted, involving teacher mobility, collaborative projects, integration of international perspectives in training and requires the development of intercultural competence among teachers and trainers. The ultimate goal is to enhance the quality and relevance of TVET, preparing ATS graduates to look for work opportunities in an international environment.

2.1 Teacher mobility and exchange programmes

The Erasmus+ programme offers opportunities for TVET teachers and trainers to undertake professional development activities in other European countries. In the EU, this can include job shadowing, teaching assignments, or participation in workshops and training courses. The aim is to expose teachers to different pedagogical approaches, industry practices, and cultural contexts, which they can then bring back to their home institutions. Organisations holding an Erasmus accreditation can send participants on job shadowing and teaching or training assignments in third countries not associated to the Programme including countries in the South Mediterranean Region such as Egypt.⁵⁵ This could be useful for any ATS who would like to invite teachers from an EU country to provide a training course to students in the Egyptian ATS partner. Teaching staff at the ATS could benefit from interaction with such invited international teachers and from observing their teaching methods, as well as initiating networking activities with the sending institution in Europe.

Some countries have bilateral agreements that facilitate the exchange of vocational teachers. For example, a partnership between a vocational school in Egypt and one in Germany might include opportunities for teachers to spend time teaching and learning in the partner institution.

2.2 Collaborative online international learning for teachers

Collaborative online international learning (COIL) can be a valuable tool for teacher professional development. TVET teachers from different countries can collaborate online to design and deliver joint modules, share best practices, and learn about each other's educational systems and cultural contexts (Kučerová, 2023).

⁵⁴ ETF, Technical Specifications for the Development of a Language Training Programme for TVET Egyptian Students, 2025

⁵⁵ <https://erasmus-plus.ec.europa.eu/programme-guide/part-b/key-action-1/mobility-vet>

2.3 Integrating international perspectives into teacher training

In the Netherlands, teacher training programmes for TVET educators incorporate elements that focus on internationalisation (Bastiaannet, 2017). This includes preparing teachers to work with diverse student populations, integrate international content into their subjects, and facilitate international projects and exchanges for their students.

Several initiatives and resources are available to help TVET teachers develop their intercultural competence. For example, the European Centre for Modern Languages (ECML) has projects that focus on intercultural competences in cross-border TVET projects, providing guidance and resources for trainers.⁵⁶ Workshops and training programmes are offered to help teachers understand different cultural norms, communication styles, and how to create inclusive learning environments for students from diverse backgrounds.

2.4 Involvement in international projects and networks

TVET teachers can get involved in international projects funded by programmes like Erasmus+ or other national and regional initiatives. These projects often involve collaboration with teachers and institutions from other countries on specific areas of TVET, leading to the development of international perspectives on teaching practice.

Box 3. Example: ACTIVE-ATS

The ACTIVE-ATS project (“Advanced Competencies of Teachers to Improve Vocational Education in Applied Technology Schools”) was funded by Erasmus+ from January 2023 to December 2024. It was coordinated by Häme University of Applied Sciences in Finland in partnership with MoETE, Helwan University, Egypt and IHK-Projektgesellschaft, Germany. Some 50 teachers from five ATS schools received training, including in a private sector company and provided experience of international practices and educational collaboration.

Additionally, networks like the European Forum of Technical and Vocational Education and Training (EfVET) provide platforms for TVET teachers and institutions to connect, share knowledge, and collaborate on internationalisation strategies.⁵⁷

2. International accreditation and recognition of TVET courses

The landscape of international accreditation for secondary TVET education is evolving, and there is no single dominant international accreditation body as can be found in some sectors of higher education. However, the increasing emphasis on the internationalisation of skills and workforce mobility is driving more TVET institutions to seek international recognition.

3.1 Accreditation through international organisations

The International Association for Quality Assurance in Pre-Tertiary and Higher Education (QAHE) accredits TVET schools and institutions globally, focusing on quality standards and international recognition.⁵⁸ Accreditation by QAHE can enhance an institution's reputation and provide a benchmark against international standards. The International Education Accreditation Council (IEAC), based in the UK, offers international accreditation to educational institutions, including TVET colleges.⁵⁹ The IEAC accreditation aims to ensure quality and effectiveness, providing international recognition to accredited institutions. The Council of International Schools (CIS) is known for accrediting international

⁵⁶ <https://www.ecml.at/>

⁵⁷ <https://digital-skills-jobs.europa.eu/en/organisations/european-forum-technical-and-vocational-education-and-training-efvet>

⁵⁸ <https://www.qahe.org/about/>

⁵⁹ <https://www.ieac.org.uk/about-IEAC.php>

schools as well as secondary TVET programmes within their scope. CIS accreditation is recognised by educational authorities worldwide.⁶⁰

3.2 Alignment with international industry standards and certifications

Some TVET schools revise their curriculum to incorporate internationally recognised certifications. TVET programmes in specific fields (e.g., IT, engineering, hospitality,) can align their curriculum and assessment with international industry certifications (e.g., Cisco, Microsoft, ISO standards, culinary certifications). While not a full institutional accreditation, this provides international recognition of the skills acquired by graduates. Other TVET schools and some ATs are partnering with international examination boards (e.g., City & Guilds, Pearson BTEC) to offer qualifications that are recognised in different countries. This provides a degree of international recognition for specific TVET programmes.

3.3 Regional recognition frameworks

National and cross-national Qualifications Frameworks (NQFs) have been developed to ensure that qualifications are recognised across international borders. NQFs provide an instrument to classify and structure certified education and training qualifications according to agreed levels (usually levels 1-8 to align with the eight levels of the UNESCO International Classification of Education). NQFs can enable TVET graduates to migrate across borders and jurisdictions on the basis of mutual recognition by governments and employers of their qualifications mapped to the relevant framework. They also ensure that common competence standards within an occupation are upheld and that they are applied everywhere. NQFs create opportunities to define standardised curricula, assessment methods and certification procedures for education and training programmes. They provide policy-makers with agreed learning outcomes and standards to measure education and training quality. And finally, they enable learners to understand what qualifications are recognised and accredited by education systems and employers elsewhere to support their educational and labour market mobility and career planning.

3.4 Morocco: A case study in aligning national qualifications frameworks with the EQF

Morocco, as a key source country of migrant workers aiming for Europe and the Gulf States, has recognised the importance of aligning its TVET system with international standards to facilitate legal migration, improve employment outcomes, and ensure recognition of qualifications abroad. A central component of this strategy has been the integration of Morocco's National Qualifications Framework (NQF) with the European Qualifications Framework (EQF). Morocco is estimated to send approximately 200,000 to 300,000 migrants annually to Europe, primarily Spain, France, and Italy (OECD, 2021). To achieve this, Morocco has developed clear Policy Frameworks. Morocco's National Development Strategy for Vocational Training (2015–2021) emphasises improving training quality, employability, and international recognition of qualifications. The Vision 2025 strategy explicitly pursued to facilitate mobility through better qualification recognition.

The European Qualifications Framework (EQF) is a common European reference framework that links national qualification systems across Europe. It translates qualifications and learning outcomes into a shared European language, increasing transparency and recognition (European Commission, 2017). Morocco aspires to align its NQF with the EQF to facilitate recognition of Moroccan qualifications in Europe. The Moroccan Ministry of Education and Vocational Training launched initiatives to make sure that the NQF compatible with regional and European standards. The NQF was officially adopted in 2017, structured into eight levels corresponding to the European EQF levels 1-8 (Ministry of

⁶⁰ <https://www.cois.org/about-cis>

Education, Morocco, 2017). The process involved mapping existing Moroccan qualifications to the EQF, ensuring that the learning outcomes, competences, and certification standards align. Key steps in this alignment have included:

- Stakeholder engagement through involving education authorities, industry representatives, and international partners.
- Curriculum reform by incorporating European standards for curriculum design, assessment, and certification.
- Quality assurance by establishing mechanisms for continuous quality improvement aligned with European practices.

As of 2020, over 1,200 vocational diplomas and certificates had been mapped to the NQF with EQF levels (UNESCO, 2020). The National Agency for Qualifications Recognition (ANQR) was established in 2018 to facilitate recognition and portability of Moroccan qualifications in Europe. Moroccan qualifications now have greater transparency in European countries, increasing the likelihood of recognition for work and further education. The EU-Morocco Mobility Partnership (2013) and subsequent agreements have formalized cooperation on skills recognition. Data from the Moroccan Ministry of Foreign Affairs (2022) indicates that approximately 45% of Moroccan migrants to Spain and France now possess qualifications aligned with European standards. Pre-departure training and certification programs have increased, with over 50,000 youth trained annually for migration pathways, many with qualifications recognized across Europe. Moroccan workers with certifications aligned with the EQF are more likely to secure legal employment in Spain's construction, hospitality, and healthcare sectors. This alignment has contributed to a reduction in irregular migration and improved working conditions for Moroccan migrants.

Simplifying recognition processes should be a priority for policies to internationalise the ATSSs. A continuous dialogue with European agencies like ETF and CEDEFOP (European Centre for the Development of Vocational Training) should form an essential part of this activity.

Box 4. European Qualification Framework

The European Qualifications Framework (EQF) is a meta-framework that helps compare qualifications systems across different European countries. By referencing national TVET qualifications to EQF levels, it becomes easier for employers and individuals in other countries to understand the skills and knowledge acquired by graduates, thus facilitating labour mobility. While primarily a referencing tool, the European Qualification Framework (EQF) aims to make TVET qualifications more readable and understandable in different European countries.⁶¹ TVET qualifications that are aligned with EQF levels gain a degree of international recognition within Europe. In Egypt, the National Authority for Quality Assurance and Accreditation of Education (NAQAAE) is involved in the development and implementation of the **Egyptian National Qualifications Framework (ENQF)**. To the extent that the ENQF is aligned with the EQF it may facilitate international mobility of TVET graduates.

Box 5. Other regional qualifications reference frameworks

The African Continental Qualifications Framework (ACQF) is a policy initiative by the African Union (AU) to establish a continent-wide framework for the recognition of qualifications. Launched in 2019, its primary objectives are to enhance comparability, quality, and transparency of qualifications across all sub-sectors and levels of education and training in Africa and to facilitate the recognition of diplomas and certificates, thereby supporting the mobility of learners and workers across the continent. In doing so it aims to promote cooperation and alignment between qualifications frameworks within Africa and internationally. The ACQF is envisioned as an overarching meta-qualifications framework comprising ten levels. It aims to act as a connector and translation tool between different national and regional qualification systems and their respective levels. The development of the

⁶¹ <https://europass.europa.eu/en/europass-digital-tools/european-qualifications-framework>

ACQF has been a collaborative effort involving the African Union Commission (AUC), the European Union (EU), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and the European Training Foundation (ETF). It is underpinned by the AU's Agenda 2063 and the Continental Education Strategy for Africa (CESA 2016-2025). The ACQF aligns with the AU's Protocol on the Free Movement of Persons, Right of Residence and Right of Establishment, which calls for a continental qualifications framework to encourage and promote the free movement of people.

The ASEAN Qualifications Reference Framework (AQRF) is similar to the EQF. It aims to facilitate the comparability of qualifications within the ASEAN region, potentially including TVET qualifications.⁶² The impetus to develop the AQRF was to support intra-regional trade by facilitating labour market mobility for workers and to help fill the skills demands of employers across the region in a way which promotes high quality education and training and standardisation across occupations.

3. Support for international labour mobility of TVET graduates

Egypt is the largest regional provider of migrant labour to the Middle East. It is estimated that more than six million of Egyptian expatriates reside in the Gulf Cooperation Countries (GCC), such as Saudi Arabia, Kuwait and the UAE followed by Libya and Jordan. In addition, three million expatriates live in non-Arab countries, such as Australia, Canada, Greece, Italy, and the USA.⁶³ As globalisation has increased the demand for skilled workers across borders, several countries have adopted policies more directly linking secondary TVET education to international labour mobility. Mobility policies at the secondary TVET level have focused on enhancing the quality and international relevance of training. They have also included the alignment of curricula with the international job market and on facilitating the recognition of TVET qualifications. The impact on labour mobility is often indirect by making graduates more attractive to international employers or by facilitating the recognition of their skills abroad.

4.1 National policies supporting mobility

Several European countries have national policies and funding mechanisms that encourage TVET students to undertake learning periods abroad. Some countries allocate national funds to support international internships or training periods for VET students and recent graduates administered by government agencies, sector-specific organisations, or VET school consortia. For example, Denmark offers apprenticeships abroad as a recognised part of its TVET programmes.⁶⁴ These policies, while primarily focused on educational benefits, directly contribute to TVET graduates' readiness for international work environments. In Germany, the "MobiPro-EU" programme (now concluded but a good example) funded the mobility of young people seeking vocational training or employment in other European countries. In France, Initiatives at regional levels support the international mobility of apprentices and VET students, often with funding from regional authorities or specific sector-based organizations. The focus is often on providing financial aid and organisational support for placements abroad. Some regions in Italy have specific programmes to promote international mobility for VET students, often focusing on sectors with strong local economies and international connections.

4.2 Bilateral Agreements and Labour Mobility Schemes

Bilateral agreements between countries on labour mobility can indirectly benefit TVET graduates in specific high-demand sectors. These agreements often recognise specific TVET qualifications. Some countries have specific visa categories or pathways for skilled workers with TVET qualifications in particular trades.

Box 6: INTERVET programme for the Western Balkans

⁶² <https://asean.org/our-communities/economic-community/services/aqrf/>

⁶³ <https://mena.iom.int/egypt>

⁶⁴ <https://ufm.dk/en/publications/2020/work-placements-abroad-for-employers-2020-2021-pdf>

INTERVET Western Balkans was a three-year pilot project for the internationalisation of vocational education and training systems in Western Balkans. The project aimed at creating opportunities for learning mobility in training centres of Western Balkans and improving the culture of learning mobility for VET students and teachers. The project consortium included business associations, SMEs, VET centres, chambers of commerce and a university from six regional partners: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, the Republic of North Macedonia and Serbia, as well as eight partners from EU Member States: Italy, Belgium, the Netherlands, France, Malta, Spain, Slovenia and Poland. The project provided 372 short-term learner mobilities of one month for high school VET students from the Western Balkans in Seville, Wrocław, Forlì-Bologna, Maribor and Lyon; 54 long-term learner mobilities of three months for recent Western Balkan VET graduates and apprentices in Seville, Wrocław, Forlì-Bologna, Maribor, Lyon; 57 job shadowing experiences for VET teachers and managers at three EU colleges of excellence: SEPR (France), ROC Da Vinci College (the Netherlands), and MCAST (The Malta College of Arts, Science & Technology); participation of 42 VET teachers in summer schools in Bologna, Seville, and Dordrecht; the participation of 85 VET teachers and managers in meetings organised by EfVET and hosted by MCAST, ROC Da Vinci College and SEPR; and the participation of 24 teachers and managers in the first Uniser Teacher Week, organised and hosted by Uniser (Italy).

Box 7. Regional Office for Middle East and North Africa

The UN's International Organisation for Migration (IOM) supports countries in the MENA region to achieve their national priorities in the area of migration and mobility. IOM's Labour Mobility and Social Inclusion Unit (LMI unit) works with governments, recruitment agencies and private sector companies to protect migrant workers and to optimise the benefits of labour migration for both the country of origin and destination as well as for the migrants themselves. IOM's Regional Office for MENA has supported several countries, among which are Egypt, Tunisia and Libya, to develop and implement Bilateral Labour Agreements (BLAs) and Skills Mobility Partnerships (SMPs) to facilitate regular, safe and orderly labour mobility and build opportunities for workers and employers alike.

While Egypt does not have many bilateral agreements aimed at enabling Egyptian TVET graduates to find work abroad, existing agreements on educational, technical, and labour cooperation, along with ongoing efforts to align Egyptian TVET with international standards, can create opportunities for mobility. One such bilateral agreement, between Egypt and Turkey, is the process of being designed and in January 2025, Egypt held talks with Turkey on the facilitation of Egyptian labour migration to Turkey and the Egyptian Minister of Labour confirmed Egypt's readiness to provide skilled and trained workers to meet the needs of the Turkish labour market. Ministers agreed on the key principles for drafting a cooperation protocol on labour mobility and outlined the necessary steps for its signing and implementation. A similar agreement with Saudi Arabia was negotiated in 2023 led by the Ministry of Labour.

4. International partnerships in TVET

International experience in developing partnerships in the field of TVET show that success often involves strong engagement from the business sector to ensure the training is relevant to the needs of the labour market, both domestically and internationally. International partnerships can be most effective if all participating institutions see clear benefits, whether the aim is knowledge exchange, access to new markets, or improved quality of training.

International funding programmes play an important role in enabling and supporting international partnerships in the field of TVET. Examples of successful international partnership programmes in the field of TVET include the EU's Erasmus+ programme, Germany's support for partnerships in the field of dual education through the aid agency GiZ, and the UK's support for International Skills Partnerships (ISPs). Egypt is already involved in some of these partnership programmes and could develop them further to support the internationalisation of the ATs. These international examples provide valuable insights into different models and approaches for leveraging international

partnerships and collaborations to enhance its ATs and improve the international employability of its graduates.

5.1 European Union's Erasmus+ Programme

Erasmus+ is a leading example of structured international collaboration in education and training, promoting the international dimension of TVET across numerous countries. It includes a strong international dimension (i.e. cooperation with third countries not associated to the Programme) in mobility, cooperation and policy dialogue activities.⁶⁵ It aims to create and implement internationalisation strategies for TVET providers by putting in place support mechanisms and contractual frameworks to promote quality mobility of TVET staff and learners. The EU Erasmus+ Programme provides funding and support for transnational partnerships between educational institutions, training organisations, businesses, and other relevant bodies across Europe and beyond.

As a Third Country not associated to Erasmus+, Egypt is eligible to participate in certain Actions of the programme⁶⁶ (subject to specific criteria or conditions) including capacity building in the field of TVET.⁶⁷ The support available covers aims such as better aligning and closing the gaps between TVET with market opportunities, supporting professional and learners' training and development, and helping professionals to build curricula and reform. Organisations should choose to focus on one or more of the following themes: work-based learning; quality assurance mechanisms; TVET teachers/trainers professional development; key competences, including entrepreneurship and citizenship competence; public private dialogue and partnerships in TVET; innovation in TVET; green and digital skills for the twin transition; skills matching with current and future job opportunities, including in promising value chains under development; development of curricula and training modules (see Erasmus+ Programme Guide 2025, p. 327n). Specifically, in the South Mediterranean Region (which includes Egypt) priority will be given to projects that contribute to its Economic and Investment Plan and/or the recommendations of the European Training Foundation under the Torino Process.

The Action "Cooperation Partnerships" supports projects aimed at developing, transferring, and/or implementing innovative practices and joint initiatives related to TVET. This can include curriculum development, the creation of new training methodologies, and the development of international quality standards. The primary goal of Cooperation Partnerships is to allow organisations to increase the quality and relevance of their activities, to develop and reinforce their networks of partners, to increase their capacity to operate jointly at transnational level, boosting internationalisation of their activities and through exchanging or developing new practices and methods as well as sharing and confronting ideas. Egyptian applicants may participate in (but not apply for) Cooperation Partnerships (see Erasmus+ Programme Guide 2025, p. 232n).

Erasmus+ also supports youth exchanges for groups of young people from different countries to meet and live together for up to 21 days to carry out a series of activities focusing on a theme that is relevant for them. These activities are planned and prepared by the participants involved in the project (see Erasmus+ Programme Guide 2025, p. 140n). Egyptian applicants may participate in (but not apply for) these exchanges.

5.2 Centres of TVET Excellence (CoVE) partnerships

Centres of excellence in vocational education and training (CoVEs) are vocational institutions recognised for excellence in identifying and imparting relevant, high-quality, specialised technical skills. In contributing to regional skills strategies, they promote employment and regional development. They work closely with employers, including small and medium-sized enterprises, to foster innovation, applied research, entrepreneurship and reskilling. The ETF has recently compiled a "cookbook" of

⁶⁵ <https://erasmus-plus.ec.europa.eu/programme-guide/part-a/important-characteristics-of-the-erasmus-programme>

⁶⁶ <https://erasmus-plus.ec.europa.eu/programme-guide/part-a/eligible-countries>

⁶⁷ <https://erasmus-plus.ec.europa.eu/opportunities/organisations/cooperation-among-organisations-and-institutions/capacity-building-vet>

experiences with setting up CoVEs in the ETF regions of operations (ETF, 2025). Since 2021, the ETF has been supporting the international dimension of centres of CoVEs.⁶⁸

The EU aims to foster international collaboration in the field of TVET through the creation of partnerships of CoVEs. These partnerships foster the development of world-class TVET institutions that can act as hubs for innovation and collaboration with businesses and other educational providers at an international level. The EU supports international collaborative networks bringing together CoVEs that share a common interest in developing skills ecosystems.⁶⁹ One of these networks has been established by the ETF. The ETF Network of Excellence (ENE) is an international network of CoVEs operating in the ETF region (including Egypt). It fosters collaboration and the sharing of ideas, practices and experience between CoVEs at both national and international levels.

5.3 UK's International Skills Partnerships (British Council)

International Skills Partnerships are funded by the British Council to connect UK colleges and training providers with partner institutions in other countries.⁷⁰ The programme supports partnerships between colleges, education policy makers, civil society organisations and industry partners in the UK and around the world.

ISPs focus on collaborative projects designed to enhance the quality and relevance of vocational skills training in partner countries. For example, Dundee and Angus College (Scotland) and Politeknik Negeri Bali (Indonesia) have built a collaboration in tourism, culture, and food to develop skills relevant to the local industry and international standards. In another case, Grimsby Institute of Further and Higher Education (England) and the Arab Academy of Science, Technology and Maritime Transport (Egypt) have developed a partnership focusing on mutual collaboration in quality, teaching and learning, and programme development in maritime-related fields. These partnerships demonstrate how specific skills needs can be addressed through international collaboration, benefiting both the UK institutions and their international partners.

5.4 Countries with successful examples of labour mobility

Many countries around the world are working to facilitate labour mobility for their youth. In addition to the example from Morocco highlighted earlier in section 3.4, the following table lists countries from Africa, Asia and Europe with successful examples of labour mobility. These countries demonstrate effective integration of TVET systems with international migration pathways, helping hundreds of thousands of youth access employment opportunities abroad. The common success factors include strong government policies, alignment of National Qualification Frameworks with regional and international ones, international partnerships and bilateral agreements, inter-cultural orientation and industry-relevant training programmes. Some examples have also used digitalisation policies and tools to achieve labour mobility objectives.

List of countries with successful examples of labour mobility schemes

Country	Scheme policies & features	Outcomes/impact	Lessons for Egypt
South Africa	<ul style="list-style-type: none"> South Africa has a well-established TVET system, designed not only to address domestic skills shortages but also to support international migration of its youth. Recognizing the importance of skills development for global mobility, SA has implemented policies and programmes 	<ul style="list-style-type: none"> Annually, approximately 30,000 to 40,000 youth complete TVET programmes with a focus on international employability. 	<ul style="list-style-type: none"> Clear policy and strategy for labour migration. Quickly complete the NQF registry to align it with international standards and

⁶⁸ <https://www.etf.europa.eu/en/what-we-do/internationalising-vocational-excellence>

⁶⁹ https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/skills-jobs/centres-vocational-excellence_en

⁷⁰ <https://www.britishcouncil.org/education/skills-employability/programme/going-global-partnerships-tvet>

	<ul style="list-style-type: none"> aimed at aligning its vocational training with international standards. National Skills Development Plan (NSDP 2030) prioritise aligning training with international labor market needs. The policies emphasise international mobility by promoting recognised qualifications and mobility pathways for learners. SA is signatory to international agreements such as the SADC Protocol on Education and Training, facilitating regional recognition and mobility. Many programmes are designed to meet international standards, including the NQF levels aligned with regional and international benchmarks. The Quality Council for Trades and Occupations (QCTO) ensures that qualifications meet both domestic and international standards. TVET colleges participate in international accreditation processes, making their certifications portable. The Exporting Skills Program (ESP), government-led initiative aimed at preparing youth for migration to the Middle East, particularly for domestic work, construction, and hospitality jobs. The programme includes pre-departure training, language skills, and internationally recognized certifications. SA has established bilateral agreements with countries such as the United Arab Emirates, Saudi Arabia, and Qatar to facilitate legal migration pathways for skilled workers. The Skills Development Levy funds are also used to support training aligned with the needs of migrant-receiving countries. 	<ul style="list-style-type: none"> It is estimated that around 10-15% of TVET graduates secure employment abroad through formal channels, especially in the Middle East and parts of Europe. SA qualifications are increasingly recognized in regional markets such as SADC and internationally through bilateral agreements. The QCTO accreditation has enhanced the credibility of South African TVET certificates in global labor markets. 	<ul style="list-style-type: none"> qualification frameworks. Expand on bi-lateral; agreements. Use the national training levy to support labour mobility training.
Kenya	<ul style="list-style-type: none"> Kenya has emerged as a significant source country for migrant workers, particularly to the Middle East, Europe, and North America. Recognising the importance of skills development in facilitating legal migration, improving employment outcomes, and reducing irregular migration, Kenya has invested in strengthening its TVET system. The National Vocational Education and Training Policy (2012) aims to overhaul and modernize Kenya's TVET sector, key objectives include improving quality, expanding access, and developing international linkages to facilitate youth migration. The Technical and Vocational Education and Training Authority (TVETA), established in 2014, responsible for regulating, licensing, and accrediting TVET institutions. It promotes international recognition of qualifications and partnerships with global training providers. Kenya has signed bilateral agreements with countries in the Middle East, Europe, and North America to facilitate skills recognition and migration pathways. The government actively participates in regional bodies like the East African Community (EAC), which promotes mutual recognition of qualifications. 	<ul style="list-style-type: none"> Annually, approximately 50,000 to 60,000 youth undergo TVET training under various programmes. An estimated 10-15% of these youth successfully secure employment abroad through formal channels. Kenya's NQF has been mapped to regional frameworks like the East African Qualifications Framework (EAQF) and aligned with international standards. - This has enhanced the portability of Kenyan qualifications, making it easier for youth to migrate legally and find employment abroad. Many Kenyan youth find employment in 	<ul style="list-style-type: none"> Partnerships with global training providers. Partnerships with regional and international bodies which promotes mutual recognition of qualifications. Sector-Specific Skills Development pre-departure training programmes

	<ul style="list-style-type: none"> ▪ The Kenya Youth Employment and Opportunities Project (KYEOP), launched in 2018 with support from the World Bank, aims to equip youth with market-relevant skills, including those aligned with international standards. The programme offers training in sectors such as hospitality, construction, ICT, and manufacturing, with a focus on employability and migration readiness. The training includes language skills, certification, and pre-departure orientation. ▪ Sector-Specific Skills Development, TVET institutions focus on sectors with high demand abroad. ▪ Many programmes are aligned with international standards to ensure portability of qualifications. ▪ The National Qualification Framework (NQF) has been developed, aligning Kenya's qualifications with regional and international frameworks. ▪ The Kenya National Qualifications Authority (KNQA) oversees quality assurance and recognition, facilitating migration. ▪ Migration Pathways and Pre-departure Training. Kenya collaborates with IOM and ILO to develop pre-departure training programmes for youth migrating to the Gulf, Europe, and North America. 	<p>sectors such as hospitality, construction, healthcare, and ICT abroad.</p> <p>The Middle East remains a primary destination, with countries like Saudi Arabia, UAE, and Qatar actively recruiting Kenyan-trained workers.</p>	
<p>India</p>	<ul style="list-style-type: none"> ▪ India is one of the largest sources of international migrant workers, particularly to the Gulf Cooperation Council (GCC) countries, Southeast Asia, and increasingly to Europe and North America. Recognising the importance of skills development in enabling legal migration, India has undertaken extensive reforms and launched various programmes to align its TVET system with international standards, improve quality, and facilitate recognition of qualifications abroad. ▪ Skill India Mission Policy (2015), launched as a flagship programme, to train over 400 million youth in various skills by 2022. The mission promotes industry-relevant training, international certifications and mobility pathways. ▪ National Council for Vocational Education and Training (NCVET), established in 2021, NCVET oversees quality assurance, accreditation, and recognition of trainers and training providers. It facilitates international recognition of Indian qualifications, especially for migration. ▪ Bilateral Agreements and Recognition Arrangement signed with countries such as the UAE, Saudi Arabia, Qatar, and others to facilitate skills recognition and employment pathways. ▪ The India Skill Certification aligns with international standards to improve portability. ▪ Pradhan Mantri Kaushal Vikas Yojana (PMKVY) project launched in 2015, is India's flagship skills certification scheme. It aims to train 10 million youth annually in sectors such as construction, hospitality, electronics, healthcare, and more. The programme provides industry-recognised 	<ul style="list-style-type: none"> ▪ over 15 million youth have been trained under various schemes, with about 2-3 million obtaining certifications aligned with international standards. ▪ Annually, approximately 1 million Indian youth migrate legally for work, with a significant proportion holding recognised skills. ▪ Indian qualifications are increasingly recognized in Gulf countries, Southeast Asia, and some European nations. ▪ The NSQF and ISC frameworks facilitate mutual recognition which helps reduce barriers to migration. ▪ Migration contributes significantly to India's economy through remittances, which stood at approximately \$100 billion in 2022 (World Bank). ▪ The programmes help reduce unemployment among youth and 	<ul style="list-style-type: none"> ▪ Clear policy and strategy for skills and labour migration. ▪ Quickly complete the NQF registry to align it with international standards and qualification frameworks. ▪ Expand on bilateral, agreements. ▪ Establish Sector Skills Councils. ▪ Learn from the scale of the operations in India. ▪ Emphasis on the social impact.

	<p>certifications and placement support, including for overseas employment. Specialized modules are designed for migration to Gulf countries, including language skills and cultural orientation.</p> <ul style="list-style-type: none"> ▪ Sector Skill Councils (SSCs), industry-led bodies that develop occupational standards and training curricula aligned with international standards. SSCs like the National Skill Development Corporation (NSDC) work with employers to ensure skills relevance and recognition. ▪ India has adopted International Skills Certification (ISC) programmes, which are recognised by partner countries. ▪ The National Skills Qualification Framework (NSQF) maps Indian qualifications to international frameworks, enabling portability. ▪ The Migrant Resource Centers (MRCs) and training modules focus on cultural orientation, language proficiency, and rights awareness. 	<p>improve social mobility.</p>	
<p>The Philippines</p>	<ul style="list-style-type: none"> ▪ The Philippines is one of the world's leading exporters of skilled labour, especially in healthcare, domestic work, engineering, and hospitality sectors. Its comprehensive TVET system plays a critical role in preparing Filipino youth for international migration, ensuring their skills meet global standards, and facilitating legal employment abroad. ▪ The Philippine Development Plan (PDP) emphasizes skills development as a key pillar for economic growth and overseas employment. It also promotes international recognition of Filipino qualifications and protection of migrant workers. ▪ The Technical Education and Skills Development Authority (TESDA), established in 1994, oversees TVET programme, including certification, curriculum development, and international partnerships. TESDA's mandate includes aligning training standards with international requirements and facilitating migration pathways. ▪ The Philippine Qualifications Framework (PQF), launched in 2012, maps Filipino qualifications to regional and international standards, including the European Qualifications Framework (EQF) and ASEAN Qualifications Reference Framework (AQRf). It enhances recognition and portability of Filipino skills. ▪ The Philippines has bilateral MOUs with countries such as UAE, Saudi Arabia, Qatar, Canada, and Japan to recognise skills and facilitate migration. ▪ The Overseas Employment Certificate (OEC) and Pre-Departure Orientation Seminars (PDOS) ensure migrants are well-prepared and certified. ▪ TESDA's Special Training Programmes (STPs) focus on high-demand sectors like healthcare, construction, hospitality, and electronics. Many STPs are designed to meet international standards, with certifications recognised abroad. Examples include Caregiving NCII, Welding NCII, and Housekeeping NCII. 	<ul style="list-style-type: none"> ▪ TESDA has trained over 10 million Filipinos since its inception, with approximately 2-3 million annually certified for work abroad. ▪ The Philippines is the top provider of domestic workers globally. ▪ TESDA's certifications are recognised in over 150 countries. ▪ Filipino migrant workers enjoy high employment rates (around 90%) and remittance flows exceeding \$35 billion annually (World Bank, 2022). 	<ul style="list-style-type: none"> ▪ Clear policy and strategy for skills and labour migration. ▪ Quickly complete the NQF registry to align it with regional and international standards and qualification frameworks. ▪ ATS can provide non-formal certified courses to support job-seekers not just the formal students. ▪ The Overseas Employment Certificates. ▪ Expand on bilateral agreements. ▪ Pre-departure orientation centres. ▪ Partner with authorised language centers, not necessarily in-house. ▪ Emphasis on the social impact.

	<ul style="list-style-type: none"> ▪ The Training for Work Scholarship Programme (TWSP) provides subsidized training to youth, including overseas job-ready skills. Focuses on industry-specific skills aligned with the needs of destination countries. ▪ The Filipino Workforce Skills Certification System. TESDA issues internationally recognised certifications under programmes like Recognition of Prior Learning (RPL) these certifications are aligned with international competency standards. ▪ Pre-departure Orientation and Language Training. The PDOS programme prepares migrant workers with orientation sessions on cultural adaptation, workers' rights, and language skills. ▪ TESDA-certified training centers also offer language courses in English, Arabic, and other languages. 		
Sri Lanka	<ul style="list-style-type: none"> ▪ Sri Lanka has a long history of exporting skilled and semi-skilled workers, especially to the Middle East, Southeast Asia, and more recently to Europe and North America. The country's TVET system is central to preparing youth for international migration, ensuring their skills meet global standards, and facilitating recognition of qualifications abroad. ▪ National Skills Development Policy aims to strengthen the TVET system to produce a globally competitive workforce. It emphasises quality standards, international recognition, and mobility as core objectives. ▪ Sri Lanka Qualifications Framework (SLQF), launched in 2015, aligns qualifications with the European Qualifications Framework (EQF) and ASEAN Qualifications Reference Framework (AQRF). The framework categorises qualifications into 8 levels, promoting recognition and portability. ▪ Ministry of Skills Development, Employment and Labour Relations oversees TVET policies, accreditation, and international recognition efforts. It collaborates with agencies like Sri Lanka Bureau of Foreign Employment (SLBFE) to facilitate migration pathways. ▪ National Skills Passport Project, digital portfolio linked to a Regional Qualifications Framework, enabling workers to showcase skills, qualifications, and work experience. This facilitates cross-border labour mobility, especially for migrants and returning workers. ▪ Bilateral recognition agreements with countries like Kuwait, Saudi Arabia, Qatar and Singapore. These agreements help recognise skills and certifications obtained domestically, easing legal migration. ▪ Sri Lanka participates in regional programs like ASEAN and South Asia Association for Regional Cooperation (SAARC) to harmonise skills standards. 	<ul style="list-style-type: none"> ▪ Annually, around 50,000 to 70,000 youth complete vocational training aligned with international standards. The majority migrate to the Middle East (Kuwait, Saudi Arabia, Qatar), with an increasing number also moving to Singapore, Malaysia, and Europe. ▪ The SLQF and NVQ certifications are increasingly recognized across Gulf Cooperation Council (GCC). ▪ This recognition has facilitated legal migration and better employment conditions. ▪ The SLFEA reports that over 60% of migrant workers are employed under recognised skill certificates. ▪ Remittances from overseas Sri Lankan workers totalled approximately \$7 billion in 2022, supporting poverty reduction and economic stability. 	<ul style="list-style-type: none"> ▪ Digital Skills Passport project. ▪ Strong collaboration with the Ministry of Foreign Affairs. ▪ Partnerships with international bodies to facilitate recognition.

	<ul style="list-style-type: none"> The country also collaborates with ILO's Skills for Trade and Economic Diversification (STED) programme to improve recognition. 		
Estonia	<ul style="list-style-type: none"> Estonia, a small but highly digitalised country, has invested heavily in modernising its TVET system to meet both domestic labour market needs and international recognition standards. Its innovative approaches include digital credentials, strong EU integration, and targeted mobility programmes that support youth migration for employment. Estonia's Qualifications Framework (EEQF), launched in 2018, is aligned with the European Qualifications Framework (EQF). It emphasises digital credentials and learner-centered approaches, facilitating recognition across borders. Digital Credentials and Blockchain Certification. Estonia pioneered digital diplomas and blockchain-based certification systems allowing easy verification and portability. Active Internationalization of TVET. The European Social Fund (ESF) supports mobility programmes, joint curricula, and recognition efforts. Estonia's National Agency for Qualifications and Adult Education manages international mobility schemes and recognition processes. Digital Mobility and Recognition Platform, where youth, employers, and educational institutions can verify qualifications instantly. The platform supports Erasmus+ mobility, mutual recognition and international certification. Sector-Specific International Training, focus on ICT, electronics, and digital services, sectors where Estonia excels. The e-Estonia digital skills training programmes are recognised internationally and support migration. Pre-departure and Cultural Orientation. The Skills for Digital Economy programme prepare youth for international employment with language training, cultural orientation, and digital certification. Many certificates are blockchain-verified ensuring portability. 	<ul style="list-style-type: none"> Estonia trains around 10,000-15,000 youth annually, with about 20-25% participating in international mobility programmes. The country has become a hub for digital professionals migrating within the EU and beyond. The digital credentials system has increased recognition across Europe and facilitated remote work opportunities globally. Many Estonian-trained youth work in digital industries, ICT, and electronics in Finland, Germany, and the UK. Estonia's high digital literacy has supported remote work, freelancing, and international collaboration. 	<ul style="list-style-type: none"> Strong digital tools and platforms to facilitate recognition and mobility. Digital Mobility and Recognition Platform Alignment with EQF. Digital Credentials and Blockchain Certification Programmes supporting remote work, freelancing, and international collaboration
Poland	<p>Poland has experienced significant emigration of its skilled youth to Western Europe, especially after joining the European Union in 2004. Recognising the importance of a strong, internationally recognised TVET system to support legal migration and match labour market needs, Poland has invested in reforms, quality assurance, and international recognition of its qualifications.</p> <ul style="list-style-type: none"> Poland's National Qualifications Framework (PNQF), launched in 2017 is fully aligned with the European 	<ul style="list-style-type: none"> Annually, approximately 70,000–80,000 youth complete vocational training aligned with European standards. An estimated 15-20% participate in mobility programme, with many securing employments in Germany, UK, 	<ul style="list-style-type: none"> full alignment with the EQF has improved the recognition. bilateral recognition agreements Industry-Specific Vocational Training courses in priority sectors Establishment of a National Register of Qualifications offers portable certifications

	<p>Qualifications Framework (EQF), enabling recognition of Polish qualifications across Europe. It categorises qualifications into 8 levels, matching European standards, and is integrated into the Polish Education Act.</p> <ul style="list-style-type: none"> ▪ Modernisation and Internationalization of TVET. The National Reform Programme emphasises international mobility, quality standards, and recognition of qualifications. ▪ The Polish Agency for Qualifications (PAQ) oversees certification and recognition processes, ensuring compatibility with European and international frameworks. ▪ Poland has signed bilateral recognition agreements with countries like Germany, the UK, and Ireland, facilitating skills portability. ▪ The European Qualifications Passport for Refugees and mutual recognition agreements further support migrant workers. ▪ The “EU-Poland Mobility” Programme allows young Polish workers to participate in work placements, apprenticeships, and training across Europe. The program guarantees certification of skills and cultural orientation. ▪ Industry-Specific Vocational Training courses in sectors like construction, hospitality, healthcare, and manufacturing are designed to meet European standards. ▪ The dual system combines classroom instruction with work-based learning in partner companies across Europe. ▪ The Polish Qualifications Framework (PKF) maps qualifications to the EQF, allowing for mutual recognition. ▪ The National Register of Qualifications offers portable certifications recognised across the EU. 	<p>Ireland, and Scandinavia.</p> <ul style="list-style-type: none"> ▪ The full alignment with the EQF has improved the recognition and portability of Polish qualifications across Europe. 	<p>recognised across the EU.</p>
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Source: Adopted by the authors from various sources provided in the list of references.

Annex 4: Proposed ATS Strategy Outline

The following is a proposed outline for an ATS Strategy to be developed by the ATS Unit and endorsed and communicated by MoETE. This strategy should encompass core components such as vision, mission, objectives, quality assurance, governance, management, financing, sustainability, collaboration, and a practical work-plan.

1. Strategic Framework for the Applied Technology School (ATS) Model in Egypt

- **Example vision statement:** The ATS model to be a regional leader in transformative TVET, empowering Egypt's workforce with globally competitive skills, driving sustainable economic growth in partnership with the private sector, and fostering innovation aligned with national development goals and international standards.
- **Example mission statement:** To deliver high-quality, industry-relevant technical education through dynamic partnerships, cutting-edge curricula, and lifelong learning opportunities, ensuring graduates meet local and global labour market demands.
- **Proposed strategic objectives:** The following are the strategy's proposed or recommended objectives to be fine-tuned or further developed by MoETE:
 - Enhance ATS's educational quality and relevance aligned with current and future industry needs. Pursue accreditation from recognized national and international bodies to ensure the programs meet high educational standards. Invest in the continuous professional development of faculty to keep them updated with the latest industry trends and teaching methodologies
 - Increase Employability: Ensure that graduates are highly employable by providing them with practical experience and industry certifications.
 - Foster Innovation and Entrepreneurship: Encourage students to develop innovative solutions to real-world problems and support entrepreneurial ventures.
 - Establish sustainable governance and management systems that ensure operational excellence.
 - Secure diversified and innovative funding mechanisms for long-term sustainability.
 - Foster robust collaboration among government, industry, academia, and communities.
 - Strengthen international recognition and partnerships to promote global mobility and best practices.
 - Build institutional capacity to adapt to technological and labour market changes. Embed a culture of continuous improvement and innovation.
 - Contribute to changing perceptions of TVET and improving its image and in turn its enrolment rates.
 - Support and align with the overall transformation of technical education in Egypt.
- **Guiding principles of the ATS strategy:** Building on the original main features of the ATS model, the following are key guiding principles that will drive the strategy and its implementation:
 - **Continuous Improvement:** Regularly review and update curricula based on feedback from industry partners, students, and faculty. Pursue accreditation from recognized national and international bodies to ensure the programs meet high educational standards.

- **Collaboration:** The ATS model is built on partnerships and strong collaboration with the private sector, other ministries and international partners to make the model demand driven. Also, the encouragement to collaboration between ATS schools among themselves and other national and international counterparts to better serve the national and international labour market.
- **Community-centred:** The ATS focuses on its overall beneficiaries. How to become truly learner-centred, addressing students' aspirations for further education and transition to employment both nationally and internationally. Also, supporting local communities and adults through LLL and continuous training services. How ATS schools can support other traditional TSSs within its sphere of influence.
- **Coordination:** The ATS strategy will only be effectively implemented through close coordination between the ATS unit and other elements and bodies responsible for TE reform. This will include CEQAT and ETQAAN for quality assurance issues, TERO for strategic oversight, TVETA for teachers and staff development, and other WBL models (DS, CoCs) to achieve synergies. Also important is coordination with external national stakeholders to support the strategy, these include the Prime Minister, the new National Council for Education, Research and Innovation, NAQAAE for the NQF alignment, Ministry of Higher Education on facilitating student pathways and aligning programmes, Ministries of Foreign Affairs and Labour for migration issues and the Ministries of Finance and Planning for funding reforms to finance the strategy.
- **Communication:** The ATS unit must master the art of communication. Allowing the team to communicate effectively the success stories, the reform achievements as well as lobby effectively with stakeholders and decision-makers for more resources and support. The MoETE must also develop a communication strategy to improve awareness about quality TVET, PPP and improving the social image of technical education. Also improve the unit's social media and website to provide information on ATSs, sectors, as well as national and international employment and career prospects.
- **Contribution:** Eventually, the ATS model will effectively contribute to the overall reform of the TVET sector, by improving access to better quality TVET, innovation, teacher capacity building, private sector engagement and expanding WBL, as well as improving the image of TVET. The ATS will also contribute to economic development improved industrialisation and localisation of industry as well as provide a good reputation of Egyptian workers in international countries of destination.
- **Key performance indicators (KPI):** Some of the KPIs for the strategy may include the following:

Short-Term (1–3 Years):

- Establish 20 new ATSs annually in key economic sectors (e.g., manufacturing, construction, ICT, tourism).
- Develop new competency-based curricula aligned with the European Qualifications Framework (EQF).
- Recruit 100 teachers annually seeking diversified sources of funding (government and private sector)
- Train up to 500 teachers and instructors annually via international certification programmes in collaboration with TVETA.
- Achieve 80% graduate employment within six months.
- Support the employment of 2,000 ATS graduates a year in international countries of destination.
- Establish an ATS Sustainability Fund to finance expansion.
- Accredite 10 ATS schools a year through ETQAAN and international awarding bodies.

- Establish an ATS or WBL Knowledge Forum for the exchange of ideas and information. This would include ATSS, CoCs and DS as well as private sector companies involved. This could also be linked to the establishment of Sector Skills Councils and the importance of fostering the roles of high-quality WBL models like the ATS.

Long-Term (4–7 Years)

- Establish 30 new ATSS annually in key economic sectors (e.g., manufacturing, construction, ICT, tourism)
- Secure international accreditation (e.g., ISO).
- Position Egypt as a regional TVET hub for Africa and the Middle East.
- Position Egypt as a good source of highly-skilled workers for the international labour market
- Expand the integration of green technologies and digital skills into all programmes.
- Support the employment of 10,000 ATS graduates a year in international countries of destination.

2. Core Components of the ATS Strategy

- Quality Assurance
 - Adopt international quality standards (e.g., ISO, EQAVET).
 - Align with the national accreditation framework for ATS (ETQAAN).
 - Implement regular internal and external audits.
 - Establish a feedback loop involving students, employers, and industry experts.
- Governance and Management
 - Create a National ATS Governance Board, including government, industry, academia, and international partners.
 - Define clear roles and responsibilities at national, regional, and school levels.
 - Promote decentralization with empowered school management teams.
 - Develop strategic planning, monitoring, and evaluation systems.
 - Contributing to overall TVET reform in Egypt
 - Financing and sustainability
 - Diversify funding sources: government budgets, industry contributions, international aid, and private sector investments.
 - Promote Public-Private Partnerships (PPPs) for infrastructure, equipment, and curriculum development.
 - Explore income-generating activities (e.g., service contracts, consultancy).
 - Establish alumni and community engagement programmes for ongoing support.
- Internationalization and Collaboration

- Align curricula with international standards and frameworks.
 - Develop exchange programmes for students and faculty.
 - Obtain international certifications and accreditation for schools.
 - Participate in global skills competitions and networks.
 - Foster bilateral and multilateral partnerships with leading international TVET institutions.
- Sustainable TVET practices
 - Embed sustainability principles into curriculum and operations.
 - Develop capacity-building programmes for teachers and administrators.
 - Invest in digital infrastructure for e-learning and remote training.
 - Promote social inclusion and lifelong learning pathways.
 - Implement environmental sustainability practices within schools.

1- Proposed Work-plan

Phase	Duration	Key Activities	Milestones
Phase 1: Foundation	Year 1	governance structures Develop national standards Conduct needs assessment Initiate stakeholder engagement	Governance body operational Standards adopted Stakeholders aligned
Phase 2: Development	Years 2-3	Curriculum design aligned with industry and international standards Capacity building for teachers Infrastructure upgrades Formalise new funding structures	First batch of curricula implemented Teacher training programs launched Industry partners engaged
Phase 3: Expansion & Internationalization	Years 4-5	Expand to additional regions Establish international collaborations Obtain international accreditation Launch student and faculty exchange programmes	Multiple ATS operational International recognition received Exchange programs active
Phase 4: Consolidation & Innovation] -	Year 6 onward	Continuous curriculum review Incorporate emerging technologies (AI) Foster innovations and research Scale successful models Ongoing quality improvements	Recognition as leading TVET model both nationally and internationally

Annex 5: list of suggested capacity building programmes for the ATS unit management and staff (2025-27)

Developing a comprehensive capacity building and training plan for the Applied Technology Schools (ATS) Unit within the Ministry of Education and Technical Education in Egypt requires a structured approach, based on a detailed Training Needs Assessment (TNA). Below is a suggested 2-year Capacity Building and Training Programme outline, covering both training and non-training initiatives, tailored to management and staff across all functions. The start is a comprehensive TNA that can be funded by one of the international development partners.

Objectives

- Strengthen technical, managerial, and administrative capacities.
- Enhance curriculum development, delivery, and assessment.
- Improve ICT integration and digital literacy.
- Foster innovation, partnership development, and project management.
- Promote continuous professional development (CPD) culture.
- Support institutional effectiveness and strategic planning.

Key Areas & Functions Covered

1. Management & Leadership
2. Curriculum & Pedagogy
3. TVET Policy and latest trends
4. ICT & Digital Technologies
5. Quality Assurance & Evaluation
6. Institutional & Project Management
7. Partnerships & Stakeholder Engagement
8. Research & Innovation
9. Support Services (Admin, HR, Finance)

Based on TNA, key gaps could include:

- Limited capacity in modern pedagogical methods.
- Insufficient ICT integration.
- Need for leadership and strategic planning skills.
- Lack of exposure to international best practices.
- Weak project management and partnership development skills.
- Limited understanding of quality assurance systems.
- Fundraising and business development

2-Year Capacity Building & Training Programme

Year 1 (2025-2026)

Capacity building Component	Activities/courses	Target Audience	Expected Outcomes	Timeline 2025
Management & Leadership Development	Strategic leadership workshops Change management seminars Executive coaching	Senior management department heads TERO	change management capabilities Improved strategic planning	Q2
Curriculum Development & Modern Pedagogy	Curriculum design workshops Training on competency-based learning digital content integration	department heads Digital content development Curriculum staff Trainers	Updated curricula aligned with industry needs;	Q2-Q3
ICT & Digital Skills	ICT literacy courses Training on LMS and e-learning tools Coding and programming workshops	Management and staff IT staff Teachers	Enhanced digital skills; LMS utilization	Q2-Q4
Quality Assurance & Assessment	QA systems workshops Assessment methodology training	Management and staff QA staff Teachers CEQAT staff	Robust QA systems; improved assessment practices	Q2-Q4
Project & Partnership Management	Project management training Understanding Sector Skills Councils (SSCs) Stakeholder engagement workshops Fundraising Planning	Managers Project staff School officers	Increased project success rate; stronger partnerships	Q2-Q4
Study Visits & International Exposure	Visits to leading vocational schools & SSCs in Europe/Asia Participation in international conferences	Selected staff & management and board members	Exposure to best practices; network development	Q3-Q4

Year 2 (2026-2027)

Capacity building Component	Activities/courses	Target Audience	Expected Outcomes	Timeline 2026
Advanced Leadership & Strategic Planning	Advanced leadership courses Strategic planning retreats Executive coaching	Senior management department heads TERO staff	Strategic visioning; leadership excellence	Q1-Q2
Advanced Pedagogical & Digital Techniques	Blended learning design Use of AI/VR in training digital content integration	department heads Digital content development Curriculum staff Trainers	Innovative teaching methods; immersive learning experiences	Q2-Q4
Innovation & R&D in Vocational Education	Innovation labs setup R&D project management training Coding and programming workshops	Management and staff R&D staff, Faculty Teachers	Foster innovation culture; R&D projects initiation	Q2-Q4
Data-driven Decision Making & Monitoring	Data analytics courses M&E systems training	Management and staff Data and M&E officers TERO staff	Evidence-based decision-making;	Q2-Q4
Strengthening Partnerships & International Cooperation	MoUs with industry International collaboration workshops Fundraising Planning	Selected staff & management and board members Project staff School officers	Expanded global partnerships; industry linkages	Q2-Q4
Non-Training Initiatives	Study visits to industry Pilot projects E-learning platform development	Selected staff & management and board members	Practical exposure; digital resource pool	Q2-Q4