



SKILLS
DEVELOPMENT
PROGRAMME

ASSESSMENT OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) ALIGNMENT

— WITH —
REGIONAL ECONOMIC NEEDS
IN NORTHEAST CAMBODIA



ELECTRICAL AND ELECTRONICS AND
CASHEW SUB-SECTORS



A project of:



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC

LED LIECHTENSTEIN
DEVELOPMENT
SERVICE



In collaboration with:



Implemented by:

involas

swisscontact

Acknowledgement

This report, **Assessment of Technical Vocational Education and Training Alignment with Regional Economic Needs in Northeast Cambodia**, was developed to provide timely evidence on how Technical and Vocational Education and Training (TVET) programs can better respond to the skills requirements of key sub-sectors, particularly the electrical and electronics and the cashew sectors in the northern provinces of Cambodia. It represents a joint effort to bridge knowledge gaps between training supply and labour market demand.

The research team extends its deepest gratitude to the Ministry of Labour and Vocational Training for its support for this study. The Ministry's continued commitment to skills development and youth employability is the foundation on which such assessments can be built. We are also especially grateful to the Swiss Agency for Development and Cooperation (SDC) for its financial and technical support, without which this study would not have been possible. At the provincial level, our sincere appreciation goes to the Provincial Training Boards (PTBs) for their active participation and constructive feedback. Their understanding of local labour market dynamics and their vision for strengthening the link between training and employment enriched the study immensely. At the same time, we would like to thank all employers and enterprise representatives in the provinces for sharing their experiences, labour demand, skills mismatch, and private-sector participation in skills training. Finally, the participation of all students and technical trainers who participated in answering survey questions and group discussions was also an important part of this study.

This report is the product of a collective effort. It reflects the contributions of many institutions, experts, and individuals who share the vision of a more responsive and inclusive skills development system for Cambodia. The findings and recommendations are offered with the hope that they will stimulate informed dialogue, support practical reforms, and ultimately contribute to building a skilled workforce that can drive sustainable and inclusive growth in Northeast Cambodia and beyond.

Executive Summary

The Technical Vocational Education and Training (TVET) has made remarkable progress in both quantity and quality, but some challenges remain and must continue to be addressed, including training programmes that meet industry needs, even though the government has introduced many reform policies related to the TVET sector nationwide as well as for the northeastern provinces of Cambodia. This study is designed to contribute to addressing these issues by providing an in-depth assessment of the relevance and responsiveness of training to current and future skill needs in the Electrical and Electronics (E&E) and Cashew Sub-Sectors.

The primary aims of the study are to:

- Identify current and future job opportunities in the electrical and electronics and cashew sub-sectors in Kratie, Mondulkiri, Ratanakiri, Stung Treng, and Preah Vihear provinces
- Assess the capacity of TVET institutions in these provinces to provide training that meets the needs of these occupations and sectors, including the provision of priority skills
- Develop recommendations for aligning TVET programs with regional economic needs and improving the overall TVET system

The significance of this research lies in its contribution to bridging the knowledge gap between TVET supply and sectoral labour demand in a rapidly transforming regional economy. The findings provide evidence-based insights to optimise training delivery, improve curriculum responsiveness, and foster sustainable collaboration between education providers and the private sector. Methodologically, the study adopts a qualitative, multi-stakeholder approach involving Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) with key actors: TVET directors and trainers, Provincial Training Boards (PTBs), employers and enterprise representatives, students, and industry associations. Data collection spanned key provinces in Northeast Cambodia, ensuring diverse perspectives and contextual relevance. The analysis was conducted to identify gaps, skills, strengths and weaknesses of TVET institutions, and overall challenges in TVET in the five provinces.

This study obtained several important results:

A. Electrical and Electronics Sub-Sector

Employers consistently report a critical skills mismatch, emphasising a shortage of practical, job-ready competencies among graduates. While foundational theoretical knowledge is imparted, TVET graduates lack hands-on experience with modern and emerging technologies such as solar photovoltaic (PV) systems, motor control, security systems, and refrigeration skills increasingly demanded by industry. Maintenance troubleshooting skills for automated and smart systems are also insufficiently covered in current curricula. The result also shows that TVET institutions face infrastructural constraints, including outdated workshops, limited access to contemporary equipment, and insufficient maintenance of existing tools, which hampers effective practical

training. Trainer capacity is another bottleneck; many instructors have limited exposure to current industry practices and emerging technologies.

Private sector engagement remains weak and fragmented, particularly among the numerous micro and small enterprises that dominate the sector. These firms frequently rely on informal recruitment channels and have limited resources or incentives to offer structured internships or apprenticeships. This limits students' access to authentic work-based learning, critical for developing job-ready skills. Furthermore, female enrolment in EE programs is low due to socio-cultural norms.

B. Cashew Sub-Sector

The enterprises in the cashew sub-sector report a scarcity of technically skilled labour capable of meeting processing, quality control, and supply chain management demands. Most enterprises focus on raw nut exports due to limited local processing capacity and skill shortages in agronomy, post-harvest technology, and value addition. Employers emphasise the need for graduates to possess practical knowledge of modern planting techniques, pest management, harvesting methods, drying, grading, and packaging.

TVET institutions that provide this skill training have not yet met the needs of enterprises, and at the same time they face difficulties recruiting students for agriculture-related programs, partly due to low interest from potential trainees and parents. Limited specialised trainers and inadequate training materials further restrict the breadth and quality of training offered. TVET providers express a need for strengthened partnerships with the agro-industry to co-develop curricula and expand work-based learning opportunities. Also, PTBs recognise the economic importance of the cashew sub-sector but highlight gaps in formalised collaboration between TVET and cashew enterprises. They observe that while the sub-sector has growth potential, its capacity to absorb skilled graduates remains constrained by infrastructure limitations and workforce availability. PTBs recommend improved coordination mechanisms, policy support for enterprise involvement in skills development, and targeted outreach to improve training relevance and inclusivity, especially for women and youth in rural areas

C. Policy Recommendations

1. Strengthen Practical Training and Curriculum Modernisation in TVET Institutions

- Update and diversify curricula in TVET institutions to reflect emerging technologies and industry needs:
 - **Electrical and Electronics Sub-Sector:** solar PV systems, motor controls, security systems, and refrigeration
 - **Cashew Sub-Sector:** modern cultivation techniques, pest management, post-harvest processing, drying, preventive grading and packaging.

- Invest in modern training materials and equipment in line with industry needs and technological advancements to enhance hands-on learning experiences that enable students to develop their skills effectively.
- Implement flexible training programs that are divided into modules and based on competencies.

2. Enhance Trainer Capacity

- Implement continuous trainer training programs, especially new competencies and skills used in current industries, along with new technologies and pedagogical skills for effective training.
- Increase collaboration between TVET institutions and industry by sending trainers to work in industry and sending technicians from industry to exchange experiences or transfer new knowledge to TVET institutions and participate in joint curriculum development.

3. Incentivise Private Sector Engagement

- Develop government-supported mechanisms such as formal Memoranda of Understanding (MoUs) to establish clear roles and expectations between TVET institutions and private sector actors.
- Collaborate by establishing regular contact between TVET institutions and industry to assess labour demands and necessary skills to be used in enterprises.

4. Expand and Improve Work-Based Learning Opportunities

- Design structured internship and apprenticeship programs tailored to enterprise capacity and scale, incorporating monitoring and evaluation frameworks to ensure quality and relevance.
- Promote industry-led on-the-job training models to complement classroom instruction

5. Promote Gender Inclusion and Access for Marginalised Groups

- Implement targeted scholarship and mentorship programs to increase female enrollment, especially in cashew -related TVET courses.
- Conduct community outreach and awareness campaigns to challenge socio-cultural barriers and promote the benefits of TVET for women and marginalised youth.

6. Develop Comprehensive Agribusiness Training for the Cashew Sub-Sector

- Expand TVET offerings to include technical skills in sustainable agriculture, pest management, harvesting techniques, post-harvest processing, packaging, and supply chain management aligned with export market standards.
- Foster collaboration with agro-processing enterprises to co-develop curricula and provide practical training opportunities.

- Support entrepreneurship and value addition skills development to enable graduates to participate effectively in growing cashew nut value chains.

7. Improve Infrastructure and Student Support Services

- Prioritise investment in TVET infrastructure, including adequate classrooms, workshops, and student accommodation to create conducive learning environments.
- Provide career guidance and counselling services, as well as personal counselling services, to reduce dropout rates and improve employment opportunities.

Table of Content

Acknowledgement	2
Executive Summary	3
List of Tables	8
List of Figures.....	8
Abbreviation	9
1. Introduction.....	1
2. Objectives of the Study	3
3. Scope and Limitation.....	2
4. Government Policy Framework	2
4.1. National Policy Context	2
4.2. Sector-Specific Policy Mapping	4
5. Sectoral Analysis.....	7
5.1. Electrical and Electronic I Sub-Sector	7
5.2. Cashew Sub-Sector	10
6. Methodology	13
6.1. Questionnaire Development	13
6.2. Sampling & Respondent Profile.....	13
6.3. Research limitations	15
7. Findings and Discussions	15
7.1. Economic & Demographic Overview	15
7.2. Provincial Profiles & TVET Capacities	17
7.3. Potential Industries	25
7.4. Synthesis of Private Sector Engagement.....	32
8. Mechanisms for Deliverable Value Chain.....	36
9. Conclusion and Recommendations	37
9.1. Conclusion	37
9.2. Recommendations.....	39
10. Bibliography	45
11. Annex.....	48

List of Tables

Table 1: Cambodia's LDC Graduation (2021 & 2024 Reviews)	1
Table 2: Summary of Key National Policies and Roadmaps Linking TVET to LDC Graduation.....	4
Table 3: Exporting trend of Electronic and Electrical Products (HS: 85) by selected countries (2020-2024)	5
Table 4: Exporting trend of Cashew (HS: 0801) by selecting countries (2020-2024).....	11
Table 5: Number of Samples Interviewed.....	11
Table 6: Achieved Sample	14
Table 7: Population, working age population (15-64), and employment (15+) in 2024.	16
Table 8: Trainer's Profiles (Kratie).....	17
Table 9: Enrolment Number (Kratie)	18
Table 10: Trainer's Profiles (Mondulkiri)	19
Table 11: Enrolment Number (Mondulkiri).....	19
Table 12: Trainer's Profiles (Rattanakiri)	20
Table 13: Enrolment Number (Rattanakiri)	21
Table 14: Trainer's Profiles (Stung Treng).....	22
Table 15: Enrolment Number (Stung Treng)	22
Table 16: Trainer's Profiles (Preah Vihear)	24
Table 17: Enrolment Number (Preah Vihear).....	24
Table 18: Top Five Skill Gaps in Electrical and Electronics Sub-Sector	27
Table 19: Areas of skill gap and mismatch in Cashew Sub- Sector.....	30
Table 20: Summary of key challenges in private sector engagement with TVET	33
Table 21: Deliverable value chain in Eelectrical and Electronics and Cashew sub-sector.....	36

List of Figures

Figure 1: Mapping the electrical and electronics products global value chain.....	9
Figure 2: Cambodia' value chain diagram on cashew sub-sector	12
Figure 3: Cambodia's economic growth, 2018 to 2026p	16
Figure 4: Private Sector Engagement Challenges of TVET collaboration	34

Abbreviation

ADB	Asian Development Bank
AI	Artificial Intelligence
CAPSAFE	Cashew Sector Development Project (EU–German supported)
CDRI	Cambodia Development Resource Institute
CQF	Cambodia Qualification Framework
CN	Cashew Nut
EE	Electrical and Electronics
EMS	Electronics Manufacturing Services
EVI	Economic & Environmental Vulnerability Index
GDP	Gross Domestic Product
GNI	Gross National Income
HAI	Human Assets Index
ICT	Information and Communication Technology
IDP	Industrial Development Policy
IoT	Internet of Things
LDC	Least Developed Country
MLVT	Ministry of Labour and Vocational Training
MoU	Memorandum/Memoranda of Understanding
ODA	Official Development Assistance
PPP	Public–Private Partnership
PTB	Provincial Training Board(s)
PV	Photovoltaic (Solar)
QA	Quality Assurance
R&D	Research and Development
RGC	Royal Government of Cambodia
RCEP	Regional Comprehensive Economic Partnership
SEA-VET	Southeast Asia Technical and Vocational Education and Training
SEZ(s)	Special Economic Zone(s)
SDF	Skills Development Fund
SPIN	Special Program to Promote Investment in the Four Northeastern Provinces
TVET	Technical and Vocational Education and Training
UNDP	United Nations Development Programme
WTO	World Trade Organisation

1. Introduction

After decades of significant socio-economic progress, Cambodia stands at a pivotal developmental crossroads. Its scheduled graduation from the United Nations' list of Least Developed Countries (LDCs) on December 19, 2029, represents both a significant national achievement and a profound economic challenge (United Nations, 2024). Such a transition, a testament to two decades of remarkable socio-economic progress, is not merely a statistical reclassification but a deliberate national project, underpinned by consistent progress against established benchmarks and driven by a clear political vision for a more self-reliant and prosperous future. In the preliminary assessment for the 2024 triennial review, Cambodia once again surpassed the required thresholds, with a GNI per capita of \$1,546 (threshold: \$1,306), an improved HAI score of 77.7 (threshold: 66), and a significantly improved EVI score of 23.3 (threshold: 32). Such consistent performance across two consecutive reviews formally qualified Cambodia for graduation. Graduation is a critical stepping stone toward achieving Cambodia's ambitious long-term development goals: becoming an upper-middle-income country by 2030 and a high-income country by 2050 (RGC: The Pentagonal Strategy Phase I, 2023).

Table 1: Cambodia's LDC Graduation (2021 & 2024 Reviews)

Criterion	Graduation Threshold	Cambodia's 2021	Cambodia's 2024	Status
Gross National Income (GNI) per capita	\$1,222 (2021) / \$1,306 (2024)	\$1,377	\$1,546	Met
Human Assets Index (HAI)	66 or above	74.3	77.7	Met
Economic & Environmental Vulnerability Index (EVI)	32 or below	30.6	23.3	Met

Source: Data compiled from Royal Government of Cambodia (2024), WTO (2022), UNDP (2024)

While this transition represents national achievement, it simultaneously triggers a fundamental restructuring of the country's economic relationships with the world; the LDC graduation will concurrently trigger the withdrawal of critical international support measures, most notably preferential trade access that has been the bedrock of its export-oriented economy (UNDP, 2024). The impending loss of international support measures that have underpinned Cambodia's growth model creates a time-bound and non-negotiable imperative for deep structural reform. Successfully navigating this new development path requires a proactive and strategic response, centred on enhancing economic resilience and competitiveness.

Therefore, the economic transformation essential for a successful post-LDC future is entirely contingent on a parallel transformation in Cambodia's human capital (World Bank, 2024; UNDP, 2024). Human capital, the accumulated knowledge, skills, and health of a population, is a primary driver of economic productivity and growth. The capacity of the workforce to

adapt, innovate, and operate in higher-value industries will be the ultimate determinant of the nation's competitiveness. Currently, a significant human capital deficit presents a formidable obstacle to this goal. A reformed, modernised, and industry-aligned TVET system is the primary strategic instrument available to close this gap and power Cambodia's transition.

Given prominent issues in the context of LDC graduation, the reform of the TVET ecosystem emerges as an urgent and critical policy instrument. It is far more than a simple skills training program; it is a strategic investment in human capital and a key driver of the economic growth and diversification that Cambodia requires. TVET is designed to enhance employability and productivity (Chrea et al. 2024). By aligning its programs with the specific needs of the labour market, TVET equips individuals with the relevant, in-demand technical and vocational skills that employers seek. This focus on practical, hands-on training directly increases the employability of graduates and ensures they are prepared to contribute effectively from day one. In a post-LDC environment where firms must compete on efficiency and quality rather than preferential tariffs, a workforce of skilled, productive, and innovative workers is not a luxury but a necessity for national economic competitiveness, and this can be achieved through the development of the TVET system.

However, the TVET system in Cambodia is currently hindered by several systemic challenges. There is a well-documented and significant gap between the skills imparted by TVET institutions and the actual needs of employers (ADB, 2015). More recently, a 2024 Skills Gap Assessment by the European Chamber of Commerce found that 74% of companies face challenges in hiring qualified employees, with 30% citing "under-qualified staff in general" as a primary obstacle. Employers consistently report that graduates lack not only specific technical competencies but also foundational "soft skills." In fact, the 2024 survey revealed that the top skills gaps involve soft skills, including leadership, quality control, and project management being top priorities. This persistent gap has led many employers to believe that existing TVET programs are of "low quality and little relevance to their needs," forcing them to rely on costly in-house training or foreign experts (CDRI, 2022).

While the National TVET Policy calls for a robust Quality Assurance (QA) system based on the Cambodia Qualification Framework (CQF), its implementation remains a major challenge (RGC, 2017). An ADB assessment identified "poor quality control of TVET courses and institutions" as a key constraint (ADB, 2017). The National TVET Policy itself acknowledges that the system's quality is hampered by "a lack of a quality assurance system; outmoded training methodologies; inauthentic experience in the industry of technical trainers. Without a credible and consistently applied QA system, there can be no guarantee of training quality, which undermines the value of certifications and erodes the trust of both students and employers. While international partners like Swisscontact are actively supporting the

development of a national QA system, this is a complex and long-term endeavour (Swisscontact, 2025).

Another issue is that the TVET system is chronically under-resourced. The government's capacity to invest is limited, and this challenge will be exacerbated by the fiscal constraints following LDC graduation (World Bank, 2015; ADB, 2017). Insufficient funding manifests in outdated training equipment and inadequate infrastructure (ADB, 2024). Critically, there are "no government-led strategies to encourage private investment in TVET facilities and some mechanisms designed to encourage private investment, such as the Skills Development Fund (SDF), have seen limited participation from the private sector. TVET continues to suffer from a negative social image in Cambodia, where it is often perceived as a "Second Choice" or a pathway for students with low grades who fail to enter academic higher education (MPRA, 2018; SEA-VET.net, 2024). The system also struggles to attract sufficient numbers of its key target demographics—the unemployed, under-employed, and disadvantaged youth (ADB, 2017).

2. Objectives of the Study

This study assesses the alignment of Technical and Vocational Education and Training (TVET) programs with the current and future economic needs of five provinces in Northeast Cambodia: Kratie, Mondulkiri, Ratanakiri, Stung Treng, and Preah Vihear. The study will focus on identifying potential occupations and sectors with promising job opportunities and evaluating the capacity of TVET institutions to equip students with the necessary skills and knowledge to succeed in these roles within the electrical and electronics and *cashew sub-sectors*.

The primary objectives of this study are to:

- Identify current and future job opportunities in the electrical and electronics and cashew sub-sectors in Kratie, Mondulkiri, Ratanakiri, Stung Treng, and Preah Vihear provinces
- Assess the capacity of TVET institutions in these provinces to provide training that meets the needs of these occupations and sectors, including the provision of priority skills
- Develop recommendations for aligning TVET programs with regional economic needs and improving the overall TVET system

To achieve the study objectives, the following research questions will be addressed:

- What are the current and projected labour market demands in the Northeast region, particularly in the electrical and electronics and cashew sub-sectors?
- What are the key skills and knowledge required for employment in these sectors?
- To what extent do existing TVET programs in the target provinces align with these skills needs?

- What are the strengths and weaknesses of TVET institutions in terms of curriculum, infrastructure, and trainer capacity?
- How can TVET institutions be strengthened to better meet the needs of the regional economy and emerging sectors?
- What are the barriers to accessing TVET for women and other marginalised groups, and how can these barriers be overcome?
- What policy interventions and partnerships are needed to enhance the effectiveness and relevance of TVET in the Northeast region?

3. Scope and Limitation

This study covers five provinces in Northeast Cambodia: Kratie, Monduliri, Ratanakiri, Stung Treng, and Preah Vihear. These provinces were selected due to their strategic economic potential, unique labour market characteristics, and the presence of relevant TVET institutions. Each province offers diverse development contexts ranging from nascent agro-industries to emerging interest in electrical and electronics manufacturing.

The primary sub-sectors of interest for this study are the electrical and electronics industry and the cashew value chain. These sectors were identified as priority areas based on their growth potential, job creation capacity, and relevance to regional economic development strategies. The electrical and electronics sub-sector represents a key emerging industry linked to industrial diversification and higher-value manufacturing, while the cashew sub-sector remains vital for rural livelihoods and agribusiness development.

To capture a holistic view of the TVET ecosystem and labour market dynamics, the study engaged a diverse group of stakeholders through key informant interviews (KIIs) and focus group discussions (FGDs). These included Provincial Training Boards (PTBs), administrators and instructors from TVET institutions, and enterprises operating in the electrical and electronics and cashew sub-sectors. Focus group discussions were also conducted with current TVET students and recent graduates to capture learner experiences and perspectives. Gender balance and inclusion of marginalised groups were considered throughout respondent selection, although challenges such as low female enrolment in technical fields limited balanced participation in some cases (See Section 6: Methodology).

4. Government Policy Framework

4.1. National Policy Context

Cambodia's key national strategies all emphasize human capital and industrial upgrading. The new **Pentagonal Strategy Phase I (2023–2028)** sets five mottos – **Growth, Employment, Equity, Efficiency, Sustainability** – and five priorities (People, Road, Water, Electricity, Technology). In it, “**Technical Skills Training**” and broader human capital development are explicit priorities for growth by transforming the technical vocational education and training,

increasing students' enrollment, promoting reskilling and upskilling, strengthening the ecosystem for skills development programmes, and addressing skills mismatches, among others (RGC, 2023). **Cambodia Skills Development Roadmap 2023–2035** likewise stresses that every Cambodian should have “at least one skill in life” to secure decent work and dignity (MLVT, 2023). This Roadmap explicitly aligns with the National TVET Policy, National Employment Policy, Cambodia Industrial Development Policy 2015-2025, Cambodia's Vision 2050, Cambodia Digital Economy and Society Policy Framework 2021-2035, and other policies, ensuring consistency across frameworks.

The **Cambodia Industrial Development Policy 2015–2025** envisions transforming Cambodia's economy “from a labour-intensive industry to a skill-driven industry by 2025”. It positions industrial diversification, agro-processing, and higher value-added manufacturing as priorities for structural transformation required for sustainable growth. Essentially, the policy also recognises that industrial upgrading requires a skilled workforce. It indicates the profound element toward strengthening technical and vocational training systems to meet the labour demands of priority sectors and meet the demand of high value-added industry (RGC, 2015). In line with the IDP, the **National Employment Policy (NEP) 2015–2025** focuses on ensuring that Cambodia's growth is translated into productive and decent work opportunities for all. Its objectives are to increase employment creation, enhance labour market governance, improve productivity, and promote inclusive labour force participation, particularly for youth, women, and vulnerable groups. In addition, the **National TVET Policy (NTVET) 2017–2025** provides the most direct framework for advancing skills development. It aims at building a demand-responsive and inclusive TVET system, expanding access for disadvantaged groups, ensuring the relevance of training through competency-based standards, and strengthening collaboration with employers. Also, the policy includes special emphasis on the importance of practical, industry-linked training and continuous curriculum updates to keep pace with emerging technologies and labour market shifts, institutional capacity building, quality assurance, and lifelong learning pathways (RGC, 2017). All policies therefore converge on upgrading skills, promoting TVET quality, and linking training to industry needs as the pathway to 2050 goals.

Table 2: Summary of Key National Policies and Roadmaps Linking TVET to LDC Graduation

Policy/Roadmap Title	Key Objectives Related to Skills/LDC Transition	Timeframe
Pentagonal Strategy-Phase I	Human capital development; transforming workforce to be skill-intensive; creating quality jobs.	2023
Cambodia Industrial Development Policy	Transforming Cambodia's economy "from a labour-intensive industry to a skill-driven industry by 2025	2015-2025
National Employment Policy	Guide implementation to seize opportunities from regional/global trends for decent job creation.	2015-2025
National TVET Policy	Improve TVET quality for market demands; increase access; promote PPPs; improve governance.	2017-2025
Cambodian Skills Development Roadmap	Improve TVET quality; enhance branding; ensure industry relevance; good governance; sustainable financing.	2023-2035
Cambodia Digital Economy and Society Policy Framework	Build digital foundations; digital adoption; human resource development for digital skills.	2021-2035

Source: Data compiled from Royal Government of Cambodia (2024), ASEAN Secretariat (2023), Royal Government of Cambodia (2017), UN LDC Portal (2025)

4.2. Sector-Specific Policy Mapping

4.2.1. Cashew and Agri-Business Sub-Sector

The government's **National Cashew Policy (2022–2027)** crystallises the agricultural focus in the ten provinces, including five northeast provinces, including Ratanakkiri, Kratie, Preah Vihear, Stung Treng and Mondulakiri (which produce much of Cambodia's cashew nuts). It aims to "increase production and value-added" and make Cambodia a major cashew producer/exporter. Its vision is to "develop cashew production and market and a competitive environment [to] ensure sustainability and economic diversification". Concretely, its vision is to develop cashew production, processing and markets with inclusive competitiveness to ensure sustainability and economic diversification. The clear goals of this national policy are to improve the production and product outputs with competitive quality, promote industrialisation to increase the value-added of the cashew harvest and processing by 25% by 2027 and at least 50% by 2032, promote exports through market diversification, inter-sectoral export linkages, trade facilitation, production cost reductions, and market advantages.

This national policy aligns with the Cambodia Industrial Development Policy 2015-2025's agro-processing emphasis and export diversification goals. It implies urgent TVET action in agriculture and food processing: training cashew farmers in improved agronomy and linking them to processors, and training plant operators in sorting, processing and quality control. The National Cashew Policy's Action Plan specifies several post-harvest training and skills-development activities aimed at improving quality, safety and value-addition, including:

- **Drying, grading & Storage Guidelines:** Prepare guidelines and disseminate to farmers and farm owners how to dry, grade, and store cashew nuts properly in accordance with technical conditions to ensure good quality and safety.
- **Technical Training in Post-Harvest Handling:** Increase productivity and protect the safety of farmers and farm workers through technical training, both theoretical and practical, to improve the quality of services to be more effective.
- **Processor Capacity-Building for Standards Compliance:** build capacity for processors so that they can obtain food-standard certificates, guide processing enterprises to enhance export productivity and ensure quality and food safety in line with international management systems.
- **Laboratory & Certification Training:** Facilitate the certification provision mechanism for food hygiene and strengthen laboratory capacity in accordance with international standards. The operation of such a laboratory could involve a public–private partnership.

Thus, in the short term, this synergy means expanding vocational courses in agro-processing. To leverage that 25% and 50% output gain goal, Cambodia is expected to have a more skilled cashew workforce supporting new factories in agro-industry.

4.2.2. Electrical and Electronics Sub-Sector

The Automotive, electrical and electronics sub-sectors are the priority sub-sectors of the Royal Government of Cambodia. In 2022, the government launched the **Cambodia Automotive & Electronics Sector Development Roadmap** designated these sectors as national priorities, in line with IDP targets. Its vision is to *“develop these sectors... to transform Cambodian industry from labour-intensive to skill-based”*. In the near term (to 2025), it calls for ramping up Cambodia's strength in labour-intensive assembly: e.g. wiring harnesses, seats and simple electrical components in vehicles, and simple cables and PCBs in electronics. In the mid-to-long term, it sets targets to move up the value chain to more complex auto parts and higher-value electronics design and assembly. The roadmap's 20-point measures include key “Human capital and innovation” initiatives: notably, *“development of an automotive and electronics labour upskilling programme with the private sector”* and enhanced public–private job matching services.

Some priority initiatives for this roadmap related to human capital development include:

- Identifying locations or SEZs for automotive and electronics clusters
- Attracting and facilitating investment for flagship companies
- Developing automotive and electronics labour upskilling programme with private sectors
- Improving monitoring and evaluation governance of TVET institutions
- Expanding and enhancing job matching services through public-private partnership
- Expanding TVET schools in priority regions

4.2.3. Other Sub-Sectors

Beyond cashew and electronics, several sub-sectors merit emphasis:

- **Agriculture and Food Processing (other crops):** These provinces also grow rubber, coffee, fruit and vegetables. National policies (IDP, Rectangular Strategy) stress diversifying agro exports. TVET should thus also cover agroforestry, post-harvest technology, and business skills for these crops. This complements the cashew focus and supports rural livelihoods.
- **Tourism and Hospitality:** Eco-tourism and cultural tourism potential in border provinces. The Ministry of Tourism's strategic plan aligns with the pentagonal priority on "*People*" and "*Road*" infrastructure. Training in hospitality management, tour guiding and eco-entrepreneurship can be integrated, ensuring local communities benefit from tourism growth.
- **ICT and Digital Services:** The Digital Economy and Society Policy Framework 2021–2035 and Vision 2050 highlight technology. Even in rural provinces, basic ICT skills (for agri tech, logistics, services) are important. Embedding digital literacy and ICT maintenance into TVET aligns with the Pentagonal and Skills Roadmap focus on technology.
- **Green and Renewable Energy:** With Cambodia's Green Growth Strategy and Sustainable Development Goals, skills in solar installation, energy-efficient construction, and environmental management should be included.

5. Sub-Sectoral Analysis

5.1. Electrical and Electronic Sub-Sector

5.1.1. Trade Performance and Market Dynamics

Cambodia's electrical and electronic (E&E) manufacturing sector has demonstrated volatile but generally positive growth trends over the past five years. Export data reveals significant fluctuations, with values ranging from USD 762,000 in 2020 to a peak of USD 3.13 million in 2023, before declining to USD 1.88 million in 2024. This volatility reflects the sector's sensitivity to global supply chain disruptions, trade tensions, and shifting production networks within the broader Southeast Asian manufacturing ecosystem.

Table 3: Exporting trend of Electronic and Electrical Products (HS: 85) by selected countries (2020-2024) in Thousand USD

No.	Exporters	Exported value in 2020	Exported value in 2021	Exported value in 2022	Exported value in 2023	Exported value in 2024	Growth in exported value between 2020-2024 (% p.a.)	Share in World's Exports (%) in 2024
	World	2,776,284,094	3,397,058,186	3,586,806,342	3,451,728,603	3,627,413,640	7.3	100.0
1	China	709,932,704	898,959,878	954,783,812	899,043,465	927,963,128	7.6	25.6
2	EU - 27	522,749,607	613,690,880	633,086,066	670,729,580	659,592,403	6.2	18.2
3	Hong Kong, China	311,585,639	395,547,515	371,718,476	336,205,322	368,737,514	5.3	10.2
4	Taipei, Chinese	174,275,860	219,328,927	246,218,534	222,866,176	224,129,317	7.3	6.2
5	US	162,785,012	185,778,022	197,748,997	200,654,689	213,920,378	7.2	5.9
6	Viet Nam	111,092,752	131,385,178	140,341,806	132,718,319	201,776,797	17.9	5.6
7	Malaysia	86,403,702	102,908,094	128,216,660	119,185,201	121,402,532	9.6	3.3
8	Thailand	34,082,521	40,132,740	45,532,167	49,550,682	51,093,938	10.8	1.4
9	Cambodia	762,091	1,081,099	1,998,196	3,129,907	1,880,291	35.9	0.1
10	Rest of the world	662,614,206	808,245,853	867,161,628	817,645,262	856,917,342	7.1	23.6

Source: ITC Trade Map, accessed on 06 August 2025

Market diversification has emerged as a critical challenge and opportunity for Cambodia's E&E sub-sector. Current export destinations are heavily concentrated, with the United States accounting for 54% of exports (USD 1.01 billion), followed by Japan (10.4%) and Thailand (9.2%). This concentration creates vulnerabilities to trade policy changes and economic fluctuations in key markets, while also indicating potential for geographic diversification into other ASEAN markets and emerging economies.

The sub-sector's integration into global value chains remains at an early stage, primarily focused on assembly and low-value manufacturing activities. Cambodia's participation is characterised by high dependence on imported inputs, with most raw materials and components sourced from China, Japan, and Thailand. This positioning reflects typical patterns for emerging economies entering E&E manufacturing, similar to Vietnam's trajectory in the 1990s.

5.1.2. Regional Distribution and Investment Patterns

Geographic concentration in specific provinces has emerged as a defining characteristic of Cambodia's E&E manufacturing landscape. Svay Rieng province hosts the largest number of enterprises (71) employing 26,582 workers, followed by Phnom Penh with 52 enterprises and 18,461 workers. This concentration reflects strategic positioning near major transportation corridors and proximity to Vietnam's established manufacturing networks.

Foreign direct investment patterns reveal strong Asian dominance, with Japanese firms accounting for 65.6% of total E&E investment, followed by Thailand (17.3%), Taiwan (6.7%), and China (5.3%). This investment distribution aligns with the "Thailand Plus One" strategy adopted by Japanese multinational corporations seeking production diversification while maintaining regional supply chain integration.

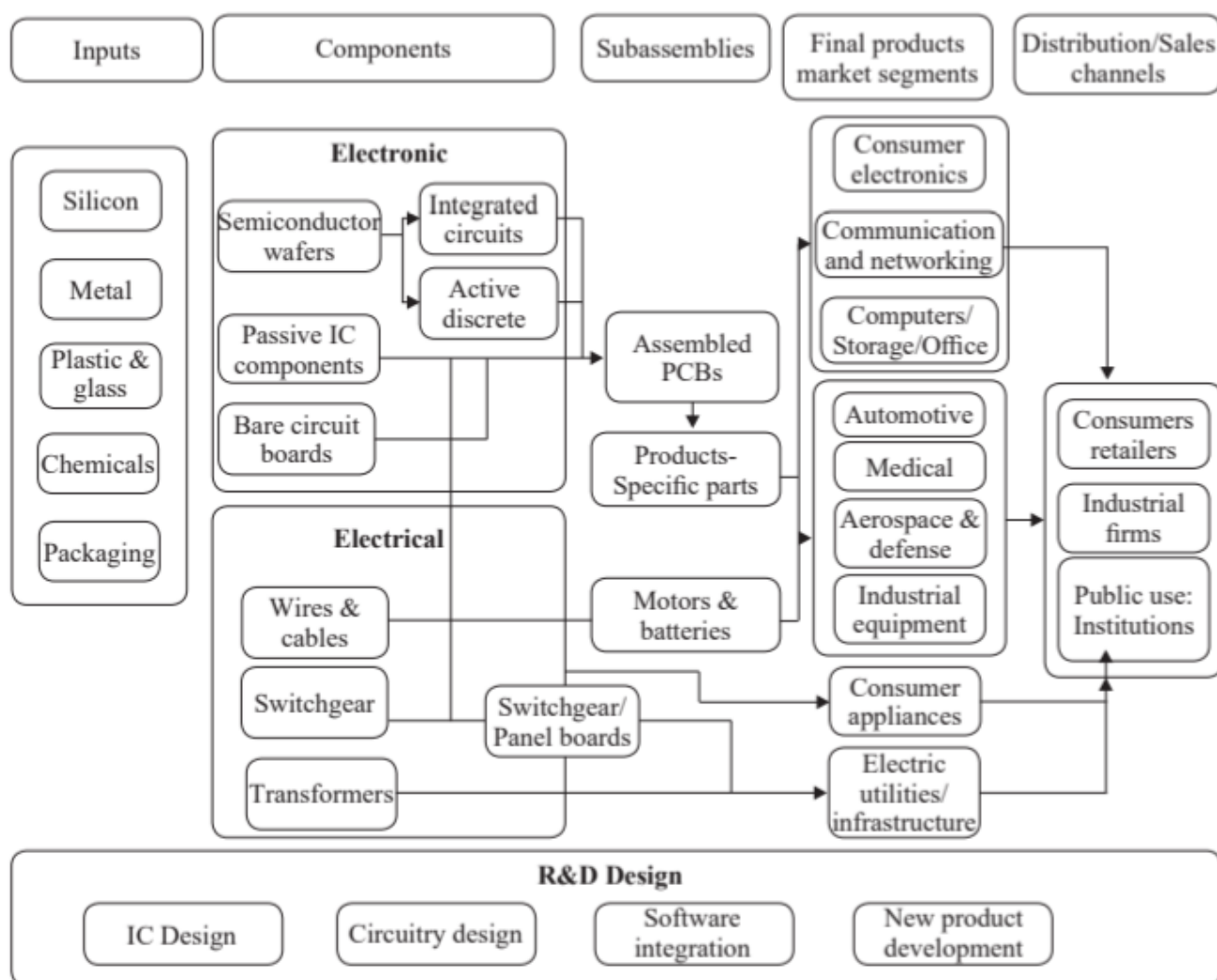
Special Economic Zones (SEZs) have played a crucial role in attracting and organising E&E investments. The Phnom Penh Special Economic Zone, in particular, has become a hub for Japanese manufacturers, while border SEZs near Vietnam attract Taiwanese and Chinese investors. These zones provide critical infrastructure, streamlined administrative processes, and cluster benefits that enhance competitiveness.

5.1.3. Electronics and Electrical Products Global Value Chain

The Electrical and Electronic (E&E) global value chain represents one of the most complex and interconnected manufacturing networks in the modern economy, spanning multiple continents and involving sophisticated coordination between diverse actors. This value chain is structured around five major segments that create a comprehensive production ecosystem from raw materials to final consumer products.

R&D and Design form the foundation of the value chain, encompassing integrated circuit design, circuitry design, software integration, and new product development. This high-value segment typically occurs in advanced economies where technological expertise and intellectual property protection are strong. Inputs include basic raw materials such as silicon, metals, plastics, glass, chemicals, and specialised packaging materials that serve as the building blocks for all electronic components.

Figure 1: Mapping the electrical and electronic products global value chain



Source: CDRI (cited as Frederick and Gereffe, 2016)

The E&E value chain is characterised by its highly modular structure, which allows different production stages to be geographically dispersed while maintaining efficient coordination. This modularity is enabled by standardised specifications and advanced information communication technology that facilitates monitoring and information sharing across global production networks. Lead firms, primarily based in advanced economies, control the high-value activities like R&D, branding, and marketing, while outsourcing manufacturing to electronics manufacturing services (EMS) providers and contract manufacturers located predominantly in developing countries. The geographic concentration in Asia has intensified over recent decades, with China serving as a major hub for both contract manufacturing and component supply, while countries like Vietnam, Thailand, Malaysia, and the Philippines have emerged as important assembly locations.

5.1.4. Skills Development and Requirements

The electrical and electronic sub-sector faces critical skill gaps across multiple competency areas, with digital skills representing the most severe challenge. Current workforce requirements span technical skills (electronics assembly, PCB handling, component testing), digital competencies (AI/IoT applications, data analysis, automation systems), manufacturing capabilities (lean manufacturing, quality systems, equipment operation), quality control (testing procedures, standards compliance), and management skills (production supervision, team leadership, project management).

TVET program alignment with industry needs remains inadequate across most skill categories. While manufacturing skills show relatively good alignment with existing programs, critical areas such as digital skills and technical competencies demonstrate poor alignment with current TVET offerings. This misalignment reflects both curriculum gaps and insufficient industry-education collaboration in program development and delivery.

Capacity constraints in TVET institutions limit the sector's ability to scale workforce development. Current certificate and diploma programs can accommodate approximately 15,000 and 8,000 students respectively, while industry demand estimates suggest needs for 25,000 and 12,000 graduates annually.

5.2. Cashew Sub-Sector

5.2.1. Trade Performance and Market Dynamics

Cambodia's cashew sub-sector represents one of the most remarkable agricultural success stories in Southeast Asia. The country has achieved the world's highest on-farm yields at 1,422 kg per hectare, significantly exceeding global averages and competitor countries including Vietnam (1,100 kg/ha), India (706 kg/ha), and Côte d'Ivoire (400 kg/ha). This productivity advantage stems from several factors, including ideal climate conditions, widespread adoption of the high-yielding M23 variety (accounting for 70-95% of trees in major producing provinces), and intensive use of modern agricultural inputs.

Production growth has been extraordinary, expanding from approximately 50,000 tonnes in 2014 to 840,000 tonnes in 2024. This growth trajectory is unprecedented in the global cashew industry and has fundamentally altered supply-demand dynamics. Forecasts suggest production will reach 1 million tonnes by 2028-2030, consolidating Cambodia's position as the world's second-largest producer. Regional concentration of production is notable, with the top two provinces accounting for 45% of national output and the top eight provinces producing 93% of total cashews. This concentration primarily spans northeastern provinces including Kampong Thom, Kampong Cham, Kratie, Stung Treng, Ratanakiri, and Preah Vihear. These provinces benefit from favourable soil conditions, climate patterns, and established agricultural support systems.

Cambodia's cashew marketing system exhibits extreme market concentration with Vietnam absorbing approximately 98.8% of exports in 2024. This dependency on a single market creates significant risks but also reflects geographic proximity, established trade relationships, and Vietnam's position as the world's leading cashew processor. The trade with Vietnam occurs primarily through road transportation of undried raw cashew nuts (RCN) in a unique arrangement that differs from global industry practices.

Table 4: Exporting trend of Cashew Nut (HS: 0801) by selected countries (2020-2024) in Thousand USD

No.	Exporters	Exported value in 2020	Exported value in 2021	Exported value in 2022	Exported value in 2023	Exported value in 2024	Growth in exported value between 2020-2024 (% p.a.)	Share in World's Exports (%) in 2024
	World	8,193,655	9,113,295	8,295,830	9,075,112	9,631,017	4.4	100.0
1	Viet Nam	3,001,591	3,244,826	2,647,912	3,039,398	3,102,805	1.6	32.2
2	EU - 27	784,324	834,586	722,447	783,297	812,803	1.3	8.4
3	Cambodia	9,712	5,070	12,593	347,943	502,838	702.0	5.2
4	Thailand	202,296	319,204	409,360	462,348	343,936	18.3	3.6
5	Malaysia	17,429	20,724	18,348	13,140	16,908	1.9	0.2
6	US	33,159	38,361	45,683	33,345	32,766	1.5	0.3
7	Hong Kong, China	8,338	6,297	3,025	2,889	2,478	-23.8	0.0
8	China	460	799	2,442	1,888	1,996	65.6	0.0
9	Taipei, Chinese	9	6	17	8	3	8.6	0.0
10	Rest of the world	4,136,337	4,643,422	4,434,003	4,390,856	4,814,484	4.1	50.0

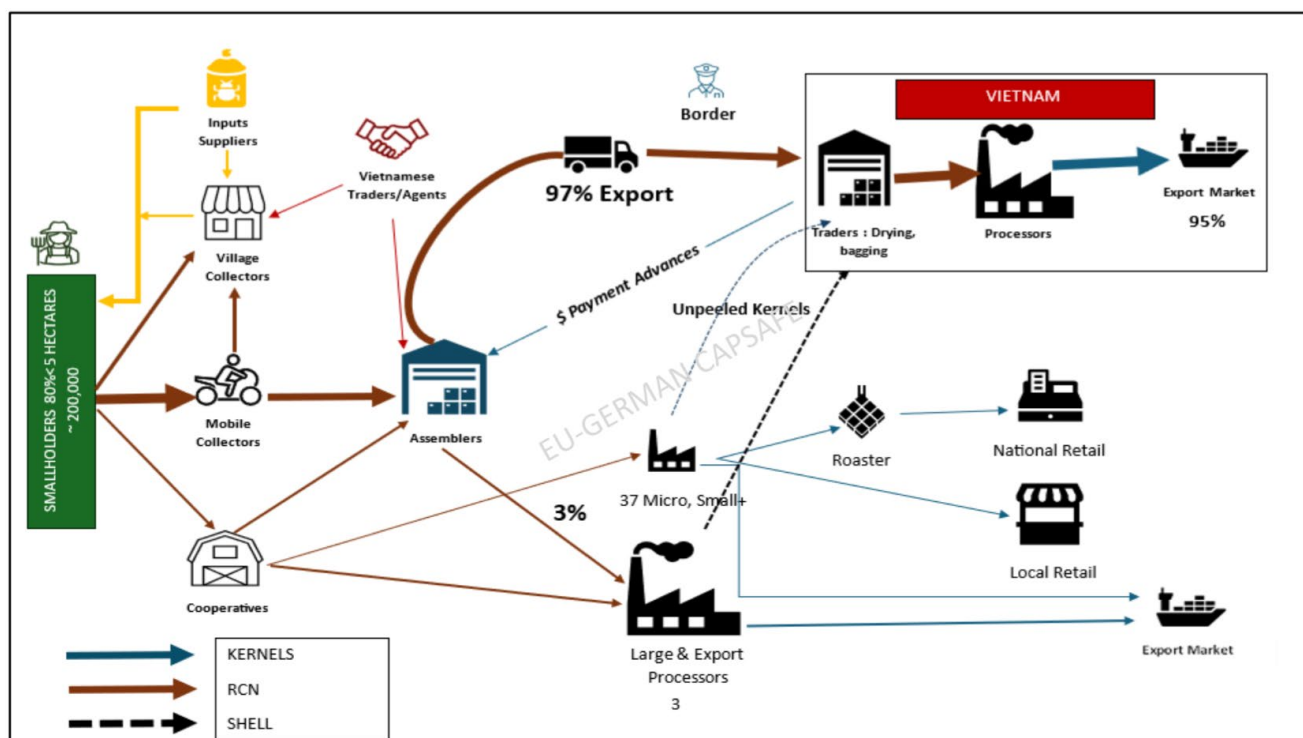
Source: ITC Trade Map, accessed on 06 August 2025

Market diversification constraints represent a critical structural challenge, and this situation underscores the importance of developing domestic processing capacity and kernel export markets.

5.2.2. Value Chain Development and Processing Potential

Processing capacity development has lagged significantly behind production growth, with current utilisation at only 32% of installed capacity in 2024. Total processing capacity is estimated at 72,625 tonnes, capable of handling approximately 8.6% of national production. This underutilization reflects multiple constraints, including inadequate post-harvest handling infrastructure, limited supply chain integration, and insufficient working capital for processors.

Figure 2: Cambodia's value chain diagram on cashew sub-sector



Source: EU-German CAPSAFE Project (2024).

5.2.3. Workforce Development

Processing skills represent the most critical gap in cashew sub-sector workforce development, with current TVET programs providing minimal coverage of modern cashew processing techniques, drying technologies, kernel extraction methods, and quality management systems. These technical competencies are essential for developing domestic processing capacity and reducing dependence on raw nut exports. Skills in product development, packaging design, branding and marketing, and export procedures are essential for accessing higher-value kernel markets and developing differentiated products.

Agricultural modernisation skills show better alignment with existing programs, particularly in areas such as modern farming techniques, pest management, and harvesting methods. However, gaps remain in precision agriculture, climate-smart farming practices, and sustainable production systems that are increasingly important for market access and environmental compliance.

Northeast Cambodia development priorities align closely with cashew sub-sector requirements, as evidenced by the government's Special Program to Promote Investment in the Four Northeastern Provinces (SPIN) for 2025-2028. This program focuses on agriculture, agro-industry, and tourism development in Kratie, Stung Treng, Ratanakiri, and Monduliri provinces, directly supporting cashew value chain development.

6. Methodology

The study employs a case study approach using Key Informant Interviews (KII) with key stakeholders to gather qualitative data on labour market demands and TVET program effectiveness. This method allows for an in-depth examination of the specific context within each selected province. Key informants will be identified from various stakeholder groups within provinces in Northeast Cambodia. The provinces for this study will be selected based on economic activity (with a focus on the target sub-sectors), the presence of relevant TVET institutions, and practicality. These groups include Provincial Training Boards (PTBs), TVET institutions (administrators, teachers, and students), and enterprises in the electrical and electronics and cashew sub-sectors. Five provinces have been selected to gather information for this study.

6.1. Questionnaire Development

- Interview Guide: Semi-structured interview guides will be developed to explore topics with various stakeholders, using open-ended questions to gather detailed information.
 - Current and projected labour market demands in the electrical and electronic and cashew sub-sectors.
 - Key skills and knowledge required for employment in these sub-sectors.
 - Alignment of existing TVET programs with these skills needs.
 - Strengths and weaknesses of TVET institutions.
 - Policy interventions and partnerships needed to enhance TVET effectiveness.
- Focus Group Discussions: Similarly, focus group discussions are planned, which would require discussion guides to facilitate conversation around specific topics related to TVET and employment opportunities.

6.2. Sampling & Respondent Profile

6.2.1. Number of interviews per province and stakeholder type

Table 5: Number of Sample Interviewed

1. In person							
Province	Provincial Training Boards (PTBs)	TVET institution	Enterprise		Focus Group Discussions with TVET Students		Total
			Electrical and Electronic	Cashew	Electrical and Electronic	Cashew	
Preah Vihear	-	-	-	-	1	-	1
Stung Treng	-	2	1	1	1	-	5

Ratanak Kiri	-	-	-	-	-	-	0
Kratie	-	2	2	1	1	-	6
Mondul Kiri	-	-	-	-	-	-	0
Total	0	4	3	2	3	0	12

2. Online

Province	Provincial Training Boards (PTBs)	TVET institution	Enterprise		Focus Group Discussions with TVET Students		Total
			Electrical and Electronic	Cashew	Electrical and Electronic	Cashew	
Preah Vihear	1	2	1	1	1	-	6
Stung Treng	-	-	-	-	-	-	0
Ratanak Kiri	1	2	-	-	-	-	3
Kratie	1	-	-	-	-	-	1
Mondul Kiri	-	-	-	-	1	-	3
Total	3	4	1	1	2	0	11

Source: Fieldwork from March 31st and June 24th

Table 6: Achieved Sample

Category	Achieved					
	PVH	ST	KRT	RAK	MKR	Total
Provincial Training Boards (PTBs)	1	-	1	1	-	3
TVET institution	2	2	2	2	-	8
Enterprise:						-
Electrical and Electronic	1	1	2	-	-	4
Cashew	1	1	1	-	-	3
Focus Group Discussions with TVET Students:						-
Electrical and Electronic	2	1	1	-	1	5
Cashew	-	-	-	-	-	-
Total	7	5	7	3	1	23

Note: PVH: Preah Vihea, ST: Stueng Treng; RTK: Rattanakiri; MDK: Mondulkiri; KRT: Kratie. Source: Fieldwork from March 31st and June 24th

6.2.2. Gender balance and diversity considerations

Regarding gender considerations, a common trend in electrical and electronic skills training is the lower enrolment of female students. Consequently, this results in limited female participation during focus group discussions. This disparity in enrolment may originate from prevailing gender stereotypes that associate these skills primarily with male roles. Although the student selection process aimed to achieve a gender balance by forming groups of four female and four male students, actual female enrolment in these fields was insufficient to support gender balance in participation.

6.3. Research limitations

6.3.1. Sample size of employers

The ongoing economic development of the region has resulted in a limited number of established enterprises, a scarcity particularly evident in the electrical and electronic, and cashew sub-sectors. The level of cooperation between TVET institutions and local enterprises remains limited, with existing collaboration predominantly involving micro and small enterprises and minimal engagement from medium and large ones. Moreover, TVET institutions have not established partnerships across all relevant sectors. A significant example is the lack of connection with enterprises involved in cashew production. TVET institutions explain this absence by citing their lack of training programs in the cashew sub-sector. Nevertheless, it is important to acknowledge the potential labour demands for electrical and mechanical expertise within enterprises engaged in cashew production.

6.3.2. Regional scope limited

A consistent absence of training programs for cashew cultivation, care, and harvesting was observed across all targeted Technical and Vocational Education and Training (TVET) institutions in this assessment. This lack of provision is attributed to the institutions' limited resources, encompassing materials, equipment, and specialised instructors. Furthermore, attracting student enrolment in these specific skills poses a challenge due to the prevailing preference for technology-related fields over agricultural cultivation among students.

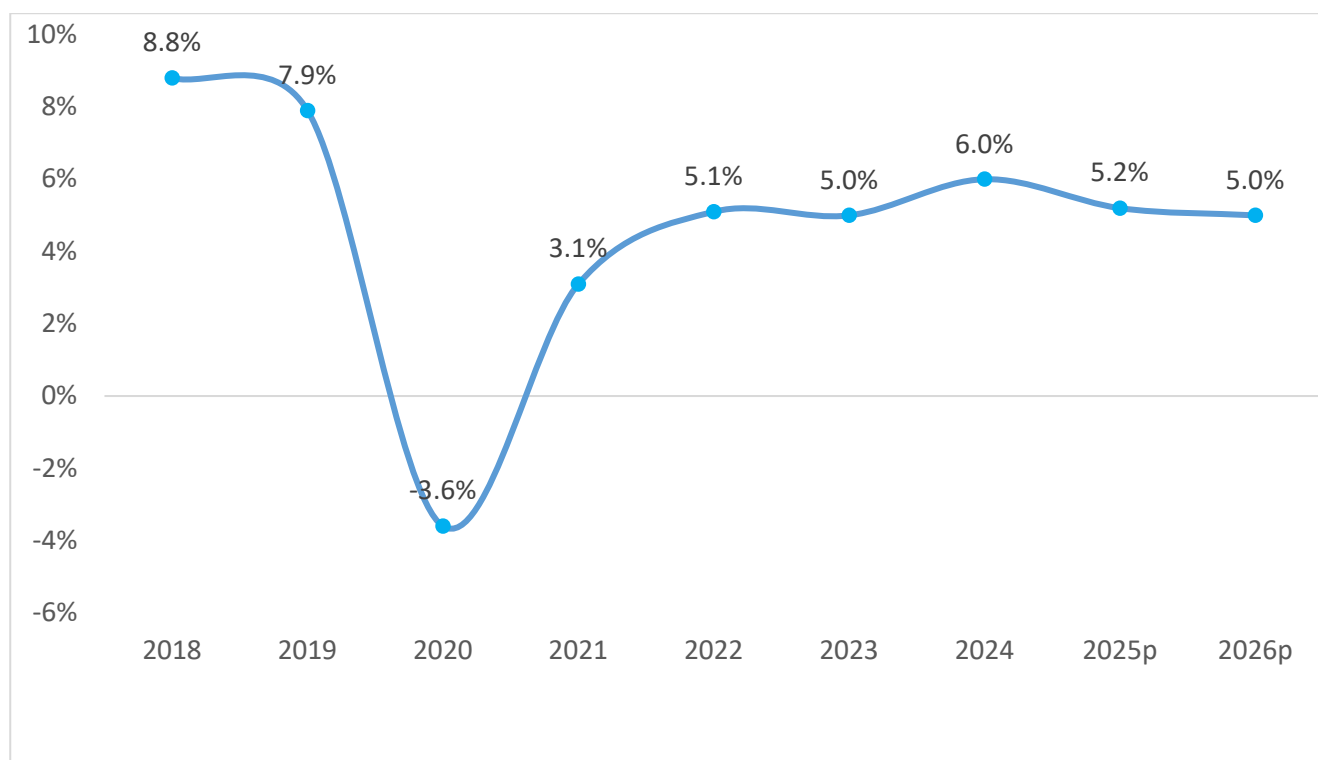
7. Findings and Discussions

7.1. Economic & Demographic Overview

Cambodia's economic trajectory demonstrates a dramatic V-shaped recovery from the COVID-19 pandemic, transitioning from a high-growth era (2018-2019 average of 8.4%) through a severe contraction of 3.6% in 2020 to a robust stabilisation phase with GDP growth reaching 6.0% in 2024—the highest level since the pre-pandemic period. This recovery pattern demonstrates the economy's fundamental resilience and adaptability, supported by diversified growth drivers across manufacturing, tourism, and agricultural sectors.

Following the post-pandemic rebound, Cambodia is now entering a more mature and stable growth phase. GDP expansion is projected at 5.2% in 2025 and 5.0% in 2026, signalling a transition toward a sustainable medium-term growth corridor of 5.0–5.4% that balances development ambitions with macroeconomic stability. This moderated yet solid growth trajectory reflects Cambodia's evolution from an emerging frontier economy dependent on low-cost manufacturing and basic agriculture toward a more diversified middle-income economy with increasing contributions from higher-value manufacturing, services, and processed agricultural exports.

Figure 3: Cambodia's economic growth, 2018 to 2026p



Source: Ministry of Economy and Finance, June 2025.

At the same time, Cambodia's demographic landscape presents a favourable demographic dividend with young labour forces. The employment-to-population ratio of 87.7% indicates robust labour market participation, translating to 9.76 million employed individuals nationwide.

Table 7: Population, working age population (15-64), and employment (15+) in 2024.

No.	City/Provinces	Population	Working Age Population (15-64)	Employment (15+)
Total		17,280,543	11,120,327	9,756,289
1	Banteay Meanchey	898,484	612,241	518,773
2	Battambang	1,132,017	690,104	601,424
3	Kampong Cham	1,062,914	620,325	544,803
4	Kampong Chhnang	604,895	361,399	337,580
5	Kampong Speu	924,175	637,958	589,702
6	Kampong Thom	807,254	468,941	408,949
7	Kampot	682,987	424,180	384,083
8	Kandal	1,352,198	879,578	745,858
9	Koh Kong	140,962	91,960	78,490
10	Kratie	441,078	252,290	229,410
11	Mondul Kiri	93,657	64,989	56,206
12	Phnom Penh	2,352,851	1,791,583	1,457,375
13	Preah Vihear	249,973	180,380	162,996
14	Prey Veng	1,277,867	710,756	632,186
15	Pursat	516,072	278,420	254,378
16	Ratanak Kiri	235,852	149,139	138,183
17	Siemreap	1,099,825	715,354	639,801
18	Preah Sihanouk	234,702	249,946	216,771

19	Stung Treng	176,488	114,738	105,353
20	Svay Rieng	613,159	374,750	355,419
21	Takeo	1,097,243	639,411	572,919
22	Oddar Meanchey	267,703	190,058	172,673
23	Kep	48,772	31,137	27,957
24	Pailin	79,445	54,220	47,458
25	Tboung Khmum	889,970	536,473	477,539

Source: Total population data is from the Cambodia Inter-censal Population Survey 2024, and working-age population and employed persons are from the Cambodian Socio-Economic Survey 2023.

The 2024-2025 outlook projects continued employment growth supported by manufacturing expansion, infrastructure development, and services sector growth. However, success requires strategic human capital development to transition from predominantly agricultural employment toward higher value-added manufacturing and services aligned with Cambodia's economic transformation goals.

7.2. Provincial Profiles & TVET Capacities

7.2.1. Kratie Province

Kratie's TVET institution has 42 total staff as of June 2025. Management and office personnel include 1 Master's and 9 Bachelor's. Civil servant trainers comprise 8 Bachelor's and 1 Associate. Additionally, 21 industry-hired trainers fill roles on contract from industries. Kratie's TVET institution provides a variety of technical and agriculture-related programs. Electrical wiring and AC servicing courses align well with available electrical and electronics trainers. IT and agribusiness courses correspond to the institution's expertise in IT, agronomy, and veterinary fields. However, welding, automotive servicing, and beauty servicing are offered despite lacking specialised trainers in these areas, indicating skill gaps. Cashew processing is not currently offered (no cashew/agro-processing course is listed), despite the province's role in cashew production. By contrast, electrical/electronic training (e.g. wiring, AC servicing) is prominent and supported by qualified trainers.

Table 8: Trainer's Profiles (Kratie)

Descriptions	Qualification	Major (Number)	Total Number
Management, Office Staff & Non- Trainers	Master's degree	Management (1)	1
	Bachelor's degree	IT (2) Civil Engineering (2) Management (1) English (1) Fishery (2) Veterinary Science (1)	9
Management, Office Staff and/or Trainers (Civil Servants)	Bachelor's degree	Tourism (1) Electronics Engineering (1) Agronomy (1) Veterinary Science (1) Electrical Engineering (2) IT (2)	8
	Associate degree	Diploma in Electronics (1)	1
	Non-university degree	Beauty servicing (1)	2

Assessment of TVET Alignment with Regional Economic Needs in Northeast Cambodia

		Motorcycle Servicing (1)	
Trainers (Hired from Industry)	Non-university degree	Auto Mechanics (1) Beauty Servicing (3) Motorcycle Servicing (1) Welding (3) Cooking (5) Masonry (5) Man's haircut servicing (3)	21
Total			42

Table 9: Enrolment Number (Kratie Province)

Occupations/Skills	Number of Students Registered											
	Vocational Certificate			Certificate 1, 2,3			Diploma and Higher			Total		
	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
Installation of electrical wiring in buildings	30	-	-	22	39	19	-	-	-	52	39	19
Domestic refrigerator air-condition service	30	-	-	-	87	-	37	41	32	67	128	32
Welding	30	-	-	40	-	-	-	-	-	70	-	-
Computer Hardware Maintenance and Repair	-	-	-	20	-	-	-	-	-	20	-	-
ARC welding	-	-	-	80	35	120	-	-	-	80	35	120
Automotive servicing	-	-	-	10	62	18	-	-	-	10	62	18
Computer servicing	-	-	-	51	74	10	-	-	-	51	74	10
Motorcycle servicing	30	-	-	-	43	20	-	-	-	30	43	20
Masonry	30	-	-	124	40	266	-	-	-	154	40	266
IT	-	-	-	-	-	-	63	64	51	63	64	51
Use of agricultural poisoning products	40	-	-	-	-	-	-	-	-	40	-	-
Post-harvest processing	60	-	-	-	-	-	-	-	-	60	-	-
Produce soy milk	40	-	-	-	-	-	-	-	-	40	-	-
Produce dishwashing soap	40	-	-	-	-	-	-	-	-	40	-	-
Beauty servicing	-	-	-	40	90	67	-	-	-	40	90	67
Service	15	-	-	-	-	-	-	-	-	15	-	-
Man's Haircut Servicing	-	-	-	-	73	25	-	-	-	-	73	25
Khmer Cuisine	-	-	-	-	-	145	-	-	-	-	-	145
Total	345	-	-	387	543	690	100	105	83	832	648	773

7.2.2. Mondulkiri Province

Mondulkiri's TVET training centres have only 14 staff. This includes 1 Master's holder (Administration) and 7 Bachelor's (Electrical Engineering, IT, English Literature, Electronic Engineering, Khmer Literature, Veterinary Science). It also has 3 Associate-degree instructors (General Mechanics, Automotive Mechanics), and 3 industry-hired trainers.

Programs emphasize electrics, electronics and mechanics. For example, Building Electrical Wiring is well matched by the 3 electrical and electronics-trained staff. Motorcycle servicing and ARC welding are supported by the 3 mechanics-qualified instructors. In contrast, Beauty Servicing and food-processing courses have no dedicated trainers listed, implying these rely on general or part-time instructors. Cashew processing is not offered at all (no cashew courses in Mondulkiri), and if there is demand, there are not enough human resources to provide these courses. Given the staff profile, Mondulkiri training centre could further prioritise IT and mechanical trades. The presence of IT-trained instructors supports expanding digital literacy and computer courses. Beauty and hospitality services show demand but need qualified instructors; recruiting a cosmetology trainer would fill this gap. Continuing to develop mechanics and auto trade training is also a good option with the current capability of staff.

Table 10: Trainer's Profiles (Mondulkiri Province)

Descriptions	Qualification	Major (Number)	Total Number
Management, Office Staff and/or Trainers (Civil Servants)	Master's degree	Administration (1)	1
	Bachelor's degree	Electrical Engineering (2) IT (1) English Literature (1) Electronic Engineering (1) Khmer Literature (1) Veterinary Science (1)	7
	Associate degree	General Mechanics (2) Automotive Mechanics (1)	3
Trainers (Hired from Industry)	Bachelor's degree	IT (2) Public Administration (1)	3
Total			14

Table 11: Enrolment Number (Mondulkiri Province)

Occupations/Skills	Number of Students Registered											
	Vocational Certificate			Certificate 1, 2,3			Diploma and Higher			Total		
	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
Computer Servicing	30	-	-	-	81	34	-	-	-	30	81	34
Building Electrical Wiring	51	-	-	19	41	-	-	-	-	70	41	-
Motorcycle Servicing	56	-	-	-	-	12	-	-	-	56	-	12
ARC welding	15	-	-	-	30	-	-	-	-	15	30	-
Beauty Servicing	41	-	-	-	-	26	-	-	-	41	-	26

Assessment of TVET Alignment with Regional Economic Needs in Northeast Cambodia

Processing pickled cabbage	40	-	-	-	-	-	-	-	-	40	-	-
Produce dishwashing soap	60	-	-	-	-	-	-	-	-	60	-	-
Man's Haircut Servicing	-	-	-	18	40	-	-	-	-	18	40	-
Electrical wiring	-	-	-	-	-	-	2	16	19	2	16	19
IT	-	-	-	-	-	-	21	21	19	21	21	19
Total	293	-	-	37	192	72	23	37	38	353	229	110

7.2.3. Rattanakiri Province

Ratanakiri employs 22 management and staff. Management and office staff include 2 Master's and 1 BSc. Civil servant trainers include 4 Master's and 8 BSc. There is 1 Associate degree holder. Industry-hired trainers add 2 BSc in Electrical Engineering and IT, 1 Associate degree holder in Electrics, and 3 non-university specialists.

Ratanakiri's provincial training centre offers both agro and technical programs. Cashew farming and aquaculture match its agronomy and veterinary staff. Electrical courses are taught by the electrical-engineering instructors. Motorcycle servicing and welding are present, supported by the mechanical trainers. Conversely, sewing and masonry are offered with no textile or construction specialists listed, indicating gaps in those areas. The province clearly prioritises cashew and other agro-industrial training as its curriculum includes a dedicated cashew course, consistent with national emphasis. Also, the electronics and electrical skills are appropriate as large wiring programs are offered, and the training institution has electrical engineering faculty. In addition, focusing on auto repair and mobile electronics (existing industry-trainer areas) is reasonable given local interest.

Table 12: Trainer's Profiles (Rattanakiri)

Descriptions	Qualification	Major (Number)	Total Number
Management, Office Staff & Non-Trainers	Master's degree	General Management (1) Public Administration (1)	2
	Bachelor's degree	Agronomy (1)	1
Management, Office Staff and/or Trainers (Civil Servants)	Master's degree	Education (1) Khmer Literature (1) Management (2)	4
	Bachelor's degree	Veterinary (2) Agronomy (1) Civil Engineering (2) Law (1) Fishery (1) Aquaculture (1)	8
	Associate degree	Accounting (1)	1
Trainers (Hired from Industry)	Bachelor's degree	Electrical engineering (1) IT (1)	2
	Associate degree	Diploma in Electrics (1)	1
	Non-university degree	Beauty servicing (1) Automotive servicing (1) Man's haircut servicing (1)	3
Total			22

Table 13: Enrolment Number (Rattanakiri Province)

Occupations/Skills	Number of Students Registered											
	Vocational Certificate			Certificate 1, 2,3			Diploma and Higher			Total		
	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
Computer Servicing	15	-	-	99	43	-	-	-	-	114	43	-
Garment Sewing	15	10	-	-	-	-	-	-	-	15	10	-
Motorcycle Servicing	35	1	-	-	74	40	-	-	-	35	75	40
Building Electrical wiring	50	1	-	21	146	111	-	-	-	71	147	111
Water-based vegetable plantation	40	-	-	-	-	-	-	-	-	40	-	-
Rubber plantation	20	-	-	-	-	-	-	-	-	20	-	-
Beauty Servicing	48	39	-	30	138	70	-	-	-	78	177	70
Diploma in Electric	-	-	-	-	-	-	16	50	38	16	50	38
Computer Science	-	-	-	-	-	-	52	25	48	52	25	48
Diploma in construction	-	-	-	-	-	-	-	10	-	-	10	-
Man's Haircut Servicing	-	3	-	-	83	36	-	9	-	-	95	36
Computer Graphic designing	-	4	-	-	24	-	-	-	-	-	28	-
Phone repair servicing	-	1	-	-	-	-	-	-	-	-	1	-
Masonry	-	-	-	-	17	-	-	-	-	-	17	-
Planting, caring for and harvesting mango trees	-	-	-	-	18	-	-	-	-	-	18	-
Welding	-	-	-	-	15	-	-	-	-	-	15	-
Catfish farming and harvesting	-	-	-	-	-	163	-	-	-	-	-	163
Planting, caring for and harvesting Cashews	40	-	-	-	-	93	-	-	-	40	-	93
Total	263	59	-	150	558	513	68	94	86	481	711	599

7.2.4. Stung Treng Province

The provincial training centre in Stung Treng has 14 management and staff. Management and office staff include 1 BSc and 1 Associate degree. Civil servant trainers consist of 4 Master's and 4 BSc, plus 1 Associate degree. There are 3 industry-hired trainers as well.

This provincial training centre offers very high enrolment in beauty and hospitality, including Beauty Servicing (304 total) and Men's Hair (234), but no staff has formal cosmetology credentials (courses rely on outside trainers). Major agricultural courses – cashew cultivation (188) and catfish farming (98) – are present and have agronomy and veterinary instructors available. In contrast, electrical wiring (86) and IT/computer (62) courses are offered with no dedicated instructors in electrical or IT, showing a significant mismatch.

Training in cashew processing or harvesting is a clear local focus and aligns with national policy, but Stung Treng provincial training centre's staff include only one agronomy expert, which may be

insufficient for nearly 200 cashew trainees. Electronics and electrical training are offered but unsupported by staff.

The extremely high demand for beauty/hospitality suggests prioritising qualified instructors in that sector. Continuing support for mechanical trades (welding, motorbike repair) is sensible given existing staff and enrolments.

The critical gaps are electrical and ICT instructors – no staff with those skills teach the wiring or IT courses. Hiring trainers in electronics/electrics and computer science is essential. Additionally, expanding agro-processing (fruits, vegetables, fish products) is recommended to leverage agronomy expertise and align with national agri-tech goals.

Table 14: Trainer's Profiles (Stung Treng Province)

Descriptions	Qualification	Major (Number)	Total Number
Management, Office Staff & Non-Trainers	Bachelor's degree	Civil Engineering (1)	1
	Associate degree	Mathematics (1)	1
Management, Office Staff and/or Trainers (Civil Servants)	Master's degree	Management (2) Education (1) Public Administration (1)	4
	Bachelor's degree	Agronomy (1) General Mechanics (1) Management (1) Veterinary Science (1)	4
	Associate degree	Diploma in Construction (1)	1
Trainers (Hired from Industry)	Non-university degree	Motorcycle servicing (1) Beauty servicing (1) Men's haircut servicing (1)	3
Total			14

Table 15: Enrolment Number (Stung Treng)

Occupations/Skills	Number of Students Registered											
	Vocational Certificate			Certificate 1, 2,3			Diploma and Higher			Total		
	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
IT	-	-	-	-	-	-	29	12	29	29	12	29
Electrics	-	-	-	-	-	-	9	-	-	9	-	-
Accounting and Finance	-	-	-	-	-	-	26	10	-	26	10	-
Computer servicing	15	-	-	54	120	142	-	-	-	69	120	142
Building Electrical wiring	30	-	-	56	107	16	-	-	-	86	107	16
ARC welding	-	-	-	18	7	35	-	-	-	18	7	35
Motorcycle servicing	-	-	-	12	125	70	-	-	-	12	125	70
Computer Graphic designing	-	-	-	25	46	43	-	-	-	25	46	43

Assessment of TVET Alignment with Regional Economic Needs in Northeast Cambodia

Domestic Refrigerate Air-Condition Service	-	-	-	-	34	-	-	-	-	-	34	-
Masonry	15			27	-	42	-	-	-	42	-	42
Beauty servicing	-	-	-	-	304	169	-	-	-	-	304	169
Man's haircut servicing	-	-	-	-	75	159	-	-	-	-	75	159
Administration servicing	-	-	-	-	-	29	-	-	-	-	-	29
Salted duck egg processing	20	-	-	-	-	-	-	-	-	20	-	-
Grafting processing	20	-	-	-	-	-	-	-	-	20	-	-
Catfish farming and harvesting	-	-	-	-	-	98	-	-	-	-	-	98
Planting, caring for and harvesting Cashews	-	-	-	-	-	188	-	-	-	-	-	188
Fruit and Vegetable Processing	40	-	-	-	-	17	-	-	-	40	-	17
Total	140	-	-	192	818	1,008	64	22	29	396	840	1,037

7.2.5. Preah Vihear Province

The training institution in Preah Vihear employs 24 management and staff. Its management and office staff cadre includes 6 BSc, 2 Associate and 1 MSc. Civil servant trainers add 9 BSc and 3 Associate. Industry trainers contribute 3 more resources.

This institution offers a blend of tech trades and agro-industrial supporting programs. Its major electrical and electronics courses (e.g. Building Wiring and ARC Welding) are well covered by staff with electrical and mechanical expertise. Masonry aligns with the civil and construction instructors. IT and computer courses match the IT-educated resources. Significant agro-related courses – Food Processing and Vegetable Plantation– correspond to agronomy and aquaculture staff in training institutions. Beauty and Haircut programs exist, but no qualified beauty instructor is on staffs but hired from the private sector. The training institution in Preah Vihear does not currently offer cashew-specific training, despite being a cashew-producing province. Electronics and electrical skills (wiring, electronics assembly) are emphasised and appropriately matched because the institute has both electrical engineering and IT personnel to teach those courses. Given the staff profile, prioritising electronics and electrical and agro-processing seems aligned with capacity.

The robust beauty/hairstyling program suggests adding a formal cosmetology instructor. Sustaining IT and automotive training is logical given the personnel. Further development of agro-enterprise courses (fruit/rubber processing, eco-tourism) would align with national diversification goals.

Table 16: Trainer's Profiles (Preah Vihear Province)

Descriptions	Qualification	Major (Number)	Total Number
Management, Office Staff & Non-Trainers	Bachelor's degree	Management (1) Agronomy (1) Aquaculture (1) Veterinary science (2) Accounting (1)	6
	Associate degree	Civil Engineering (1) IT (1)	2
Management, Office Staff and/or Trainers (Civil Servants)	Master's degree	Management (1)	1
	Bachelor's degree	Veterinary science (1) IT (1) Aquaculture (1) Marketing (1) Agronomy (1) Electronic Engineering (1) Civil Engineering (1) Electrical Engineering (2)	9
	Associate degree	General Mechanics (2) Automotive Mechanics (1)	3
Trainers (Hired from Industry)	Bachelor's degree	Management (1) IT (2)	3
Total			24

Table 17: Enrolment Number (Preah Vihear)

Occupations/Skills	Number of Students Registered											
	Vocational Certificate			Certificate 1, 2,3			Diploma and Higher			Total		
	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
IT	-	-	-	-	-	-	25	14	27	25	14	27
Electrical	-	-	-	-	-	-	25	13	-	25	13	-
Masonry	45	-	-	-	30	82	-	-	-	45	30	82
Building Electrical wiring	15	-	-	138	98	60	-	-	-	153	98	60
ARC welding	15	-	-	-	30	57	-	-	-	15	30	57
Motorcycle Servicing	30	-	-	26	65	48	-	-	-	56	65	48
Small Engine servicing	15	-	-	16	-	21	-	-	-	31	-	21
Computer Servicing	30	-	-	56	211	114	-	-	-	86	211	114
Computer Graphic designing	-	-	-	23	-	-	-	-	-	23	-	-
Beauty Servicing	-	-	-	40	81	99	-	-	-	40	81	99
Domestic Refrigerate Air-Condition Service	-	-	-	25	73	24	-	-	-	25	73	24
Khmer food cooking	-	-	-	-	-	60	-	-	-	-	-	60

Assessment of TVET Alignment with Regional Economic Needs in Northeast Cambodia

Food processing	80	-	-	-	-	-	-	-	-	80	-	-
Vegetable plantation	100	-	-	-	-	-	-	-	-	100	-	-
Fertilizer processing	40	-	-	-	-	-	-	-	-	40	-	-
Grafting processing	40	-	-	-	-	-	-	-	-	40	-	-
Total	410	-	-	324	588	565	50	27	27	784	615	592

7.3. Potential Industries

7.3.1. Electronic and Electrical Sub-Sector

7.3.1.1. Skill Mismatches and Workforce Readiness

The Electrical and Electronic sub-sector presents a strategic opportunity for inclusive employment and micro-enterprise growth across selected provinces for the study. Driven by rural electrification targets, solar energy proliferation, and household appliance demand, the sector shows strong grassroots potential. However, realising this potential is undermined by a fragmented skills ecosystem and informal hiring patterns.

A dominant theme emerging from stakeholder interviews was the widespread perception of a skills mismatch between TVET graduates and employer expectations, particularly in the electrical and electronic sub-sector. Employers frequently criticised the practical competencies of graduates, noting that while most had foundational knowledge, they lacked real-world problem-solving skills. Trainers and students consistently pointed to the same problem. As one instructor in Stung Treng explained,

“Most of the skills we lack are cutting concrete walls for laying electrical networks. Currently, our practice is on wooden boards” (TVET Interview, Stung Treng, 2025).

Such indication of shortcoming is not a minor gap in technique. It reflects a fundamental flaw in the design of training environments. Learning electrical work on wooden boards eliminates the need to handle dust, noise, vibration, and the physical constraints of real buildings. As a result, graduates are unaccustomed to working in tight spaces, planning cable runs around structural elements or integrating installations with other building trades. The absence of realistic training conditions erodes confidence and forces employers to either reject inexperienced applicants or shoulder additional training costs, both of which hinder workforce integration.

The gap between intended skills outcomes and actual graduate capacity is reinforced by severe resource and infrastructure limitations in training institutions. TVET providers openly acknowledged these constraints. A trainer in Ratanak Kiri noted that there is a shortage of equipment, which forces students to work in large groups, meaning they get very limited hands-on time.

“The centre is very small... practice materials are not enough... we only have 2 to 3 control boards, but the standard for 30 students is from 10 up” (TVET Interview, Ratanakiri, 2025).

For example, if 10 students share one control board, each might spend only a few minutes actually wiring or troubleshooting, while the rest observe. Observation can build theoretical understanding but does not develop the tactile skills, troubleshooting instincts, and problem-solving speed required in the workplace. Space constraints also mean that practice rooms cannot be set up to simulate varied work

environments. Students themselves expressed frustration at the disconnect between classroom learning and what is required in the labour market. During a focus group in Kratie, one student explained,

“At school, we learn to connect wires on a board, but outside we actually have to connect them to walls... which we never learned at school” (FGD, Student, Kratie, 2025).

It shows that the TVET system’s practical training components are not contextually aligned with workplace realities. The lack of exposure to authentic tasks during training means that the first-time graduates encounter these challenges is after they are hired. It also undermines graduates’ self-confidence, as they enter the workforce feeling unprepared, which in turn can affect retention. Over time, this can discourage prospective students from enrolling if they perceive that the training will not lead to immediate employability.

While there is an emerging issue persist at the supply side, employer expectations also extend beyond C1-level competencies, with many enterprises demanding more advanced technical skills. In Stung Treng, a trainer summarising enterprise feedback said,

“Enterprises want... setup of distribution, finding faults, operating air conditioners... what they need is a level from C2 and up—ATS system setup, automatic power, state power and generator layout” (TVET Interview, Stung Treng, 2025).

“C1-level students learn foundational technical skills that are fragmented and do not meet the actual needs of the current job market. For example, in electrical work, there is a real need for combined skills with air conditioning. Therefore, the school should consider adding or further developing the curriculum to a higher level to give students a strong foundation and make it easier for them to find a job” (Employer- Mondulkiri, 2025)

From this, it reveals a structural misalignment between the current training structure and the labour market’s actual demand. The standard C1 program, often lasting four months, is sufficient for basic wiring and installation but does not cover advanced diagnostics and automation. This limits graduates to low-skill, low-wage jobs and forces employers seeking advanced skills to either recruit from other provinces or invest heavily in post-hire upskilling.

The skills gap is not purely technical. Trainers in several provinces emphasised that soft skills are equally challenging. As one instructor in Preah Vihear put it,

“The most difficult thing is soft skills—communication, honesty in work, discipline... it is really difficult” (TVET Interview, Preah Vihear, 2025).

Soft skills gaps compound the technical deficits by affecting workplace integration and career progression. Employers repeatedly note that punctuality, reliability, and communication are just as critical as technical know-how. A graduate who cannot communicate effectively with supervisors, follow safety protocols, or manage time efficiently can slow down projects and compromise quality. The absence of structured soft skills training within TVET programs means these competencies are left to chance: either students develop them through personal experience, or they do not, which creates uneven workforce readiness.

The Provincial Training Boards (PTBs) pointed to governance barriers that make it difficult to adjust training to local needs. In Kratie, one representative explained,

“However, the curriculum is still based on the ministry’s prepared curriculum; however, the committee leader often raises these issues in the meetings” (PTB Interview, Kratie, 2025).

Similarly, in Ratanak Kiri, another PTB official stated,

“There is feedback from some private enterprises, but the curriculum is still provided by the ministry, so there is little program modification that can be done at the provincial level” (PTB Interview, Ratanakiri, 2025).

This centralisation means that emerging trends in the local labour market cannot be quickly incorporated into training programs. The curriculum may be well-designed at a national level, but if it does not match the tools, methods, and technologies used locally, graduates will remain out of sync with employer needs. This rigidity also discourages active collaboration between TVETs and local firms, since stakeholders may believe that their input will not lead to actionable changes. Efforts to link TVET institutions with enterprises do exist but are often shallow and unsustainable. In Stung Treng, a school reported that most of its industry contacts are with micro and small enterprises:

“We have approximately 104 enterprises... most are micro and small... we do not have much contact with medium and large enterprises” (TVET Interview, Stung Treng, 2025).

In Preah Vihear, a trainer admitted,

“We don’t have a mechanism or form to record the feedback; we just take notes and tell the teacher” (TVET Interview, Preah Vihear, 2025).

The reliance on informal, ad-hoc partnerships means that student placements, internships, and industry exposure are inconsistent. Partnerships with small firms are valuable but may not expose students to more advanced equipment, processes, or quality standards found in medium and large enterprises. The absence of a formal feedback mechanism further weakens the ability of TVETs to systematically improve training content or delivery. These findings essentially emphasise that the training–employment disconnect is not the result of isolated inefficiencies or individual shortcomings but rather the outcome of a fragmented and under-coordinated skills and training ecosystem. Employers are willing but unsupported in their engagement; TVETs are committed but under-resourced; students are motivated but underprepared for real-world transitions; and PTBs hold a formal mandate but lack the authority to shape curricula to provincial realities. The constellation of these constraints produces a cyclical mismatch where even well-intentioned initiatives fail to generate lasting improvements in decent employability.

Table 18: Top Five Skill Gaps in Electrical and Electronics Sub-Sector

Skill Gap	Description
Electrical Wiring and Installation	Core skill for building electrical networks, fundamental to most jobs

Troubleshooting and Maintenance	Practical problem-solving and repair skills, often lacking among graduates
Refrigeration Equipment Skills	Installation and repair of air conditioners and cooling systems, growing demand
Security Camera System Installation	Setup and maintenance of surveillance systems, emerging need
Soft Skills (Communication, Discipline, Work Ethic)	Critical for workplace integration, teamwork, and reliability

Source: Author's elaboration

7.3.1.2. Formal and Informal Hiring Trend

A clear consensus emerged among key informants interviewed with employers, students, PTBs, and TVET schools that informal hiring in the selected provinces. The hiring process deeply depended on informal and trust-based hiring processes, prioritising familiarity, referrals, and field performance over formal qualifications, especially among small firms. This will perpetually create barriers for job seekers without existing personal networks, including many TVET graduates.

From the perspective of TVET institutions, this informal recruitment culture limits the scope and scale of work-based learning placements. A TVET interviewee from Preah Vihear noted,

“Only family-run. Some families have 1 or 2 employees. We mostly contact him about electrical networks; he takes our students to do internships, and also about air conditioning. In 2024, there are not many electrical sectors, 3 or 4 in the province.” (TVET Interview, Preah Vihear, 2025)

The constraints in the industrial landscape in provincial regions are dominated by very small family-run enterprises with limited capacity to host interns or provide diverse practical experience. Such limitations inhibit the ability of TVET trainees to gain exposure to real-world challenges, thereby deepening the gap between acquired skills and employer needs. In addition, the effort has been made and to formalise and expand collaborations between TVET institutions and enterprises are gradual and face structural challenges. For example, A deputy director from Stung Treng remarked,

“Most of the enterprises in the region are partners of the centre, but we continue to increase cooperation gradually according to the instructions of the director of the centre. Because the number of students trained is small each year, and the number of enterprises in the region has not increased much.” (TVET Interview, Stung Treng, 2025)

“For the private sector, there must be incentives and benefits for them as well. If we pressure them, they will not participate. As we know, in the private sector, they participate but do not receive a salary. If we make them join us forever, it may waste their time.” (TVET Interview, Preah Vihear, 2025)

Based on the findings above, collaboration with enterprises is inherently voluntary and contingent on mutual benefits. Private firms, especially small and micro enterprises, are unlikely to allocate time or resources to formal training collaborations without clear financial, reputational, or regulatory incentives.

7.3.1.3. Work-based Learning Availability

Work-based learning (WBL) is widely recognised as a crucial bridge connecting classroom theory with practical workplace skills, especially in technical fields like the Electrical and Electronic sub-sector. However, the current structure of WBL limits the potential benefits due to its short duration. Internships typically last only three weeks, which is often insufficient for students to fully grasp the complexities of real work environments or to develop confidence and autonomy in performing tasks.

Students' perspectives highlight the value of WBL arrangements. During a focus group discussion in Kratie, a student noted,

“The theory classes have not yet finished, and it is time to start the internship, but the teacher has allowed the students to take them on practical work with him during their free time, which has allowed the students to gain work experience and the teacher's own techniques” (FGD, Student, Kratie, 2025).

This testimony underscores the experiential learning benefits that internships can provide, clarifying concepts, enhancing practical skills, and exposing students to workplace dynamics. Yet, the brevity of internships and limited task involvement could undermine their effectiveness.

TVET institutions themselves acknowledge the importance of active monitoring and support during internships to maximise benefits. A marketing officer explained,

“When we do internships, we have our officers follow up with both the enterprise and the students. Because at first there are always problems, we go down to collect and monitor information related to our students” (TVET Interview, Stung Treng, 2025).

It is essential to raise awareness within institutions of the need to maintain communication channels and resolve emerging challenges during internships. However, such follow-ups tend to be reactive and rely heavily on individual staff capacity rather than being embedded within a standardised system, potentially limiting consistent quality assurance. This ad hoc monitoring may leave gaps in the internship experience unaddressed, reducing the potential for students to gain sustained, practical insights and for enterprises to effectively integrate interns into their workflows.

7.3.2. Cashew Sub-Sector

7.3.2.1. Skill Mismatches and Workforce Readiness

Stakeholder interviews, particularly employer, cashew-producers in Preah Vihear, Rattakiri and Katie, indicate a sub-sector rich in economic potential yet burdened by deep structural mismatches between workforce supply and enterprise needs. The cashew sub-sector is notable for its high demand, expanding production volumes in recent years, and emerging semi-industrial processors. However, these gains have not yet translated into broad-based local employment or value-added transformation. Multiple TVET institutions confirmed that their current curricula do not include these agricultural and processing skills, creating a fundamental gap between education and industry requirements. As a TVET instructor in Preah Vihear remarked,

“The institute does not teach skills in planting, maintaining, and harvesting cashews” (TVET Interview, Preah Vihear, 2025).

“Curriculum and programs do not currently include cashew processing or related technical skills” (PTB Interview, Ratanak Kiri, 2025).

Low enrollment interest and student motivation further compound this skills deficit. Many potential trainees and their families perceive cashew-related work as traditional and low-paying, preferring jobs with more immediate financial returns. A TVET representative in Stung Treng observed,

“Most trainees gave feedback that they were not interested because it would not provide income to support their families” (TVET Interview, Stung Treng, 2025).

This perception creates recruitment challenges for training providers, who struggle to attract youth to agricultural technical courses despite local and regional economic growth opportunities in the cashew sub-sector. It also signals a need for awareness campaigns and incentives to reframe agriculture as a viable and modern livelihood option.

Table 19: Areas of skill gap and mismatch in cashew sub-sector

Skills	Description
Motor Repair and Maintenance	Essential for machinery upkeep in cashew processing plants
Basic Processing Operations	Skills related to sorting, drying, and packaging cashew nuts
Quality Control Awareness	Understanding standards for product quality and consistency
Agricultural Maintenance	Basic skills in maintaining trees and farm equipment
Soft Skills (Work Discipline, Reliability)	Important for consistent productivity and workplace behaviour

Source: Author’s elaboration

Another significant issue related to the shortage of qualified teachers specialising in cashew-related skills was a recurrent theme across provinces. Several TVET officials indicated that without technical instructors who possess both theoretical knowledge and practical experience in cashew farming and processing, the quality and relevance of any training program would be severely compromised.

Finally, weak linkages between TVET institutions and cashew industry actors limit the ability to co-design curricula, facilitate internships, and ensure skills training meets real market demands. Enterprises expressed limited engagement with schools, and opportunities for hands-on learning or job placement remain minimal. A provincial official in Ratanak Kiri highlighted this disconnect:

“Private sector involvement is limited; schools lack cooperation with cashew companies for internships or curriculum input” (PTB Interview, Ratanak Kiri, 2025).

To sum up, these findings illustrate that skill gaps and mismatches, and workforce readiness challenges in the cashew sub-sector stem from a combination of curriculum omissions, teacher shortages, low trainee interest, infrastructural limitations, and fragmented industry linkages. Addressing these issues requires coordinated efforts to develop specialised training programs, attract and retain qualified instructors, raise awareness about agricultural career prospects, and build durable partnerships between TVET providers and the cashew industry.

7.3.2.2. Formal and Informal Hiring Trend

It is similar to the electrical and electronics sub-sector. In the cashew sub-sector, informal hiring practices are similarly prevalent, reflecting the agricultural nature of the industry and local community dynamics.

“We decided to select students from some schools and find some more outside through our network of friends, siblings, relatives, etc. in case we lack the strength to work.” (Enterprise Interview, Stung Treng, 2025)

This finding demonstrates the frequent integration of hiring decisions into familial and social networks, which serve as informal labour markets in rural and agro-industrial settings. In areas where formal recruitment infrastructure is inadequate or non-existent, these networks are essential for the procurement of dependable labour. Nevertheless, these hiring methods may exclude individuals who lack access to these networks, thereby restricting equitable labour market access and potentially perpetuating underemployment or precarious work conditions.

7.3.2.1. Work-based Learning Availability

Work-based learning in the cashew sub-sector faces distinct challenges compared to the electrical and electronic sub-sector, largely due to the sector’s structure and the nature of its labour demand. Unlike EE, where technical internships and practical skill development are somewhat more institutionalised, the cashew sub-sector, primarily agro-processing and farming, relies heavily on informal labour and seasonal work, which complicates formalised WBL opportunities. Enterprises in the cashew sub-sector often depend on daily workers rather than skilled interns or apprentices, which restricts the scope for structured internship programs. A representative from a cashew processing company in Ratanakiri observed:

“The cashew companies mainly need labourers for harvesting and processing; they do not have structured programs for interns or trainees” (Enterprise Interview, Ratanakiri, 2025).

The scarcity of formal WBL placements in the cashew sub-sector forces students either into low-skilled casual labour or to seek employment in unrelated fields, contributing to skill underutilization and job dissatisfaction. This situation also underlines the limited integration between TVET institutions and the agro-processing industry.

“There is very little chance to do internships related to cashew processing. Most of us end up working as general workers or leave to find other jobs” (FGD, Student, Mondulakiri, 2025).

Provincial Training Boards (PTBs) acknowledge the challenges in establishing sustainable WBL in the cashew sub-sector, largely due to the informality of the labour market and weak enterprise engagement. A PTB official from Ratanakiri noted:

“It is difficult to organise internships in the cashew sub-sector because many enterprises are small and family-run without formal HR systems or training programs” (PTB Interview, Ratanakiri, 2025).

7.4. Synthesis of Private Sector Engagement

7.4.1. Electrical and Electronic Sub-Sector

Willingness to partner with TVET

Based on our interview with employers and literature, willingness of private sector actors in the electrical and electronic sub-sector to partner with TVET institutions is generally positive but tempered by practical concerns. Employers recognise the importance and often emphasise that a stronger link with TVETs could help bridge the persistent skills gaps they experience, particularly in practical competencies and applied problem-solving. Many express eagerness to contribute to training but cite challenges such as limited time, resources, and unclear incentives as barriers to deeper engagement. This cautious openness is often shaped by past experiences where collaborations were short-lived or project-driven without sustainable follow-up, leading to scepticism about the long-term benefits of partnerships. Furthermore, smaller enterprises, which dominate the sector, tend to rely more on informal networks for recruitment and training, limiting their engagement with formal institutions. The willingness to partner therefore varies by enterprise size and capacity. Building sustained partnerships will require clear articulation of mutual benefits, such as reducing recruitment costs, tailoring training to real job requirements, and enhancing workforce productivity. PTBs and government intermediaries have a critical role in brokering trust and providing enabling policies to incentivise private sector involvement.

Ability to Offer Internship

Private sector firms in the electrical and electronics sub-sector demonstrate varying capacities to offer internships, influenced largely by their size, resources, and operational complexity. Larger firms and formal enterprises generally have more structured environments and supervisory capabilities, making them better positioned to host interns who can gain exposure to practical, job-specific skills. However, concerns persist over the costs associated with mentoring interns, potential disruptions to production, and the short duration or quality of existing internship programs. Many small and micro firms, while willing to provide on-the-job learning, often lack formal internship programs due to limited managerial capacity and high day-to-day operational demands. The shortage of clear frameworks for internship agreements, monitoring, and evaluation further constrains the scale and effectiveness of these placements. From the training providers' perspective, this restricts the availability of authentic work-based learning critical for bridging classroom theory and workplace practice. Policy incentives, capacity-building for supervisors, and formalised internship models adapted to enterprise scale and capability could expand opportunities and improve quality.

Table 20: Summary of key challenges in private sector engagement with TVET

Key Challenges	Summary	Challenges
Willingness to Partner with TVET	Generally positive but cautious; smaller firms rely on informal networks; past short projects cause scepticism.	Limited time, resources, unclear incentives.
Ability to Offer Internships	Larger firms better equipped; small firms willing but lack capacity; unclear frameworks limit quality.	Managerial limits; costs; lack of formal models.
Skill Development	Need advanced technical and soft skills beyond basics; current curricula outdated.	Outdated curricula; weak teacher capacity.
Linkages Between Sector & Training	Weak, informal links cause mismatch; poor feedback and collaboration mechanisms.	Lack of formal structures; poor feedback loops.

Source: Author's elaboration

Skill Development to Enhance Value Addition

The electrical and electronics sub-sector faces rapidly evolving technology demands, especially with the growth of renewable energy systems, smart appliances, and industrial automation. Current skill development often remains focused on traditional competencies such as electrical wiring and basic equipment maintenance, which inadequately prepare workers for emerging value-added roles requiring advanced technical knowledge and adaptability. Strategic skill development must therefore encompass not only core technical skills but also digital literacy, troubleshooting complex systems, safety standards, and energy efficiency technologies. Additionally, soft skills like problem-solving, communication, and teamwork are increasingly vital to meet modern workplace expectations. Aligning TVET curricula with these advanced and holistic skill sets necessitates active private sector input, investment in updated training infrastructure, and continuous teacher capacity development. Incorporating modular, competency-based training that allows workers to upskill progressively can enhance workforce agility and industry competitiveness.

Linkages between Private Sector and Training Institution

Linkages between EE firms and training institutions remain underdeveloped and often opportunistic, lacking the regularity and formal mechanisms needed to adapt training to real-time labour market needs effectively. Communication is frequently informal or mediated through government agencies without dedicated structures for collaborative curriculum development, joint internships, or research partnerships. This gap contributes to a misalignment between training outputs and industry skill requirements, especially in specialised or emerging technology areas.

7.4.2. Cashew Sub-Sector

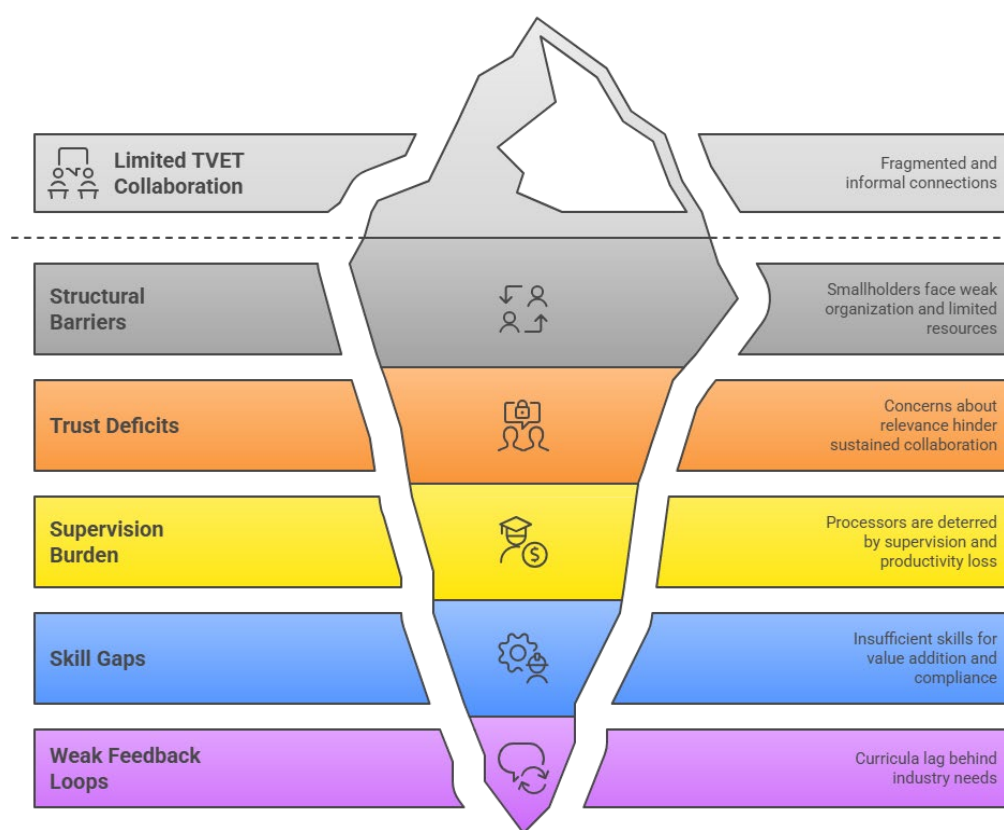
Willingness to partner with TVET

Based on our findings and desk review, the cashew sub-sector's heterogeneity demands differentiated engagement strategies; successful TVET-private sector collaboration tends to be dependent on adaptive approaches that reconcile the formal-informal divide and build trust through incremental, results-oriented partnerships since it reflects a complex interplay of opportunities to recognise the role of each stakeholder and constraints. On the one hand, larger processing firms increasingly acknowledge the value of skilled labour in maintaining product quality and meeting export standards, especially as Cambodia seeks to expand its footprint in global markets with stricter quality requirements. This recognition fosters a cautious openness to collaboration with TVETs, although this is not yet fully institutionalised or widespread across the sector. On the other hand, smallholder farmers and informal collectors, who dominate upstream production, face structural barriers limited formal organisation, weak access to information, and resource scarcity that hinder their ability to engage formally with training providers. Given such divergence between scale and formality within the sector suggests that partnership models need to be tailored: formal, contractual engagements with processors and cooperatives; flexible, community-based outreach for smallholders. Additionally, the limited history of sustained engagement has led to trust deficits and concerns over the relevance and practicality of training content. Building willingness, therefore, requires demonstrating clear value propositions such as improved labour productivity.

Ability to Offer Internship

The capacity of private sector actors in the cashew industry to provide meaningful internship opportunities is uneven and shaped by operational realities. Larger processing enterprises possess the infrastructure and organisational systems necessary to host interns, although their willingness is moderated by concerns over productivity loss, supervision burden, and limited incentives. Their internships tend to be short-term and concentrated in processing, quality control, or machinery maintenance roles, which align more closely with technical skill demands. Conversely, upstream actors such as farmers and collectors are constrained by the seasonality of production and informality, which makes formal internships rare or impractical. Addressing these gaps requires developing tailored internship models that reflect sector realities. For example, modular apprenticeships in processing plants and community-based mentorship for smallholders.

Figure 4: Private Sector Engagement Challenges of TVET collaboration



Source: Author's elaboration

Skill Development to Enhance Value Addition

The value addition in Cambodia's cashew industry remains constrained by skill deficits that permeate the entire value chain from production and post-harvest handling to processing and quality control. While basic agronomic training addresses yield and harvesting issues, enhancing competitiveness requires a paradigm shift toward more sophisticated skills that enable compliance with stringent international quality standards and certifications (e.g., organic, fair trade). These include advanced processing skills, machinery operation and maintenance, HACCP (Hazard Analysis Critical Control Point) compliance, and supply chain management. Furthermore, business and entrepreneurial skills are critical to empower actors to scale operations and improve market access.

Linkages between Private Sector and Training Institution

Based on the literature and the interview, the existing linkages between private sector actors and TVET institutions in the cashew sub-sector are embryonic and fragmented, reflecting structural and operational challenges. Communication channels are often informal and episodic, limiting the capacity for training programs to adapt swiftly to emerging skill demands or technological changes. Furthermore, TVET institutions face challenges in engaging the private sector due to limited awareness, weak incentive structures, and resource constraints on both sides. Enhancing these linkages requires deliberate policy interventions to institutionalise partnerships, including formalised roles for private sector representatives in curriculum design and quality assurance.

8. Mechanisms for Deliverable Value Chain

The deliverable value chain in Cambodia's electrical and electronic and Cashew sub-sector operates within a complex ecosystem involving TVET institutions, private enterprises, provincial training boards (PTBs), and other stakeholders. Effective functioning of this value chain is critical to ensuring that the workforce skills produced by TVET providers align with the real needs of industry, thereby enabling a seamless transition from training to employment.

The value chain mechanisms reveal a predominance of informal engagement between TVET institutions and private enterprises, especially small and micro-enterprises. Enterprises generally participate through short-term internships and occasional feedback on graduate competencies. However, medium and large enterprises, which have greater capacity to offer robust training and mentoring, remain underrepresented in collaborative efforts. This limited engagement is attributed to a lack of formal incentives for enterprises and a perception that training contributions do not translate into immediate business benefits. Coordination through PTBs exists but is hampered by weak authority and limited resources.

Table 21: Deliverable value chain in EE and Cashew sub-sector

Stakeholder	Role	Key Issues	Outcomes	Suggested Solutions
Ministry of Labour & Vocational Training	Set national competency standards and policy frameworks	Competency standards and curriculum are not up-to-date and are not responding to industrial development	Training programmes are not responding to the industry's needs.	Set specific intervals to update curriculum, and increase private sector engagement through consultation
Provincial Training Boards (PTBs)	Coordinate between industry and training providers; facilitate collaborations	Limited authority and resources; weak enforcement of quality and standards	Ineffective local adaptation of training; poor alignment with labour market demands	Strengthen PTB mandate and resources; enhance local governance and monitoring mechanisms
TVET Institutions	Deliver training, curriculum implementation, student internships Design and update training content	Training programmes are not fully responsive to local needs; insufficient trainers and equipment	Graduates with skills mismatch; limited practical exposure; training quality varies	Increase curriculum flexibility; invest in trainer capacity building; improve infrastructure and equipment; Establish continuous employer consultation mechanisms; integrate emerging technology updates
Private Sector (Enterprises)	Provide internships, feedback on graduate skills, provide employment	Limited participation from medium/large firms; mainly informal, project-based engagement	Fragmented involvement; insufficient industry exposure for students; weak	Create formal incentives for participation; develop structured internship programs; foster long-term partnerships

Stakeholder	Role	Key Issues	Outcomes	Suggested Solutions
			sustained partnerships	
Business Associations	Support partnerships, provide technical inputs, promote industry standards	Limited engagement with TVET system; insufficient advocacy for training reforms	Missed opportunities for skills alignment; fragmented coordination	Facilitate multi-stakeholder platforms; advocate for policy and resource support
Students / Graduates	Recipients of training; internship participants; workforce	Limited access to diverse practical training; low confidence and readiness for workplace demands	Skills gaps persist; difficulties transitioning to employment	Expand work-based learning opportunities; improve mentorship and career guidance

Source: Author's elaboration

Competency standard and curriculum are not up-to-date and are not responding to industrial development. Consequently, graduates may possess outdated or incomplete skills, undermining their job readiness and employability. Additionally, the short duration of many training programs limits depth and breadth of skills acquisition, particularly in specialised areas such as solar technologies and refrigeration within the electrical and electronics sub-sector.

Practical, work-based learning is widely recognised by stakeholders as a crucial mechanism within the deliverable value chain. Yet, its implementation faces considerable challenges. Internship placements are predominantly offered by small firms and family-run enterprises, limiting exposure to diverse and advanced work environments. Larger firms with more sophisticated technologies and structured training programs rarely participate actively.

9. Conclusion and Recommendations

9.1. Conclusion

This study rigorously assesses the alignment of Technical and Vocational Education and Training (TVET) programs in Northeast Cambodia with the dynamic labour market demands of the Electrical and Electronics and cashew sub-sectors. Employing qualitative interviews and focus groups involving employers, TVET trainers, Provincial Training Boards (PTBs), students, and enterprises, the study sought to illuminate sector-specific skills needs, institutional capacity, and systemic barriers.

The study reveals critical insights into the alignment of TVET programs with the labour market demands of the Northeast region's electrical and electronics and cashew sub-sectors. First, the electrical and electronics sub-sector faces a pronounced skills mismatch, characterised by a gap between theoretical knowledge and practical competencies, particularly in emerging technologies such as solar energy systems, motor controls, and refrigeration. Employers consistently report that graduates lack sufficient hands-on experience, which undermines their immediate employability and slows enterprise productivity. Second, in the cashew sub-sector, there is a significant deficiency in agribusiness

knowledge, processing techniques, and mechanisation skills required for value addition. Third, TVET institutions demonstrate strengths in providing foundational training and relevant academic programs but struggle with outdated infrastructure, limited access to industry-standard equipment, and a shortage of qualified trainers. Fourth, private sector engagement is generally positive but inconsistent, hindered by limited incentives, resource constraints, and weak institutional linkages, particularly impacting opportunities for internships and cooperative curriculum development. Finally, gender and socio-economic barriers continue to limit equitable access to TVET programs, with marginalised groups facing challenges in enrolment, retention, and transition to employment. These findings underscore the urgent need for integrated policy measures that enhance practical training, strengthen private sector partnerships, and promote inclusivity to better serve the regional economy's evolving skill demands.

Electrical and Electronic Sub-Sector

1. Addressing Skills Mismatch and Practical Training Deficiencies

Employers across provinces repeatedly cited a shortfall in practical competencies among electrical and electronic graduates. While theoretical knowledge is imparted, the scarcity of updated equipment and workshops restricts experiential learning, especially in critical emerging technologies like solar PV installation, motor control, security systems, and refrigeration. This gap not only reduces graduate employability but constrains sectoral productivity and innovation capacity. TVET curricula must be revisited to integrate comprehensive, hands-on modules aligned with industry standards and emerging technological trends. Investments in simulation labs, industry-grade tools, and partnerships for field exposure are urgently needed.

2. Strengthening Trainer Capacity and Curriculum Responsiveness

The shortage of specialised trainers who possess current industry experience and technical knowledge is a systemic challenge. Many trainers lack exposure to renewable energy technologies and advanced digital applications increasingly demanded by employers. Ongoing professional development programs, industry attachments, and curriculum co-development with enterprises can enhance trainer expertise and relevance. Modular, competency-based training frameworks that allow flexibility and continuous updating are essential to keep pace with sectoral evolution.

3. Enhancing Private Sector Engagement and Work-Based Learning

TVET-private sector linkages remain underdeveloped, particularly among the prevalent micro and small enterprises that form the bulk of the electrical and electronics sub-sector. These firms often rely on informal recruitment and have limited capacity or incentive to offer formal internships or apprenticeships. Strengthening these linkages through formalised Memoranda of Understanding, incentivization mechanisms such as tax breaks or recognition programs, and capacity-building for enterprise supervisors will expand authentic work-based learning opportunities critical for bridging theory and practice. PTBs and government actors must actively broker trust and facilitate sustained collaboration.

4. Overcoming Gender and Inclusion Barriers

Female enrollment in EE programs is disproportionately low due to socio-cultural norms, safety concerns, and lack of gender-sensitive facilities and outreach. Addressing this requires multi-pronged efforts: targeted scholarships, gender-sensitive curricula and teaching methods, mentorship programs, and workplace policies promoting female retention and career progression. Inclusive outreach campaigns involving families and communities can reshape perceptions and increase participation among marginalised groups.

Cashew Sub-Sector

1. Expanding Formal Technical Training Across the Stage of the Value Chain

Despite the cashew sub-sector playing a vital role in the economy, TVET offerings related to this sector are limited largely to labour-intensive tasks, with minimal focus on technical skills in planting, pest management, harvesting techniques, post-harvest processing, and quality control. Given the increasing demand for value-added products and export standards compliance, developing comprehensive agribusiness curricula is vital, which includes skills related to processing technology, packaging, and supply chain management.

2. Building Stronger Partnerships with Agro-Industry Actors

Engagement between TVET institutions and cashew processing enterprises remains sporadic and informal, leading to curricula that poorly reflect real-world operational needs and limited internship or apprenticeship slots for trainees. Institutionalising partnerships through joint curriculum development committees, regular feedback mechanisms, and co-designed on-the-job training models can enhance curriculum relevance and graduate job readiness. Agro-processing firms must be incentivised and supported to take active roles in skills development.

3. Tackling Access and Demand-side Constraints

Low student interest in cashew-related training stems from perceptions of agriculture as low-status, low-income, and physically demanding work, compounded by limited community and parental encouragement. Outreach strategies must emphasize to boost agribusiness career pathways, entrepreneurship opportunities, and income potential linked to modernised cashew value chains.

9.2. Recommendations

Short-term and Medium-term Recommendations by Sector

Electrical and Electronics Sub-Sector

Short-term Actions:

1. Upgrade Practical Training Facilities:

Equip TVET centres with essential tools focused on solar PV, motor control, refrigeration, and security systems to improve hands-on learning immediately.

2. Targeted Trainer Capacity Building:

Organise focused workshops and industry attachments for existing trainers to familiarise them with emerging technologies and strengthen their teaching capabilities.

3. Formalise Private Sector Linkages:

Facilitate Memoranda of Understanding (MoUs) between TVET institutions and key EE firms to pilot internship and apprenticeship programs, especially with medium-sized enterprises.

4. Gender-Sensitive Outreach:

Launch awareness campaigns targeting female students interested in EE, alongside improving safety and sanitation facilities at training centres.

5. Curriculum Quick Review:

Convene curriculum review sessions with industry representatives and PTBs to ensure immediate incorporation of priority practical modules aligned with employer needs.

Medium-term Actions:

1. Develop Modular, Competency-Based Curriculum:

Revise TVET curricula to include flexible, modular courses with ongoing updates tied to sectoral technology trends and labour market changes.

2. Establish Sustainable Industry Partnerships:

Institutionalise continuous collaboration platforms involving TVETs, PTBs, and EE enterprises to jointly develop curricula, evaluate training outcomes, and co-manage internships.

3. Expand Trainer Recruitment and Retention:

Implement incentives and career development pathways to attract and retain skilled trainers with industry experience, including competitive remuneration and professional growth opportunities.

4. Scale Gender Inclusion Measures:

Integrate mentorship programs, female role models, and workplace gender policies into EE training pathways to foster long-term female participation and career progression.

5. Enhance Monitoring and Feedback Systems:

Build robust data collection and employer feedback loops on graduate performance to continuously refine training quality and responsiveness.

Cashew Sub-Sector

Immediate Actions:**1. Introduce Basic Technical Skills Training:**

Expand TVET offerings to include immediate foundational skills in pest management, harvesting techniques, and quality control relevant to the cashew value chain.

2. Initiate Partnership Pilots with Cashew Processor:

Facilitate introductory MoUs with local cashew processors and farms to enable short-term internships and joint training events.

3. Community and Stakeholder Awareness Campaigns:

Promote agribusiness careers through local media, school visits, and role models to address negative perceptions and increase youth interest.

4. Quick Curriculum Alignment:

Collaborate with agro-industry stakeholders to update existing TVET curricula with practical modules on post-harvest processing and sustainable practices.

5. Map and Mobilise Existing Resources:

Conduct resource assessments to identify gaps in equipment and technical teachers for cashew-related training and mobilise support for immediate upgrades.

Medium-term Actions:**1. Develop Comprehensive Agribusiness Curricula:**

Create training programs covering the full value chain: planting, harvesting, processing, packaging, and marketing tailored to local industry standards.

2. Expand Access through Flexible Training Models:

Design modular, part-time, or community-based training to accommodate working youth and women, reducing barriers posed by geography and economic constraints.

3. Strengthen Career Guidance and Placement Services:

Integrate agribusiness career counselling into TVET offerings and develop linkages with markets and cooperatives to improve graduate employment outcomes.

Specific Recommendations for TVET Institutions

TVET Institutes	Recommendations
Preah Vihear Polytechnic Institute	1. Curriculum and Training Programs - The institute needs to introduce a modular cashew-processing course tailored to local agro-processing needs in partnership with processors such as Santana. Short courses (C1) should be extended, particularly in 2. Teacher Capacity and Recruitment - Immediate recruitment of contract-based teachers in refrigeration and solar technologies is essential.

	refrigeration and electronics, to meet employer expectations. • There is a demand for a new solar system installation and maintenance course to be implemented to respond to Cambodia's growing renewable energy demand. • Fostering the implementation of the recognition of prior learning (RPL)	• In parallel, existing teachers need to undergo upskilling programs through exposure visits to Phnom Penh or Siem Reap institutions. • Teacher performance must be regularly assessed using competency frameworks, ensuring accountability and alignment with national standards.
	3. Equipment and Facilities • The institute should acquire refrigeration units and cashew-processing machines for practical training while mobilising donor or provincial development funds for incremental equipment upgrades. • One underutilised workshop should be converted into a dedicated electronics and renewable energy lab, inducing a focused learning environment for high-demand skills.	4. Industry Partnerships and Internships • Within six months, the institute should foster signing formal MOUs with at least three local employers in cashew processing, solar energy, and electronics repair. These agreements should include an internship extension period. • A bi-annual provincial skills roundtable should also be established to regularly review industry needs and align training curricula.
	5. Student and Graduate Support • A graduate tracer system should be created using simple digital tools, with one staff member designated as a career services focal point. To support employability, structured job linkage mechanisms with Phnom Penh and Siem Reap employers should be developed. • In addition, close coordination with MLVT and PTB is needed to ensure timely disbursement of stipends to reduce dropout risks.	6. Policy and Governance Integration • The institute should pilot a provincial apprenticeship model with PTB endorsement, linking training with structured workplace learning. • Advocate for resource allocation, particularly in agro-processing and green skills, ensuring alignment with Cambodia's national development priorities. • It is essential that the institute establish clear key performance indicators (KPIs) to systematically track progress and measure the outcomes of core activities. It will ensure that challenges are identified early and addressed in a timely and evidence-based manner, thereby strengthening institutional accountability and continuous improvement.
Stung Treng Provincial Training Centre	1. Upgrade training level and facilities • The centre should extend its training programmes to C2 and C3 levels in electrical and electronic trades to match technician-level demand. • Establish a standardised practical training room (concrete walls, real tools, modern electrical systems) to replace wooden board practice. • The centre should also formalise add-on modules already being offered, such as security systems and air-conditioning, by	2. Teacher Capacity and Recruitment • The centre should recruit at least one additional qualified trainer in electricity/electronics to strengthen delivery at higher levels. Existing teachers should undergo structured professional development, including exposure visits to institutions in Phnom Penh or Siem Reap. • Teacher competency should be regularly evaluated to ensure consistency with national standards.

Regional Polytechnic Institute Techo Sen Kratie	integrating them into the official curriculum.	
	3. Diversify Training to meet local demand • Institutionalise teacher-driven curriculum innovations such as CCTV, air-conditioning, and agro-industry skills into official programs. • Develop short modular courses (e.g., machine operation, food safety, quality control in cashew processing) tailored for local agro-industrial employers. • Introduce dual-training pathways combining TVET classroom learning with structured enterprise-based learning, modelled after the electrical enterprise's ongoing internship practice. • Foster the implementation of the recognition of prior learning (RPL)	4. Industry Partnerships and Internships • Within six months, the centre should sign formal MOUs with at least three local employers, including agro-processing firms such as Handcrafted Cashew Nuts Stung Treng (HCST). • Internship periods should be extended, and a systematic employer feedback mechanism should be introduced to review and adjust training content. • A bi-annual provincial skills forum co-hosted with PTB should be established to sustain dialogue between the centre and enterprises. • It is essential that the centre establish clear key performance indicators (KPIs) to systematically track progress and measure the outcomes of core activities. It will ensure that challenges are identified early and addressed in a timely and evidence-based manner, thereby strengthening institutional accountability and continuous improvement.
	5. Student and Graduate Support • A graduate tracer system needs to be piloted using simple digital tools, with one staff member designated as a job-placement focal point to maintain linkages with employers and track outcomes. • Track graduates systematically to build a skills-demand database that guides curriculum planning.	6. Enhance soft skills and employability training • Integrate mandatory soft-skills modules (communication, workplace ethics, teamwork, discipline) into all programs. • Use peer-to-peer and alumni mentoring to reinforce discipline and job-readiness.
	1. Address trainer shortage and capacity gap • Take immediate action to recruit for immediate trainers in priority sectors by the next academic year. • Introduce peer-mentoring and exchange programs with stronger institutes to address trainer isolation. • Organise annual industry exposure visits so trainers can keep updated on new tools and workplace practices.	2. Improve curriculum relevance and practical learning • Strengthen C1 programs to include practical exposure in real-life settings such as concrete-wall practice rooms. • Add short, demand-driven modular courses in plumbing, CCTV installation, agro-processing basics, and digital marketing. • Develop a terminology and tools guide co-created with enterprises to ensure students practice with industry-standard equipment.
	3. Strengthen facilities and resources • Prioritise upgrading one fully functional workshop for electricity/electronics by the end of next fiscal year.	4. Enhance student quality and retention • Since many entrants lack grade 9 completion, there is a clear proceed to complement it with a bridging course.

	- Secure resource partnerships (with SDC, GIZ, or private sector) for new machinery and updated IT labs - Establish mobile training toolkits to allow outreach in rural districts. 5. Expand industry partnerships and work-based learning (current partnership with micro and small only) - Formalise MOUs with medium and large enterprises, especially in cashew, construction, and agro-industrial processing. - Pilot dual training models in electrical installation and cashew processing, with enterprise-shared training responsibility. - Introduce employer satisfaction surveys after each cohort to systematically capture feedback.	- Provide stipends/scholarships to reduce dropouts among poor and rural youth. - Launch community outreach campaigns with alumni role models to boost enrollment and retention. 6. Diversify program for emerging growth areas: - Partner with MTST Agro Products and cashew cooperatives to pilot a hands-on agro-processing training module. - It is essential that the institute establish clear key performance indicators (KPIs) to systematically track progress and measure the outcomes of core activities. It will ensure that challenges are identified early and addressed in a timely and evidence-based manner, thereby strengthening institutional accountability and continuous improvement.
Ratanakiri Provincial Training Centre	1. Recruit capable trainers and improve training facilities - Recruit and train new instructors by offering competitive contracts to graduates of ITC, NPIC, or regional polytechnic institutes. Short-term technical training and pedagogy programs should be offered to upskill local trainers. - Facilities are described as inadequate for applied learning. Workshops, labs, and classrooms should be expanded and fully equipped with industry-relevant tools (e.g., motor control systems, circuit boards, air-conditioning units). - Seek support from MLVT and partnership with a development partner for infrastructure and equipment support. 3. Expand work-based learning and employer partnership - Transform MoUs into binding internship agreements, with clear commitments from companies on the number of students hosted each year, the length of placements, and feedback mechanisms - Possibility of considering a dual-training system where students could spend part of the week in the classroom and the remainder at the worksite.	2. Curriculum co-design with industry - The centre needs to maintain close contact with employers - There is a need to establish a working group including representatives from employers such as Thagco Agri Company, construction firms, and ICT providers to develop curriculum. - Introduce specialised short courses in air-conditioning, motor control, ICT basics, and agro processing based on employer demand, alongside the extended C1 programs. 4. Student support and soft skills - Provide compulsory module on workplace behaviour, teamwork, punctuality, and communication, delivered by both trainers and invited employers. - Considering developing peer mentorship, pairing graduates working in the agro industry and ICT with current students - Implement a gender-sensitive recruitment campaign and provide support for women to encourage their participation in technical fields.

5. Graduate tracking and job placement services - Establish a digital graduate tracking database updated every six months - Track graduates systematically to build a skills-demand database that guides curriculum planning. - There is a need for a focal point at the centre to link students to jobs in high-demand sectors such as hydropower in Lumphat district, and agro processing.	6. Governance and integrated challenges It is essential that the institute establish clear key performance indicators (KPIs) to systematically track progress and measure the outcomes of core activities. It will ensure that challenges are identified early and addressed in a timely and evidence-based manner, thereby strengthening institutional accountability and continuous improvement.
1. Strengthen curriculum integration - Since Employers in Mondulkiri highlighted that the current C1-level curriculum provides fragmented technical skills that do not reflect real workplace needs, revise the C1 curriculum - Conduct regular (annual) employer skill surveys and feedback sessions, using results to update course offerings and teaching methods	2. Enhance trainer capacity through industry placement Establish industry placements for trainers, where they can spend 2–3 months in electrical and mechanical enterprises to update their skills and gain exposure to modern equipment
Mondulkiri Training Centre 3. Formalise work-based learning with employer Foster formalisation of WBL agreement with local firm including structured apprenticeship plan, clear competency targets and employer feedback mechanisms	4. Student support and apprenticeship to employment pathway - Scale up dual-training program where students divide time between TVET classrooms and enterprise apprenticeships. - Induce the awareness and recognition of apprenticeships to ease transition into employment
5. Governance and integrated challenges It is essential that the centre establish clear key performance indicators (KPIs) to systematically track progress and measure the outcomes of the centre's core activities. It will ensure that challenges are identified early and addressed in a timely and evidence-based manner, thereby strengthening institutional accountability and continuous improvement.	

10. Bibliography

ASEAN. (2021). *Global value chains in ASEAN – Electronics*. ASEAN-Japan Centre. Retrieved from https://www.asean.or.jp/main-site/wp-content/uploads/2024/03/GVCs_Electronics_Paper-13_full_web.pdf

Asian Development Bank. (2015). *Policy priorities for a more responsive TVET system in Cambodia*. Retrieved from <https://www.adb.org/publications/policy-priorities-more-responsive-tvet-system-cambodia>

- Asian Development Bank. (2017). *Policy Brief: Cambodia's New Technical and Vocational Education and Training Policy*. Retrieved from <https://www.adb.org/sites/default/files/publication/401691/adb-brief-089-cambodia-new-tvet-policy.pdf>
- Asian Development Bank. (2024). *Skills for competitiveness project – Cambodia*. ADB Project Documentation. Retrieved from <https://www.adb.org/projects/50394-002/main>
- Asian Development Bank. (2024). *Southeast Asia economic performance and outlook 2025*. Retrieved from <https://www.adb.org/outlook/editions/july-2025>
- Cambodia Development Resource Institute. (2013). *The Role of TVET and Higher Education in Economic Development*. Retrieved from <https://cdri.org.kh/publication/the-roles-of-tvet-and-higher-education-in-economic-development-in-cambodia>
- Cambodian Education Forum. (2023, September 18). *Technical and Vocational Education and Training in Cambodia: Significance, Challenges, and Ways Forward*. Retrieved from <https://cefcambodia.com/2023/09/18/technical-and-vocational-education-and-training-in-cambodia-significance-challenges-and-ways-forward/>
- Chrea, S., Ky, S., Bun, B., San, S., & Phy, S. (2024). *Report on Employer Skill Need Survey 2024*. Ministry of Labour and Vocational Training, Phnom Penh, Cambodia
- EU-German CAPSAFE Project. (2024). *Cambodian cashew value chain analysis*. GIZ Cambodia. Retrieved from <https://www.asean-agrifood.org/wp-content/uploads/2025/03/Summary-Version-Draft-2-Cashew-Value-Chain-Analysis.pdf>
- European Chamber of Commerce in Cambodia. (2024). *Skills Gap Assessment Survey*. Retrieved from <https://cambodiainvestmentreview.com/2024/07/11/eurochams-2024-skills-gap-assessment-highlights-critical-workforce-needs-in-cambodia/>
- Khmer Times. (2025). *Skills shortage may upend Cambodia's economic growth*. Retrieved from <https://www.khmertimeskh.com/501654842/skills-shortage-may-upend-cambodias-economic-growth/>
- Ministry of Agriculture, Forestry and Fisheries. (2020). *Cashew growing area in Cambodia 2024*. Department of Agricultural Land Resources. Retrieved from https://serv.maff.gov.kh/parse/files/maff/9e4a7b036cf4a20312ed3b55c907d564_1683905225.pdf
- Ministry of Economy and Finance, Cambodia. (2025). *Investment promotion program for Northeast Cambodia*. Retrieved from <https://itacham.org/spin-unlocking-investment-opportunities-in-cambodias-northeastern-provinces/>
- Ministry of Labour and Vocational Training (2023). *Cambodia Skills Development Roadmap 2023-2035*.
- Organisation for Economic Co-operation and Development. (2022). *ASEAN SMEs integration in GVCs: Opportunities and challenges in response to COVID-19*. Retrieved from <https://asean.org/wp-content/uploads/2022/11/ASEAN-SMEs-Integration-in-GVCs.pdf>
- PwC. (2024). *Upskilling for shared prosperity in Southeast Asia: Fostering sustainable growth*. Retrieved from <https://www.pwc.com/gx/en/services/consulting/south-east-asia-consulting/upskilling-for-shared-prosperity-sustainable-growth.html>
- Royal Government of Cambodia. (2015). *Industrial Development Policy 2015–2025*. Council for the Development of Cambodia. Retrieved from <https://cdc.gov.kh/wp-content/uploads/2022/04/IDP-English.pdf>

- Royal Government of Cambodia. (2015). *National Employment Policy 2015–2025*. Ministry of Labour and Vocational Training. Retrieved from <https://asean.org/wp-content/uploads/2016/05/National-Employment-Policy-2015-2025-of-the-Royal-Government-of-Cambodia.pdf>
- Royal Government of Cambodia. (2017). *National Technical Vocational Education and Training Policy 2017–2025*. Retrieved from <https://asean.org/wp-content/uploads/2024/09/National-Technical-Vocational-Education-and-Training-Policy-2017-2025.pdf>
- Royal Government of Cambodia. (2024, February). *Statement to the Expert Group Meeting of the United Nations Committee for Development Policy on Cambodia's LDC Graduation*.
- Royal Government of Cambodia. (2023). *Pentagonal Strategy – Phase I: Growth, employment, equity, efficiency, and sustainability*. Royal Government of Cambodia.
- Royal Government of Cambodia. (2025). *Special program to promote investment in the four northeastern provinces (SPIN) 2025–2028*.
- SEA-VET.net. (2024). *Empowering Youth through Digital TVET for Economic Diversification*. Retrieved from <https://sea-vet.net/news/1526-empowering-youth-through-digital-tvet-for-economic-diversification>
- Swisscontact. (2025, February 18). *More than 13,000 Cambodian disadvantaged youth and low-skilled workers in 12 provinces will benefit from the Skills Development Programme Phase 3*. Retrieved from <https://www.swisscontact.org/en/news/more-than-13-000-cambodian-disadvantaged-youth-and-low-skilled-workers-in-12-provinces-will-benefit-from-the-skills-development-programme-phase-3>
- Tes, V., & Oeun, S. (2025). Examining Cambodian upper secondary school students' perceptions of TVET as a career choice: A cross-sectional study. *Cambodian Journal of Educational Research*. Retrieved from <https://cjerjournal.com/index.php/cjer/article/view/122>
- United Nations Development Programme. (2024). *Policy Brief: Cambodia's Graduation from Least Developed Country (LDC) Status: Preparedness and Potential Economic and Social Impacts*. Retrieved from <https://www.undp.org/cambodia/publications/cambodias-graduation-least-developed-country-ldc-status-preparedness-and-potential-economic-and-social-impacts>
- United Nations. (2022). *Graduation from LDC status: trade preference and development financing implications for Asia-Pacific countries*. Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/2024-11/final_ldc-policy_brief.pdf
- United Nations. (2024) *List of Least Developed Countries (as of 19 December 2024)*. Retrieved from https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/Ldc_list.pdf
- Ven, S., & Hing, V. (2019). *Cambodia in the electronic and electrical global value chains* (CDRI Working Paper Series No. 119). Cambodian Development Resource Institute. Retrieved from https://cdri.org.kh/storage/pdf/wp119e_1617247939.pdf
- Veung, N., & Ven, S. (2021). *Exploring Insights into Vocational Skills Development and Industrial Transformation in Cambodia*. CDRI Working Paper Series No. 131. Cambodia Development Resource Institute. Retrieved from https://cdri.org.kh/storage/pdf/WP131%20Exploring_Insights_1637129221.pdf
- World Bank. (2015). *Cambodia National Qualifications Framework Summary*. Retrieved from <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/512181508744668918/cambodia-national-qualifications-framework->

[summary#:~:text=The%20Cambodia%20Qualifications%20Framework%20\(CQF,the%20nation's%20Human%20Resources%20Development.](#)

World Bank. (2018). *Financing Technical and Vocational Education and Training in the East Asia and Pacific Region*. Retrieved from <https://documents1.worldbank.org/curated/en/494921508752195355/pdf/120597-WP-v2-P150980-PUBLIC-KWPF-Financing-TVET-in-EAP-Full-Final.pdf>

World Trade Organisation. (2022, September). *Trade impacts of LDC graduation*. Retrieved from https://www.wto.org/english/res_e/booksp_e/trade_impacts_of_ldc_graduation.pdf

11. Annex

Research Team's Structure

A research team structure with clear roles facilitates efficient fieldwork management and supports the collection of high-quality qualitative data:

1. Project Lead: Oversees the general research design, methodology, ethical considerations, analysis, and reporting. Maintains consistency and quality throughout the research.
2. Field Coordinators: Coordinate arrangements for logistics in the selected provinces, liaise with local contacts, coordinate the fieldwork team, and ensure quality of data gathered upon first collection.
3. Lead Interviewer: An experienced researcher who is in charge of interview guide completion, field interviewer training, methodological consistency during interviews, and has partial responsibility for the key interviews.
4. Field Interviewers: Conduct the majority of KIIs. Need to be skilled in qualitative interviewing techniques (probing, active listening, establishing rapport), note-taking, and recording equipment handling.
5. Transcribers: In case interviews are carried out in Khmer and analysis/reporting is in some other language (e.g., English), specialised staff is required for proper transcription and translation of the audio recordings. This job demands high linguistic skills in both languages.



Timeframe and Data Collection Method

Interviews were conducted through physical meetings and virtually via video conferencing platforms (Zoom and Google Meet) over a three-week period between March 31st and June 24th, 2025. The interviews took between 80 and 120 minutes and were audio-recorded with the consent of the participants. The interview was guided by the interviewer to establish a relaxed and friendly

environment for participants to share their experiences, applying active listening and probing techniques to obtain elaborative answers.

The study applies a mixed-methods approach for data collection:

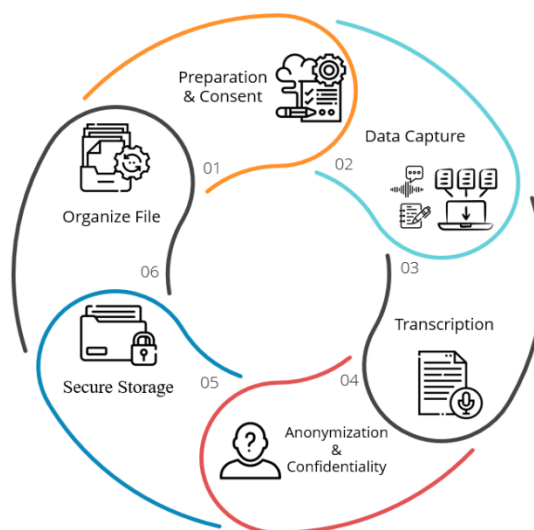
- **Document Review:** A comprehensive review of secondary data was conducted. This review includes Provincial Development Plans, TENAs, SEZ plans, government reports, statistical data, academic studies, industry reports, investment plans, and policy frameworks, focusing on the target provinces and sectors.
- **Key Informant Interviews (KIIs):** Semi-structured interviews were conducted with stakeholders including Provincial Training Boards (PTBs), TVET institution administrators and teachers, and enterprises in the target sectors.
- **Focus Group Discussions (FGDs):** Conducted with specific groups such as TVET students and recent graduates.
- **Observations:** Field visits were conducted to TVET institutions and workplaces to observe the learning environment, teaching practices, and skills application.

Data Management and Quality Control Procedures

Data Management for Key Informant Interviews (KIIs):

1. Preparation & Consent:

- Finalise the semi-structured interview guides.
- Prepare clear informed consent forms explaining the study purpose, confidentiality, voluntary participation, and how data will be used and stored. Request and secure consent before each interview.
- Have good procedures for making and conducting interviews.



2. Data Capture:

- **Audio Recording:** Use stable equipment to audio-record interviews (with informant's specific permission) to tape verbatim replies accurately.
- **Note-taking:** Interviewers should take extensive notes during the interview, highlighting points of importance, verbatim quotes, non-verbal responses, and immediate reflections or clarifications. These notes supplement the recordings.

3. Transcription:

- Transcribe audio recordings into text format. Decide whether verbatim transcription (word-for-word) or detailed summary transcription is needed based on analysis requirements. Keep accuracy.

4. Anonymisation & Confidentiality:

- During transcription or data organisation, remove or replace any personally identifiable information (names, specific job titles if identifying, locations) with codes to protect informant confidentiality, according to the consent form.

5. Secure Storage:

- All information (audio files, notes, transcripts, consent forms) should be securely stored. All files should be password-protected and stored on secure drives or platforms. Physically maintained forms and notes should be retained in locked files. Set a plan for backups.

6. Organise Files:

- Arrange an orderly file name format (province code informant code_sector_date).
- Organise transcripts and notes systematically, perhaps using qualitative data analysis software (like NVivo, ATLAS.ti, or simpler tools like spreadsheets) to manage and code the data later.

Quality Control for Key Informant Interviews (KIIs):

1. Interviewer Training: Ensure all interviewers are thoroughly trained on the research objectives, ethical conduct, the interview guide, probing techniques, active listening, and consistent notetaking/recording procedures.

2. Pilot Testing: Conduct pilot interviews with a few individuals representative of the key informants to test the clarity, flow, and effectiveness of the interview guide. Refine the guide accordingly.

3. Consistency: If multiple interviewers are involved, hold regular debriefing sessions to discuss experiences, ensure consistency in applying the interview guide, address any challenges, and maintain a shared understanding of the questions and objectives.



4. In-Interview Quality Checks: Interviewers should listen actively, probe adequately for greater insight, clarify ambiguous answers, and sometimes paraphrase items to ensure clear understanding with the informant.
5. Post-Interview Review: Interviewers should review their notes and tapes after every KII to fill gaps in missing information, add reflection, and check completeness.
6. Transcription Confirmation: Confirm transcriptions against audio recordings for quality.
7. Peer Debriefing: Regularly share emerging findings, interpretations, and potential biases with the research team to enhance analytical rigour and validity.
8. Triangulation (as per report): Compare findings from the KIIs with data gathered from document reviews, observations, and any focus group discussions to validate themes and identify areas for further research.
9. Audit Trail: Record the research process, including variations on the interview guide, analysis decisions (e.g., coding definitions), and challenges encountered.

Data Analysis

The audio recordings were transcribed verbatim. Thematic analysis was employed to analyse the interview data. This involved:

- Familiarisation: Re-reading and reading of transcripts with the purpose of gaining general familiarity with the data.
- Initial Coding: Identifying and labelling segments of text that were relevant to the research questions and emergent themes. This was done manually and using a qualitative data analysis computer program.
- Theme Development: Grouping early codes into broader, more general themes by searching for patterns of meaning across the participants' accounts.
- Reviewing and Refining Themes: Ensuring the themes were coherent, distinct, and a good reflection of the data.
- Defining and Naming Themes: Carefully defining the nature of each theme and selecting descriptive names.