

Employment and Socioeconomic Impacts of Cambodia's LDC Graduation: Evidence from TINA and the SAM-Multiplier Analysis

Bopith Bun¹, Xiao Jiang², Chan Mono Oum¹, Somara Oum¹, Somean Kuoch¹,
Sopheana Bronh¹, Sereyvuth Ky¹

¹ Ministry of Labour and Vocational Training, Phnom Penh, Cambodia

² International Labour Organization, Genève, Switzerland

Key Points

- ▶ Cambodia's LDC graduation is a development milestone, but the loss of trade preferences will create short-run pressure on output, employment, incomes across the economy.
- ▶ Modelling results show that a full trade-loss shock could reduce output, factor incomes, and household income by around 8–10 percent, with effects spreading well beyond directly exposed sectors. The most exposed are informal and self-employed workers, women, low-skilled workers, and those in agriculture and labour-intensive manufacturing.
- ▶ Targeted mitigation can meaningfully reduce these impacts, though economy-wide spillovers cannot be fully eliminated through sectoral measures alone.
- ▶ Proactive policy responses — spanning worker skills and social protection, firm upgrading, sectoral value chain development, and macroeconomic competitiveness — can limit these impacts and support Cambodia's transition to a more diversified and resilient growth trajectory.

1. Introduction

Cambodia has demonstrated remarkable socio-economic progress, successfully meeting the criteria for Least Developed Country (LDC) graduation in 2021 and again in 2024. With the second endorsement by the United Nations Economic and Social Council, Cambodia entered a five-year preparatory period leading to its official graduation in 2029. The nation stands at a critical developmental milestone. While graduation signifies a successful transition toward Cambodia's vision 2050 becoming a high-income country, it also initiates the gradual withdrawal of critical international support measures (ISMs).

This transition poses significant macroeconomic challenges due to Cambodia's concentrated economic base, which relies heavily on manufacturing and agricultural exports. The phase-out of preferential trade agreements will expose key export sectors to higher Most-Favoured Nation (MFN) tariffs and standard Generalized System of Preferences (GSP) rates. Furthermore, stricter Rules of Origin (RoO) will demand higher local value-added thresholds for preferential treatment, compounding the pressure on domestic industries and market competitiveness.

Cambodia's workforce is heavily concentrated in labour-intensive sectors with low average skill levels, making it particularly exposed to export demand shocks. Modelling results point to the sharpest employment pressures in the textile, clothing, footwear, bicycle manufacturing and agricultural sectors. (Bekkers & Cariola, 2024; Te Velde et al., 2019). The impact falls disproportionately on the most vulnerable workers — women, informal and self-employed workers, and those with low skills — underscoring that LDC graduation is as much a labour market challenge as it is a trade policy one.

Ministry of Labour and Vocational Training

 023 884 375/023 884 376

 Building 3, Russian Federation Blvd.,
Toek Laak I, Toul Kork, Phnom Penh

 info@mlvt.gov.kh

To navigate these complexities, policymakers require robust, evidence-based insights into the structural characteristics and vulnerabilities of Cambodia's labour market. This brief combines trade loss simulations from Trade Intelligence and Negotiation Advisor (TINA) frameworks with Social Accounting Matrix (SAM) multiplier analysis to assess the potential employment and socioeconomic consequences of this transition.

2. Methodology

This study applies a SAM multiplier framework to assess the short-run employment and socioeconomic impacts of Cambodia's LDC. Sector-specific trade losses generated by TINA are treated as reductions in export demand and introduced into the SAM as exogenous final-demand shocks. The framework traces how these shocks propagate through production activities, labour markets, enterprises, and households, capturing both direct and indirect economy-wide effects.

Structure of the Social Accounting Matrix

A Social Accounting Matrix is a comprehensive representation of the economy that maps the flow of income and expenditures among productive sectors, workers, households, enterprises, government, and the rest of the world. Built from the national accounts and other official statistical sources, a SAM provides a consistent picture of how economic activities are interconnected and how income generated in one part of the economy circulates through others.

This study uses the 2022 Cambodia SAM developed under the IFPRI Nexus framework, which represents the economy through 42 production sectors, factors of production, enterprises, households, government, and external trade accounts (IFPRI, 2024). The SAM is complemented by an employment satellite account constructed from the Cambodia Labour Force Survey (LFS) 2025. The satellite account harmonizes employment data with the SAM sector classification and provides detailed information on workers by sex, age group, employment status, skill level, and formality status. This enables the analysis to translate economy-wide output shocks into employment impacts and identify the groups of

workers most exposed to LDC graduation-related trade shocks.

SAM multiplier specification

The SAM multiplier model estimates how an initial economic shock propagates through production activities, factor incomes, enterprises, and households. The analysis begins with the construction of the average expenditure coefficient matrix A , also called "SAM coefficient matrix", which captures the expenditure relationships among endogenous accounts:

$$A = Z \cdot \hat{x}^{-1}$$

where Z is the matrix of transactions among endogenous accounts and $\hat{x}$ is the diagonal matrix of total income or expenditure. The SAM multiplier matrix is then calculated as:

$$S = (I - A)^{-1}$$

where I is the identity matrix. The total impact of an exogenous shock (such as export collapse) is estimated as:

$$\Delta X = S \cdot \Delta f$$

where Δf represents the initial shock and Δf the resulting change in endogenous accounts, including output, factor income, household income, and institutions' income.

The multiplier captures four channels of impact. Direct effects occur in sectors immediately exposed to the export demand shock. Indirect effects arise through supply-chain linkages as affected sectors reduce their demand for intermediate inputs. Income generation and distribution effects translate output changes into factor incomes and trace how these flow to different household groups according to their factor endowments. Finally, consumption-induced effects capture how changes in household incomes alter final demand across the economy. Together, these channels allow the analysis to estimate the economy-wide consequences of LDC graduation beyond the sectors that are directly exposed to trade losses.

Export Demand as the Transmission Channel

In the SAM multiplier framework, exports are treated as an exogenous component of final

demand. A reduction in exports therefore enters the model as a negative demand shock, directly lowering production in affected sectors and indirectly reducing demand for intermediate inputs, factor inputs (including labour), final consumption via the induced effect.

This transmission mechanism is particularly relevant for Cambodia, where exports play a central role in economic growth and employment. According to the 2022 Cambodia SAM, exports accounted for approximately 35.7 per cent of total output, with manufacturing contributing nearly 88 per cent of total exports. Textiles, clothing, and footwear alone represented more than 70 per cent of merchandise exports.

In this study, sector-specific trade losses estimated by TINA are introduced into the SAM as reductions in export demand. The model then traces how these shocks spread through production linkages, factor income, enterprise income, household income, and employment.

Assumptions and Applicability

The SAM multiplier model is designed to assess short-run economy-wide effects. It assumes fixed production technologies, fixed expenditure patterns, and no immediate changes in prices, wages, or behavioural responses. These assumptions make the model suitable for estimating the initial impact of LDC graduation, where the main transmission channel is a reduction in export demand.

The results should therefore be interpreted as a short-run baseline scenario showing the economy's exposure to trade preference erosion. The model does not capture longer-term adjustment such as productivity improvement, market diversification, technological change, or changes in relative prices. However, it provides a useful benchmark for identifying vulnerable sectors, workers, enterprises, and households, and for informing timely mitigation policies.

Scenario Design

The study assesses the potential impacts of LDC graduation under alternative assumptions regarding the transmission of trade shocks to the domestic economy. Sector-specific export losses estimated by TINA are introduced into the SAM multiplier model as reductions in export demand. Four scenarios are examined: a full-impact baseline with no mitigation (100 percent of estimated trade losses), a high-impact scenario (75 percent), a targeted mitigation scenario in which selected strategic sectors face only half of their estimated losses, and a low-impact scenario (25 percent). The proportional reductions in Scenarios 2 and 4 are illustrative assumptions reflecting graduated levels of market and policy response; the study can be extended to include more refined mitigation modelling, including endogenous enterprise behaviour and policy-specific simulations.

Table 1: Scenario design for assessing the impact of LDC graduation on Cambodia's economy

Scenario	Analytical meaning	Treatment of trade-loss vector
Scenario 1: Full impact / no intervention	Reference case. The LDC graduation shock is fully transmitted to the economy.	100% of the TINA-estimated trade loss across affected sectors.
Scenario 2: High-impact shock	Most of the trade shock materializes, but the impact is partially dampened as it propagates through the economy.	75% of the TINA-estimated trade loss across affected sectors.
Scenario 3: Targeted sector mitigation	The overall shock occurs but selected strategic exporting sectors receive partial mitigation.	Textiles, clothing and footwear, electrical equipment and metal-related sectors face only half of their estimated loss; other sectors retain the full loss.
Scenario 4: Low-impact shock	Lower-bound case in which the economy absorb significant part of the tariff shock with buyers maintaining some orders.	25% of the TINA-estimated trade loss across affected sectors.

3. Results on the Impact Assessment

Aggregate Economy-Wide Impacts

The SAM multiplier results show that Cambodia's LDC graduation could generate sizeable short-run economy-wide effects if the full trade-loss shock is transmitted in absence of any mitigation policy intervention. Under Scenario 1, the full-impact baseline, activity output and commodity produced also falls by 10.4 percent, while factor income, enterprise income, and household income also fall substantially (See Figure 1). This clearly shows the economy-wide result - the impact is not confined to exporting sectors alone. Once export demand weakens, the shock spreads through intermediate input demand, factor payments, household income, and enterprise earnings.

Because the SAM multiplier model is linear and fixed-coefficient, Scenarios 2 and 4 follow the same sectoral and income-distribution pattern as Scenario 1, with smaller magnitudes. Therefore, the detailed sectoral graphs below focus on Scenario 1 and Scenario 3 only. Scenario 3 is retained because it applies mitigation selectively across strategic sectors rather than scaling the shock uniformly, producing a different sectoral pattern of impacts.

Activity and commodity output effects

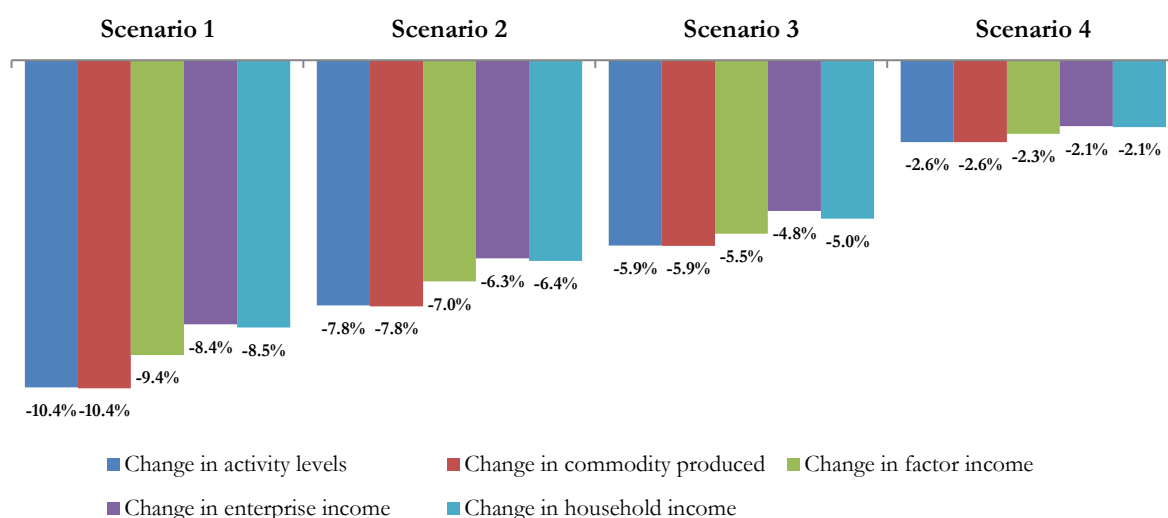
The largest proportional activity losses are concentrated in both export-facing and supply-

chain-linked sectors, due to large direct effects. Textiles, clothing and footwear are directly exposed because they are among Cambodia's most trade-preference-dependent sectors. However, the result also shows sizeable losses in agriculture-related activities, wholesale and retail trade, transport, utilities, other manufacturing, finance, and business-related services (See Figure 2). This confirms that LDC graduation is not only a manufacturing-sector issue. Lower export demand reduces production in directly affected sectors, but also weakens demand for transport, trade, utilities, services, and domestic suppliers.

Commodity produced and activity levels follow a similar pattern, with the largest contraction are concentrated in sectors most connected to directly affected industries through production, income, and consumption linkages.

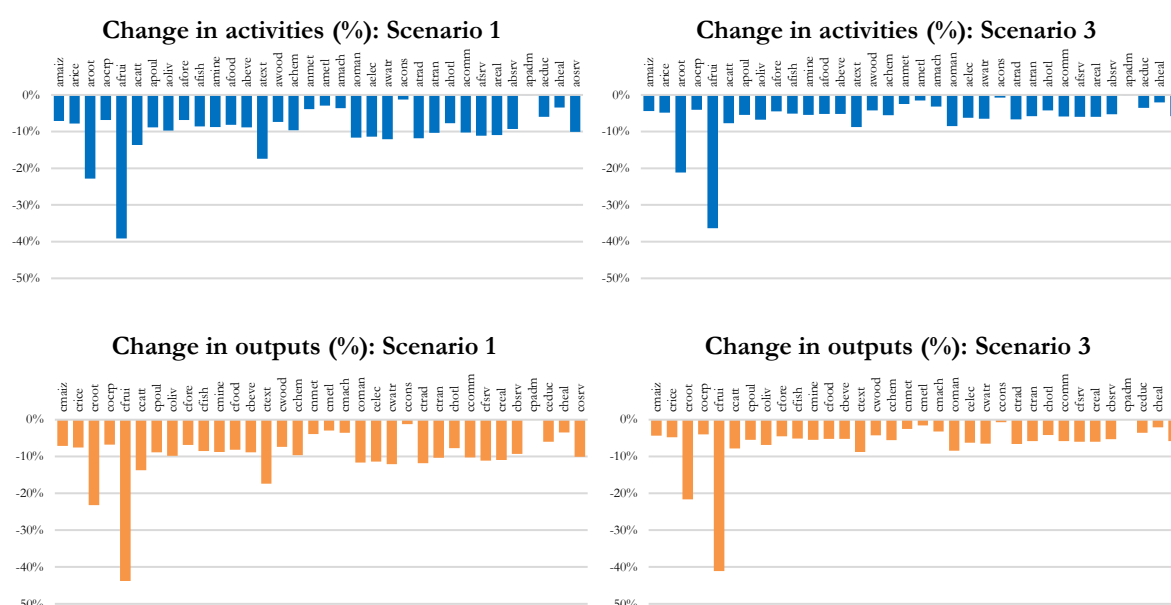
Scenario 3 shows that targeted mitigation can reduce the magnitude of activity and commodity output losses, especially in sectors where mitigation is directly applied. However, the contraction is not fully eliminated - sectors outside the mitigation perimeter remain exposed through production linkages and weakened household consumption demand. Targeted sectoral support can therefore soften the shock, but cannot fully offset its economy-wide spillovers.

Figure 1: Aggregate percentage change in endogenous accounts by scenario



Source: Author's calculation

Figure 2: The impact on sectoral activity levels and commodity produced



Source: Author's calculation

Factor, enterprise, and household income effects

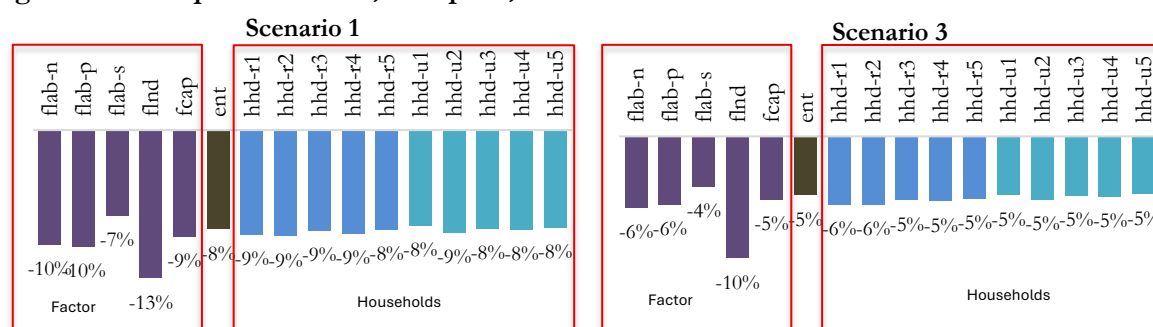
Figure 3 shows the percentage change in factor, enterprise, and household incomes under Scenario 1 and Scenario 3. Under Scenario 1, all major income accounts decline. Low- and medium-skilled labour incomes fall by around 10 percent, while high-skilled labour income declines by about 7 percent. Agricultural land income experiences the largest decline, at around 13 percent, reflecting the strong exposure of agriculture-related sectors. Capital income and enterprise income also fall, by around 9 percent and 8 percent, respectively, indicating lower returns to production assets.

Household income also declines across all rural and urban quintiles, reflecting the SAM's transmission from lower factor incomes — wages, land rents, and capital returns — through to household

earnings and consumption. Under Scenario 1, income losses of around 8–9 percent are broadly consistent across rural and urban groups, suggesting the shock is transmitted economy-wide rather than concentrated in any single household category.

Under Scenario 3, income losses are smaller but remain significant. Low- and medium-skilled labour incomes decline by about 6 percent, while high-skilled labour income falls by about 4 percent. Notably land income still declines by around 10 percent, suggesting that agriculture-linked income remains vulnerable even under targeted mitigation. Household income losses are reduced to around 5–6 percent across most rural and urban groups. This confirms that while selective policy intervention can moderate income losses, the economy-wide welfare risks of LDC graduation cannot be fully contained through sectoral measures alone.

Figure 3: The impacts on factor, enterprise, and household incomes



Source: Author's calculation

Total affected employment

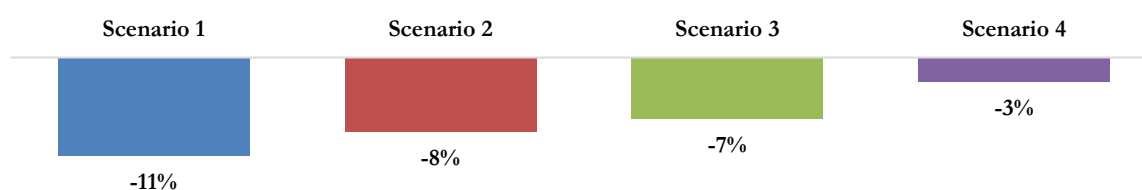
Under Scenario 1, total affected employment declines by around 11 percent (See Figure 4). This represents the full employment impact when the trade-loss shock is transmitted without any mitigation. Scenario 2 reduces the employment impact to around 8 percent, while Scenario 4 further reduces it to around 3 percent, consistent with their proportional scaling of the original shock.

Scenario 3 reduces total affected employment to around 7 percent. This suggests that targeted mitigation in selected sectors can meaningfully reduce the employment contraction compared with

the full-impact scenario. However, such mitigation is partial - employment losses spread beyond directly supported sectors through production, income, and consumption linkages.

It bears emphasis that these estimates represent jobs at risk rather than confirmed layoffs. In practice, labour market adjustment can also be manifested through reduced hours worked, slower hiring, temporary suspension, lower earnings, non-renewal of short-term contracts, or weakened self-employment income than through outright job losses.

Figure 4: Total affected employment by scenario (in percentage)



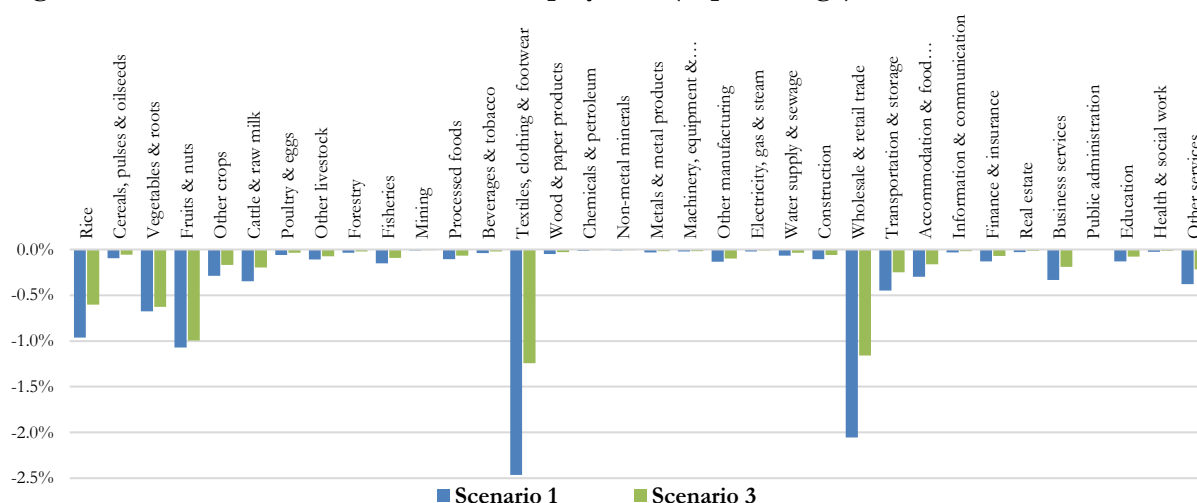
Source: Author's calculation

Sectoral employment impacts

Under Scenario 1, the largest employment impacts are concentrated in textiles, clothing and footwear; wholesale and retail trade; rice; fruits and nuts; vegetables and roots; and other agriculture-related activities (See Figure 5). This reflects Cambodia's strong dependence on labour-intensive exporting sectors and the strong linkage between export production, agriculture, domestic trade, and supporting services.

The employment effect is not limited to manufacturing wage employment. The sizeable impact on wholesale and retail trade indicates that export shocks also affect domestic market activities through lower input demand, income and consumption. Agriculture-related employment is also exposed due to lower demand as both intermediate and final consumption goods combined with high labour intensity – a distinctive characteristic for agriculture sector.

Figure 5: Sectoral distribution of affected employment (in percentage)



Source: Author's calculation

Scenario 3 mitigates the negative employment impacts in several affected sectors. The contraction in textiles, clothing and footwear is noticeably smaller than under Scenario 1, and the negative impacts in trade and agriculture-related sectors are also reduced considerably. The persistence of negative effects across many sectors confirms that targeted mitigation cannot fully contain the labour market consequences of LDC graduation, as spillovers through production and consumption linkages extend well beyond the sectors where support is applied.

Composition of affected employment

Self-employed workers account for 52 percent of affected employment, compared with 48 percent for employees – a reminder that the shock extends well beyond manufacture wage workers. Own-account workers, retail traders, household enterprises, transport providers, and informal service workers are also exposed through weakened production linkages and declining household demand.

The gender dimension is also important. Women account for 53 percent of affected employment, reflecting their concentration in textiles, clothing and footwear, trade, services, and other labour-intensive activities linked to export and domestic demand. Without gender-responsive mitigation, LDC graduation could therefore place disproportionate pressure on female workers and women-led households.

Informality amplifies these vulnerabilities. Informal workers account for 68 percent of affected employment and are far less likely to have formal contracts, social insurance, or severance protection. For this group, the shock is more likely to surface at lower income, weaker job quality, or reduced hours worked than as measurable unemployment.

By age, non-youth workers account for 82 percent of affected employment. While the shock primarily hits the existing adult workforce, the overall negative pressure on the labour market would transmit to younger workers via less earnings and job opportunities.

By occupation, the largest affected groups are skilled agricultural, forestry and fishery workers (28 percent), plant and machine operators and assemblers

(24 percent), and service and sales workers (22 percent) – mostly labour-intensive occupations closely linked to agriculture, manufacturing, trade, and services. Note that “skilled agricultural workers” refers to the ISCO occupational category, not an education-attainment based skill level.

Low-skilled workers account for 86 percent of affected employment, against 9 percent for medium-skilled workers and 5 percent for high-skilled workers. This concentration is particularly concerning given that low-skilled workers typically have less savings, more limited retraining opportunities, and fewer pathways to alternative employment.

Taken together, these findings indicate that LDC graduation is as much an employment and household welfare challenge as it is a trade policy issue. The most exposed – informal workers, self-employed workers, women, low-skilled workers, production workers, service and sales workers, and agriculture-linked workers – are also those with fewest buffers and least resilience, making targeted employment and social protection policy measures essential complements to trade policies.

4. Discussion on Policy Responses

Cambodia’s graduation from LDC status is an important development milestone, but it also introduces significant trade, employment, skills, enterprise, and household-welfare risks. To mitigate these risks, Cambodia should pursue an integrated transition package built around the following four priorities levels. These responses should be understood not merely as shock-absorbing measures, but as building blocks for a transition towards a new, more diversified and resilient growth trajectory.

Workers and Household Level

Skills upgrading and reskilling must prioritize industrial upgrading, machine operation, quality control, maintenance, logistics, digital competencies, green production, and supervisory skills, with training programs designed in close collaboration with enterprises and sector associations to reflect actual labour market demand. Inclusion of women, informal workers, and low-skilled workers must be built into programme design from the outset, not treated as an afterthought. At the same time, social

protection coverage should be extended by strengthening access to employment services and income-support mechanisms, expanding NSSF registration pathways, and sustaining HEF support to shield poor and near-poor households from health-related financial shocks. Given women's concentration in the most exposed sectors such as textiles, clothing and footwear, gender-responsive policy measures are essential: dedicated reskilling pathways, childcare support linked to training participation, and strengthened enforcement of labour standards, all connected to NSSF and HEF to safeguard female labour-force participation and household income resilience and stability.

Enterprise Level

To successfully navigate the post-LDC trading environment, a wide range of businesses—including large exporting enterprises, SMEs, subcontractors, logistics operators, and domestic suppliers—require comprehensive capacity building and practical adjustment support. This support should encompass targeted advisory services on tariff changes, rules-of-origin compliance, product upgrading, cost accounting, productivity improvement, digitalization, and alignment with new buyer standards. Simultaneously, Cambodia must accelerate market diversification toward higher-value products, new export markets, and sectors less reliant on narrow preferential schemes. This shift also offers an opportunity to embrace the “**Double Transformation**” – the simultaneous shift toward greener and more digital production - as a strategic response to the evolving domestic conditions and global economy. Investments in energy efficiency, cleaner systems, digital customs procedures, and traceability tools will help enterprises reduce costs while meeting emerging environmental and due-diligence requirements. Finally, to ensure broad-based resilience, enterprise formalization must be promoted not merely as an administrative process, but as a crucial pathway to higher productivity, stable income, and public support, which can be facilitated through simplified registration for micro and small enterprises, targeted incentives, and easier access to NSSF schemes.

Sectoral Level

At the sectoral level, the priority is building the domestic

value chain depth needed to meet stricter rules of origin and sustain preferential market access beyond LDC status. This requires attracting upstream investments in fabric production, textiles, clothing and footwear dyeing, finishing, and packaging to sustain preferential market access. Effective coordination among government agencies, sector associations, international buyers, and exporting enterprises is critical to ensure coherence in policy and practice. At the same time, demand driven training programs must be designed in direct collaboration with enterprises and sector associations to align with current labour needs, and enforcement of labour standards must be reinforced in the most affected sectors to safeguard workers and maintain compliance with international standards.

Macro Level and Trade Diversification

At the macroeconomic level, competitiveness depends on higher efficiency: addressing logistics bottlenecks, lowering utility prices, and easing compliance burdens for exporting firms, modernizing customs and border procedures through streamlined clearance digital systems. Export resilience also requires accelerated diversification toward new international markets, higher value-added products, and sectors less reliant on narrow preferential trade schemes. These efforts should be anchored in an integrated national transition strategy that combines trade diplomacy (e.g., FTC, RCEP), with industrial upgrading, enterprise support, skills development, and social protection. Critically, the transition strategy should be employment-led: public investment in labour-intensive activities, strengthened public employment services, and incentives for new growth sectors should be mobilized to actively generate jobs during the adjustment period, not only to defend existing ones. The goal is an economy that competes on productivity and value-addition, not on preferential trade access alone.

Across all four levels of policy response, one principle should anchor the transition strategy: Cambodia's competitiveness must be built on productivity, value addition, and decent work — not on the erosion of labour protections. A race to the bottom on labour standards would be self-defeating, as labour rights and economic resilience are mutually

reinforcing and decent work conditions are increasingly a condition of market access as supply chain due diligence requirements tighten (ILO, 2025). The shock of LDC graduation is precisely the moment to strengthen, not weaken, the foundations of a resilient and inclusive economy.

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Appendix

Table A1. List of Account Codes in the SAM Multiplier

Account Code	Account Name
amaiz	Cereals, pulses & oilseeds
arice	Rice
aroot	Vegetables & roots
aocrp	Other crops
afrui	Fruits and nuts

Account Code	Account Name
acatt	Cattle and raw milk
apoul	Poultry and eggs
aoliv	Other livestock
afore	Forestry
afish	Fisheries
amine	Mining
afood	Processed foods
abeve	Beverage and tobacco
atext	Textiles, clothing and footwear
awood	Wood and paper products
achem	Chemicals and petroleum
anmet	Non-metal minerals
ametl	Metals and metal products
amach	Machinery, equipment and vehicles
aoman	Other manufacturing
aelec	Electricity, gas and steam
awatr	Water supply and sewage
acons	Construction
atrad	Wholesale and retail trade
atran	Transportation and storage
ahotl	Accommodation and food services
acomm	Information and communication
afsrv	Finance and insurance
areal	Real estate activities
absrv	Business services
apadm	Public administration
aeduc	Education
aheal	Health and social work
aosrv	Other services
flab-n	Factors - Labour - Low (not finished primary schooling)
flab-p	Factors - Labour - Medium (finished primary, but not finished secondary schooling)
flab-s	Factors - Labour - High (finished secondary and/or tertiary schooling)
flnd	Factors - Agricultural land
fcap	Factors - Capital
ent	Enterprises
hhd-r1	Households - Rural (quintile 1)
hhd-r2	Households - Rural (quintile 2)
hhd-r3	Households - Rural (quintile 3)
hhd-r4	Households - Rural (quintile 4)
hhd-r5	Households - Rural (quintile 5)
hhd-u1	Households - Urban (quintile 1)
hhd-u2	Households - Urban (quintile 2)
hhd-u3	Households - Urban (quintile 3)
hhd-u4	Households - Urban (quintile 4)
hhd-u5	Households - Urban (quintile 5)

Source: *Social Accounting Matrix (SAM)*

About This Policy Brief

This policy brief examines the employment and socioeconomic impacts of Cambodia's graduation from Least Developed Country (LDC) status. Drawing on trade-loss estimates using the Trade Intelligence and Negotiation Advisor (TINA) too, it applies a Social Accounting Matrix (SAM) multiplier analysis to trace how reduced export competitiveness propagates through the economy — affecting output, factor incomes, enterprise earnings, and household income across rural and urban groups. The analysis finds that the most exposed workers are informal and self-employed workers, women, and low-skilled workers, and those in agriculture and labor-intensive manufacturing. It concludes with a four-level policy framework — spanning workers and households, enterprises, sectors, and the macroeconomy — to reduce the impact of the shock and support Cambodia's transition to a more diversified and resilient growth trajectory.

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