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I. Background

The Logistics sector has been identified as one of the priority industries of the Philippine government as key in providing decent employment and promoting entrepreneurship for millions of Filipinos, as well as its important role in economic development. The Department of Trade and Industry (DTI) has been working on various programs and initiatives for the promotion of the competitiveness and innovation of industries that contribute to inclusive growth and economic generation. TESDA as the authority in technical education and skills development in the Philippines ensures to address the needs of industries in the development of its programs and standards. The DTI, TESDA, and the various industry associations in the logistics industry intend to work together in assessing current and future skills as well as initiating training programs to develop skills requirements needed by the logistics service sectors.

II. Objectives

The consultation intends to collect information on the current situation of the logistics sector in to determine the necessary training related support and programs for the sector.

Specifically, it intends to:

1. Determine the challenges and opportunities in the logistics sector;
2. Present and validate the skills map for the logistics sector; and
3. Determine the priority skills requirements for the sector.

III. Attendees

The following organizations/agencies were invited by the Planning Office to the Industry Consultation:

Technical Education and Skills Development Authority
Department of Trade and Industry
PTTC - Philippine Trade Training Center
ACOP - Association of Off-Dock-CFS Operators of the Philippines
ACTOO - Alliance of Concerned Trucker Owners and Operators
ADLI - Academy of Developmental Logistics, Inc.
AISL - Association of International Shipping Lines, Inc.
CBWOCl - Customs Bonded Warehouse Operators Confederation, Inc.
CCAP - Cold Chain Association of the Philippines
CCBI - Chamber of Customs Brokers, Inc.
CDAP - Container Depot Alliance of the Philippines
CTAP - Confederation of Truckers Association of the Philippines
INHTA - Inland Haulers and Truckers Association Corp.
ICTSI - International Container Terminals Services, Inc.
PISM - Philippine Institute for Supply Management
PLSA - Philippine Liner Shipping Association
PMTLAI - Philippine Multimodal Transport and Logistics Association Inc.
PUCP - Port Users Confederation of the Philippines
SCMAP - Supply Chain Management Association of the Philippines
UPC - United Port Users Confederation of the Philippines Inc.

IV. Highlights of the Result

4.1. Presentation of the Industry Situationer

The industry considers human capital **as its best asset**. Likewise, the challenges also relate to manpower. Considering that, the “most complex and most challenging component of a warehouse is hiring the right person, for the right job, at the right time, with the right compensation”.

The private sector is doing its part to upgrade its human capital and address issues relating to it. The manpower and organizational strengths of their warehousing sector are:

- Availability of trained personnel;
- Operational expertise and skills of warehouse personnel;
- Institutionalizing an OJT Program;
- Procedural expertise of support staff (inventory staff, documentation staff, etc.);
- Presence of managerial competence amongst officers of warehouse facility; and
- Strong networking presence due to memberships in organized industry associations.

The challenges include:

- piracy of qualified personnel;
- lack of training programs;
- lack of qualified personnel for specific rank and file positions, supervisory positions, and managerial job positions;
- inadequate financial resources to upgrade facilities, acquire and or upgrade technology systems; and
- provide an appropriate financial compensation package for managerial personnel.

One of the pressing and recurring problems in the logistics industry is the scarcity of qualified and trained personnel such as truck drivers. And as domestic and global business expands, the demand for qualified truck drivers has doubled.

In 2014, port congestion caused a mass exodus of truck drivers to seek alternative employment. Another factor discouraging truck operators and drivers is the trucking industry's slower truck trip turnaround caused by heavy traffic. This affects them as they are paid on a per-trip basis coupled with trucking service fees. Truck drivers have then shifted to other types of driving jobs, such as taxi drivers, tricycle drivers, angkas drivers, and motorcycle food delivery drivers. The industry proposed that “continuous training and graduates trained by TESDA” be used to solve the issue.

The industry believes that the sector currently experiences a second or third round of brain drain. After the worker has completed the training, the worker would move to another country in search of better pay. Thus, this makes the development of the next level of qualified personnel, a human resource challenge. The industry already has measures to slow down the brain drain. However, a strong partnership support will be needed for this.

Furthermore, the manpower requirements needed include documentation supervisors, import-export inspector specialists, import processors, consolidators assistant, and a host of other personnel complements.

4.2. Challenges and Opportunities

Based on the discussions made during the Industry Consultation on Skills Requirements of the Logistics Industry, the following were the current challenges and opportunities by them as described by the participants. These were divided into several aspects which are Employment, Education, Economic, and Others.

Table 1. Summary of Opportunities and Challenges in the Logistics Industry.

Aspect	Challenges	Opportunities
Employment	Among the job challenges, both in the technical and non-technical jobs, are a shortage of qualified and experienced manpower (e.g., truck drivers, helpers, slingman), as well as a high turnover rate, especially after training. It takes time for a crane operator position to be filled despite having newspaper ads and contacting friends.	Crane operators, slingman, welders, warehouse checkers, accountants, container freezer/reefer technicians, riggers, crane mechanics, container surveyors, container control clerks, container inspectors, truck drivers, helpers and trained personnel in online transactions are among the positions available in the logistics industry. The industry considers these as some of their immediate needs.
		TESDA, DTI, and other agencies may immediately initiate a creation of a talent pool which will serve as a resource for companies looking for qualified employees.
	There is a scarcity of honest applicants.	
	Salaries are not standardized based on personnel qualifications which may have contributed to the high turnover of employees	
	Most businesses have been relying on their savings and have had to implement cost-cutting measures such as layoffs.	
Education	Although shifting to digital/online processes has always been a plan in several subsectors of the logistics industry, the COVID-19 pandemic pushed and forced them to it. For instance, performing various processes of Land/Air/Sea Freight Forwarding became difficult as the method has shifted from manual to digital. The lack of a standardized digital platform for all supply chain practitioners makes it more difficult for employees to learn the various platforms.	Reskilling and upskilling of workers, in terms of digitization, are also needed. As the new normal shifts toward digitization, there is an obvious need to upgrade workers' and third-party providers' skills. What the industry urgently needs is a standard platform where their online processes will take place.
		Re-alignment/Standardization of the modules/platforms must be considered.

Aspect	Challenges	Opportunities
	Soft skills seminar (e.g., Customer centered programs, Ethics, Leadership) is also crucial.	DTI-TESDA "Tulong Trabaho" Program (equip workers with knowledge and skills) is regarded as one of the training opportunities in logistics. Specifically, there is a need to train workers for proper cargo handling, workplace safety, handling customers, defensive driving, minor mechanical works (under-chassis repair, equipment adjustments) among others. It is best to have specific skills training for different jobs.
	Workers lack the minor mechanical knowledge needed for the job, making a sustainable training program necessary. However, the desire/ability of the workers to participate in training if the mode is face-to-face is a foreseeable obstacle.	Training is not limited to rank-and-file positions as supervisory and managerial positions also have a great need to undergo talent development.
	Helpers and checkers are promoted to drivers despite having no proper training. The only knowledge they have is that which they gain through observation while accompanying the driver. According to one representative of the industry, around 90% of the drivers were promoted from being <i>pahinantes</i> . In some cases, companies must rely on a specific employee, regardless of their poor performance or work attitude, because they find difficulty looking for immediate replacement.	
	The limited capabilities of third-party providers are a challenge in the supply chain management sector.	
	There refrigeration and crane related TESDA Training regulation is not sector specific. The current TESDA TR for refrigeration differs from industrial refrigeration that the industry requires. Likewise, the it was remarked that crane operation differs significantly between the logistics and construction industry.	There is an opportunity to review existing Training Regulations.
Economic	Another challenge is the lack of infrastructure development. The major players in ports and infrastructures are at various stages of development. The cost of investment and the operating cost is high, and there are only few available incentives to participate in such investments. In particular, transport infrastructure connectivity (Competing transport facilities, Hinterland connectivity bottlenecks, Limited international gateway connectivity, Inadequate alternate modal options) is an issue.	Invest in the creation of new and modernized warehousing systems (e.g., custom bonded warehouse) and facilities, as well as in the servicing of import for MSME re-export requirements, export, network expansion, market growth in food and pharmaceuticals, and other essential goods and services, managed services in logistics and procurement skills, high peak hauling truck requests, and early delivery. They hope to receive financial support from the government in terms of capital expenditures.

Aspect	Challenges	Opportunities
Others		In response to the Fourth Industrial Revolution, digitalization and automation are important. Automation of shipping procedures and processes is necessary for more efficient operations in the logistics sector.
	One challenge in the logistics industry is dealing with the complex bureaucratic government procedures. For instance, the regulations of the Bureau of Customs can be stringent and costly. Smugglers' entry has resulted in stricter supervision and compliance measures.	
	As a result, these regulations have hampered efficiency and effectiveness and bureaucratic delays affect the local and international trade. There are trade facilitation efficiency problems relating to limited	
	compliance to standards, regulations and policies, clearance coordination challenges, and cargo security concerns.	
	Some of the local government policies are inconsistent and conflicting, including the lack of centralized truck ban in place.	
	Lack of government support in the fast-tracking of goods and services.	
	Other challenges in the logistics industry are insufficient business opportunities (domestic market), competitors, mono-sourced vendors, and service competence capability (Institutional framework challenges, limited capabilities of service providers, lack of skilled human capital, low technology adoption).	

4.1. Skills Requirements

Technical Skills

Table 2 shows the technical skills that are needed in the logistics sector as derived from the Skills Validation Survey.

Cargo handling, safety manager, dangerous goods awareness, dangerous goods handling, and logistics support clerk are the skills requirements that are needed in the next 1-3 years. Meanwhile, freight forwarder is the most needed in the next 3-5 years.

The table below (Table 2)) also shows the labor shortage in filling hard-to-fill jobs, which were classified as medium and high shortages, with 100-500 workers and more than 500

workers, respectively. Administrative clerk and human resource assistant are two of the hard-to-fill positions, with a predicted shortage of 100-500 workers. Furthermore, there

will be an anticipated shortage of 500 and above workers for truck drivers, master mechanics, heavy equipment operators, mechanics, and human resource managers. These positions are difficult to fill due to the constraints listed in Table 2.

During the consultation, the industry identified the following additional job positions as having an immediate need and requiring well-experienced and trained workers:

- Rigger
- Container freezer/reefer technicians
- Container checkers
- Welders
- Mechanics
- Sling man

In order to fill the gap in these technical skills requirements in the logistics industry, there is an apparent and immediate need for training, and if possible, provide it for free to the employees.

Table 2. Technical Skills Requirements in the Logistics Industry per Subsector as derived from the Skills Validation Survey.

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
Container Depot	Administrative Clerk	L	M	Unattractive Position	No technical training Undercompensated	Conduct of Training
	Ticketing Issuing/Travel Clerk	S	M	Unattractive Position	Not Challenging enough	Standardization
	Ticket Teller	S	M	Unattractive Position	Machines take over the work	Abolishing of the position
	Customer Service Representative/Associate	L	M	Unattractive Position	No technical training	Conduct of Training
	Automotive Painter	L	M	Experience requirement	Lack experience	Conduct of Training
	Master Mechanic	L	H	Experience requirement	Lack experience	Conduct of Training /Certification
	Welder	L	H	Experience requirement	No technical training Lack experience	Conduct of Training /Certification
	Electrician	L	H	Experience requirement	No technical training Lack experience	Conduct of Training /Certification
	Heavy Equipment Operator	L	H	Experience requirement Low Salary	No technical training Lack experience	Conduct of Training /Certification
	Mechanic	L	H	Experience requirement Low Salary	No technical training Lack experience	Conduct of Training /Certification
	Transport Network Vehicle Service (TNVS) Driver / Taxi Driver	L	H	Lack of Soft Skills	No technical training	Conduct of Training /Certification
	Terminal and Warehouse Personnel	L	H	Experience requirement	No technical training	Conduct of Training /Certification
	Bus Driver	L	H	Experience requirement	No technical training	Conduct of Training /Certification
	Truck Driver	L	H	Experience requirement	No technical training	Conduct of Training /Certification
	Machine Operator	L	H	Experience requirement	No technical training	Conduct of Training /Certification
Forklift Operator	L	H	Experience requirement	No technical training	Conduct of Training /Certification	

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Forklift Driver	L	H	Experience requirement	No technical training	Conduct of Training /Certification
	Green Skills	L	M	Lack of Technical Skills	No technical training	Conduct of Training /Certification
	Human Resource Assistant	L	M	Experience requirement	No technical training	Conduct of Training /Certification
	Delivery Associate	L	H	Unattractive Position	Lack Skills	Salary Standardization
	Parts Pricing	S	M	Unattractive Position	Low Budget	Conduct of Training /Certification
	Order Tracker/Coordinator	S	M	Unattractive Position	Lack of Interested in the position	Conduct of Training /Certification
	Freight forwarders	L	H	Unattractive Position	Low Budget	Conduct of Training /Certification
	Shipping Line Personnel	L	H	Low Budget	Low Budget	Conduct of Training /Certification
	Airline Staff	S	H	Low Budget	Lack of Soft Skills	Conduct of Training /Certification
	Ground Handler	S	H	Low Budget	Lack experience	Conduct of Training /Certification
	Motorcycle Driver	S	M	Risky Position	Low Budget	Conduct of Training /Certification
	Conductor	S	M	Unattractive Position	Commission-based	Conduct of Training/Standardization
	Helper	L	H	Unattractive Position	Low Budget	Conduct of Training/Standardization
	Dispatcher	S	M	Experience Requirement	Low Budget	Conduct of Training/Standardization
	Route Planner	S	M	Experience Requirement	Low Budget	Conduct of Training/Standardization
	Courier	S	M	Experience Requirement	Low Budget	Conduct of Training/Standardization
	Export Brokerage Clerk	S	M	Experience Requirement	Low Budget	Conduct of Training/Standardization
	Scheduler	S	M	Experience Requirement	Low Budget	Conduct of Training/Standardization
	Shipper and Receiver	S	M	Experience Requirement	Low Budget	Conduct of Training/Standardization
	Inventory Clerk	S	M	Unattractive Position	Low Budget	Conduct of Training/Standardization
	Logistics Support Clerk	S	M	Low Budget	Lack of Interested in the position	Conduct of Training/Standardization
	Call Center Operator	L	H	Lack of Soft Skills	Low budget	Conduct of Training/Standardization
	Warehouse Management	S	M	Lack of Soft Skills	Low Budget	Conduct of Training/Standardization
	Inventory System	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Cargo Handling	S	M	Lack of trained workers	Low Budget Handling ODG	Conduct of Training/Standardization
	Perishable Cargo Handling	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Dangerous Goods Awareness	S	M	Lack of trained workers	Low Budget Refresher Training on Dangerous Goods	Conduct of Training/Standardization

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
					Awareness (Handling, storage, and disposal)	
	Dangerous Goods Handling	S	M	Lack of trained workers	Low Budget, Standard Training & Competence on Dangerous Goods (Awareness, Handling, Storage, & Disposal)	Conduct of Training/Standardization
	Dangerous Goods Handling for Sea Transport	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Dangerous Goods Regulation	S	M	Lack of trained workers	Low Budget Covered in DG Awareness Training	Conduct of Training/Standardization
	Fundamentals of Warehousing and Inventory Management	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Good Warehousing Practices	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.)	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Repair and Maintenance various Warehouse Equipment	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Basic International Air Cargo Forwarding	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Foundation Course on Multimodal Transport Operation	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Intermediate Course on Multimodal Transport Operations	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Communication Skills Program for Transport Workforce	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	RMC 9-2006					Conduct of Training/Standardization
	RMC 35-2006					Conduct of Training/Standardization
	DG Workshop					Conduct of Training/Standardization
	Basic Cargo Skills and Procedure	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Basic Cargo Build-Up Handling Training	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	ULD Handling Course/Airside Safety Course	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Multimodal Transport Operation and Logistics (Seafreight Import)	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Logistics Management	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
	Logistics and Supply Chain Management Certificate	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Logistics and Supply Chain Management Diploma	S	M	Lack of trained workers	Low Budget	Conduct of Training/Standardization
Customs Bonded Warehouse	Administrative Clerk	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Customer Service Representative/Associate	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Automotive Painter	S	M			
	Master Mechanic	S	H			
	Welder	S	M			
	Electrician	S	M			
	Heavy Equipment Operator	S	H			
	Mechanic	S	H			
	Terminal and Warehouse Personnel	S	M			
	Bus Driver	S	M			
	Truck Driver	S	H			
	Machine Operator					
	Forklift Operator	S	M	Virtual Reality	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Parts Pricing	S	H			
	Freight forwarders	S	M			
	Motorcycle Driver	S	M			
	Dispatcher	S	M			
	Courier	S	M			
	Export Brokerage Clerk	S	M			
	Shipper and Receiver	S	M			
	Logistics Support Clerk	S	M			
	Warehouse Management	S	M	Virtual Reality	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
Cargo Handling	S	M				
Perishable Cargo Handling	S	H				
Dangerous Goods Awareness	S	H				
Dangerous Goods Handling	S	H				

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Dangerous Goods Handling for Sea Transport	S	H			
	Dangerous Goods Regulation	S	H			
	Fundamentals of Warehousing and Inventory Management	S	M	Virtual Reality	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Good Warehousing Practices	S	M	Virtual Reality	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.)	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Repair and Maintenance various Warehouse Equipment	S	M	Lack of qualified applicants/employees	Virtual Reality	Conduct of Training, Standardization, Certification
	Basic International Air Cargo Forwarding					
	Foundation Course on Multimodal Transport Operation	S	M			
	Intermediate Course on Multimodal Transport Operations	S	M			
	Communication Skills Program for Transport Workforce	S	H			
	Basic Cargo Skills and Procedure	S	M			
	Basic Cargo Build-Up Handling Training	S	M			
	ULD Handling Course/Airside Safety Course	S	M			
	Multimodal Transport Operation and Logistics (Seafreight Import)	S	H			
	Logistics Management	S				
	Logistics and Supply Chain Management Certificate	S	M	Lack of qualified applicants/employees	Virtual Reality	Conduct of Training, Standardization, Certification
	Logistics and Supply Chain Management Diploma	S	M	Lack of qualified applicants/employees	Virtual Reality	Conduct of Training, Standardization, Certification
Inland Haulers and Trucking	Administrative Clerk	S,L	2	Lack of qualified applicants/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Ticketing Issuing/Travel Clerk	S	1			
	Ticket Teller	S	1			
	Customer Service Representative/Associate	S	1	Lack of qualified applicants/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Automotive Painter	S,L	M,H	Lack of qualified applicants/employees, Unattractive Job, Lack of skills and educational requirements (i.e. basic English, adept Tagalog language); Equipped with knowledge but cannot deliver acceptable outputs	Lack of qualified applicant; Lack of training/experience	Conduct of Free training, Standardization, Certification
	Master Mechanic	S,L	H	Lack of qualified applicants/employees, Unattractive Job, Lack of skills and educational requirements (i.e. basic English, adept Tagalog language); High paying and not affordable for truck operators	Lack of qualified applicant; many have learned only few are reliable	Conduct of Free training, Standardization, Certification
	Welder	S,L	M,H	Lack of qualified applicants/employees; Equipped with knowledge but cannot deliver acceptable outputs	Lack of qualified applicants/employees; lack of training/experience	Conduct of Free training, Standardization, Certification
	Electrician	S,L	M,H	Lack of qualified applicants/employees; Equipped with knowledge but cannot deliver acceptable outputs	Lack of qualified applicants; lack of training/experience	Conduct of Free training, Standardization, Certification
	Heavy Equipment Operator	S	H	Lack of qualified applicants/employees; Lack of experience/training	Lack of qualified applicants; Few learning opportunities	Conduct of Free training, Standardization, Certification
	Mechanic	S	H	Lack of qualified applicants/employees, Unattractive Job, Lack of skills and educational requirements (i.e. basic English, adept Tagalog language); Few have obtained formal training	Lack of qualified applicants; Lack of available applicants with hard skills; Overseas Labor Migration or transferring to other job opportunities (e.g. Grab/Uber) to seek higher compensation; Poor Road/ Infrastructure Situation; Restrictions (i.e. Truck Bans, One Lane Policy, LGU's policy with regards to passing through fees and documentary requirements for Truck Driver and Helper) ; No access to opportunities and trainings	AOTA; They need training in developing articulated drivers in code 8 restrictions for driver's license and current employees to fill up open positions; Free training programs
	Transport Network Vehicle Service (TNVS) Driver / Taxi Driver	S	M			
	Terminal and Warehouse Personnel	S	M,H	Lack of qualified applicants/Virtual Reality; Lack experience/training	Lack of qualified applicants; lack of training/experience	Conduct of Free training, Standardization, Certification
	Bus Driver	S,L	M	Lack of qualified applicants/employees	Lack of qualified applicants	Conduct of Free training, Standardization, Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Truck Driver	S,L	H	Lack of qualified applicants/employees, Unattractive Job, Lack of skills and educational requirements (i.e. basic English, adept Tagalog language); Lack of experience/training	Lack of qualified applicants with hard skills; lack of training/experience; transferring to other job opportunities (e.g. Grab/Uber) to seek higher compensation; Restrictions (i.e. Truck Bans, One Lane Policy, LGU's policy with regards to passing through fees and documentary requirements for Truck Driver and Helper)	Conduct of free training, Standardization, Certification. They need training in developing articulated drivers in code 8 restrictions for drivers license and reskilling current employees; paired courses (example: basic trouble shooting and under chassis repair)
	Machine Operator	L	H			
	Forklift Operator	S	H	Lack of training/experience	Lack of training/experience	Free Training
	Forklift Driver	S	H	Lack of training/experience	Lack of training/experience	Free training
	Green Skills					
	Delivery Associate	S	M	Lack of qualified applicants	Lack of qualified applicants	Conduct of Training, Standardization, Certification
	Parts Pricing	S	M,H	Lack of qualified applicants; Virtual reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Order Tracker/Coordinator	S	M			
	Freight forwarders	S,L	M	Lack of qualified applicant	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Shipping Line Personnel	S	M			
	Airline Staff	S	M			
	Ground Handler	S	M			
	Motorcycle Driver	S	M	Lack of qualified applicant	Lack of employees	Conduct of Training, Standardization, Certification
	Conductor	S	M			
	Helper	S	H	Unattractive job, lack of skills and educational requirements (i.e. basic English, adept Tagalog language)	Lack of qualified applicants with hard skills; lack of training/experience; transferring to other job opportunities (e.g. Grab/Uber) to seek higher compensation; Restrictions (i.e. Truck Bans, One Lane Policy, LGU's policy with regards to passing through fees and documentary requirements for Truck Driver and Helper) ; Truckers are unable to provide good	They need training in developing articulated drivers in code 8 restrictions for drivers license and reskilling current employees; Need to increase hauling fees paid to truck

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
					compensation because of low hauling fees that they collect from the customers	
	Dispatcher	S	M	Lack of qualified employee; Unattractive job, lack of skills and educational requirements (i.e. basic English, adept Tagalog language)	Lack of employees; Lack of available applicants with hard skills. They transferred to other works like Grab/Uber and applied overseas workers to have high income. Also roads infrastructure, port and road congestion, etc. There are restriction such as Truck Bans, One Lane Policy, LGU's policy with regards to passing through fees and documentary requirements for Truck Driver and Helper.	They need training in developing articulated drivers in code 8 restrictions for drivers license and reskilling current employees; Need to increase hauling fees paid to truck
	Courier	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Export Brokerage Clerk	S	M,H	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Scheduler	S	H			
	Shipper and Receiver	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Inventory Clerk	S	M			
	Logistics Support Clerk	S	M	Lack of qualified applicant/employee; Unattractive job, lack of skills and educational requirements (i.e. basic English, adept Tagalog language)	Lack of employees; Lack of qualified applicants with hard skills; lack of training/experience; transferring to other job opportunities (e.g. Grab/Uber) to seek higher compensation; Restrictions (i.e. Truck Bans, One Lane Policy, LGU's policy with regards to passing through fees and documentary requirements for Truck Driver and Helper)	Conduct of Training, Standardization, Certification; Conduct of free training, Standardization, Certification. They need training in developing articulated drivers in code 8 restrictions for drivers license and reskilling current employees
	Call Center Operator	S	M			
	Warehouse Management	S	H		lack of experience and training	training and automation
	Inventory System	S	M			
	Cargo Handling	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees; few have access to required training	Conduct of Training, Standardization, Certification; paired courses

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Perishable Cargo Handling	S,L	M,H	Lack of qualified applicants/employees; Virtual reality	Lack of qualified applicants/employees; few have access to required training	Conduct of Training, Standardization, Certification; paired courses
	Dangerous Goods Awareness	S,L	M,H	Lack of qualified applicants/employees; Virtual reality	Lack of qualified applicants/employees; few have access to required training	Conduct of Training, Standardization, Certification; paired courses
	Dangerous Goods Handling	S,L	M,H	Lack of qualified applicants/employees; Virtual reality	Lack of qualified applicants/employees; few have access to required training	Conduct of Training, Standardization, Certification; paired courses
	Dangerous Goods Handling for Sea Transport	S,L	H	Lack of qualified applicants/employees	Lack of qualified applicants/employees; few have access to required training	Conduct of Training, Standardization, Certification; paired courses
	Dangerous Goods Regulation	S,L	M,H	Lack of qualified applicants/employees; Virtual reality	Lack of qualified applicants/employees; few have access to required training	Conduct of Training, Standardization, Certification; paired courses
	Fundamentals of Warehousing and Inventory Management	S	M			
	Good Warehousing Practices	S	M			
	Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.)	S	M			Paired courses
	Repair and Maintenance various Warehouse Equipment	L	H			
	Basic International Air Cargo Forwarding	L	M			
	Foundation Course on Multimodal Transport Operation	S,L	M,H	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Intermediate Course on Multimodal Transport Operations	S,L	M,H	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Communication Skills Program for Transport Workforce	S	H	Lack of qualified applicants/employees; Virtual reality	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	RMC 9-2006	L	H			
	RMC 35-2006	L	H			
	DG Workshop	S	M			
	Basic Cargo Skills and Procedure	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Basic Cargo Build-Up Handling Training	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification; paired courses
	ULD Handling Course/Airside Safety Course	S	M	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization,

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
						Certification; paired courses
	Multimodal Transport Operation and Logistics (Seafreight Import)	S,L	H	Lack of qualified applicants/employees	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification
	Logistics Management	S	M			Automation and Logistics IT Courses
	Logistics and Supply Chain Management Certificate	S	M			Automation and Logistics IT Courses
	Logistics and Supply Chain Management Diploma	S	M,H	Lack of qualified applicants/employees; Virtual reality	Lack of qualified applicants/employees	Conduct of Training, Standardization, Certification; Automation and Logistics IT Courses
Domestic and International Shipping Lines	Administrative Clerk	S	M	Lack of qualified applicant	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Ticketing Issuing/Travel Clerk	S				
	Ticket Teller	S				
	Customer Service Representative/Associate	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Automotive Painter	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Master Mechanic	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Welder	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Electrician	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Heavy Equipment Operator	S,L	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Mechanic	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Transport Network Vehicle Service (TNVS) Driver / Taxi Driver	S				
	Terminal and Warehouse Personnel	S,L	M	Lack of qualified applicant; Virtual reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Bus Driver	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Truck Driver	S,L	M,H	Lack of qualified applicant/employees/Virtual Reality; Qualification & Certification	Lack of qualified applicant/employees; Cost of training / Certification	Conduct of Training, Standardization, Certification; OJT
	Machine Operator	S,L	M	Qualification & Certification	Cost of training / Certification	OJT & Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Forklift Operator	S,L	M	Qualification & Certification	Cost of training / Certification	OJT & Certification
	Forklift Driver	S,L	M	Qualification & Certification	Cost of training / Certification	OJT & Certification
	Delivery Associate		M	Lack of qualified applicant	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Parts Pricing	S	H	Lack of qualified applicant; Virtual reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Freight forwarders	S,L	M	Lack of qualified applicant	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Motorcycle Driver	S	M	Lack of qualified applicant	Lack of qualified employee	Conduct of Training, Standardization, Certification
	Helper	S,L				
	Dispatcher	S,L	M	Lack of qualified employee	Lack of qualified employee	Conduct of Training, Standardization, Certification
	Courier	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Export Brokerage Clerk	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Shipper and Receiver	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Inventory Clerk	S,L				
	Logistics Support Clerk	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Call Center Operator					
	Warehouse Management	S,L				
	Inventory System	S,L				
	Cargo Handling	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Perishable Cargo Handling	S,L	H	Lack of qualified applicant/employees; Virtual reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Awareness	S,L	H	Lack of qualified applicant/employees; Virtual reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Handling	S,L	H	Lack of qualified applicant/employees; Virtual reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Handling for Sea Transport	S,L	H	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Dangerous Goods Regulation	S,L	H	Lack of qualified applicant; Virtual reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Fundamentals of Warehousing and Inventory Management	S,L	M		Training experience	Conduct of training/seminar workshops
	Good Warehousing Practices	S,L	M		Field experience	Conduct of training/seminar workshops
	Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.)	S,L	H		operational experience	
	Repair and Maintenance various Warehouse Equipment	S,L			operational experience	
	Foundation Course on Multimodal Transport Operation	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Intermediate Course on Multimodal Transport Operations	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees; Training/educational experience	Conduct of Training, Standardization, Certification, seminar workshops
	Communication Skills Program for Transport Workforce	S,L	M,H	Lack of qualified applicant/employees; Virtual reality	Lack of qualified applicant/employees; Training/educational experience	Conduct of Training, Standardization, Certification, seminar workshops
	RMC 35-2006	S,L				
	Basic Cargo Skills and Procedure	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Basic Cargo Build-Up Handling Training	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	ULD Handling Course/Airside Safety Course	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Multimodal Transport Operation and Logistics (Seafreight Import)	S,L	M,H	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Logistics Management	S,L				
	Logistics and Supply Chain Management Certificate	L	M			
	Logistics and Supply Chain Management Diploma	S	H	Lack of qualified applicant/employees; Virtual reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
Land/Air/Sea Freight Forwarding	Administrative Clerk	S	M	Lack of qualified applicant	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Customer Service Representative/Associate	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Automotive Painter	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Master Mechanic	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Welder	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Electrician	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Heavy Equipment Operator	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Mechanic	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Terminal and Warehouse Personnel	S	M	Lack of qualified applicant; Virtual Reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Bus Driver	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Truck Driver	S	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Delivery Associate	S	M	Lack of qualified applicant	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Parts Pricing	S	H	Lack of qualified applicant; Virtual Reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Order Tracker/Coordinator	S,L				
	Freight forwarders	S,L	M	Lack of qualified applicant	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Motorcycle Driver	S	M	Lack of qualified applicant	Lack of employees	Conduct of Training, Standardization, Certification
	Dispatcher	S	M	Lack of employees	Lack of employees	Conduct of Training, Standardization, Certification
	Courier	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Export Brokerage Clerk	S	M	Lack of qualified applicant/employees; may be obsolete under new CMTA law	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Shipper and Receiver	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Inventory Clerk	S				
	Logistics Support Clerk	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Call Center Operator				Back-end customer service support training is needed	
	Warehouse Management	L				
	Inventory System	L				
	Cargo Handling	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Perishable Cargo Handling	S,L	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Awareness	S,L	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Handling	S,L	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Handling for Sea Transport	S,L	H	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Regulation	S,L	H	Lack of qualified applicant; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Fundamentals of Warehousing and Inventory Management	L				
	Good Warehousing Practices	L				
	Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.)	L				
	Repair and Maintenance various Warehouse Equipment	L				
	Basic International Air Cargo Forwarding	L				
	Foundation Course on Multimodal Transport Operation	L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Intermediate Course on Multimodal Transport Operations	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Communication Skills Program for Transport Workforce	S,L	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	RMC 9-2006	S		BIR rules may change		
	RMC 35-2006	S		BIR rules may change		
	DG Workshop	L				
	Basic Cargo Skills and Procedure	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Basic Cargo Build-Up Handling Training	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	ULD Handling Course/Airside Safety Course	S,L	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Multimodal Transport Operation and Logistics (Seafreight Import)	S,L	H	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Logistics Management	L				
	Logistics and Supply Chain Management Certificate	L				
	Logistics and Supply Chain Management Diploma	S,L	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
Off-Dock CFS Operations	Administrative Clerk	L		Lack of Required Skills	Overseas Labor Migration; Shifting to other work opportunities (i.e. Truck drivers turned taxi/PUV drivers)	Training; Upgrade of Knowledge and Skills of Employees
	Master Mechanic	S	H			
	Welder	S				
	Electrician	S				
	Heavy Equipment Operator	S				
	Mechanic	S				
	Terminal and Warehouse Personnel	S				
	Truck Driver	S	H			
	Machine Operator					
	Forklift Operator	S	H			
	Forklift Driver	S	H			
	Motorcycle Driver	S				
	Warehouse Management	S				
	Inventory System	S				
	Cargo Handling	S				
	Perishable Cargo Handling	S				
	Dangerous Goods Awareness	S				
Dangerous Goods Handling	S					
Dangerous Goods Handling for Sea Transport	S					
Dangerous Goods Regulation	S					

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Fundamentals of Warehousing and Inventory Management	S				
	Good Warehousing Practices	S				
	Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.)	S				
	Repair and Maintenance various Warehouse Equipment	S				
Supply Chain Management	Administrative Clerk	S,L				
	Ticketing Issuing/Travel Clerk	S				
	Ticket Teller	S				
	Customer Service Representative/Associate	S,L				
	Transport Network Vehicle Service (TNVS) Driver / Taxi Driver	S,L				
	Terminal and Warehouse Personnel	S,L				
	Bus Driver	S,L				
	Truck Driver	S,L	H			
	Machine Operator	S,L				
	Forklift Operator	S,L	M			
	Forklift Driver	S,L				
	Delivery Associate	S,L			Demand	Standardization/ Certification
	Order Tracker/Coordinator	S,L			Demand	Standardization/ Certification
	Freight forwarders	S,L			Demand	Standardization/ Certification
	Shipping Line Personnel	S,L			Demand	Standardization/ Certification
	Airline Staff	S				
	Ground Handler	S,L			Demand	Standardization/ Certification
	Motorcycle Driver	S,L			Demand	Standardization/ Certification
	Conductor	S,L			Demand	Standardization/ Certification
	Helper	S,L			Demand	Standardization/ Certification
Dispatcher	S,L			Demand	Standardization/ Certification	
Courier	S,L			Demand	Standardization/ Certification	

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Export Brokerage Clerk	S,L			Demand	Standardization/ Certification
	Scheduler	S,L			Demand	Standardization/ Certification
	Shipper and Receiver	S,L			Demand	Standardization/ Certification
	Inventory Clerk	S,L			Demand	Standardization/ Certification
	Logistics Support Clerk	S,L			Demand	Standardization/ Certification
	Call Center Operator	S,L			Demand	Standardization/ Certification
	Warehouse Management	S,L	M		Demand	Standardization/ Certification
	Inventory System	S,L	M		Demand	Standardization/ Certification
	Cargo Handling	S,L			Demand	Standardization/ Certification
	Perishable Cargo Handling	S,L			Demand	Standardization/ Certification
	Dangerous Goods Awareness	S,L			Demand	Standardization/ Certification
	Dangerous Goods Handling	S,L			Demand	Standardization/ Certification
	Dangerous Goods Handling for Sea Transport	S,L			Demand	Standardization/ Certification
	Dangerous Goods Regulation	S,L			Demand	Standardization/ Certification
	Fundamentals of Warehousing and Inventory Management	S,L			Demand	Standardization/ Certification
	Good Warehousing Practices	S,L	M		Demand	Standardization/ Certification
	Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.)	S,L	M		Demand	Standardization/ Certification
	Repair and Maintenance various Warehouse Equipment	S,L	M		Demand	Standardization/ Certification
	Basic International Air Cargo Forwarding	S,L			Demand	Standardization/ Certification
	Foundation Course on Multimodal Transport Operation	S,L			Demand	Standardization/ Certification
	Intermediate Course on Multimodal Transport Operations	S,L			Demand	Standardization/ Certification
	Communication Skills Program for Transport Workforce	S,L			Demand	Standardization/ Certification
	Basic Cargo Skills and Procedure	S,L			Demand	Standardization/ Certification
	Basic Cargo Build-Up Handling Training	S,L			Demand	Standardization/ Certification

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Multimodal Transport Operation and Logistics (Seafreight Import)	S,L			Demand	Standardization/ Certification
	Logistics Management	S,L			Demand	Standardization/ Certification
	Logistics and Supply Chain Management Certificate	S,L	M		Demand	Standardization/ Certification
	Logistics and Supply Chain Management Diploma	S,L	M		Demand	Standardization/ Certification
Wet and Dry Warehousing	Administrative Clerk	S	M	Lack of qualified applicant	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Customer Service Representative/Associate	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Automotive Painter	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Master Mechanic	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Welder	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Electrician	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Heavy Equipment Operator	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Mechanic	S	H	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Terminal and Warehouse Personnel	S	M	Lack of qualified applicant; Virtual Reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Bus Driver	S	M	Lack of qualified applicant/employees	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Truck Driver	S	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Delivery Associate		M	Lack of qualified applicant	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Parts Pricing	S	H	Lack of qualified applicant; Virtual Reality	Lack of qualified applicant	Conduct of Training, Standardization, Certification
	Freight forwarders	S	M	Lack of qualified applicant	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
Motorcycle Driver	S	M	Lack of qualified applicant	Lack of employees	Conduct of Training, Standardization, Certification	

Subsector	Skills/Job	Year (S: In the next 1-3 years, L: In the next 1-5 years)	Shortages of Workers in Filling-up Hard-to-fill Jobs (M :100-500, H: 500 above)	Constraints in Filling-up the Hard-to-fill Jobs	Reasons/Causes for the Shortage	Recommended Action
	Dispatcher	S	M	Lack of employees	Lack of employees	Conduct of Training, Standardization, Certification
	Courier	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Export Brokerage Clerk	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Shipper and Receiver	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Logistics Support Clerk	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Cargo Handling	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Perishable Cargo Handling	S	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Awareness	S	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Handling	S	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Handling for Sea Transport	S	H	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Dangerous Goods Regulation	S	H	Lack of qualified applicant; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Foundation Course on Multimodal Transport Operation	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Intermediate Course on Multimodal Transport Operations	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Communication Skills Program for Transport Workforce	S	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Basic Cargo Skills and Procedure	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Basic Cargo Build-Up Handling Training	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	ULD Handling Course/Airside Safety Course	S	M	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Multimodal Transport Operation and Logistics (Seafreight Import)	S	H	Lack of qualified applicant/employees	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification
	Logistics and Supply Chain Management Diploma	S	H	Lack of qualified applicant/employees; Virtual Reality	Lack of qualified applicant/employees	Conduct of Training, Standardization, Certification

Technical Skills Common to the Sector

Based on the results of the survey, the following are the technical skills that were selected or common to all the subsectors:

- Administrative Clerk
- Terminal and Warehouse Personnel
- Truck Driver
- Motorcycle Driver
- Cargo Handling
- Perishable Cargo Handling
- Dangerous Goods Awareness
- Dangerous Goods Handling for Sea Transport
- Dangerous Goods Regulation
- E-Commerce and Social Media Specialists

Soft Skills

Apart from the technical skills needed in the industry, there are also soft skills that are critical in building relationships and facilitating growth within the workplace. The soft skills that are relevant to the logistics industry are communication skills, leadership quality, business and work ethics, professionalism, love and dedication to company/service (service orientation), digitalization, computer and technological literacy, management and organization, customer service/stakeholder engagement/customer relationship management, and innovative skills.

The most needed soft skills in the next 1-5 years as identified by the results of the survey in the skills map validation, in descending order, are:

- Critical Thinking and Analysis
- Emotional Intelligence
- Problem Solving
- Quality control and safety awareness
- Attention to detail
- Resilience
- Management and organization skills
- Technology use, monitoring and control
- Trustworthiness
- Stress tolerance
- Ideation
- “Economics of Living and Planning”
- Digital Skills

Skills Related to 4IR

With the emergence of new technology, the way industry works changes. In terms of the Fourth Industrial Revolution, the Logistics sector anticipates the following emerging skills:

- Robotics
- Artificial Intelligence

- Internet of Things
- Virtual/augmented reality
- Technical skills for equipment/tools (i.e. machine operation)
- Analytics (i.e. data analytics, systems analytics)

According to the results of the skills validation, e-Commerce and social media specialists, process automation, and data analysts and scientists are among the top emerging skills.

4.2. Possible Providers of the Program

- Cold Chain Association of the Philippines (CCAP) has been conducting training sessions for their members that focus on subjects relevant to multi-sectoral stakeholders. The Philippine Institute for Supply Management also commissioned CCAP to deliver training modules and undergraduate courses to several universities in Manila.
- TESDA can utilize industry practitioners as speakers for the topics.
- Almost all of the industry associations have their in-house training units (e.g., Supply Chain Management Association of the Philippines, Philippine Multimodal Transport and Logistics Association Inc, etc.). What is needed by these training units is the realignment and standardization of their course's contents and modules. Table 3 shows the training venues for some of the industry associations based on the Profiling Survey Responses for the Tulong Trabaho. Please note that not all of the Industry Associations answered the said survey conducted by DTI.

Table 3. Training Venues of the Logistics Industry Association.

Industry Association/Training Provider	Training Venue Location
Association of Off-Dock-CFS Operators of the Philippines (ACOP)	Las Piñas City, Manila City
Philippine Liner Shipping Association (PLSA)	Cagayan de Oro, Cebu City, Davao, General Santos City, Iloilo, Manila City, Puerto Princesa
Philippine Institute for Supply Management (PISM)	National Capital Region
Academy of Developmental Logistics, Inc. (ADLI)	CALABARZON, National Capital Region, Visayas, Mindanao

4.3. Other sector/sub-industries that will be affected

The logistics industry is critical in reviving and improving the competitiveness of other industries. The logistics sector has become indispensable to all industries (Sever & Abasiz, 2017), such as:

- Automotive and Transportation
- Construction
- Electrical and Electronics
- E-commerce Industry
- Heating, Ventilation, Airconditioning and Refrigeration
- Human Health / Health Care
- Information and Communication Technology
- Processed Food & Beverages
- Tourism (Hotel and Restaurant)
- Wholesale and Retail Trading
- Manufacturing Industry

V. Mapping of Skills Requirements vis-à-vis Existing TR

Table 4 shows the available Training Regulations for each skill/ job in the logistics industry.

Table 4. Equivalent Qualifications (WTR) for Skills/ Jobs in the Logistics Industry.

Skills/Job	Qualifications (WTR)
Administrative Clerk ¹	No Equivalent TR
Airline Staff	No Equivalent TR
Automotive Chassis Specialist	Automotive Servicing (Chassis Repair) NC II
Automotive Painter	Automotive Body Painting/Finishing NC I Auto Body Painting Finishing NC III
Automotive Service Specialist (Chassis)	Automotive Servicing (Chassis Repair) NC II
Basic Cargo Build-Up Handling Training ²	No Equivalent TR
Basic Cargo Skills and Procedure ²	No Equivalent TR
Basic International Air Cargo Forwarding ²	Multimodal Transport Operation and Logistics (Seafreight Import) Services NC IV
Bus Driver	Driving (Passenger Bus/Straight Truck) NC III
Call Center Operator	Contact Center Services NC II
Cargo Handling ¹	Warehousing Services NC II
Chassis Repair Personnel	Automotive Servicing (Chassis Repair) NC II
Communication Skills Program for Transport Workforce ²	No Equivalent TR
Conductor	No Equivalent TR
Container checker ¹	Warehouse Services NC II
Courier ¹	No Equivalent TR
Customer Service Representative/Associate	Customer Services NC II Contact Center Services NC II
Dangerous Goods Awareness ²	No Equivalent TR
Dangerous Goods Handling ¹	Warehousing Services NC II
Dangerous Goods Handling for Sea Transport ¹	Warehousing Services NC II
Dangerous Goods Regulation	No Equivalent TR
Delivery Associate ¹	No Equivalent TR
DG Workshop ²	No Equivalent TR

Skills/Job	Qualifications (WTR)
Dispatcher ¹	Warehousing Services NC II
Electrician	Electrical Installation and Maintenance NC II Electrical Installation and Maintenance NC III Electrical Installation and Maintenance NC IV
Export Brokerage Clerk ¹	No Equivalent TR
Forklift Driver	HEO (Forklift) NC II
Forklift Operator	HEO (Forklift) NC II
Foundation Course on Multimodal Transport Operation ²	Multimodal Transport Operation and Logistics (Seafreight Import) Services NC II
Freight forwarders ¹	Multimodal Transport Operation and Logistics (Seafreight Import) Services NC III
Fundamentals of Warehousing and Inventory Management ²	Warehousing Services NC II Warehousing Services NC III Warehousing Services NC IV
Good Warehousing Practices ²	Warehousing Services NC II Warehousing Services NC III Warehousing Services NC IV
Ground Handler	No Equivalent TR
Handling and Operating various Warehouse Equipment (Forklift, Stackers, etc.) ²	HEO (Forklift) NC II HEO (Container Stacker) NC II
Heavy Equipment Operator	HEO (Container Stacker) NC II HEO (Forklift) NC II HEO (Truck Mounted Crane) NC III HEO (Overhead and Gantry Crane) NC III HEO (Gantry Crane) NC II
Helper ¹	Warehousing Services NC II
Import Processors, consolidators assistant ¹	Multimodal Transport Operation and Logistics (Seafreight Import) Services NC IV
Import-Export Inspection Specialists ¹	No Equivalent TR
Intermediate Course on Multimodal Transport Operations ²	Multimodal Transport Operation and Logistics (Seafreight Import) Services NC III Multimodal Transport Operation and Logistics (Seafreight Import) Services NC IV
Inventory Clerk ¹	Warehousing Services NC III Warehousing Services NC IV
Inventory System ¹	Warehousing Services NC III Warehousing Services NC IV
Logistics and Supply Chain Management Certificate ²	Warehousing Services NC II Warehousing Services NC III Warehousing Services NC IV
Logistics and Supply Chain Management Diploma ²	No Equivalent TR
Logistics Management ²	Warehousing Services NC III Warehousing Services NC IV
Logistics Support Clerk ¹	Warehousing Services NC III Warehousing Services NC IV

Skills/Job	Qualifications (WTR)
Machine Operator	HEO (Forklift) NC II HEO (Container Stacker) NC II
Master Mechanic	Automotive Servicing NC I Automotive Servicing (Chassis Repair) NC II Automotive Servicing (Electrical Repair) NC II Automotive Servicing (Engine Repair) NC II Automotive Servicing NC III Automotive Servicing NC IV Heavy Equipment Servicing (Mechanical) NC II Motorcycle/Small Engine Servicing NC II Machining III
Mechanic	Automotive Servicing NC I Automotive Servicing (Chassis Repair) NC II Automotive Servicing (Electrical Repair) NC II Automotive Servicing (Engine Repair) NC II Automotive Servicing NC III Automotive Servicing NC IV Heavy Equipment Servicing (Mechanical) NC II Motorcycle/Small Engine Servicing NC II Machining NC I Machining NC II
Motorcycle Driver	No Equivalent TR
Multimodal Transport Operation and Logistics (Seafreight Import) ²	Multimodal Transport Operation and Logistics (Seafreight Import) Services NC II Multimodal Transport Operation and Logistics (Seafreight Import) Services NC III Multimodal Transport Operation and Logistics (Seafreight Import) Services NC IV
Order Tracker/Coordinator ¹	Multimodal Transport Operation and Logistics (Seafreight Import) Services NC III
Parts Pricing ¹	No Equivalent TR
Perishable Cargo Handling ¹	Warehousing Services NC II
Refrigeration Mechanic	Land-based Transport Refrigeration Servicing NC II
Refrigeration Technician	Ice Plant Refrigeration Servicing NC III RAC Servicing (DomRAC) NC II RAC Servicing (PACU-CRE) NC III Transport RAC Servicing NC II
Repair and Maintenance various Warehouse Equipment ¹	Heavy Equipment Servicing (Mechanical) NC II
Scheduler ¹	Warehousing Services NC III
Shipper and Receiver ¹	Warehousing Services NC II Warehousing Services NC III Warehousing Services NC IV
Shipping Line Personnel	No Equivalent TR
Slingman ¹	No Equivalent TR
Taxation (RMC 9-2006, RMC 35-2006) ²	No Equivalent TR

Skills/Job	Qualifications (WTR)
Terminal and Warehouse Personnel ¹	Warehousing Services NC II Warehousing Services NC III Warehousing Services NC IV
Ticket Teller	Travel Services NC II
Ticketing Issuing/Travel Clerk	Travel Services NC II
Transport Network Vehicle Service (TNVS) Driver /Taxi Driver	Driving NC II
Truck Driver	Driving (Passenger Bus/Straight Truck) NC III Driving (Articulated Vehicle) NC III
ULD Handling Course/Airside Safety Course ²	No Equivalent TR
Warehouse Management ¹	Warehousing Services NC III Warehousing Services NC IV
Welder	Flux Cored Arc Welding (FCAW) NC I Flux Cored Arc Welding (FCAW) NC II Flux Cored Arc Welding (FCAW) NC III Gas Metal Arc Welding (GMAW) NC I Gas Metal Arc Welding (GMAW) NC II Gas Metal Arc Welding (GMAW) NC III Gas Tungsten Arc Welding (GTAW) NC II Gas Tungsten Arc Welding (GTAW) NC IV Gas Welding NC I Gas Welding NC II Shielded Metal Arc Welding (SMAW) NC I Shielded Metal Arc Welding (SMAW) NC II Shielded Metal Arc Welding (SMAW) NC III Shielded Metal Arc Welding (SMAW) NC IV Submerged Arc Welding (SAW) NC I Submerged Arc Welding (SAW) NC II

Source: TESDA's TR and Related Job Database, Quick LMI on Logistics, Jobsfit 2022 LMIR

Note: ¹ This has to be verified with the sector what is the scope of work so that we will be able to determine the equivalent TR.

² This is a subject being taught in logistics and not a job title.

VI. TVET Capacity

Table 5 below shows the total number of enrolled, graduated, assessed, and certified (EGAC) by qualification (WTR, WTR-Cluster) that are relevant to the logistics industry. This is arranged in descending order in terms of the number of graduates. Some do not have data for specific TVET Statistics (shown as gray), including Contact Center Services NC II, Travel Services NC II, Gas Metal Arc Welding (GMAW) NC I, among others.

Eight of the training regulations relevant to the Logistics Industry have green competencies. These are Automotive Servicing NC I, Automotive Servicing NC II, Automotive Servicing NC II, Automotive Servicing NC IV, Ice Plant Refrigeration Servicing NC III, RAC Servicing (DomRAC) NC II, RAC Servicing (PACU-CRE) NC III, and Transport RAC Servicing NC II (green-colored cells in Table 5 and Table 6). The green competency requirements are those “under the Montreal Protocol for shifting to ozone-friendly refrigerants; the recent revision included the revised RAC Code of Provoctice and the use of low GWP substances as required by the Kyoto Protocol and the UN Climate Change Framework” (LMIR Issue No 1. Series of 2018).

Please be noted that from this point of the discussion, the three newly promulgated TRs namely Automotive Servicing (Chassis Repair) NC II, Automotive Servicing (Electrical Repair) NC II, and Automotive Servicing (Engine Repair) NC II will not be considered as those do not have data yet for the TVET Statistics. These TRs are the result of an amendment to the Automotive Servicing NC II and were promulgated last August 12, 2020. Automotive Servicing NC II will be considered then.

Table 5. Total Number of Enrolled, Graduated, Assessed, and Certified by Qualification (WTR, WTR Cluster), by Sex, 2020.

Qualifications (WTR, WTR-Cluster)	Enrolled			Graduated			Assessed			Certified		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Shielded Metal Arc Welding (SMAW) NC II	15,211	1,872	17,083	13800	1525	15325	20,082	2,113	22,195	18,983	1,987	20,970
Driving NC II	14510	5678	20188	11030	4034	15064	22,941	5,424	28,365	21,616	5,041	26,657
Electrical Installation and Maintenance NC II	13704	1784	15488	12451	1523	13974	23541	2184	25725	21734	2021	23755
Shielded Metal Arc Welding (SMAW) NC I	11,475	1,583	13,058	12319	1434	13753	14,677	1,763	16,440	13,718	1,642	15,360
Contact Center Services NC II	2344	5310	7654	2496	4859	7355	0	0	0	0	0	0
Automotive Servicing I*	4513	397	4910	5119	468	5587	8,051	510	8,561	7,512	473	7,985
Motorcycle/Small Engine Servicing NC II	3,400	377	3,777	2723	291	3014	3,006	283	3,289	2,806	264	3,070
RAC Servicing (DomRAC) NC II*	1,096	76	1,172	983	52	1035	1,767	87	1,854	1,584	75	1,659
Gas Tungsten Arc Welding (GTAW) NC II	728	63	791	904	84	988	995	77	1072	951	75	1026
Electrical Installation and Maintenance NC III	793	52	845	708	48	756	819	35	854	750	33	783
Gas Metal Arc Welding (GMAW) NC II	604	75	679	583	60	643	557	43	600	543	43	586
HEO (Forklift) NC II	1069	68	1137	602	28	630	3,329	53	3,382	3,137	3,137	6,274
Shielded Metal Arc Welding (SMAW) NC III	580	93	673	518	60	578	537	58	595	530	53	583
Machining NC II	500	21	521	512	55	567	728	76	804	691	71	762
RAC Servicing (PACU- CRE) NC III*	111	0	111	206	4	210	230	7	237	220	7	227
Automotive Servicing NC II *	0	0	0	0	0	0	8,131	406	8,537	7,301	371	7,672
Driving (Passenger Bus/Straight Truck) NC III	225	11	236	118	12	130	2,190	49	2,239	2,101	47	2,148
Driving (Articulated Vehicle) NC III	25	0	25	25	0	25	903	7	910	879	7	886
Travel Services NC II	0	0	0	9	41	50	25	59	84	24	57	81
Gas Metal Arc Welding (GMAW) NC I	0	0	0	24	1	25	58	4	62	56	4	60

Qualifications (WTR, WTR-Cluster)	Enrolled			Graduated			Assessed			Certified		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
HEO (Gantry Crane) NC II	0	0	0	0	0	0	102	0	102	100	0	100
HEO (Truck Mounted Crane) NC III	20	0	20	43	1	44	629	2	631	620	2	622
Customer Services NC II	4	9	13	26	84	110	75	184	259	71	183	254
Flux Cored Arc Welding (FCAW) NC II	25	0	25	43	5	48	97	7	104	97	7	104
Automotive Servicing NC III *	0	0	0	0	0	0	95	6	101	84	6	90
Automotive Servicing NC IV	0	0	0	0	0	0	105	14	119	99	14	113
Heavy Equipment Servicing (Mechanical) NC II	0	0	0	23	2	25	51	0	51	51	0	51
Shielded Metal Arc Welding (SMAW) NC IV	147	11	158	135	10	145	182	11	193	173	11	184
Gas Metal Arc Welding (GMAW) NC III	0	0	0	7	1	8	7	1	8	7	1	8
Gas Welding NC II	0	0	0	9	0	9	0	0	0	0	0	0
Transport RAC Servicing NC II	29	1	30	0	0	0	8	2	10	8	2	10
Machining NC I	10	0	10	25	0	25	33	1	34	33	1	34
Flux Cored Arc Welding (FCAW) NC I	0	0	0	0	0	0	22	5	27	22	5	27

Source: TESDA Management Information Technology Division, TESDA Certification Office

Note: * with green competencies

Shielded Metal Arc Welding (SMAW) NC II has the most number of graduates and are among the Qualifications with the highest number of enrolled, assessed, and certified.

Meanwhile, Table 6 lists the following Training Regulations relevant to the Logistics industry that do not have available data for EGAC for the year 2020.

Table 6. Training Regulations with no Available Data for enrolled, graduated, assessed, and certified, 2020.

List of Training Regulations with No Available EGAC Data, 2020.
Land-based Transport Refrigeration Servicing NC II
Flux Cored Arc Welding (FCAW) NC III
Electrical Installation and Maintenance NC IV
Gas Welding NC I
Automotive Body Painting/Finishing NC I
Automotive Body Painting/Finishing NC III
Gas Tungsten Arc Welding (GTAW) NC IV
HEO (Container Stacker) NC II
HEO (Overhead and Gantry Crane) NC III
Ice Plant Refrigeration Servicing NC III*

List of Training Regulations with No Available EGAC Data, 2020.
Machining NC III
Multimodal Transport Operation and Logistics (Seafreight Import) Services NC II
Multimodal Transport Operation and Logistics (Seafreight Import) Services NC III
Multimodal Transport Operation and Logistics (Seafreight Import) Services NC IV
Submerged Arc Welding (SAW) NC I
Submerged Arc Welding (SAW) NC II
Warehousing Services NC II
Warehousing Services NC III
Warehousing Services NC IV

Note: * With Green Competencies

VII. Way Forward

The government and private sector recognize the importance of reskilling/upskilling employees and addressing the shortage of qualified applicants/employees in certain jobs. As a result, they have collaborated to gather information (challenges, opportunities, priority skills, etc.) that will aid in the development of new training programs, as well as the enhancement of existing TESDA programs and policies for the Logistics sector. This is to capacitate the human capital and make the logistics industry future-ready. The following are the recommended action items:

- **Reviewing the Existing TRs**

Some of the existing Training Regulations (TR) are not sector-specific. It is therefore recommended that TESDA formulate TRs that are specifically useful in the industry. Moreover, TESDA shall enhance the TVET Capacity of these TRs.

- **Standardization and Re-alignment of Course Contents and Modules**

Most industry associations already have capacity-building measures through in-house training. What may be considered is providing a standardized platform for the realignment and standardization of course contents and modules. In addition, particularly to the Land/Air/Sea Freight Forwarding Sector, a standard platform on how to perform the different digital platforms is urgently needed.

- **Enhancing the TVET Capacity of Existing Training Regulations**

TESDA must enhance the appropriate TVET Capacity of the relevant available Training Regulations, focusing on skills requirements identified as critical to the industry. Moreover, TESDA may focus on improving the no assessment centers, competency assessors, registered programs, national TVET Trainer Certificate Holder for TRs with little to no values for these. Based on the skills validation survey results, the industry also has an immediate need for welders and crane operators among others. However, there are several welding-related and crane-related training regulations that need improvement on these as evident in Table 7.

Table 7. Summary of the Number of Assessment Centers, Competency Assessors, Registered Programs, and NTTC Holder per Qualification (WTR), F.Y. 2020.

Qualifications (WTR)	Number of Assessment Centers	Number of Competency Assessors	Number of Registered Programs	Number of NTTC Holder
Shielded Metal Arc Welding (SMAW) NC II	330	708	751	2226
Driving NC II	265	514	506	1408
Shielded Metal Arc Welding (SMAW) NC I	255	438	495	0
Electrical Installation and Maintenance NC II	209	596	391	1551
Automotive Servicing NC II	158	220	331	779
Automotive Servicing NC I	137	155	284	0
HEO (Forklift) NC II	58	84	70	204
Driving (Passenger Bus/Straight Truck) NC III	57	104	25	162
RAC Servicing (DomRAC) NC II	54	86	86	270
Electrical Installation and Maintenance NC III	47	103	46	391
Gas Tungsten Arc Welding (GTAW) NC II	46	82	70	328
Gas Metal Arc Welding (GMAW) NC II	44	75	61	353
Shielded Metal Arc Welding (SMAW) NC III	38	60	53	334
Driving (Articulated Vehicle) NC III	26	31	5	46
RAC Servicing (PACU-CRE) NC III	21	21	18	77
Travel Services NC II	15	22	13	50
Gas Metal Arc Welding (GMAW) NC I	12	11	17	0
HEO (Truck Mounted Crane) NC III	12	18	5	30
Customer Services NC II	11	24	11	93
Flux Cored Arc Welding (FCAW) NC II	11	21	15	123
Automotive Servicing NC III	8	17	11	0
Automotive Servicing NC IV	6	8	4	0
Heavy Equipment Servicing (Mechanical) NC II	5	11	4	25
Shielded Metal Arc Welding (SMAW) NC IV	5	11	3	57
Flux Cored Arc Welding (FCAW) NC I	4	1	6	0
Gas Metal Arc Welding (GMAW) NC III	4	4	3	19
Gas Welding NC II	3	1	4	3
Land-based Transport Refrigeration Servicing NC II	3	4	0	6
Flux Cored Arc Welding (FCAW) NC III	2	0	0	1
Transport RAC Servicing NC II	2	9	4	16
Electrical Installation and Maintenance NC IV	1	4	3	30
Gas Welding NC I	1		1	0
Warehousing Services NC II	1	2	0	1
Automotive Body Painting/Finishing NC I	0	2	2	6
Machining NC II	0	41	38	134
Motorcycle/Small Engine Servicing NC II	0	117	94	324
Contact Center Services NC II	0	0	200	0

Qualifications (WTR)	Number of Assessment Centers	Number of Competency Assessors	Number of Registered Programs	Number of NTTC Holder
Machining NC I	0	18	15	0
Machining NC III	0	0	5	13
Automotive Body Painting/Finishing NC III	0	0	3	0
Submerged Arc Welding (SAW) NC I	0	2	0	0
Gas Tungsten Arc Welding (GTAW) NC IV	0	1	0	0
HEO (Container Stacker) NC II	0	0	0	0
HEO (Gantry Crane) NC II	3	5	0	4
Ice Plant Refrigeration Servicing NC III	0	0	0	0
Multimodal Transport Operation and Logistics (Seafreight Import) Services NC II	0	0	0	0
Multimodal Transport Operation and Logistics (Seafreight Import) Services NC III	0	0	0	0
Multimodal Transport Operation and Logistics (Seafreight Import) Services NC IV	0	0	0	0
Submerged Arc Welding (SAW) NC II	0	0	0	0
Warehousing Services NC III	0	0	0	0
Warehousing Services NC IV	0	0	0	0

Source: TESDA Certification Office

- **Prioritization of Logistics Industry Skills**

There is an opportunity to formulate a Full-blown Training Regulations and Competency Standards for jobs with no existing TRs to cope up with the demands of the industry.

Development of a Full-Blown Training Regulation

Skills requirements and subjects/courses identified as needed in the next 1-3 years and are of high demand (above 500 workers) are recommended for the development of a full-blown TR are as follows:

- Parts Pricing
- Shipping Line Personnel
- Airline Staff
- Ground Handler
- Export Brokerage Clerk
- E-Commerce and Social Media Specialists

Development of a Competency Standard

Skills requirements and subjects/courses identified as needed in the next 1-5 years and are of medium demand (100-500 workers) are recommended for the development of a Competency Standard are as follows:

- Conductor
- Courier
- Slingman

- **Prioritization of Scholarship Allocation**

Scholarship allocations will be provided for the following programs with existing TRs:

- Automotive Body Painting/Finishing NC I
- Automotive Body Painting Finishing NC III
- Automotive Servicing (Chassis Repair) NC II
- Automotive Servicing (Electrical Repair) NC II
- Automotive Servicing (Engine Repair) NC II
- Automotive Servicing NC I
- Automotive Servicing NC III
- Automotive Servicing NC IV
- Contact Center Services NC II
- Customer Services NC II
- Driving (Articulated Vehicle) NC III
- Driving (Passenger Bus/Straight Truck) NC III
- Driving NC II
- Electrical Installation and Maintenance NC II
- Electrical Installation and Maintenance NC III
- Electrical Installation and Maintenance NC IV
- Flux Cored Arc Welding (FCAW) NC I
- Flux Cored Arc Welding (FCAW) NC II
- Flux Cored Arc Welding (FCAW) NC III
- Gas Metal Arc Welding (GMAW) NC I
- Gas Metal Arc Welding (GMAW) NC II
- Gas Metal Arc Welding (GMAW) NC III
- Gas Tungsten Arc Welding (GTAW) NC II
- Gas Tungsten Arc Welding (GTAW) NC IV
- Gas Welding NC I
- Gas Welding NC II
- Heavy Equipment Servicing (Mechanical) NC II
- HEO (Container Stacker) NC II
- HEO (Forklift) NC II
- HEO (Overhead and Gantry Crane) NC III
- HEO (Gantry Crane) NC II
- HEO (Truck Mounted Crane) NC III
- Ice Plant Refrigeration Servicing NC III
- Land-based Transport Refrigeration Servicing NC II
- Machining NC I
- Machining NC II
- Machining III
- Motorcycle/Small Engine Servicing NC II
- Multimodal Transport Operation and Logistics (Seafreight Import) Services NC II
- Multimodal Transport Operation and Logistics (Seafreight Import) Services NC III
- Multimodal Transport Operation and Logistics (Seafreight Import) Services NC IV
- RAC Servicing (DomRAC) NC II
- RAC Servicing (PACU-CRE) NC III
- Shielded Metal Arc Welding (SMAW) NC I
- Shielded Metal Arc Welding (SMAW) NC II
- Shielded Metal Arc Welding (SMAW) NC III
- Shielded Metal Arc Welding (SMAW) NC IV
- Submerged Arc Welding (SAW) NC I

- Submerged Arc Welding (SAW) NC II
- Transport RAC Servicing NC II
- Travel Services NC II
- Warehousing Services NC II
- Warehousing Services NC III
- Warehousing Services NC IV

Further, programs for prioritization and CS development are also recommended for allocation of scholarship funding.

- **Widely Disseminating of Trainings**

Drivers, particularly truck drivers, play an important role in the logistics industry. There is an anticipated high shortage of 500 and above truck drivers in the coming years. Despite the fact that Driving NC II produced the most number of graduates who were assessed and certified in 2020, the Logistics Sector still faced driver shortages. It may aid in resolving the issue by widely disseminating the training and encourage females and the unemployed to take the program. As seen from Table 5 in the TVET Capacity Section, there is a comparable difference in the number of males and females who were enrolled, graduated, assessed, and certified in Driving NC II.

- **Paired Courses for Drivers**

The industry suggested paired courses for the truck drivers to foster flexibility of workers. The added training may include defensive driving, road guidelines and regulations, and discipline.

- **Digitalization Training**

With the rise of e-commerce, digitalization training is becoming increasingly important. Training should be provided for rank and file members, as well as supervisory and managerial positions. Third-party providers must also have the necessary digital skills.

- **Integrating Soft Skills in Training**

There is also a need to incorporate soft skills training. The industry identified the lack of soft skills as one of the constraints in filling hard-to-fill jobs and as reasons/causes of shortages. The worker may be qualified and equipped with hard skills, however it poses a problem too if the workers lack soft skills.

- **Creation of a Talent Pool**

A talent pool may be developed and made available to the industry in order to benefit both the industry and the TESDA-certified graduates.

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TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY

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