# FAR AND WIDE: ACCELERATING UPSKILLING AND RESKILLING AT SCALE

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*"How can TVET strategically respond to upskilling and reskilling requirements at scale?"*

## I. BACKGROUND

The ever-changing demands in the world of work, caused by various factors, have resulted to skills mismatches, creating many consequences for workers, businesses and the future of work. The reinvigorated momentum for investing in people's capacities reflects a heightened sense of urgency and shared responsibility, especially in the post-pandemic recovery process, which calls for placing greater priority on skills development and empowering people from a lifelong learning perspective. In this sense, skilling, reskilling and upskilling throughout all stages of life is the precondition and an accelerator for people to access decent work opportunities and enable smooth transitions into labor markets and within labor markets. (ILO, 2021)

The Training Industry defines reskilling as "the process of developing and training employees in order to fulfill job functions and tasks outside of their current role and existing skill set". (Training Industry, 2022) Disruptions caused by adoption of technology in industries and workplaces has created new roles, thus necessitating training on technical and human skills. Reskilling is also sought by individuals who intend to change their jobs or careers by learning new skills to be employed in a new field than where they are previously in. (ESEI International Business School, n.d.) Upskilling, on the other hand, "is the process of building upon employees' existing skills and strengths to enhance their skill sets to enhance their performance and capabilities" in existing job roles. (Training Industry, 2022) One of the most common reasons for companies in reskilling their employees ``is the desire to retain reliable, high-performing employees whose roles have become obsolete", in order for them to take on new roles instead of them being laid-off. (Capsim, 2022) Upskilling, however, is needed in order for workers in existing jobs to adapt to new changes in the industry, such as implementation of new technology. (Capsim, 2022) Some displaced workers, or persons permanently separated from their jobs and connotes the disappearance of the job as well as the dislocation of the individual workers from the enterprise will also need to reskill in order to perform new roles or jobs. (ILO, 2009) This is evident during the rampant surge of the COVID-19 pandemic in the initial weeks and months back in 2020. Some new entrants to the labor force or those "who seek work for the first time or first time unemployed, or those who work for the first time or first time employed, including those who are expected to work for the first time within two weeks after the date of interview" who are graduates of education systems have been prepared for jobs that no longer exist, and many do not have the right skills for the jobs they want, thus skills gaps are prevalent and widening. The way this cohort will solve the skills dilemma is through smart, iterative skills acquisition, sensibly and loosely guided by need such as reskilling and continuous skills building throughout a career to keep up with the skills and work of the future. (Zao-Sanders M. and Palmer K., 2019)

The demand for quality Technical-Vocational Education and Training (TVET) has increased in importance in response to a rapidly changing demand for skills in the Philippine labor market. TVET will play a critical role in reskilling and upskilling requirements so that workers can transition more seamlessly to other industries and occupations. This paper shall attempt to discuss the case for upskilling and reskilling, initiatives by other countries in promoting upskilling and reskilling, and propose an upskilling and reskilling framework which TESDA can align its existing and future efforts to.

## II. THE CASE FOR UPSKILLING AND RESKILLING

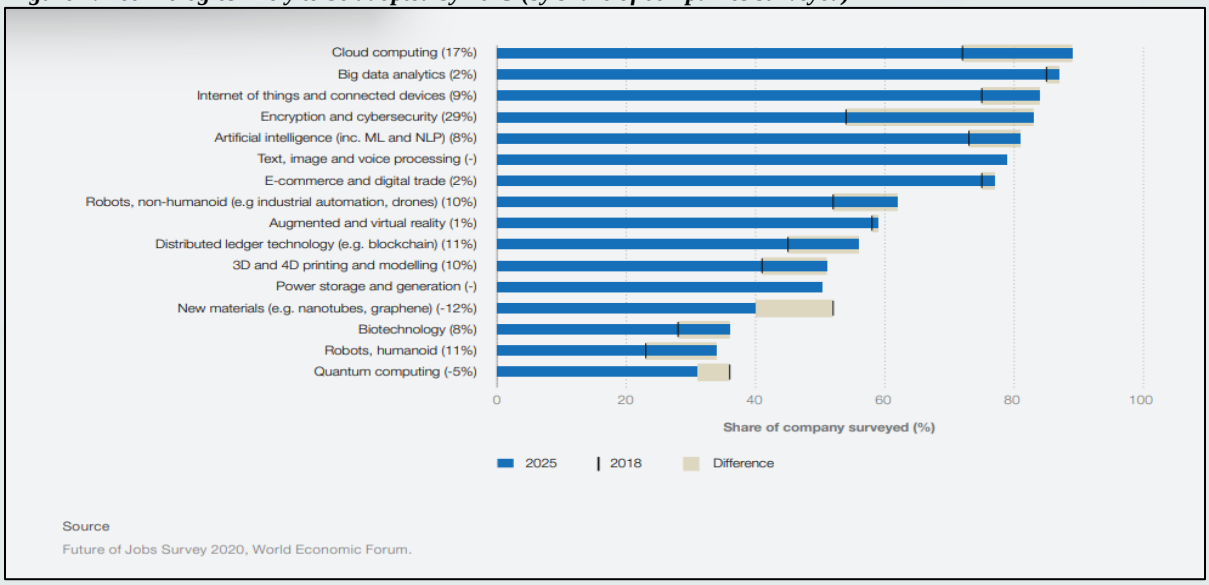
### 2.1 Technological Adoption

The World Economic Forum (WEF) reports that many companies and employers around the world and across industries have adopted new technologies in their business models in order achieve efficiency in production and to remain competitive in rapidly changing market. In the WEF Future of Jobs Report 2020, it reports the following relative to technology adoption:

- Technologies that are likely to be adopted by companies

  In Figure 1, it can be seen that Cloud computing, Big data analytics, Internet of things and connected devices, Encryption and cybersecurity, and Artificial intelligence (including ML and NLP) are among the technologies that are likely to be adopted by 2025 by more than 80% of the companies surveyed. Those with the largest difference from the 2018 result are Encryption and cybersecurity (29%), Cloud computing (17%), Distributed ledger technology (e.g. blockchain) (11%) and Robots, humanoid (11%).

***Figure 1. Technologies likely to be adopted by 2025 (by share of companies surveyed)***




- Technologies likely to be adopted by 2025, by share of companies surveyed, selected sectors

  Technology adoption varies according to industry. In Figure 2, the WEF presents that Artificial intelligence is highly adopted by the Digital Information and Communications, Financial Services, Healthcare, and Transportation industries. On the other hand, Big Data, the Internet of Things and Non-Humanoid Robotics are seen as being strongly adopted in Mining and Metals. Technology adoption also sends signals as to where the new job roles and skills sets will have increased demand.

*Figure 2. Technologies likely to be adopted by 2025, by share of companies surveyed, selected sectors*

| Technology/Sector | AGRI (%) | AUTO (%) | CON (%) | DIGICIT (%) | EDU (%) | ENG (%) | FS (%) | GOV (%) | HE (%) | MANF (%) | MIM (%) | OILG (%) | PS (%) | TRANS (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3D and 4D printing and modelling | 54 | 67 | 39 | 39 | 69 | 69 | 27 | 45 | 65 | 69 | 48 | 79 | 40 | 60 |
| Artificial intelligence (e.g. machine learning, neural networks, NLP) | 62 | 76 | 73 | 95 | 76 | 81 | 90 | 65 | 89 | 71 | 76 | 71 | 76 | 88 |
| Augmented and virtual reality | 17 | 53 | 58 | 73 | 70 | 75 | 62 | 56 | 67 | 54 | 57 | 71 | 57 | 62 |
| Big data analytics | 86 | 88 | 91 | 95 | 95 | 76 | 91 | 85 | 89 | 81 | 90 | 86 | 86 | 94 |
| Biotechnology | 50 | 18 | 48 | 40 | 46 | 47 | 46 | 38 | 65 | 31 | 16 | 36 | 28 | 23 |
| Cloud computing | 75 | 80 | 82 | 95 | 95 | 88 | 98 | 95 | 84 | 92 | 87 | 86 | 88 | 94 |
| Distributed ledger technology (e.g. blockchain) | 31 | 40 | 41 | 72 | 61 | 50 | 73 | 40 | 72 | 41 | 50 | 46 | 53 | 38 |
| E-commerce and digital trade | 80 | 75 | 85 | 82 | 72 | 71 | 90 | 67 | 78 | 82 | 62 | 62 | 70 | 87 |
| Encryption and cyber security | 47 | 88 | 85 | 95 | 86 | 88 | 95 | 95 | 84 | 72 | 83 | 71 | 78 | 75 |
| Internet of things and connected devices | 88 | 82 | 94 | 92 | 62 | 94 | 88 | 79 | 95 | 84 | 90 | 93 | 74 | 76 |
| New materials (e.g. nanotubes, graphene) | 15 | 46 | 22 | 36 | 67 | 65 | 36 | 33 | 47 | 51 | 37 | 36 | 27 | 27 |
| Power storage and generation | 75 | 64 | 59 | 38 | 27 | 88 | 55 | 33 | 31 | 62 | 57 | 69 | 45 | 46 |
| Quantum computing | 18 | 21 | 17 | 51 | 25 | 41 | 44 | 36 | 38 | 21 | 29 | 25 | 19 | 38 |
| Robots, humanoid | 42 | 50 | 38 | 44 | 47 | 24 | 47 | 31 | 47 | 41 | 15 | 17 | 25 | 21 |
| Robots, non-humanoid (industrial automation, drones, etc.) | 54 | 60 | 52 | 61 | 59 | 65 | 53 | 50 | 56 | 79 | 90 | 79 | 35 | 69 |
| Text, image and voice processing | 50 | 59 | 82 | 90 | 89 | 88 | 88 | 89 | 88 | 64 | 76 | 87 | 79 | 65 |

Source

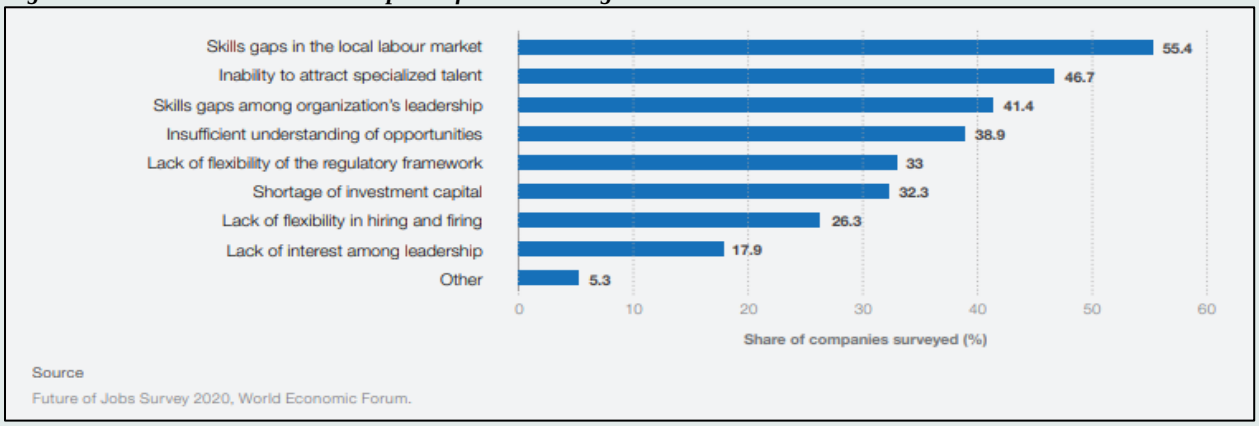
Future of Jobs Survey 2020, World Economic Forum.

Note

AGRI = Agriculture, Food and Beverage; AUTO = Automotive; CON = Consumer; DIGICIT = Digital Communications and Information Technology; EDU = Education; ENG = Energy Utilities & Technologies; FS = Financial Services; GOV = Government and Public Sector; HE = Health and Healthcare; MANF = Manufacturing; MIM = Mining and Metals; OILG = Oil and Gas; PS = Professional Services; TRANS = Transportation and Storage.

In addition, the WEF reports that technological adoption across various industries will eventually also result in a widespread transformation of current job roles, thus requiring workers to update their skillset to adapt to the changing needs, and be flexible and adaptable in terms of skillset. However, skills gaps in the local labor market are among the perceived challenges in the adoption of new technologies.

*Figure 3. Perceived barriers to the adoption of new technologies*




Source

Future of Jobs Survey 2020, World Economic Forum.

## 2.2. Globalization

Globalization of industries has allowed the entry of Foreign Direct Investments (FDIs). Among the perceived benefits of FDIs in countries are the knowledge and technology diffusion that the investors bring. The type of skills that the country has plays a role in the type of FDIs that the country attracts. Industries in countries that are able to attract high-value investments are able to become more competitive and technologically advanced, thus pushing enterprises in these industries to improve the skills of their workers.

## 2.3 Climate Change

With a better understanding of the impact of climate change, countries, industries and societies, there is anticipation of demand on green jobs and green skills in the green and circular economies. Changes in the labor market can be grouped into four main categories shown in Table 1.

***Table 1. Categories of change in labor market***

| LEVELS | DESCRIPTION |
|---|---|
| **JOB CREATION** | This is expected in 'green' sectors and activities, as well as new business models that are stimulated through the circular economy policies. |
| **JOB SUBSTITUTION** | This takes place when labor activity is directly replaced by another due to shifts in economic activities from being resource-intensive to becoming more circular. |
| **JOB DESTRUCTION** | This takes place when labor activity is lost and is not replaced. This occurs in sectors with large environmental and materials footprints that are discontinued or banned. |
| **JOB REDEFINITION** | This takes place when existing jobs are transformed towards more resource efficiency and circularity which requires new work methods, profiles and skillsets. |

## 2.4 Labor Migration

Labor migration plays a factor in the need for upskilling and reskilling as these will be required for the replacement of skills lost for those who have migrated. Planning for the upskilling and reskilling is needed in anticipation of migration, to ensure that steady supply of skilled workers remains to be available in occupations where job losses are seen due to overseas employment.

## 2.5 Demography

The global demographic landscape is changing, with some countries having an aging population, while other countries like the Philippines having a large labor force. Those with a large labor force need to be able to capitalize on this demographic dividend through appropriate skills policies.

## 2.6 Disruptions

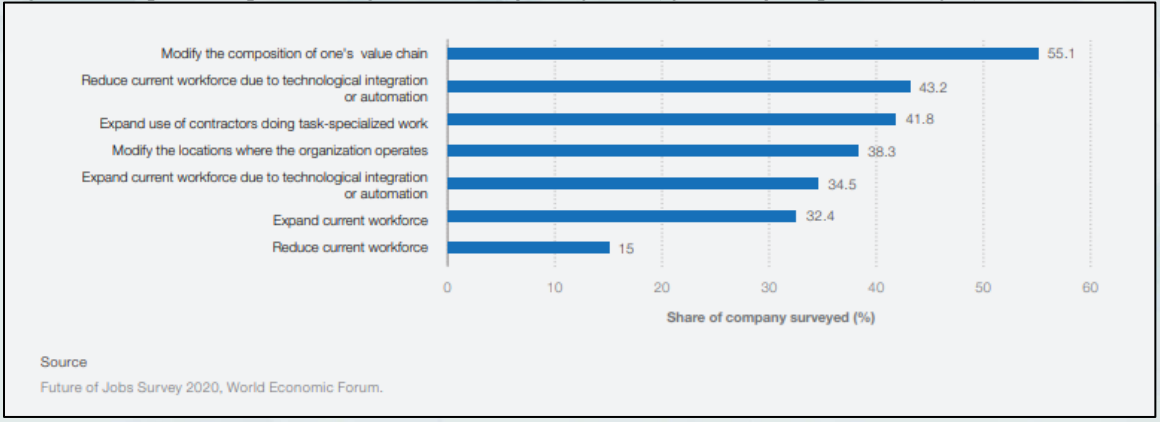
The COVID-19 may not be the last major disruption that will change the labor market landscape. In order to be better prepared for future disruptions and mitigate challenges, countries need to reinforce the importance of labor and skills policies and programs. The World Bank's 2013 World Development Report highlights the advancement of the global jobs agenda which is about putting right investment in people by providing right skills so they can secure good jobs, along with the right social protection especially for the vulnerable workers, and the effective mechanisms for the unemployed to transition from unemployment to employment, and for workers to transition from low to high productivity employment.

## III. CHANGING LABOR MARKET

### 3.1 Companies' expected changes to the workforce by 2025 (by share of companies surveyed)

Figure 4 shows how companies will likely restructure their workforce in accordance with the adoption of new technologies. Most of the companies will restructure their workforce through the composition of their value chain (55%), introduce further automation, reduce the current workforce (43%) or expand their workforce as a result of deeper technological integration (34%), and expand their use of contractors for task-specialized work (41%).

***Figure 4. Companies' expected changes to the workforce by 2025 (by share of companies surveyed)***




### 3.2 Emerging and declining jobs

In the Future of Jobs 2020 report it is stated that 85 million jobs may be displaced, with 97 million new roles that may emerge through the adoption of new technology.

Positions that lead in the growing demand are Data Analysts and Scientists, AI and Machine Learning Specialists, Robotics Engineers, Software and Application developers and Digital Transformation Specialists. Process Automation Specialists, Information Security Analysts and Internet of Things Specialists are among the newly emerging job roles that have seen growing demand from employers. There are also emerging jobs that are specific to their respective industries, such as Materials Engineers in the Automotive Sector, Ecommerce and Social Media Specialists in the Consumer sector, Renewable Energy Engineers in the Energy Sector, FinTech Engineers in Financial Services, Biologists and Geneticists in Health and Healthcare, and Remote Sensing Scientists and Technicians in Mining and Metals.

At the other side of the spectrum, the following jobs are being displaced by new technologies: Data Entry Clerks, Administrative and Executive Secretaries, Accounting and Bookkeeping and Payroll Clerks, Accountant and Auditors, Assembly and Factory Workers, as well as Business Services and Administrative Managers.

Counterbalancing this disruption is the creation of new jobs, either in “wholly new occupations, or existing occupations undergoing significant transformations in terms of their content and skills requirements.”

*Figure 5. Emerging roles*


*Source: Linkedin Economic Graph, as cited in the Future of Jobs Report 2022*

In the Philippines, however, Industry 4.0 has not yet made a major impact on employment levels. However, according to the Asian Development Bank (2021), nevertheless, there is already a show of signs on the changes in the structure and nature of jobs, with real and significant distributional effects. Thus, skills will play a key role, benefiting high-skilled workers and those with technology-compatible skills, while lower-skilled workers whose tasks are more easily automated, run the risk of being left behind. With the increased globalization and participation of industries in global value chains, the Philippines' competitive advantage on labor-intensive production and assembly is becoming less relevant. To improve the Philippines' position in the global value chains, the country should move into increasing the innovation capacity, as well as higher-value and more knowledge-intensive sectors. Workers in high-productivity services sectors often conduct non-routine cognitive tasks that require specialized knowledge and analytical capacity. Unfortunately, the ADB reports that there is a shortage of TVET graduates with the required technical competencies.

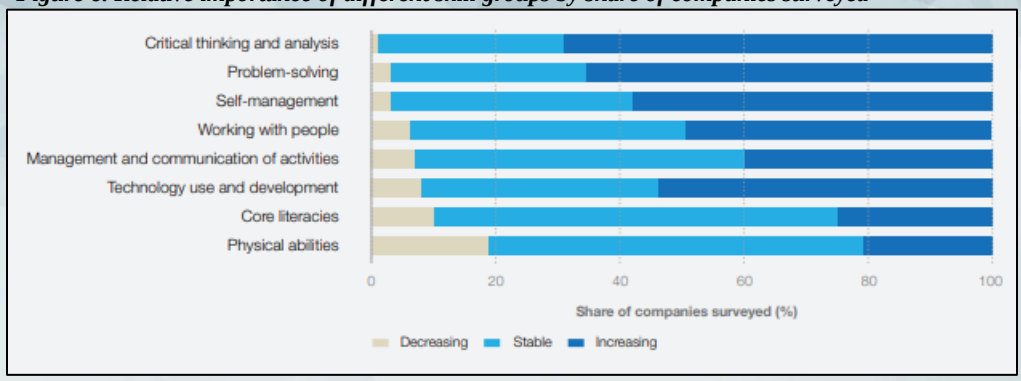
The ADB also reports that there is an increased demand for middle-skilled and high-skilled occupations, and a decline in the share of low-skilled workers, where occupations that primarily involve non-routine cognitive (including analytical, interpersonal) tasks is increasing, while the relative demand for occupations that primarily involve non-routine manual tasks is declining. The ADB explains that these are the reasons for the increase in skill intensity of employment.

Due to the COVID-19 situation, the low-skilled workers were displaced, particularly those in the included construction, transportation, tourism, and trade sectors.

### 3.3 Emerging and declining skills

The perceived in-demand skills are critical thinking and analysis, problem-solving, including the newly-emerging skills in self-management such as active learning, resilience, stress tolerance and flexibility.

***Figure 6. Relative importance of different skill groups by share of companies surveyed***




***Source: Future of Jobs Survey 2020***

The Future of Jobs Report 2020 states the Top 15 skills for 2025:

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative
- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation
- Emotional intelligence
- Troubleshooting and user experience
- Service orientation
- Systems analysis and evaluation
- Persuasion and negotiation

## IV. DEMAND FOR TRAINING

The Future of Jobs report discussed the changing demand for skills training by employment status. Comparing the top courses in 2019 and 2020, those who are employed have shifted from the digital skills training such as python programming, artificial neural networks, to more personal development courses such as writing and strategy. However, digital skills such as python programming and algorithms remain to be the preferred skills for those who are unemployed.

*Figure 7. Top 10 skills of those in employment*

| Rank | 2019 | 2020 |
|---|---|---|
| 1 | Python Programming | ↑ Writing |
| 2 | Artificial Neural Networks | ↑ Strategy |
| 3 | Algorithms | ↓ Python Programming |
| 4 | Regression | ↑ Mindfulness |
| 5 | Strategy | ↑ Meditation |
| 6 | Deep Learning | ↑ Gratitude |
| 7 | Writing | ↑ Kindness |
| 8 | Supply Chain | ↑ Listening |
| 9 | Cloud Computing | ↓ Algorithms |
| 10 | General Statistics | ↑ Grammar |

*Source: Coursera, produced for the World Economic Forum's New Metrics CoLab*

*Figure 8. Top 10 skills for those who are unemployed*

| Rank | 2019 | 2020 |
|---|---|---|
| 1 | Python Programming | – Python Programming |
| 2 | Artificial Neural Networks | ↑ Algorithms |
| 3 | Algorithms | ↑ Writing |
| 4 | Regression | ↑ Strategy |
| 5 | Deep Learning | ↓ Artificial Neural Networks |
| 6 | Strategy | ↓ Regression |
| 7 | Supply Chain | ↑ Grammar |
| 8 | Writing | ↓ Deep Learning |
| 9 | General Statistics | – General Statistics |
| 10 | Tensorflow | ↑ Problem-Solving |

*Source: Coursera, produced for the World Economic Forum's New Metrics CoLab*

## 4.1 Sectors that are constrained in access to training

The bulk share of global employment in the formal and informal sector works for SMEs. SMEs employ 60 to 70% of workers in OECD countries and exceed 80% of job creation in some emerging economies.

Nevertheless, SMEs are constrained in their access to training due to their small size and resource limitations that impact their participation in training activities. In OECD countries, workers in SMEs engage in half of the training activities as those workers employed by larger firms. In emerging markets and developing economies where SMEs comprise the bulk of enterprises. Data from the Philippine Statistics Authority (PSA) in 2021 states that there are more than 1 million MSMEs comprising 99.6% of total establishments.

Thus, effectively engaging and reaching formal and informal SMEs in skilling programs is critical for ensuring the success of skilling programs done at scale. There is also a growing share of workers pursuing independent contracting through the platform-based gig economy who may have limited opportunities to benefit from work-based training initiatives, and may benefit from trainings such as those related to entrepreneurship, resilience, small business management and development.

## V. GLOBAL/INTERNATIONAL UPSKILLING AND RESKILLING INITIATIVES

### 5.1 National Skilling Strategies

The table provides the national skilling strategies of other countries which provides the initiatives of countries on reskilling, upskilling and lifelong learning:

***Table 2. Upskilling/Reskilling initiatives of selected countries***

| COUNTRY | DESCRIPTION |
|---|---|
| **CHINA** | The People's Republic of China adopted the National Long- and Medium-Term Outline Plan of Education Reform and Development (2010–2020) with the aim of establishing a modern, multilevel and balanced TVET system that responds to labor market needs and the requirement for quality TVET. This objective will be achieved through the (i) institutionalizing cooperation between TVET institutions and employers to improve TVET facilities, provide work-based learning opportunities for students, and offer work placements for TVET teachers; (ii) expanding TVET in rural areas to better serve agriculture, rural areas, and farmers; and (iii) making TVET more attractive through the exemption of tuition fees for senior secondary TVET and the provision of financial aid for students from poor and disadvantaged backgrounds, the award of dual certificates for TVET graduates, and the alignment of TVET curricula with occupational standards.<br><br>The country's local TVET systems have undertaken programs that meet the needs of local industry and communities through joint determination and development of TVET programs with industry and employers, promotion of work-based learning and recruitment of industry practitioners, and skills standards, qualifications framework and quality assurance mechanisms. |
| **INDIA** | The Republic of India adopted a National Policy on Skill Development and Entrepreneurship in 2015. The national policy envisions the creation of an ecosystem of empowerment by Skilling on a large Scale at Speed with high standards and to promote a culture of innovation based entrepreneurship which can generate wealth and employment so as to ensure Sustainable livelihoods for all citizens in the country.<br><br>The objective of this policy is to meet the challenge of skilling at scale with speed and standard (quality). It likewise provides an umbrella framework to all skilling activities being carried out within the country, aligning them to common standards and linking the skilling with demand centers. In addition to laying down the objectives and expected outcomes, the policy also identifies the various institutional frameworks which can act as the vehicle to reach the expected outcomes. The national policy provides clarity and coherence on how skill development efforts across the country can be aligned within the existing institutional arrangements. This policy will link skills development to improved employability and productivity. |
| **AUSTRALIA** | The Australian government instituted the 2012-2017 National Partnership Agreement on Skills Reform that is focused on funding and enhancing industry involvement in vocational education and training. Among the objectives of this reform are the establishment of a more efficient VET sector, responsive to the needs of students, employers and industry; and the establishment of a higher quality VET sector, delivering learning experiences and qualifications that are relevant to individuals, employers and industry.<br><br>The focus to strengthen industry involvement in the VET sector aims to ensure the availability of skilled workforce that Australia needs in order to achieve economic growth, competitiveness, productivity and providing greater employer confidence in outcomes from training. |
| **GERMANY** | The Federal Republic of Germany is highly invested in lifelong education for its citizens. Their education system facilitates the transition from school to initial TVET and help unplaced applicants, especially young people from migrant backgrounds, disadvantaged individuals and those with learning difficulties or other disabilities. Its national TVET policies recognizes non-formal and informal learning through the reorientation of formal, certificate-based qualifications to competency-based learning. |

| | |
|---|---|
| **INDONESIA** | As the Republic of Indonesia transitions towards a knowledge economy and increased competitiveness, growth and employment performance, the government saw that skills gaps is among the significant obstacles in this transition. Thus, the government is investing more in the development of the nation's education and training system in order to close these gaps and to transform the Indonesian TVET system into one that provides demand-driven and practice-oriented programs, aimed at improving employability and participation in lifelong learning. The Ministry of National Education has increased its investments in formal TVET in order to expand its reach. |
| **THAILAND** | The Kingdom of Thailand's Office of the Education Council developed its National Scheme of Education with the vision "All Thai people are provided with quality education and engage in lifelong learning as well as live happy lives on the basis of the principles of a sufficiency economy and global changes in the 21st century." The objectives of this plan as follows: 1) to develop a quality and effective educational system and process; 2) to produce quality Thai citizens with qualifications, skills, and capabilities as required by the Constitution of the Kingdom of Thailand, the National Education Act, and the National Strategic Framework; 3) to establish Thailand as a society of high quality learning, morals, and ethics as well as national harmony and cooperation for sustainable development on the principle of the sufficiency economy; and 4) to free Thailand from the middle-income gap and income inequality.<br><br>Among the strategies in this plan are the development of research and innovation workforce to enhance the national competitiveness, where the national workforce possesses essential skills and capabilities which meet the requirements of the job market and needs of the national economic and social development, and the proficiency development for people of all ages and the promotion of a lifelong learning society, where learners and people of all ages possess essential and necessary knowledge and skills to live in the 21st century, and use these knowledge and skills to improve their lives. |
| **SINGAPORE** | The Republic of Singapore, through the SkillsFuture Singapore (SSG) initiative worked with its various stakeholders to ensure that skills training and upgrading for individuals continue to be readily accessible throughout their lives even as they move out of the school environment into the workplace. The SkillsFuture movement, launched in 2014, is the national skills strategy to help build the foundation for a highly skilled, productive, and innovative economy. Singaporeans are entitled to an account in the My Skills Future Portal where they can find various resources to help them understand the different industry sectors and labour market information. They can also explore education and training opportunities, and search for job openings across various industries in the portal. |

5.2 The World Economic Forum, an international organization that "engages the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas", has a "Preparing for the Future of Work Project", a platform for large scale collaboration among business, civil society, education and government stakeholders in order to provide "futureproof workforce strategies" including how workers who can potentially be displaced be supported through upskilling and reskilling.

5.3 The UNESCO Global Network of Learning Cities "is an international policy-oriented network providing inspiration, know-how and best practice" on lifelong learning (UNESCO Institute for Lifelong Learning).

UNESCO defines a learning city as a city that:

- Effectively mobilizes its resources in every sector to promote inclusive learning from basic to higher education;
- Revitalizes learning in families and communities;
- Facilitates learning for and in the workplace;
- Extends the use of modern learning technologies;
- Enhances quality and excellence in learning; and
- Fosters a culture of learning throughout life.

In doing so, a learning city supports individual empowerment and social inclusion, economic development and cultural prosperity, and sustainable development (UNESCO Institute for Lifelong Learning). The UNESCO Global Network of Learning Cities currently has 229 active member cities from 55 countries. Although all of the member cities have developed outstanding lifelong learning policies and practices, 10 cities in particular have recently been recognized as UNESCO Learning Cities in 2019:

- Aswan, Egypt
- Chengdu, China
- Heraklion, Greece
- Ibadan, Nigeria
- Medellín, Colombia
- Melitopol, Ukraine
- Petaling Jaya, Malaysia
- Santiago, Mexico
- Seodaemun-gu, Republic of Korea
- Sønderborg, Denmark

## VI. PHILIPPINE INITIATIVES

6.1 The Philippine Qualifications Framework (PQF) levels of educational qualifications and sets the standards for qualification outcomes. It is a quality assured national system for the development, recognition and award of qualifications based on standards of knowledge, skills and values acquired in different ways and methods by learners and workers of the country. The PQF was mandated through an Executive Order No. 83 in 2012 and was passed into a law through the Republic Act No. 10968 entitled “An Act Institutionalizing the Philippine Qualifications Framework (PQF), Establishing the PQF-National Coordinating Council (NCC) and Appropriating Funds Therefor.” (Philippine Qualifications Framework). It is observed that the level of qualifications serve as vertical growth in order to transition from TVET Program to higher education and also as the official recognition of the individual’s learning achievements. It also sets the standards for qualification outcomes which are the knowledge or skills gained by the individual after undergoing a certain learning or educational program. As part of the essence of upskilling and reskilling, the PQF minimizes the effects of skills mismatch and encourages lifelong learning to build the workforce's confidence.

6.2 Through the Department of Trade and Industry (DTI), the Philippine Skills Framework (PSF) Initiative was established, which is an inter-agency effort to build the skills and competencies of human capital and better prepare the country’s workforce for the future economy. This involves the development of sector-specific skills frameworks that will guide the country’s workers in enhancing their skills for particular job roles. Using the framework of SkillsFuture Singapore (SSG) as reference, the PSF will be contextualized with consideration to the circumstances of local industries and the current skills and competencies of workers across all sectors. (DTI, 2021) To date, the PSFs have been developed for the Supply Chain and Logistics, Animation, Game Development, Business Development and Human Capital Development.

## VII. ACTION FRAMEWORK ON UPSKILLING AND RESKILLING vis-à-vis TESDA'S INITIATIVES

The WEF proposes an action framework where different stakeholders can contribute to workforce reskilling and upskilling. The table below presents the framework along with the initiatives undertaken by TESDA in response to the recommended actions.

***Table 3. Action Framework for Upskilling and Reskilling vis-à-vis TESDA's Initiatives***

| PATHWAY | KEY PUBLIC SECTOR ACTIONS | KEY PRIVATE SECTOR ACTIONS | OTHER STAKEHOLDER ACTIONS | TESDA INITIATIVES |
|---|---|---|---|---|
| Create shorter learning modules that foster continued learning | Redesign education courses to offer more short-term and highly specific courses aligned with specific employment opportunities | • Create modular learning programs that allow for rapid reskilling as skill demand evolves<br>• Partner with universities and other institutions to create the relevant programs and nanodegree | Create targeted training opportunities and coordinate the provision of basic education with public institutions | • TESDA Circular No. 048 s. 2021 or the Implementing Guidelines on Recognition of Micro-Credentials for Lifelong Learning and Upskilling/Reskilling of Learners in TVET has been issued to recognize the achievement of skill, skill sets or knowledge through micro-credentials, nano-degrees, badges or stackable micro-degrees.<br>• The TESDA Online Program offers short courses in different industries/sectors, as well as courses on 21st century skills, entrepreneurship, and lifelong learning skills. |
| Determine the role of different stakeholders | Governments, policymakers and public intermediary institutions can: lead the governance of the lifelong learning system; set curricula and standards and create frameworks for skills recognition; ensure the quality of adult education programs; secure access to learning technologies; promote equal access to learning opportunities for all; find collaborative funding solutions and governing incentives; coordinate social safety nets; and lead skills anticipation activities | • Create opportunities for reskilling and upskilling within companies, across sector alliances and business councils, and throughout supply chains<br>• Co-finance professional development opportunities for employees and allot adequate resources for creating a culture of continuous learning<br>• Partner with universities and other education actors to ensure access to a suitable talent pipeline with the right blend of skills<br>• Support skills anticipation systems by providing data to employer surveys and actively participating in industry foresight groups | Unions can work in coordination with other stakeholders to identify skill needs, inform workers about training opportunities, support apprenticeships, and provide targeted trainings when needed | • The setting of standards and curricula, frameworks for skills recognition, ensuring the quality of training, promoting access to learning opportunities and funding for TVET are part of TESDA's core functions as stipulated in the TESDA law. Standards are aligned to the levels according to the Philippine Qualifications Framework.<br>• TESDA is undertaking the Skills Needs Anticipation in order to examine the trends in the movement of the labor market, and how it can signal current and future skills requirements in order to help address job-skills mismatch. Various methodologies are employed such as the conduct of the Workplace Skills and Satisfaction Survey, publication of Labor Market Intelligence Reports, and through the skills mapping activities being conducted by the Central, Regional and Provincial offices in accordance with TESDA's policy on Area-Based Demand Driven TVET. |

| | | | | |
|---|---|---|---|---|
| Recognize and promote on- the-job training opportunities and maximize informal learning opportunities | • Create financial incentives and programmes for facilitating adult apprenticeships<br><br>• Build training infrastructure that brings together educators and companies in innovation labs and joint research facilities | • Put in place job rotation programs, adult apprenticeships and other opportunities to acquire new skills in the workplace<br><br>• Work to create a learning enabling corporate culture that rewards individual innovation and learning | Help inform workers about training opportunities and support learning activities through peer support networks | • Incentives for enterprise-based trainings are covered in existing laws such as the Labor Code of the Philippines, the Dual Training System Act and the Corporate Recovery and Tax Incentives for Enterprises (CREATE) Act.<br><br>• TESDA provides various scholarship programs such as the Training for Work Scholarship Program, Special Training for Employment Program, Private Education Student Financial Assistance, as well as scholarship for TVET programs as provided by the Universal Access to Quality Tertiary Education Act and the Tulong Trabaho Act |
| Reach those who need it most– SMEs, lower-skilled workers and older workers | Launch motivational campaigns, provide financing and resources to vulnerable groups within the workforce, and provide targeted programs for low skilled and older workers, gig economy contract workers and SMEs | • Put in place mid-career review and other mechanisms for actively engaging the development of older workers<br><br>• Create direct opportunities for knowledge-sharing and intergenerational learning within the workplace<br><br>• Build consortia of SMEs to cater to their training needs and build peer support networks | • Unions can actively support firms and governments in the provision of inclusive programs for basic skills training<br><br>• Civil society can also create peer networks and administer programs for silver workforce participants<br><br>• Community learning centers, universities, and other education providers at local and regional levels can work with businesses and governments to coordinate courses to best meet the needs of diverse learners | • Oplan TESDA Abot Lahat articulates the provision of innovative and accessible programs to meet the needs and requirements of target clientele.<br><br>• The Implementing Guidelines for the Tulong Trabaho Scholarship Program under the New Normal arrangements explicitly states that MSMEs can directly avail of the Tulong-Trabaho Fund for the upskilling and reskilling of their workers in accordance with program recognition requirements. |

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| Customized teaching for adults | • Set high standards and work to professionalize adult education by putting in place rigorous training and certification processes for adult educators<br><br>• Invest in further research about effective adult learning strategies and ensure this research is applied in government programmes | • Design training to be practical, hands-on and directly applicable in the workplace<br><br>• Adapt the format to the skill levels of diverse learners | Unions can adapt their training formats to best suit adult learning styles with direct applications in professional settings | • TESDA has been addressing the skills requirements of TVET trainers through the Philippine TVET Trainers-Assessors Qualification Framework, Trainers Methodology (TM) Levels I and II, and the development of regional lead assessors and regional lead trainers for the TESDA qualifications. The qualifications and standards set forth in these programs and policies help ensure the quality of TVET delivery.<br><br>• The TVET trainer standards and curricula are addressing the learner-centered, gender responsive and inclusive pedagogy/andragogy requirements. |
| Harness the power and scalability of blended online courses, enhanced with virtual and augmented reality when relevant | • Promote the continued adoption of blended format courses for diverse adult learners at universities, community centers, vocational training centers and other public education institutions to increase opportunities while maximizing resource efficiency<br><br>• Work to monitor quality and support the development of blended coursework by creating more instructional resources, evaluation of courses and certification programs | • Maximize opportunities for training and development for all employees and through supply chains by adopting scalable blended learning adapted to digital literacy levels<br><br>• Incorporate virtual and augmented reality for scalable transfer of tacit knowledge | Universities and diverse adult educators can actively work to increase the offer of these flexible and scalable learning opportunities | • TESDA has issued implementing guidelines on the management and implementation of flexible learning in the delivery of TVET, in line with TESDA's Oplan Abot Lahat: TVET in the New Normal. The policy has helped institutions with registered programs to continue TVET delivery that is responsive to disruptions and to the challenges in the digital economy.<br><br>• The TESDA Online Program has allowed TESDA to deliver TVET at scale. At the height of the pandemic, it had increased enrollment by 925%. As of December 2021, there were a total of 914,647 registrants, and real accumulated users is above 3.5 million since 2012. |

## VIII. RECOMMENDATIONS/WAY FORWARD

TESDA has undertaken significant initiatives on upskilling and reskilling. However, the following recommendations are provided in order to improve TESDA's implementation of its programs and policies on upskilling and reskilling:

8.1 TESDA to continue and strengthen its mechanisms on skills anticipation and forecasting that will provide relevant labor market information on current and future skills requirements that are aligned with the performance of current and future job requirements.

8.2 TESDA to develop competency standards, training regulations and curriculum that are aligned to the technical and soft skills demanded by industry in response to their upskilling and reskilling requirements.

8.3 TESDA to issue the guidelines on the recognition of micro-credential programs in order to recognize the modular learning programs and nano-degrees being implemented by industries, companies, universities, training institutes and other related institutions.

8.4 TESDA to study the implementation of industry-run training fund or training levy as a mechanism to diversify the sources of fund and co-financing scheme for TVET by the private sector.

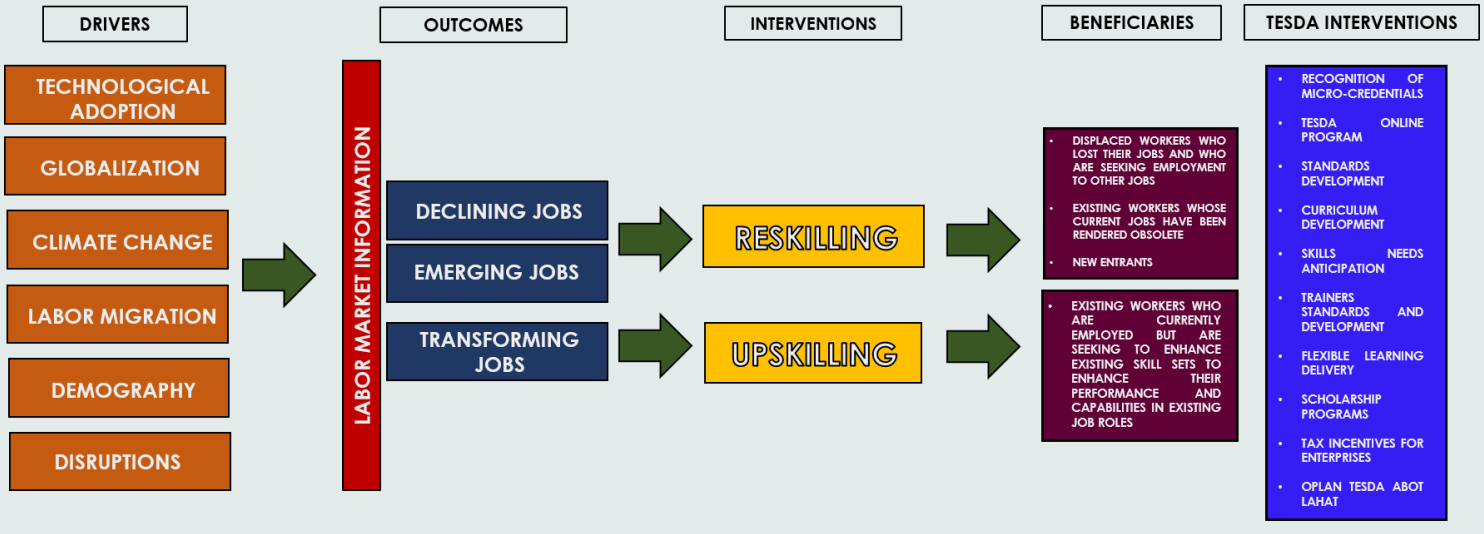
8.5 TESDA to expand and intensify partnerships with industry especially with regard to increasing the implementers of enterprise-based trainings such as apprenticeships and dual training system.

8.6 TESDA to continue promoting its scholarship programs especially to MSMEs and vulnerable groups in line with its TESDA Oplan Abot Lahat.

8.7 TESDA to incentivize its trainers to engage in further research on best practices on effective adult learning strategies for TVET.

8.8 TESDA to continue promoting the TESDA Online Program, and capacitate more technical-vocational institutions on the implementation of flexible learning delivery in TVET.

8.9 Part of the outcome of this brief is a proposed initial framework to demonstrate the strategic response to the upskilling and reskilling requirements in the context of TVET:



Changes in the labor market are driven by various factors such as **technological adoption**, **globalization**, **climate change**, **labor migration**, **demography**, and **major disruptions** (i.e. COVID-19 pandemic). The changes in the labor market can take place through **1) declining jobs** or jobs that have been deemed redundant or obsolete, **2) emerging jobs** because of new roles that may emerge through the adoption of new technology and industry-specific roles; and **3) job transformation** or jobs that will continue to exist but is transformed due to technology and industry developments. **Reskilling interventions** will be made to respond to the declining and emerging jobs for **displaced workers** seeking employment in new roles; **existing workers** whose role has been rendered obsolete; and **new entrants** who do not have the right skills for the jobs they want. On the other hand, **upskilling interventions** will be made for the **existing workers** in need of enhancement of their skill sets for performance and productivity capabilities in current and existing job roles.

More so, **TESDA can respond to upskilling and reskilling requirements** through its various initiatives, such as recognition of micro-credentials, TESDA Online Program, standards development, curriculum development, skills needs anticipation, trainers standards and trainers development, flexible learning delivery, scholarship provision, tax incentives for enterprises to implement the enterprise-based training programs, and TESDA's thrust of "Abot Lahat" to meet the needs and requirements of its clientele by providing innovative and accessible upskilling and reskilling TVET programs.

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