A firm foundation for a career in construction

Overhauling TVET for overall socioeconomic benefits

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WORK IN PROGRESS: THE GROWING GLOBAL INFRASTRUCTURE DEMAND

Construction has been – and is poised to be – big business in years to come.

The steady and rapid economic growth and development we are witnessing worldwide is only possible with the right infrastructure in place.

And we have the construction sector to thank for that.

The United Nations has projected the following **global trends by 2050:**

- The global **population will grow** to nearly 10 billion concentrated mainly in emerging and developing countries (EMDCs), with Africa's population alone set to double to 2.5 billion.
- **Global economic growth** will occur mainly in these EMDCs, thus requiring new infrastructure to keep pace with accelerating economic activity and demand for services among a growing global middle class.
- **Two-thirds of the world will live in urban areas** thus requiring more complex infrastructure.
- More investments will be needed for **lower carbon infrastructure technologies**, and new systems to adapt to the impact of climate change.[1]

These numbers alone underscore the significance of the construction sector, the vast and varied long-term employment opportunities it offers, and naturally, the wider socioeconomic benefits for all involved.

Projected investments in infrastructure are no less staggering either.
In 2016, the McKinsey Global Institute stated that by 2030, the world will need to invest about 3.8% of the global GDP – a whopping **annual average of USD 3.3 trillion** – in the core sectors of transport, power, water, and telecommunication to support the growth rates above.[2] Emerging economies, led by Asia, will account for the lion's share of this amount.

[1] Humphrey, Chris; Channelling private investment to infrastructure, ODI, April 2018
https://doi.org/10.3929/ethz-b-000346004
[2] Mc Kinsey Global Institute, Bridging Global Infrastructure Gaps, Full Report, June 2016
www.un.org/pga/71/wp-content/uploads/sites/40/2017/06/Bridging-Global-Infrastructure-Gaps-Full-report-June-2016.pdf

GLOBAL TVET: WHY AN OVERHAUL IS VITAL – NOW

These investments however come with two interconnected preconditions: a fully-functioning, state-of-the-art construction sector and a suitably skilled workforce.

And therein lies the hurdle: Turner and Townsend's International Construction Market Survey 2019 highlights how "two-thirds of worldwide construction markets are reporting skills shortages."[3]

Although unskilled daily labourers are generally open to working on construction sites, that isn't often the case with engineering students or trainees. The demanding (and sometimes risky) work conditions, the perceived "inferior status" of working in construction, or even a general reluctance in accepting trained and willing female staff (<10%) further exacerbate the issue.

Most significantly, **many global TVET systems still practice school-based theoretical vocational education using outdated curricula, and do not offer hands-on training**. This has churned out graduates who fail to meet actual workplace requirements nor have a feel for the nitty-gritty of work on actual construction sites.

It goes without saying that governments and the private sector need to jointly cultivate cutting edge TVET systems. Many countries have been striving to reform their TVET systems by incorporating more employment relevant training, like implementing dual training or competency-based training (CBT). However, this requires time and vast investments into overhauling current national TVET infrastructure and human capacities.

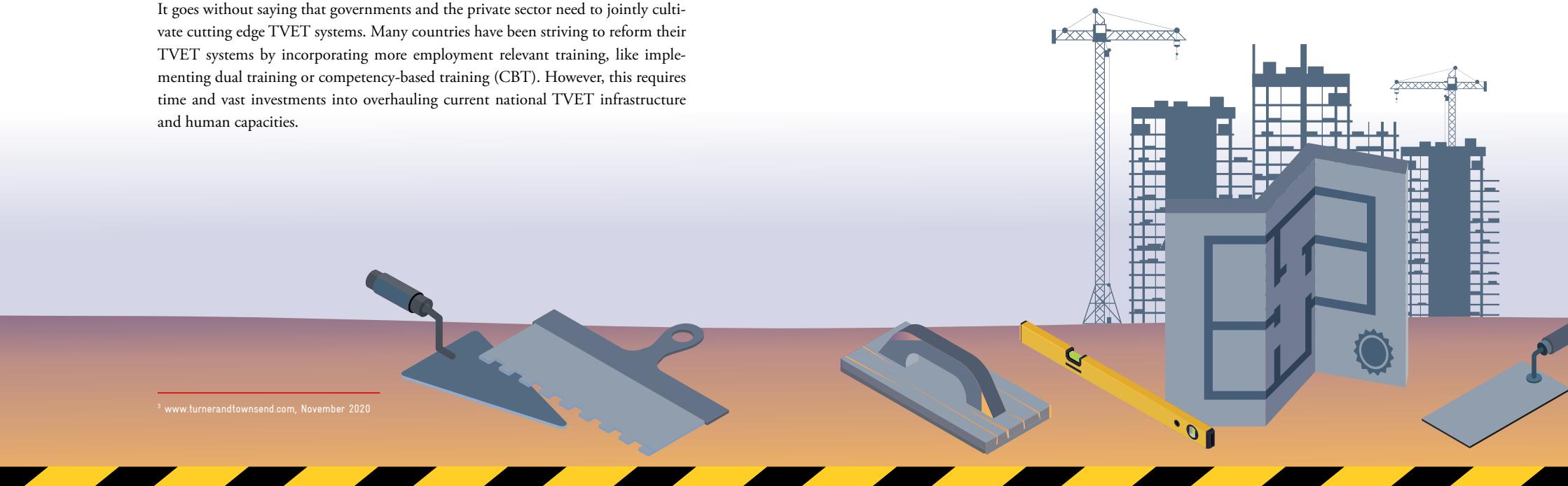
[3] www.turnerandtownsend.com, November 2020

ENTER BUILD4SKILLS

In 2018, the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Asian Development Bank (ADB) jointly set up the global Build4Skills project, selecting Mongolia and Pakistan as implementing countries.

Build4Skills operates on a simple yet practical premise: why not utilise the untapped potential of ongoing infrastructure projects to train TVET students on-site? Workplace-based and nationally accredited training on the construction sites of infrastructure projects won't only enhance the employability of the local workforce but improve TVET graduates' prospects for securing decent work and higher incomes. **The long-term aim is to make TVET a prerequisite in tendering processes for infrastructure projects – akin to social and environmental standards.**

Build4Skills' first intervention was launched in Mongolia in January 2019. The various ongoing and future infrastructure projects of the ADB-funded Ulaanbaatar Urban Services and Ger Areas Development Investment Programme provides the 'active training space' for work-based training. And Build4Skills provides technical assistance in facilitating on-site training that meets actual construction site demands.



PARTNERING WITH MDBs TO POWER INFRASTRUCTURE

Development banks have been financing global basic infrastructure for decades. Despite declining quotas, they have still set up major investment programmes for supra-regional infrastructure. In 2016, direct financial commitments to physical infrastructure projects represented a **total of USD 39 billion or 34% of total commitments by the World Bank Group and major regional Multilateral Development Banks (MDB).**

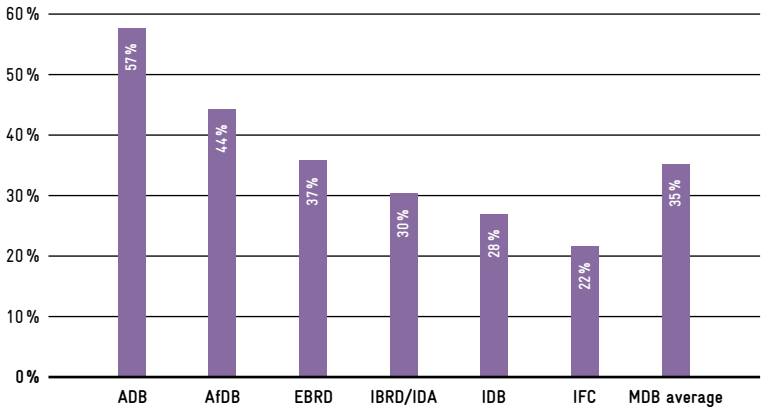


Figure 1: Percentage of global MDB investments going into physical infrastructure
Source: MDB Annual Reports 2016

In Asia, the **ADB** is the main investor in infrastructure projects. It estimates demand for investments in infrastructure in Asia – including climate change mitigation measures – to be **USD 1.7 trillion per year until 2030**. To this end, the ADB scaled up its annual loan and grant approvals to **USD 20 billion** in 2020.[4]

For the African Development Bank (AfDB), infrastructure and urban development project approvals have risen yearly and accounted for 21% of the bank's total portfolio in 2018, when it committed USD 1.9 billion to 19 new projects throughout Africa. AfDB's full infrastructure portfolio totals **USD 15.4 billion**.[5]

[4] ADB, Meeting Asia's Infrastructure Needs, 2017
www.adb.org/publications/asia-infrastructure-needs
[5] AfDB, Infrastructure and Urban Development Department - Annual Report 2018
www.afdb.org/en/documents/document/infrastructure-and-urbandevelopment-department-annual-report-2018-109284

In Mongolia, the government is the main sponsor of the country's investment projects, and nearly USD 1 billion has been approved for 42 Public Private Partnership (PPP) projects in the infrastructure sector since 2010.

Nevertheless, Mongolia still relies on loans and grants from foreign sources, such as the ADB and the World Bank. The ADB and the Japan International Cooperation Agency (JICA) for instance have financed specific infrastructure projects, such as roads and airports, by lending directly to the Mongolian government.

In 2019, the ADB financed 398 projects worth USD 3.31 billion in Mongolia, almost half of which was for infrastructure, which included the aforementioned GADIP project, partner project of Build4Skills.That programme aims to integrate the ger area redevelopment into the city master plan since these areas are key elements of future city growth. The programme focuses on improved urban planning including better traffic connections and an infrastructure network along priority roads.

As one of the participating nations of **China's Belt and Road Initiative** also known as the 'New Silk Road' that was **launched in 2013**, the Mongolian government is treating the reconstruction of the paved road between Ulaanbaatar and Darkhan as high priority. Financed by European Bank for Reconstruction and Development (EBRD) and ADB, it is part of the Russia-Mongolia-China corridor, for which inter-state rail connections will also require upgrading.

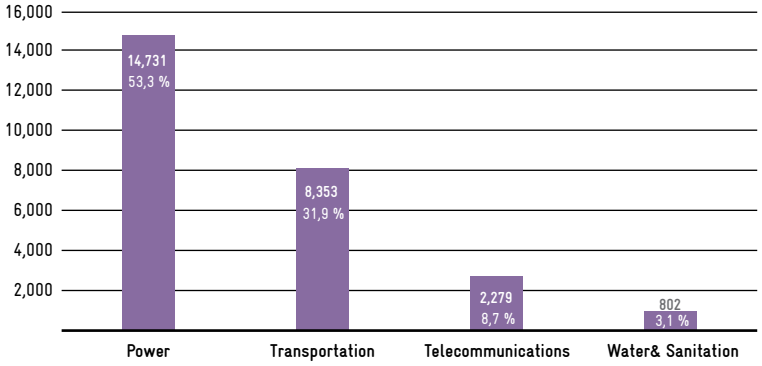


Figure 2: Infrastructure investment needs by sector in Asia, 2016-2030 (USD billion, 2015 prices)
Source: Presentation by Declan Magee ADB Senior Country Economist for Mongolia, 2017

MONGOLIA'S CONSTRUCTION SECTOR: AN OVERVIEW

Mongolia's construction sector and its labour market transitioned rather quickly from a centralised industrial and education system to a somewhat unregulated market economy after the breakdown of the socialist regime in 1990.

A **unique feature of the sector is its 'brigades'.** These informal micro/small enterprises operate largely in Ulaanbataar and elsewhere. They consist of a core team of 3–6 workers – many of whom have **years of labour intensive work experience but lack formal TVET training.** Some brigades have operation licences, but they generally function based on personal recommendations and word-of-mouth marketing. Despite playing an integral role in construction work throughout the country, matters like technical qualification/training of staff, occupational health and safety, and financial management do not figure largely in their operations.

The country's **extreme climate also reduces the attractiveness of working in the construction sector.** Staff turnover dramatically fluctuates with employment decreasing between 25% and 50% when summer turns to winter. While this means insecure employment and living conditions for workers, **employers tend to be reluctant to invest in vocational training** without appreciating that it does indeed pay off in the long run.

Finally, there is hardly any TVET collaboration between the public and private sectors. This would be the most practical solution to improving the current system since the private sector is best suited to advise public institutions on current workplace training requirements, and what to prepare for in the future.

IDENTIFYING TVET GAPS IN MONGOLIA

Supported by international donors and development agencies, Mongolia's **TVET system has been undergoing reform since the last decade**. This, however, has been slow.

Mongolia has yet to have a formal and established **TVET teacher training system**. TVET trainers currently lack up-to-date **teaching material and practical know-how** and work experience, which they then transfer to their students.

This in turn sees the construction sector being staffed by employees whose training hasn't equipped them to capably adapt to rapidly developing infrastructure and emerging new technologies.

In 2019, the Research Institute of Labour and Social Protection (RILSP), the Mongolian Ministry of Construction and Urban Development (MCUD) and Build4Skills conducted a pilot **study to determine the workforce status and demands** of the various segments within the construction sector.

They found that in that year alone, there were **17,700 vacancies**, with 3,400 registered unemployed persons amongst them. Of these, only 14% of job seekers had any TVET education. Half of them were registered as secondary school graduates, while 15% provided an academic degree.

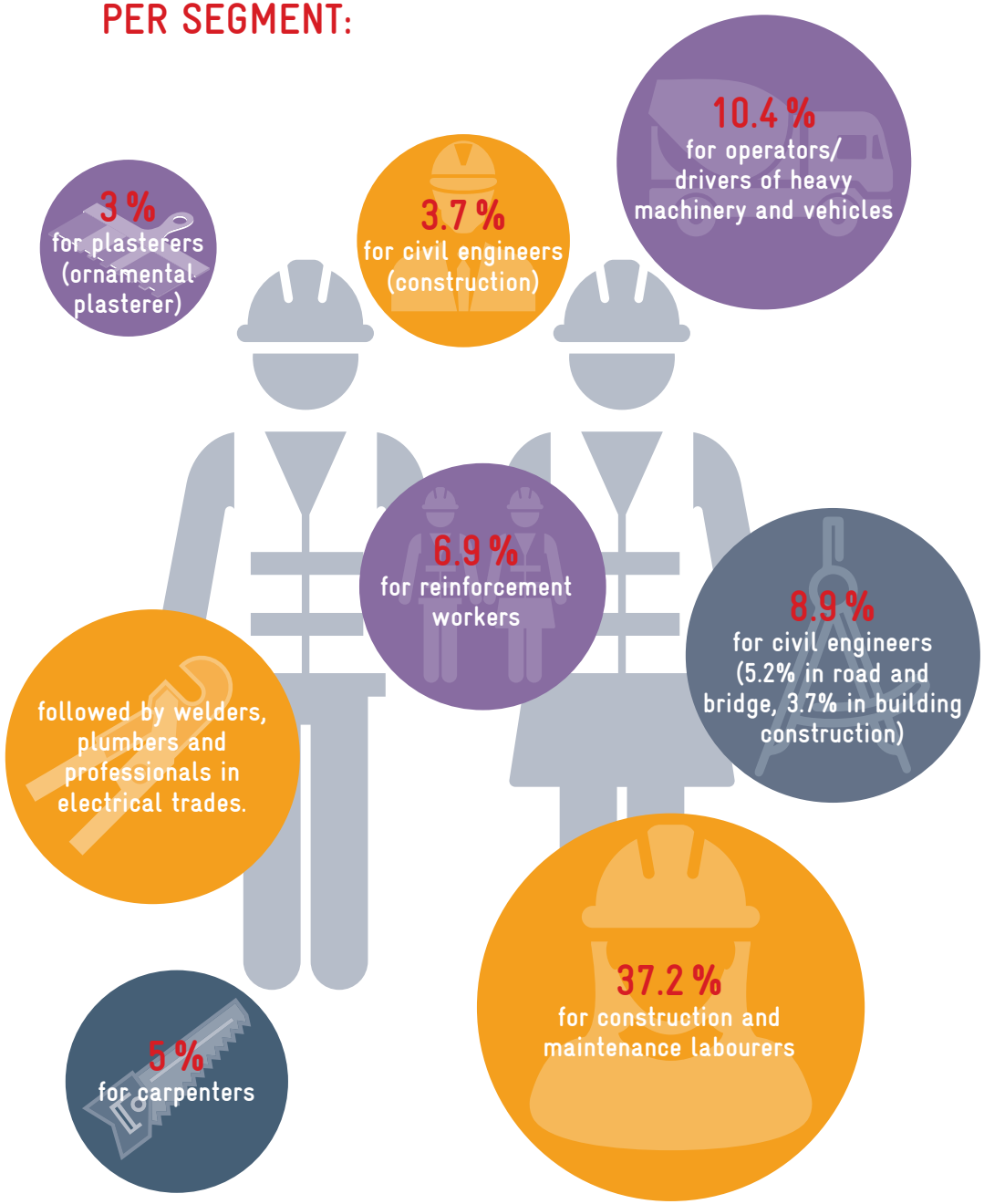
Higher education is still favoured in the sector though. According to a graduates' survey by RILSP for the years 2015–2016,[6] over 90% of the academic graduates, and **nearly 80% of the TVET graduates in construction-related fields found employment**.

Meanwhile, **employers shared how hiring competent personnel was generally very difficult**. Mainly due to the unwillingness of potential employees to work permanently or in rural areas, lack of technical or soft skills, or lack of physical constitution for hard labour under demanding climate conditions.

This shows that while employers may not be completely satisfied with the general capabilities of TVET graduates, formal TVET certification still gives job seekers an edge on the labour market.

[6] Graduate Employment Survey 2017. RILSP
RILSP survey results available at: www.rilsp.gov.mn

A BREAKDOWN OF LABOUR DEMAND PER SEGMENT:



As climate resilience is slowly becoming a development catchphrase worldwide, more innovative technologies focusing on AI, energy efficiency / climate protection or user convenience are slowly gaining publicity in Mongolia too. Thus, **Mongolia's construction labour market will need to adopt green practices to ensure economic growth remains sustainable**.

However, its current TVET system isn't yet equipped to prepare students for emerging green jobs, and providing them with the necessary green skills and competencies. Therefore, most innovative technology suppliers do not rely on the country's existing TVET structures, and instead configure, install, and maintain their services themselves.

Jobs requiring green skills in Mongolia:

Operating high-tech construction machinery/vehicles for heavy civil construction like caterpillars and related technology like GPS, construction lasers, wireless data communications, Internet connection and application software.

Installing and maintaining modern heating and Heating, ventilation, and air conditioning (HVAC) technology systems.

Installing insulation for existing buildings.

Installing and maintaining wind and solar regenerative energy technology.

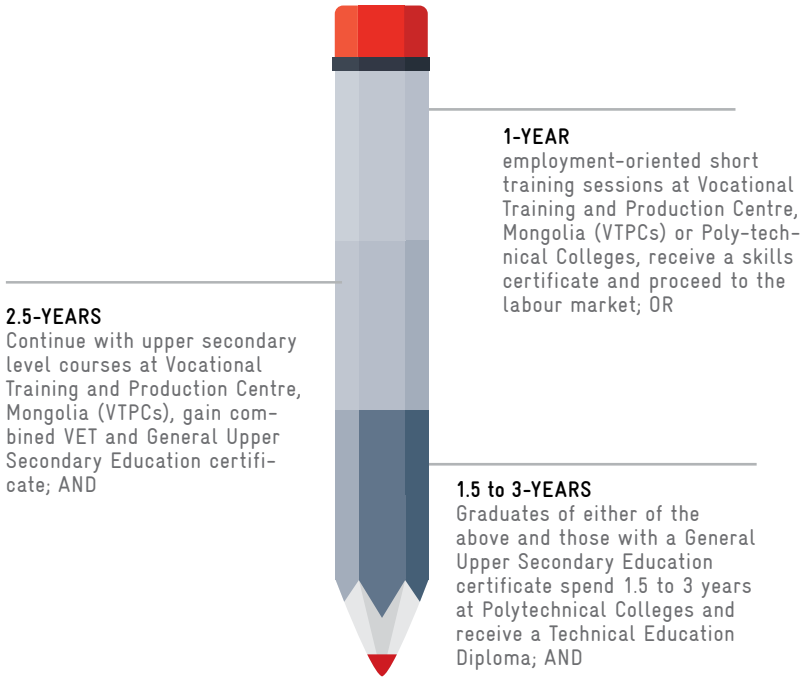
However, with a relatively young workforce – about 60% are under 34 years old, the majority of whom are aged between 15 and 24 – Mongolia has much untapped potential on its hands especially in building emerging technologies infrastructure.

THE ROAD AHEAD: FUTURE PROOFING TVET IN MONGOLIA

As of 2020, Mongolia has 50 public and 30 private TVET institutions with 40,011 trainees. Additionally, 712 other training centres and providers offer non-formal short-term vocational training.

About 5.8% of youth aged between 14 and 24 participate in TVET programmes, but only 55% of them find work placement.[7] According to the 2020 data of the Ministry of Labour and Social Protection (MLSP), 2 out of the 5 top-demanded TVET trades are at least partly construction related, namely plastering and welding.

Current study-to-work tracks available to lower secondary school graduates:



[7] GIZ, cTVET Mongolia, https://www.giz.de/en/worldwide/23143.html

Since 2018, non-formal vocational training programmes have been offered in addition to the options above. **Individuals can sign up for short-term skills training** sessions of up to three months at VTCs registered under Ministry of Labour and Social Protection, Mongolia (MLSP.) Focusing particularly on job-related skills, these institutes take on the role of training entities or as supplementary training providers for formal TVET institutions and for the industry (on-the-job training). Competencies acquired through non-formal training may be assessed and certified by the TVET Assessment, Information and Methodology Centre (TVET AIMC), the assessment unit of MLSP supported by Build4Skills.

Existing government plans to enhance the Mongolian TVET system

To further enhance the quality of TVET and the employability of its graduates, the Mongolian government has also put the following plans into action:

- The National Programme on Vocational Education and Training 2016–2021 aims to make TVET an attractive education and career alternative, and completely overhaul the current TVET system.
- The Sustainable Development Vision of Mongolia 2030, aims to improve capacity of TVET teaching personnel, expand internship bases, and increase student numbers.
- The Education Sector Medium Term Development Plan (2021–2030) aims to establish optimum structures for lifelong learning and development.
- Eight legislative acts on TVET policy, quality, databases, are also currently being hammered out in parliament.

As part of the reform processes, the German government through GIZ, together with the Australian Department of Foreign Affairs and Trade (DFAT) and the Korean International Cooperation Agency (KOICA) are implementing the cTVET Programme on cooperative TVET with the MLSP 2019–2022.

The programme aims to set up Capacity Development Centres (CDCs) for high-quality training in selected trades (including construction and carpentry) as well as teacher training development.

Finally, new approaches using state-of-the-art technologies and enhancing the technical quality of construction work in Mongolia are already underway.

International companies such as Geomatrix and Sitech are offering training that targets sustainable market development for their technologies, while various PPP training projects are taking place with the support of development cooperation agencies like GIZ.

Meanwhile Build4Skills is facilitating the development of a digital platform to compare skills supply and demands in the Mongolian construction sector. This "Occupational Skills Gap Analysis Platform" (OSGAP) is owned by TVET AIMC and allows to display workforce demand and supply and interlink that to TVET provision. Thereby the platform helps in the policy-making and planning of labour market driven skills training and development in Mongolia.

The substantial and increasing national and international investments in infrastructure means there will be continuing demand for properly functioning construction sectors and equally efficient TVET systems. Thus, investing in a modern and flexible TVET system in close cooperation with the private sector is going to become even more pressing in the future.

Which points to one irrefutable fact: the time to invest in TVET is now, and it requires the concerted and committed efforts of all stakeholders.

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