

Human Resources Development Readiness in ASEAN

Indonesia Country Report







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Catalogue-in-Publication Data

Human Resources Development Readiness in ASEAN – Indonesia Country Report Jakarta, ASEAN Secretariat, August 2021.

331.0601

1. ASEAN - Labour - Study Report

2. Professional Development - Lifelong learning - Policies

ISBN 978-623-6945-20-9 (EPUB)



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Foreword

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Developing human resources to empower peoples across the region and to strengthen ASEAN Community has been one of the key purposes of ASEAN as stipulated in the ASEAN Charter, adopted in 2007. The advancement of human resources development (HRD) has become more urgent, particularly with the Fourth Industrial Revolution (4IR) which has transformed businesses and jobs at a speed faster than workers can adapt. This urgency has been further exacerbated by the COVID-19 pandemic.

Cognisant of the urgency of developing future-ready human resources to enable ASEAN to recover and thrive in the face of ever-changing demands of the labour market, ASEAN Leaders reaffirmed their unwavering commitment to build a people-oriented and people-centered ASEAN Community, through the adoption of the ASEAN Declaration on HRD for the Changing World of Work and its Roadmap, championed by Viet Nam during their Chairmanship of ASEAN in 2020. Carried out in support to the implementation of the ASEAN HRD Declaration and its Roadmap and in collaboration between ASEAN labour and education sectors, we are very pleased to welcome the publication of the ten country reports of the Study on HRD Readiness in ASEAN, which features the state of HRD readiness in each ASEAN Member States (AMS). The study is a joint initiative of Viet Nam's Ministry of Labour, Invalids and Social Affairs (MOLISA) and the ASEAN Secretariat, with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) through the Regional Cooperation Programme for TVET in ASEAN (RECOTVET).

Each country report compiles and synthesises national strategies, policies and programmes on HRD, which were then used as the basis in developing the regional report on HRD Readiness in ASEAN. We acknowledge that while the report demonstrates the significant progress made in the region, we are also aware of the commitments required to ensure that dynamic reforms are carried out going forward. We believe that the ten country reports and regional report will be instrumental in supporting the implementation of the ASEAN HRD Declaration and its Roadmap, particularly through the development of evidence-based policies and initiatives to advance HRD in ASEAN.

Lastly, we would also like to commend the efforts and commitment of the national researchers and authors from all AMS in developing the country reports under the guidance of Prof. Dieter Euler, as the Study's lead researcher and author of the regional report. Appreciation also goes to the respondents and resource persons from relevant ministries and institutions from the labour and education sectors for their valuable feedback and contributions during the development and finalisation of the reports.

We would also like to extend our recognition to RECOTVET for their longstanding support in advancing HRD agenda in ASEAN.

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Acknowledgements

The Study on Human Resources Development (HRD) Readiness in ASEAN was initiated by the ASEAN Secretariat together with the Vietnamese Ministry of Labour, Invalids and Social Affairs (MOLISA). The purpose of the Study is to support implementation of the ASEAN Declaration on HRD for the Changing World of Work adopted by the 36th ASEAN Summit in June 2020. The Study was conducted as an initiative under Viet Nam's Chairmanship of ASEAN with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH through the Regional Cooperation Programme in Technical and Vocational Education and Training (RECOTVET).

Terms of Reference and an Inception Report for the Study were endorsed at the ASEAN Senior Labour Officials Meeting (SLOM) and Senior Officials Meeting on Education (SOM-ED) in April 2020 and June 2020, respectively. The research methodology was further deliberated by SLOM and SOM-ED focal points at a Validation Workshop held virtually on 29 June 2020.

The Study, which was conducted at regional level and across ten ASEAN Member States, has achieved its objective of offering comprehensive baseline information and recommendations. This valuable feedback will enable ASEAN policy makers and practitioners to better frame HRD as a priority for policy making.

The Regional Report and ten country reports were produced and endorsed following a series of extensive consultations with SLOM and SOM-ED from September 2020 to April 2021. The reports were launched at the High-Level Launch and Dissemination Forum conducted virtually on 26 April 2021.

The technical contributions of numerous individuals were invaluable to the development and implementation of the Study. We would like to offer our sincere thanks to the following:

- The focal points of ASEAN Member States' labour and education ministries, whom there are too many to acknowledge individually, for your invaluable time and efforts to review draft reports, provide data and information, and share insights;
- To the International Cooperation Department of MOLISA Viet Nam, led by Dr. Ha Thi Minh Duc (Deputy Director General) for leadership and guidance during implementation of the Study, and her team members, particularly Ms. Tran Thanh Minh and Mr. Phan Nhat Minh;

- To the ASEAN Secretariat under the coordination of H.E. Kung Phoak, Deputy Secretary-General for ASEAN Socio-Cultural Community, including Director Rodora T. Babaran; the Labour and Civil Services Division, led by Ms. Mega Irena (Head and Assistant Director); the Education, Youth and Sport Division, led by Ms. Mary Anne Therese Manuson (former Head and Assistant Director); and their team members, in particular Mr. Carl Rookie O. Daquio, Ms. Madyah Rahmi Lukri, Mr. Alvin Pahlevi, Ms. Felicia Clarissa, and Ms. Shinta Permata Sari for their professional coordination and facilitation of consultations and stakeholders, as well as for their feedback to the draft reports;
- To GIZ's RECOTVET team, led by Mr. Ingo Imhoff (Programme Director), in particular Mr. Nguyen Dang Tuan and Ms. Tran Phuong Dung for the financial, technical and administrative support throughout the Study;
- To Prof. Dieter Euler of St. Gallen University as the Study's lead researcher and author of the Regional Report. This Study would not have been possible without his expertise and support;
- To the following national researchers and authors of the country reports:
 - a. Dr. Paryono and the research team at SEAMEO VOCTECH (Brunei Darussalam)
 - b. Ms. Ek Sopheara (Cambodia)
 - c. Mr. Souphap Khounvixay (Lao PDR)
 - d. Mr. Daniel Dyonisius and Prof. Bruri Triyono (Indonesia)
 - e. Assoc. Prof. Razali Bin Hasan and the research team of the Malaysia Research Institute for Vocational Education and Training (Malaysia)
 - f. Ms. Thet Su Hlaing (Myanmar)
 - g. Mr. Elvin Ivan Y. Uy and the education team of the Philippine Business for Social Progress (the Philippines)
 - h. Dr. Jaclyn Lee, Dr. Tay Wan Ying, and Dr. Dang Que Anh (Singapore)
 - i. Dr. Chompoonuh K. Permpoonwiwat (Thailand)
 - j. Dr. Dang Que Anh and Dr. Dao Quang Vinh (Viet Nam); and
- Finally, to Prof. Sir Alan John Tuckett for editing and proofreading the Regional Report, Dr. Daniel Burns for editing the Cambodia, Indonesia, Myanmar and Thailand country reports, and Mr. Steven Christensen for designing the layout of the published reports.

Introduction to the Indonesia country report

Human resources development (HRD) empowers people to actively shape their future in a modern world of work that is characterized by an accelerated pace of change. HRD aims at equipping people with the skills, competencies, values, and attitudes to prepare them for a future that is yet unknown.

Education and training systems are designed to provide people with the capacity and resilience to tackle current and future challenges in both their private and working lives. Governance, infrastructure, content, and teaching and learning processes have to be organized to accomplish this key function effectively and efficiently.

While these basic requirements are not new, the ASEAN regional context has changed considerably over the last decades. Advances in digital technologies, new demands in the area of environmental protection, and increased labour migration are just a few examples of the issues that require rapid responses by governments and the societies they represent. Education and training systems need to adjust to the changing times. The COVID-19 pandemic demonstrates the need for societies to adapt to unprecedented and unpredictable disruptions, and to be better prepared for the future.

Against this background, the Heads of State adopted the Declaration on Human Resources Development for the Changing World of Workⁱ at the 36th ASEAN Summit on 26 June 2020, reaffirming the region's commitment to equip its human resources with the competencies required for the future. A Roadmap to implement the Declaration was subsequently developed and adopted by the ASEAN labour and education ministers.

Guided by the aforementioned ASEAN Declaration, the Study on HRD Readiness in the ASEAN region was conducted to provide baseline information on the preparedness of HRD policies and programmes across ASEAN Member States with the aim of enabling their workforces to be relevant, agile and resilient for the future world of work. The Study was initiated by the ASEAN Secretariat to support Viet Nam's Chairmanship of ASEAN in 2020 and in collaboration with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH through RECOTVET.

i https://asean.org/storage/2020/06/ASEAN-Declaration-on-Human-Resources-Development-for-the-Changing-World-of-Work.pdf

This Indonesia Country Report is part of a comprehensive regional study investigating HRD readiness in ASEAN Member States (AMS) from a broader perspective. This report, together with the reports on the other nine AMS, forms part of the Regional Report on HRD Readiness in ASEAN. The ten country reports follow a common conceptual framework for HRD developed in the Inception Report, which was endorsed in June 2020. Together, the Regional Report and aligned country reports offer a wealth of background knowledge and guidance to enable ASEAN policy makers and practitioners to better frame HRD as a priority of future policy-making in the region.

The country reports were designed to focus on three key activities:

- Review relevant country-specific literature, policies, and other practices to identify elements of HRD frameworks and what 'readiness' means in the national context;
- Overview the current situation of national HRD policies and available resources to promote LLL and future skills; and
- Showcase promising strategies and practices to promote LLL and future skills within the respective areas of intervention.

This Indonesia Country Report was written by the national researcher Daniel Dyonisius with the support of Prof. Bruri Triyono. It describes existing practices and introduces options for future policies as guided by a conceptual framework of investigation introduced in the Regional Report. In particular, it explores approaches currently applied with regard to HRD in reaction to the challenges of a changing world of work. It reveals considerable gaps between the appraisal of importance and desirability of HRD interventions on the one hand, and the extent of their realization and achievement on the other. In response, the report encourages those responsible for designing future strategies and policies to adapt their approaches to ensure the workforce is more resilient to the future world of work.

The ASEAN country reports were developed through extensive consultations between September 2020 and April 2021, at which time they were finalised and endorsed by their respective education and labour ministries. Building upon the findings and analyses in the country reports, the Regional Report was then developed by the senior international researcher, Prof. Dr. Dieter Euler. The Regional Report and country reports were launched at the High-level Launch and Dissemination Forum conducted virtually on 26 April 2021.

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Abbreviations

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
ADEM	Affirmation of Secondary Education Programme
ADik	Higher Education Affirmation Scholarship Programme
APINDO	Indonesian Employers' Association
APK	Gross Enrolment Rate
APM	Net Enrolment Ratio
APS	School Participation Rate
BAN-PT	National Accreditation Board for Higher Education
BAN-SM	National Accreditation Board for School/Madrasah
Bappenas	Coordinating Ministry for Economic Affairs, and the Ministry of National Development Planning / National Development Planning Agency
BBPPMPV	Centres for Vocational Education Quality Assurance Development
BIMTEK	Technical Guidance
BLK	Vocational Training Centres
BP2MI	Indonesian Migrant Worker Protection Agency
BNSP	National Professional Certification Board
BPPT	Agency for the Assessment and Application of Technology
BPS	Central Bureau of Statistics
BUMN	Ministry of State Owned Enterprises
CSR	Corporate Social Responsibility
Dikpora DIY	Department of Youth Education and Sports of the Special Region of Yogyakarta
DTS	Digital Talent Scholarship
FHCI	Indonesian Human Capital Forum
FKJP	Apprenticeship Network Communication Forum
FKLPI	Industrial Training Institute Communication Forum
G to G	Government to Government
GNI	Gross National Income
GNIK	National Competent Indonesia Movement

HCI	Human Capital Index
HDI	Human Development Index
HEI	Higher Education Institution
НКІ	Indonesian Industrial Estate Association
HRD	Human Resources Development
IBI	Indonesian Bankers' Association
KADIN	Indonesian Chamber of Commerce and Industry
KBU	Business Learning Group
Kemenag	Ministry of Religious Affairs
Kemendikbud	Ministry of Education and Culture
Kemenkeu	Ministry of Finance
Kemenko PMK	Coordinating Ministry for Human Development and Cultural Affairs
Kemenparekraf	Ministry of Tourism and Creative Economy
Kemenperin	Ministry of Industry
Kemenristek/BRIN	Ministry of Research and Technology/National Research and Innovation Agency
Kemenristekdikti	Minister of Research and Technology and Higher Education
Kemnaker	Ministry of Manpower
KIP	Smart Indonesia Cards
KKNI	Indonesian Qualifications Framework
Kominfo	Ministry of Communications and Information Technology
KSDI	Industrial-Regional Cooperation
LA-LSPK	Accreditation Board for Training Centres
LIPI	Indonesian Institute of Sciences
LKP	Course and Training Institute
LLL	Lifelong Learning
LPPKS	Institute for the Development and Empowerment of School Principals
LPTK	Teacher Training Institute

LSP Trainer Indonesia	Institute of Trainer Profession Certification Indonesia
NEET	Not in Employment, Education or Training
NFE	Non-formal education
PAUD	Early Childhood Education
PGRI	Indonesian Teachers' Union
PIP	Smart Indonesia Programme
PKBM	Community Learning Centres
PKK	Work Skills Education
PPG	Teacher Professional Programme
РРР	Public-Private-Partnership
Renstra	Strategic Plans
ROI	Return on Investment
RPJMD	Regional Medium-Term Development Plans
RPJMN	National Medium-Term Development Plans
RPL	Recognition of Prior Learning
SD/MI	Sekolah Dasar / Madrasah Ibtidaiyah (Primary School)
SEA-TVET Consortium	Southeast Asian Technical and Vocational Education and Training Consortium
SEAMEO	Southeast Asian Ministers of Education Organisation
SL-AEP	School of Productive Economic Acceleration
SLB	Extraordinary School
SMA/MA	Sekolah Menengah Atas / Madrasah Aliyah (High School)
SMK	Sekolah Menengah Kejuruan (Vocational High School)
SMP/MTs	Sekolah Menengah Pertama / Madrasah Tsanawiyah (Junior Secondary School)
STEM	Science, Technology, Engineering, and Mathematics
Susenas	National Socio-Economic Survey
TUK	Competency Test Place
TVET	Technological and Vocational Education and Training

1. Statistical facts: Human Resources Development (HRD)/Lifelong Learning (LLL) in Indonesia

1.1. Human Development Index (HDI) and mean years of schooling

Unlike the Human Capital Index (HCI), which is a specific measure of human capital, HDI is a summary measure that assesses long-term progress in three basic dimensions of human development: 1) a long and healthy life; 2) access to knowledge; and 3) a decent standard of living (UNDP, 2019, p. 2). The first dimension is measured by life expectancy. Knowledge level is measured by mean years of schooling among the adult population, which is defined as "the average number of years of schooling received in a lifetime by people aged 25 years and older". Meanwhile, access to learning and knowledge is measured by expected years of schooling for children of school-entry age, which is defined as "the total number of years of schooling a child of school-entry age can expect to receive, if prevailing patterns of age-specific enrolment rates stay the same throughout the child's life." Lastly, standard of living is measured by Gross National Income (GNI) per capita, which is expressed in constant 2011 international dollars converted using purchasing power parity conversion rates.

Based on consistent time series data, from 1990-2018, Indonesia's Human Development Index (HDI) value increased by 34.6% (UNDP, 2019, p. 3). During the same period, mean years of schooling rose by 4.7 years and expected years of schooling increased by 2.8 years. In 2018, Indonesia's HDI value was 0.707, while its expected years of schooling was 12.9 years and mean years of schooling was 8 years. Similarly, according to Indonesia's Central Bureau of Statistics (BPS) (2020, p. 1), the country's HDI reached **0.7192** in 2019. Indonesian children aged 7 in 2019 are expected to have **12.95 years** of schooling, while the mean years of schooling for those aged 25 and older was **8.34 years**.

1.2. Not in employment, education or training (NEET)

The percentage of youths aged 15-24 who were not in employment, education, or training (NEET) in 2018 was **22.48%** (BPS, 2018a).

1.3. Literacy and numeracy rates (15-24 age group)

The literacy rate of citizens aged 15 and over was 95.90% in 2019 (BPS, 2018b).¹ According to a different source, adult literacy rate in Indonesia increased from 81.5% to 95.7% between 1990 and 2018, reflecting an annual growth rate of 1.84% (Knoema, 2018). Generally, literacy also encompasses numeracy, which is "the ability to make simple arithmetic calculations."

For the 15-24 age group more specifically, **99.76%** were literate (BPS, 2018c). Indeed, a high proportion of people in this particular age group were already literate, although there are notable discrepancies across the country's provinces, as we will see below.

1.4. Literacy and enrolment rates of people from disadvantaged backgrounds

There is a notable gap between literacy rates for women and men aged 15 and over. While **97.48%** of male Indonesians aged 15 and over could read in 2019, only **94.33%** of all women within the same age group could do so (BPS, 2018b).

While literacy rates across provinces are comparable, there are discrepancies. For example, whilst **99.96%** of the people aged 15-24 in DKI Jakarta – the country's capital – were literate in 2019, only **90.39%** were in Papua, an eastern province (BPS, 2018c).

In 2018, only **90.06%** of people with disabilities aged 15-44 could read and write (Hastuti et al., 2020, p. 21). This contrasts with the literacy rate of **99.24%** for people without disabilities in the same age group. Unfortunately, there is still a paucity of data in regard to literacy rates of other potentially disadvantaged groups.

Overall school enrolment in Indonesia is measured through the School Participation Rate (APS) in formal and non-formal education, which is the proportion between certain school age groups who are in school, irrespective of the level of education they are attending, out of the population of the corresponding school age group (BPS, 2014). In 2019, APS scores for the 7-12, 13-15, 16-18, and 19-24 age groups were **99.24%**, **95.51%**, **72.36%**, and **25.21%**, respectively (BPS, 2015a).

School participation rates at primary and secondary levels can be measured through Net Enrolment Ratio (APM), which is a comparison between the number of students in a particular age group enrolled in a certain level of education and the corresponding size of the population within that age group (Kemendikbud, 2017). At national level, the ratios in primary (SD/MI), junior secondary (SMP/MTs),

¹ Some BPS sources in this paper appear to be published before 2019, suggesting that the information that they provide represent projections from data collected in the preceding years.

and senior secondary (SMA/MA/SMK) levels in 2019 were 97.64%, 79.40%, and 60.84%, respectively (BPS, 2015b). There is also a provincial gap in regard to APM. While 60.24% of senior secondary-aged children in DKI Jakarta were enrolled in school, which is comparable to the national average, only 44.32% of children within the same age group in Papua were enrolled (BPS, 2015b).

Women and men performed similarly in terms of APM at primary level (i.e. around 97%) (BPS, 2018d). However, women have in fact performed slightly better than men in junior and senior secondary levels, especially in recent years. For instance, 79.93% of junior secondary-aged women, in contrast to 78.80% of men, were enrolled in school in 2019 (BPS, 2018e). Similarly, 62.26% of senior secondary-aged women, in contrast to only 59.23% of men, were enrolled in school in 2019 (BPS, 2018f).

Participation in higher education is only measured through Gross Enrolment Rate (APK), which is a comparison between students at a particular level of education with the school-age population (Kemendikbud, 2017). In 2019, the rate was 30.28% at the national level (BPS, 2018g). Again, there are provincial discrepancies: the rate was only 21.08% in Papua, in stark contrast with 73.14% in the Special Region of Yogyakarta (DIY). Women's higher education APK in 2019 was 31.67%, which is better than the average for men (28.93%) (BPS, 2018h).

People with disabilities have lower rates of school participation across all levels of education (Hastuti et al., 2020, p. 21). According to the 2018 National Socio-Economic Survey (Susenas), only **89.82%** of those with disabilities within the primary education age group received an education, in contrast to **97.65%** of those without disabilities (Hastuti et al., 2020, p. 22). At junior secondary level, the participation rate of people with disabilities was **48.79%**, in contrast to **79.10%** for those without disabilities. At senior secondary level, the rates were **24.73%** for people with disabilities within the higher education age group were enrolled in university, in contrast to **18.71%** of those without disabilities.

1.5. Primary education enrolment and attainment (15 years and over)

As indicated above, the primary education enrolment rate, as measured by APM, was **97.64%** in 2019 (BPS, 2015b). Indonesia does not specifically record primary education attainment rates for the 7-24 age group. However, the 2019 Welfare Statistics, which sources its results from the March 2019 Susenas, reports that **83.39%** of the population aged 15 years and over in Indonesia held at least a primary school diploma (BPS, 2019, p. 79).

1.6. Secondary Education Enrolment and Attainment (15 Years and over)

Enrolment rates at junior and senior secondary levels were **79.40%** and **60.84%**, respectively in 2019 (BPS, 2015b). Meanwhile, of all the population aged 15 years and over, **58.26%** received at least a secondary level education (BPS, 2019, p. 79).

The country does not collect data on vocational education enrolment for the 15-24 age group. However, Kemendikbud (2019a) reports that there are currently 5,242,851 students enrolled in vocational high schools (SMK). Taking into consideration the senior secondary-aged population (16-18 age group) of 13,398,700 in 2019, the SMK APM score would be about **40%** (Kemendikbud, 2019b).

1.7. Tertiary education enrolment and attainment (15 years and over)

In 2019, the APK rate for higher education was **30.28%** (BPS, 2018g). There is no specific data on enrolment for the 15-24 age group or attainment for the 25-54 age group. Nonetheless, according to the 2019 Welfare Statistics, **9.26%** of the population aged 15 years attained a tertiary education (BPS, 2019, p. 79).

2. Results from the HRD Readiness Questionnaire

Figure 1: Respondents' institutional affiliation



A total of 36 people responded to the survey. Figure 1 shows that the two largest proportions are from the Ministry of Education and Culture (Kemendikbud) and the Ministry of Manpower (Kemnaker). One person simultaneously represents a company (Astra International) and a polytechnic (Astra Manufacturing Polytechnic). One other respondent comes from Sleman Secondary Education Centre, a part of the Department of Youth Education and Sports in the Special Region of Yogyakarta (Dikpora DIY), which still technically operates under Kemendikbud.



Figure 2: Respondents' expertise

Figure 2 shows that most respondents have expertise in general/basic education, technical and vocational education, or higher education. Most answers fit into the study's expertise categories. A few respondents representing a Business Membership Organisation (BMO) and Kemnaker, however, declared their more specific areas of expertise as workforce placement and expansion, HR management, and international cooperation.



Figure 3: Promote HRD culture

Survey participants were asked to respond to the following statement: "There is an awareness and culture of HRD empowering people to make them resilient for an environment of constant change." Figure 3 shows most respondents think that an HRD culture is highly desirable. Many suggest that it is in place, although some think that there is still room for improvement. This suggests that despite the notable gap between the importance and realisation of HRD culture, the charts still display some degree of consistency.



Figure 4: Adopt inclusive approach

Survey participants were next asked to respond to the following statement: "HRD includes specific programs and support for vulnerable groups at risk of being left behind." Figure 4 shows that most feel that adopting an inclusive approach is highly important/desirable, although a few think that it is not very important/desirable. This shows that perhaps adopting an inclusive approach has not been fully introduced in some institutions, which is worth investigating. Meanwhile, the answers in regard to its realisation/achievement are more evenly distributed, suggesting more disagreement on the degree of realisation in this area, compared to Figure 3.



Survey participants were then asked to respond to the following statement: "HRD is clearly visible in terms of legislation, coordinated bodies and ministries at state level, platforms of cooperation, funding and research on labour market developments." Most think that the achievement in this category is quite high, a trend that can be explained by the various regulations that have been proposed in regard to HRD. Most respondents representing Kemendikbud and Kemnaker were particularly aware of these regulations. Indeed, Figure 5 is similar to Figure 3. However, distribution of responses in regard to the degree of realisation is again spread more evenly in Figure 5 than in Figure 3, suggesting a notable gap between the desirability/importance of strengthening enabling structures and its realisation.



Figure 6: Modernise HRD programmes²

Participants were also asked to respond to the following statement: "Future skills"³ are fully incorporated into curricula, teaching and learning resources and assessments in general, vocational and higher education." Again, there is a notable gap between the extent of importance and achievement in this area, as noted in Figure 6: while almost all think that this category is either important or very important, a significant proportion still think that its achievement is either quite low or low.

^{2.} While this is not considered a priority intervention area in this study, it is still discussed as a part of Chapter V on the development of qualified teaching personnel.

^{3 &}quot;Future skills" comprise especially (1) cognitive skills (numeracy and literacy as foundation skills, low- and high order skills, e.g. critical thinking, creating /innovating); (2) ICT skills/digital literacy; (3) STEM skills; (4) social skills; (5) learnability (e.g. readiness to learn, learning motivation; curiosity, self-learning strategies); (6) character qualities (e.g. ethical reflection and action, social and cultural awareness, agility, initiative); and (7) problem-solving in complex, technology-rich environments



Figure 7: Professionalise development of qualified teaching personnel

Next, respondents were asked to assess the following statement: "There are standards for the training of teachers and in-company trainers which address the acquisition of "future skills". In Figure 7, 31 out of 36 respondents think that this is either desirable or very desirable. However, answers in regard to the degree of realisation is even more mixed than in other areas, suggesting a desirability-realisation gap. As will become evident in subsequent chapters, this can be partly explained by the rupture between academic universities and vocational/TVET institutions.





Finally, respondents were asked to examine the following statement: "In the field of TVET and Higher Education, there are strong links between state bodies and the business sector in terms of public-private partnerships (PPP) in HRD". Figure 8 is also similar to Figure 3 and Figure 5. Notably, almost half of the respondents think that the extent of realisation is already quite high. However, looking only at the "Very High" and "High" categories, the desirability-realisation discrepancy in Figure 8 is quite pronounced, and quite a significant number of interviewees still think achievement is low or quite low in this area. This hints at potential implementation challenges.

3. Inclusiveness in HRD/LLL approaches

3.1. Scope of initiatives and challenges with regard to HRD/LLL for vulnerable groups

In Indonesia, there is still a socio-economic learning divide between the "learning rich" and the "learning poor" (Ministry of National Education⁴; Indonesian National Commission for UNESCO; UNESCO Institute for Lifelong Learning (UIL); Japanese Fund in Trust (JFIT), 2008, p. 2). Indeed, HRD/LLL programs are still primarily targeted towards the economically poor, as the illiteracy rate has a strong correlation with the poverty rate: provinces with the lowest levels of literacy also tend to be the poorest (Kemendikbud, 2012, p. 7). Central and eastern provinces, such as West Nusa Tenggara, East Nusa Tenggara, West Sulawesi, and Papua, tend to have higher literacy rates (Kemendikbud, 2012, p. 3). Indeed, an interview respondent in this study commented how geographical gaps in HRD become more apparent in other provinces outside Java, especially eastern provinces (C1). There are still some infrastructure and skills barriers faced by vulnerable groups in remote areas. A report by the Asian Development Bank Institute (ADBI) notes how such barriers are often linked to the problem of decentralisation: the capacity of local governments is often inadequate to the point that policy reforms from the central government fail to achieve optimal results (Nasution, 2016, p. 1).

There were notable gender disparities in access to education and literacy: In the early 2000s, 64% of illiterate adults were women (Kemendikbud, 2012, p. 1). The government has attempted to address this issue by combining more generic life skills with literacy courses, thereby increasing women's literacy levels (OECD/ADB, 2015, p. 247). An interviewee commented how differences between women and men have gradually dissolved, although cultural factors, such as the perception that women do not have to be educated at higher levels, may sometimes still play a role in inhibiting their access to education (U1).

Gender mainstreaming in education in recent years has contributed to gender parity in enrolment at all levels of education as noted in Chapter 1, as well as to the operation of working groups for gender mainstreaming (Yorozu, 2017, pp. 24-5). A government official noted that the enrolment rates for women in certain education fields, such as STEM, are still low, yet she also suggested how men's enrolment rates in other subjects, such as Biology and Midwifery are also low, signifying that gender is no longer a pronounced issue in the country (G1).

⁴ Later changed to the Ministry of Education and Culture (Kemendikbud).

Chapter 1 alluded to the lower rates of school participation across all levels of education for people with disabilities (Hastuti et al., 2020, p. 21). Act No. 20/2003 on the National Education System stipulates that all citizens with all types of disabilities are provided with compulsory inclusive education (Tsaputra, 2012, p. 4). In the same year, the Ministry of National Education also issued a decree on Inclusive Education for Children with Physical and Cognitive Disabilities. The Minister of National Education's Regulation No.70/2009 on Inclusive Education specifically defines inclusive education as "an educational system that provides opportunities for all students with disabilities and intelligence potential and/or special talents to participate in education or learning in an educational environment, together with other students in general" (Ministry of National Education, 2009, p.2). In light of this, students with disabilities can access two education options: 1) Extraordinary School (SLB) and 2) Inclusion School (Hastuti et al., 2020, p. 22-3). Inclusion Schools were established in 2003 to fight education discrimination faced by students with disabilities, as well as raise the social skills of students with and without disabilities. While Inclusion Schools treat regular students and those with disabilities under the same educational environment, SLBs are specifically set up to accommodate students with disabilities.

However, there are still limitations to these options. SLBs provide education for children with visual, hearing, or physical disabilities, but not necessarily those with mental disabilities, learning difficulties, and developmental delay (Hastuti et al., 2020, p. 22-3). Only 55,836 students with disabilities are enrolled in SLBs, a marginal amount compared to a total of 1.5 million children with disabilities. Indeed, there are only a few SLBs in Indonesia (only 1,311), most of which are located in cities and Java provinces. Meanwhile, during learning processes at Inclusion Schools, students are required to adjust to the regular public school system and take responsibility for their learning outcomes, while teachers often do not have sufficient capability to teach or provide guidance to students on appreciating differences. Hence, persons with disabilities still face physical barriers related to access to stairs, classrooms, laboratories, and libraries, especially due to low school budgets for assistive devices; they also face non-physical challenges (e.g. emotional isolation, harassment, and discriminatory behaviour from friends, parents, and teachers).

These findings are corroborated by interviews. An interview respondent suggested how despite the emergence of Inclusion Schools at primary-junior secondary public schools, students' competencies are still low and vocational/TVET curriculum in SLBs is still non-existent in the sense that lessons are not taught by experts (U1). Similarly, a government official noted how not all lecturers are aware of students who have special needs and that the entry of SLB students into higher education is still low, which can also be attributed to cultural factors: some parents think that children with disabilities or special needs do not have to be educated at higher levels (G1). Another interviewee explained how the lack of quality teaching staff has hindered the students' capacity for independent learning, despite the availability of IT learning resources, scholarships, and training (C2).

More recently, ethnic minority groups have been taken into account in HRD/LLLrelated programs, such as the Adult Literacy Action Plan 2012-2015 (Kemendikbud, 2012, p. 9). However, there have not been any government-initiated programs that are specifically designed to target any of these groups, let alone other, more socially stigmatised groups.

As noted by an interviewee, there is still a paucity of data related to inclusion in HRD/ LLL (U1). All five government officials interviewed in this study agreed that whilst most education and training programs are open to and provide new opportunities for students from all backgrounds, which is consistent with the Minister of National Education's Regulation No.70/2009 on Inclusive Education, the country still lacks a targeted approach to reach vulnerable populations (G1, G2, G3, G4, G5). For instance, most programs do not provide specific provisions to allow better access for people with disabilities, which largely explains their low enrolment rates. The lack of targeted policies also translates into inadequate disaggregated data on enrolment and completion rates for some groups.

3.2. HRD/LLL programmes for vulnerable groups; implemented – planned – desirable

Non-formal education (NFE) is an official category employed by Kemendikbud and the Ministry of Religious Affairs (Kemenag). The main categories of NFE programs are: 1) school equivalency packages; 2) literacy programs; and 3) Islamic boarding schools (OECD/ADB, 2015, p. 244). In particular, Indonesia's equivalency system offers regular alternative ways for those who miss out on schooling to acquire general education qualifications through three packages: Package A: primary equivalence; Package B: junior secondary equivalence; and Package C: senior secondary equivalence (OECD/ ADB, 2015, p. 245). The school equivalency packages, as well as other programs such as Early Childhood Education (PAUD), Business Learning Groups (KBU), and community libraries are often delivered by Community Learning Centres (PKBM), which are established at regional level to provide literacy and life skills education for communities (Pramudia, 2018, p. 222). According to Act No. 20/2003 on the National Education System, life skills education is a form of education that provides personal, social, intellectual, and vocational skills for work or establishing independent businesses (Mil, 2020). Kemnaker also provides Vocational Training Centres (BLK), which offer skills training for the workforce and support prospective workers with respect to specific fields of expertise or vocations (G2).

Multiple scholarship programs are offered to vulnerable groups. Under its Smart Indonesia Programme (PIP), Kemendikbud distributes Smart Indonesia Cards (KIP), which provide funding for economically vulnerable students to access education. More recently, Kemnaker released Pre-Work Cards, which help to cover training costs for citizens who want to improve their work skills (C2). The cards have evolved to become a form of social assistance in the wake of the COVID-19 pandemic in Indonesia. Through Industrial-Regional Cooperation (KSDI) programs, regional governments and industries outside Java select talented students to enrol in universities in Java and then return to develop their respective regions or industries (U2). Similarly, Kemendikbud provides scholarships for students from less developed provinces, such as Papua and West Papua, to study in more developed provinces through its Affirmation of Secondary Education Program (ADEM) and Higher Education Affirmation Scholarship Program (ADik) (G1). For students who dropped out of school and people who are out of work, Kemendikbud cooperates with companies and foundations to provide Work Skills Education (PKK) at Course and Training Institutes (LKP) (G5).

Gender mainstreaming in education has been promoted in the NFE sector, as reflected in the Women's Activity Centre and its five education programs: women's illiteracy eradication; family education (with a gender equality perspective); women's leadership training; a women's empowerment course; and soft skills courses (Yorozu, 2017, p. 25). In 2016, the government launched the Movement on Education for Marginalised Women's Empowerment, which aims to strengthen the commitment of local governments and stakeholders to improve women's quality of life and capacity. The program especially targets mothers and marginalised women in its delivery of life skills training, family education, equivalency education, vocational training, and community libraries (Yorozu, 2017, pp. 25-6). Continuing this trend, Kemendikbud is currently working on a regulation to tackle sexual harassment at schools (G1).

Inclusive education has been integrated in PAUD, elementary, and secondary education in the last 20 years (G1). Act No. 8/2016 also stipulates that higher education institutions (HEIs) must establish Disability Service Units, although the Minister of Research and Technology and Higher Education's⁵ Regulation No. 46/2017 on Special Education and Special Service Education states that such services are optional rather than mandatory (G1). Students with and without disabilities thus join the learning process together. HEIs are requested to facilitate the learning process through providing infrastructure or events related to disability services (e.g. computers/ audio learning for visually impaired students, student companions, and monitoring against bullying once every three days). There are also anti-bullying communities, ethic group communities, and counselling services for students with special needs.

⁵ In 2019, the Directorate General of Higher Education within Kemendikbud took over the responsibility of the Minister of Research and Technology and Higher Education (Kemenristekdikti) for managing higher education. As such, Kemenristekdikti became the Ministry of Research and Technology/National Research and Innovation Agency (Kemenristek/BRIN).

Some universities cooperate with regional governments to assist students from lessdeveloped regions to gain access to higher education, for example through providing community reading/library programs, such as village libraries (C3; U2). There are also partnerships with companies. However, universities sometimes still face difficulties in ensuring companies accommodate their graduates with disabilities or special needs: there is no national platform to coordinate work placements for these students.

Some companies, such as Astra International, have income-generating programs for less-developed or "foster" villages, while a few others, such as Omron (a Japanese electronics company), Telkom (an Indonesian wireless network provider), and Indosat (an Indonesian telecommunications company), have programs that specifically target people with disabilities and/or women (C1, C2). Companies that specialise in fields that are traditionally occupied by men (e.g. IT) are now required to accept a certain proportion of women as employees (C2, C4). As will become clear later in the report, partnerships between companies and the government still leave much to be desired as policies almost always face implementation hurdles (C1). For example, the Digital Talent Scholarship (DTS) program aims to develop programmers in areas such as AI, cloud computing, and cyber security (C4). Despite such expanded provision of learning opportunities, many in remote regions still lack the necessary infrastructure (e.g. online connectivity, equipment) (C1, C2, C4).

On the whole, the delivery of inclusive HRD programs is still left to the discretion of each educational unit and company, which contributes to all the challenges noted above (G3). A more targeted approach for vulnerable groups is therefore still desirable.

3.3. Provisions to promote recognition, validation and accreditation of non- and informal learning?

The Indonesian Qualifications Framework (KKNI) was introduced to "stratify learning outcomes obtained through various pathways into nine qualification levels," ensuring consistency in learning outcomes obtained from formal vocational education or tertiary vocational institutions, in addition to self-study, training, professional working experience, and various professional certification schemes (LKY School of Public Policy, 2016, pp. 28-30). The Recognition of Prior Learning (RPL) mechanism of the KKNI maps individuals' learning/training outside the formal education institutions with comparable outcomes obtained through the formal education system, while the "Multi Entry, Multi Exit System" enables people to switch between academic education and vocational education tracks without penalty, thereby increasing their mobility across the education system. The KKNI also serves as the basis for the development of the National Competency Standard at Work, which specifies the requirements and skills relevant to a particular job.

A government official confirmed how non-formal and informal competency can be formally recognised through the RPL mechanism (G1). Thus, a person holding a bachelor's degree in agriculture and running a business can take a test to enrol in a business graduate program if he/she has undergone some informal training. Work experience can also be substituted for learning credits, which also applies for prospective lecturers. In addition, communication regarding HRD/LLL with other countries is conducted through the KKNI Committee.

The key issue in KKNI implementation is a persisting supply-demand mismatch, namely a gap between what school graduates offer and what the industry needs. As such, bachelor-level graduates may only work in operator-level jobs (G5). An official admitted that the KKNI is still under discussion and has only been operating at higher education level (G3). This is because there is still an equivalency package option (package C) offered at secondary education level. According to a university representative, people's awareness of learning credits conversion (e.g. from vocational to academic higher education) is increasing and the concept is still under discussion (U2). Another respondent commented that categorisation in KKNI is sometimes contentious: some SMKs reject the categorisation of their graduates as "operators," as opposed to "technicians/analysts" or "experts" under the KKNI (UI; LKY School of Public Policy, 2016, p. 28). A lecturer at a polytechnic institute also explained that validation of certification has not been successfully implemented since polytechnics do not have sufficient funding to develop a coherent vocational program despite their designation as vocational education institutions (TI). A company representative similarly commented that heavy administrative requirements often discourage people from transferring between education levels (C1).

Furthermore, some companies provide certificates with global standards, which are recognised by other industry sectors (C2). However, companies have not been able to map their globally recognised certifications into the KKNI because they have not been recognised or legitimated by the government bureaucracy. As such, a civil servant cannot use these certificates for promotion. On the flip side, work certification provided by the National Professional Certification Board (BNSP) through Competency Test Places (TUK) are often sectoral and not recognised equally by all industry sectors (U1).

3.4. Good practices

- The Indonesian Government has promoted a variety of inclusive education programs that seek to expand education opportunities for economically marginalised populations and those living in less developed provinces.
- Gender development in education also deserves appreciation.
- There are various national and regional initiatives related to non- and informal education provision. Non- and informal forms of learning are officially recognised via the KKNI, which could potentially ease the transfer of credentials across academic institutions and between academia and industry.

3.5. Key points/conclusion

- Indonesia has designed various inclusion-oriented education provisions.
- There are, however, implementation challenges, which mostly revolve around two issues. First, schools may lack adequate teaching staff and infrastructure to deliver a truly inclusive education due to funding shortfalls (SEA-VET, 2020). There is an additional geographical dimension to this: despite recent developments surrounding inclusive, technology-oriented education, children in less developed regions may lack adequate infrastructure to access education provision. Second, there are still disconnects between the government, education institutions, and industry on the recognition and validation of nonand informal learning credentials.

4. Enabling structures for promotion of HRD/LLL

4.1. Overview: HRD/LLL state provisions based on formal regulations (C1)

Citizens' rights to compulsory schooling is outlined in Act No. 20/2003 on the National Education System. Education is compulsory and provided free of charge at public schools from grades 1-9 (i.e. elementary and junior secondary levels), while senior secondary education is neither compulsory nor free (Roach, 2019). A government official representing Kemendikbud, however, acknowledged that the effort of the Directorate General of PAUD, Primary Education and Secondary Education to raise the standards of compulsory education from 9 to 12 years is still difficult to realise due to the 70 million citizens who are educated at junior high school level or below (G1, U1).

Act No. 20/2003 also specifies the two main domains of formal education: academic and vocational. Within the academic track, general schools teach secular academic subjects, while religious ones teach a mixture of academic and religious subjects (LKY School of Public Policy, 2016, pp. 12-3). Students who choose the vocational track learn secular academic subjects and subjects focusing on technical skills. The vocational track is first introduced at the senior secondary level, namely as SMK, in contrast to its academic counterpart, academic high school (SMA). At the higher education level, academic programs are offered only by advanced schools, institutes, or universities, while vocational programs are offered by a variety of tertiary institutions, such as polytechnics, community academies, academies, advanced schools, institutes, and universities.⁶ Academic higher education consists of bachelor degrees (S1), master degrees (S2), and doctoral degrees (S3), while vocational higher education includes Diploma I-IV (i.e. D1, D2, D3, and D4) (LKY School of Public Policy, 2016, p. 28). D4 is the vocational equivalent of S1. There are also vocational master and doctorate programs.

Furthermore, there are two additional options at the higher education level. First, professional education is a continuation for bachelor graduates who wish to obtain a particular profession-related degree, which is a level higher than

⁶ These education institutes vary by the set of programs they offer and their scope. Universities may offer academic and vocational programmes in addition to professional programmes (LKY School of Public Policy, 2016, p. 44). Institutes may offer academic and vocational programmes, yet the range of disciplines is more limited. Advanced schools may offer both academic and vocational programs but only on one discipline, while polytechnics may only offer vocational programmes from a broader range of disciplines. Academies may offer vocational programs from a limited range of disciplines, while community academies offer the least number of courses among these tertiary education institutions (i.e. D1 and D2), which correspond to their prioritised regional economic activities.

S1 according to the KKNI. Second, specialist programs are still restricted in the fields related to medical science (e.g. neuroscience, dentistry); they consist of Specialist 1 (equivalent to S2 or vocational masters) and Specialist 2 (equivalent to S3 or vocational doctorate). As discussed in the previous chapter, those who cannot access formal education are eligible to join NFE programs (e.g. PKBM, the equivalency program, BLK) (SEA-VET, 2020).

While Indonesia has yet to implement a coherent policy that organises LLL, the concept is embedded in government policies and programs, such as National Medium-Term Development Plans (RPJMN), Regional Medium-Term Development Plans (RPJMD), and Strategic Plans (Renstra) (Pramudia, 2018, p. 218). Furthermore, the National Strategic Plan 2015-2019 defines education as a lifelong process that should be conducted through an open system (Yorozu, 2017, p. 15). Renewed commitment in HRD/LLL in recent years is reflected in President Joko Widodo's statement, which sets HRD as the focus of the 2019 State Budget (Cabinet Secretariat of Indonesia, 2018).

In relation to this, vocational education has traditionally been considered as a second preference by society, as most aim to enrol in academic education programs (C1, G5). Employers' stigmatisation of vocational education graduates' competencies has been documented in other studies (LKY School of Public Policy, 2016, p. 34). This has in turn fuelled a public perception that vocational graduates only work in blue collar jobs to fulfil the needs of industry, creating a vicious cycle (C1). On top of this, many vocational graduates are facing unemployment due to industry's lack of capability to absorb the workforce. The negative branding of SMKs also feeds into the unpopularity of TVET, despite the fact that TVET students can pursue education equivalent to doctorate level (G1). Indeed, the quality of vocational institutions still varies largely and some public SMKs/polytechnics tend to perform better than smaller, private ones (G5).

The focus on advancing vocational education has been put forward only recently; it especially stemmed from a realisation that many school and HEI graduates struggle to gain access to the labour market (G1, G5). To address skills mismatch issues, the government launched a "70:30" policy, which aims at having 70% of senior secondary students enrolled in vocational (SMK) schools (OECD, 2013, p. 262). The country is getting closer toward reaching this target, yet unemployment remains an issue (U1). Additionally, raising the quota for vocational institutions will not do much if it is not coupled with improvement in their quality, quantity, and public image (G5).

4.2. Bodies in charge of HRD/LLL at the state level (C2-3) and Coordination Mechanism (C4)

Kemendikbud and Kemenag are responsible for overseeing formal and nonformal education (Roach, 2019). Kemendikbud is responsible for planning and implementing educational services at primary, secondary, and higher levels (e.g. polytechnics, colleges, universities) (SEA-VET, 2020). Kemendikbud carries out its functions through various directorate generals, including the Directorate General of Teachers and Educational Staff, the Directorate General of PAUD, Primary Education and Secondary Education, the Directorate General of Vocational Education, and the Directorate General of Higher Education, along with their sub-units.

While Planning is organised by the central government, implementation and monitoring is the responsibility of provincial and district governments (SEA-VET, 2020). Authorities responsible for accreditation and competence certification include: BNSP, National Accreditation Board for School/Madrasah (BAN-SM), and the National Accreditation Board for Higher Education (BAN-PT) under Kemendikbud, in addition to the Accreditation Board for Training Centres (LA-LSPK) under Kemnaker.

The recent changes in organisational structure are seen as beneficial for introducing a more effective vocational education structure (G1). In particular, reincorporating the responsibility over higher education, a task previously assumed by Kemenristekdikti, within Kemendikbud has introduced better connectivity between formal and non-formal forms of education, as well as academic and vocational education, since skills-based curriculum and certification in non-formal education are now integrated with competency-based assessment in SMKs. Indeed, this is a part of Kemendikbud's current mission to increase APK, the relevance between higher education curricula and the world of work, and education quality.

Nonetheless, efforts to introduce a more adaptive, flexible, and relevant education structure are curtailed by long-standing coordination issues between government agencies, as recognised by many respondents (G1, G2, C1, C2, U2, B1). Three primary government bodies are responsible for HRD/LLL at the highest level: 1) the Coordinating Ministry for Human Development and Cultural Affairs (Kemenko PMK); 2) the Coordinating Ministry for Economic Affairs; and 3) the Ministry of National Development Planning/National Development Planning Agency (Bappenas) (G1, G2, G5). In turn, these agencies coordinate their HRD/LLL plans and strategies with Kemendikbud, Kemnaker, and other ministries and agencies, who monitor their progress every year. In practice, however, there is neither a clear roadmap nor a formal regulation on how government bodies should coordinate on their policies (G1, C2). In the absence of a reward and punishment mechanism, ministers along with their ministries and sub-units cannot be coordinated by these coordinating
ministries (G1, B1). Government officials admitted how the country's RPJMN may look good on paper but is in practice difficult to implement because each ministry has its own programs and objectives to address the same issue (G1, G3). For example, much attention has been paid on vocational study but not job creation (G3). For this reason, the capacities of ministries are difficult to combine due to fragmented and overlapping HRD/LLL provisions (U2, C2). Another crucial implication is that ministries cannot provide a coherent answer as to what kinds of skills development are needed in the next few years (G1, U2).

A company representative added a useful insight to this problem: top-down regulations from the central government have not landed properly, while some competency-based programs initiated by companies do not receive legitimation at the upper echelons of the government (C1). Therefore, having one, coherent voice is important for policy sustainability. Another interviewee explained that due to such coordination issues, companies approach all stakeholders to communicate, which has proven to be rather inefficient (C2).

4.3. Cooperation between state bodies and external stakeholders/organisations (C5-6)

One example of regional cooperation is the Southeast Asian Technical and Vocational Education and Training (SEA-TVET) Consortium. It comprises of TVET institutions in the member countries of the Southeast Asian Ministries of Education Organisation (SEAMEO) that "agree to work together in harmonising and internationalising their programs through curriculum harmonisation, student and staff exchanges, industrial attachment, and resource sharing" (SEA-TVET, 2020). Its main activities are: 1) student exchanges; (2) staff exchanges; (3) industrial attachments for students; (4) industrial attachments for staff; (5) sharing of expertise and resources; and (6) research collaboration. However, no such cooperation was mentioned by any respondent during the interviews.

Examples of cooperation with international organisations include a Vocational Education Strengthening Project conducted by the Asian Development Bank (ADB) between 2008-2013 and a recently proposed Indonesia Skills Development Project by the World Bank (World Bank, 2019; ADB, 2014). There are also cooperation programs with other countries, such as a Government to Government (G to G) program between Indonesia and Korea, which provides an opportunity for Indonesian workers to work abroad and is coordinated by the Indonesian Migrant Worker Protection Agency (BP2MI) (G5). Other examples include the Skills for Competitiveness program (S4C) between Indonesia and Switzerland, and a Declaration of Intent on Vocational Education between the German-Indonesian Chambers of Industry and Commerce (EKONID) and the Coordinating Ministry for Economic Affairs (Purwanto, 2018; JERIN, 2020). Indonesia also cooperates with Australia as evident in various

projects in higher education, vocational education and training, and research (e.g. Innovation for Indonesia's School Children (INOVASI) program) (Australian Embassy Indonesia, 2017). However, again, none of these cooperation platforms were mentioned during interviews.

4.4. Research on future challenges relevant to HRD/LLL policy (mega-trends, future skills) (C7)

Research on future challenges regarding HRD/LLL, including mega-trends and future skills, is apparently being conducted by the Bappenas and Kemenko PMK (G3). Kemenristek/BRIN is responsible for conducting research on priority sectors and innovation for the future, a task that is also partly carried by the Indonesian Institute of Sciences (LIPI) and the Agency for the Assessment and Application of Technology (BPPT) (G1, U2). Within Kemnaker, there is also the Manpower Planning and Development Agency, which comprises of sub-units, including the Centre for Manpower Planning, the Centre for Employment Data and Information, the Centre for Employment Research and Development, and the Centre for Labour Information Technology (G4). Government agencies also ask companies for data relating to future skills, which is especially the case in the IT sector (C2, C4).

In short, each institution has its own research on HRD/LLL (U1). The downside is that there is no single agency responsible for conducting research, again resulting in coordination issues. This partly explains why there has not been coherent and accurate data documenting the needs of industry and the respective skills they demand (G3, U1). Therefore, research on the future of work in Indonesia is ongoing (G4).

4.5. Financing HRD/LLL (C8)

As stipulated in Act No. 20/2003 on National Education, TVET financing, like other public education services, is a joint responsibility between Kemendikbud and other stakeholders, including local governments and communities (SAE-VET, 2020). At least 20% of the national and regional budget must be allocated for education. In contrast, private TVET institutions are privately financed depending on the type of ownership (e.g. individual, faith-based, NGOs, and partnership) and require operational authorisation from the ministry.

In terms of financing, a government official explained that only a relatively small proportion of funding (out of the 20% of the national budget allocated for education) was left in Kemendikbud, (GI). The rest is with other ministries and agencies, universities and polytechnics, and district governments. Moreover, universities and polytechnics are left to carry out research projects entirely at their own discretion. Meanwhile, not all companies have the same financing capacity and willingness to improve HRD, as explained by a respondent representing the Indonesian Chamber of Commerce and Industry (KADIN) (B1). Large enterprises, such as IT companies, have more funding for innovation. However, even IT companies often opt to buy technologies and employ higher skilled workers from abroad rather than recruiting local innovators (B1, C4). To sum up, HRD/LLL provision and financing are still fragmented at multiple levels.

4.6. Agenda for the future TVET Council (C9)

As stipulated in Act No. 20/2003 on National Education, TVET financing, like other public education services, is a joint responsibility between Kemendikbud and other stakeholders, including local governments and communities (SAE-VET, 2020). At least 20% of the national and regional budget must be allocated for education. In contrast, private TVET institutions are privately financed depending on the type of ownership (e.g. individual, faith-based, NGOs, and partnership) and require operational authorisation from the ministry.

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To address these two issues, the committee must first work towards promoting the idea of vocational education as a driver of economic development rather than a contributor to unemployment (G1, G3, C2). Only then can it start to map the emerging sectors and their required skills (C2, C4). Mapping is important to determine which up-skilling and re-skilling policies should be introduced, as at the moment, skills of Indonesian workers are still very low and are not valued (B1). This will be crucial as the next 15 years will be a "golden age" for Indonesia due to its demographic bonus peak: the share of working-age population becomes larger than the non-working age population (Ministry of Industry (Kemenperin), 2018, p. 4). Finally, cooperation platforms should strategically involve all stakeholders while ensuring that each is willing to put aside its organisational goals in pursuit of broader priority areas (U2, C4).

4.7. Good practices

• Policies and cooperation platforms in recent years suggest renewed commitments in promoting vocational education as the main driver of HRD/LLL.

4.8. Key points/conclusion

- National regulations to support basic education rights are in place.
- Indonesia has recognised the importance of vocational education.
- However, it still lacks a comprehensive HRD/LLL policy framework: every responsible government body has its own programs, yet this makes coordination and implementation difficult, resulting in fragmented provision and financing.
- A future TVET council should focus on resolving such fragmentation and map skills of school graduates to match industry demands.

5. Professional development of qualified teaching personnel

5.1. Formal standards in place for academic and TVET teachers, school managers, and in-company trainers (E1, E2, E4, E5)

The disconnect between demand and supply in the labour market is inextricably linked to the low quality of TVET graduates and teachers (SEA-VET, 2020). Act No.14/2005 on Teachers and Lecturers requires teachers at early-senior secondary level to hold an academic or vocational bachelor's degree and successfully complete a certification process (LKY School of Public Policy, 2016, p. 19). Academic and vocational master's degree holders are eligible to teach vocational diploma (D1, D2, D3, D4) and bachelor programs. Finally, PhD holders can teach post-graduate academic and vocational programs.

Teacher professional development programs seek to ensure mastery over the necessary teaching content and teachers' pedagogical knowledge (OECD/ADB, 2015, p. 265). Required competencies include critical reading and thinking, transversal skills (e.g. problem solving and team working), innovation and entrepreneurship, and inquiry-based teaching methods. In particular, teachers' education standards are regulated by the Ministry of Research and Technology and Higher Education's Regulation No. 55/2017, which focuses on the establishment of Bachelor of Education Programs and Teacher Professional Programs (PPG) (G1). Upon completing these programs, teachers receive certificates from the Teacher Training Institute (LPTK) as a measure of their professional qualifications. Nevertheless, public and private teacher training institutions in the country tend to operate independently. As a result, there has not been any systematic evaluation to determine the effectiveness of such training (LKY School of Public Policy, 2016, p. 19).

Moreover, in Indonesia, the competency standards for teachers/lecturers and managers at academic and vocational institutions has traditionally been the same (U1). In some ways, this is a problem. Schools, especially SMKs, already lack teachers since the majority of the teachers are retiring (G5). In addition, most teachers are trained academically by the LPTK and therefore need further up-skilling and reskilling activities before they can teach at vocational education institutions. These facts form the basis of the Directorate General of Vocational Education's Regulation

No. 16/2020 on Guidelines for the Implementation of Vocational Teachers' Up-skilling and Re-skilling Activities at SMK at Industrial Standards. Thus, vocational teachers will now be trained at Centres for Vocational Education Quality Assurance Development (BBPPMPV) in their respective teaching expertise. The concept of link and match also implies the importance of business involvement. Kemendikbud hopes that in the future, half of the instructors will represent businesses.

Figure 9 shows the average scores of academic and vocational teacher/lecturer training standards based on the assessment of nine interviewees:

	Extent
Facilitate acquisition of the following "future skills":	
Numeracy and literacy skills	2
High-order cognitive skills (e.g. analysing; critical thinking; creating)	3
ICT-skills/digital literacy (e.g. applying devices and tools; reflecting on the impact of ICT applications)	3
STEM skills	3
Social skills (e.g. communication; cooperation in teams; conflict resolution; empathy; emotional intelligence)	2
Learnability (e.g. readiness to learn; learning motivation; curiosity; self-learning strategies)	2
Character qualities (e.g. ethical reflection; social and cultural awareness; agility)	2
Problem-solving in complex, technology-rich environments	3
Promote active, learner-centric teaching methods	3
Evaluate concepts of technology-enhanced learning	3
Focus on instructional alignment of objectives, teaching methods and assessment	3

Figure 9: Teachers training standards

Extent: (1) very high; (2) high; (3) quite high; (4) quite low; (5) low; (6) none

As evident in Figure 9, interviewees generally think that the current teacher training standards match the indicators. It is interesting to note that according to the respondents, teachers tend to perform better on basic skills (e.g. numeracy and literacy), social skills, and character qualities than on skills related to high-order thinking; ICT, STEM, problem-solving, and student-centric learning, or the alignment of teaching objectives, methods, and assessment.

This is consistent with findings from a previous study: institutional practices vary widely and while teachers may know their subjects, they often ignore pedagogies, such as promoting innovative student-centred teaching, inquiry-based teaching methods, content modernisation, and practical studies that reflect a stronger link

to society and industry (OECD/ADB, 2015, p. 195). One interviewee went as far to argue that certification programs tend to prioritise the quantity of teachers who get certified each year rather than their quality (U2).

Despite its high assessment score, the degree of teachers' learnability is actually still disputed. Several reasons led some interviewees to rate teachers' learnability as high. First is the implementation of e-learning and blended learning for teachers, as well as distance learning they need to deliver following the COVID-19 outbreak (S1, G2). Second, credit/career development is a prerequisite for promotion, so teachers need to improve their learnability over time (G2). This also applies to BLK instructors trained by Kemnaker, who need to hold at least a bachelor's degree. Third, the high academic orientation of lecturers might translate into high learnability (T1). On the other hand, other respondents claimed that learnability is hindered by lecturers' day-to-day routine and institutional regulations (U2, T1).

Finally, some interview respondents identified inconsistencies between teaching objectives, methods, and evaluation: polytechnic graduates are expected to work in industry but they are only assessed theoretically, sometimes with exam questions that do not require high-order cognitive skills (U2, TI). In fact, many lecturers at polytechnics possess academic, as opposed to vocational degrees (U2). These highlight a pronounced rift between academics and industry (TI). To address this issue, some HEIs have introduced student centres that combine theories with problem-solving/case studies and campaign/program proposals (U2). Some have also called for certification of teachers by industry (U2, G3). Such an initiative must emphasise the importance of developing sector-specific skills and global updating for lecturers in line with the demand of a particular industry (U2).

Responsibility for school management is placed on school principals and school supervisors (OECD/ADB, 2015, pp. 277-8). Required competencies for school supervisors are specified in the Minister of National Education's Regulation No. 12/2007, which covers six dimensions: personal competence; managerial supervision; academic supervision; education evaluation; research and development; and social competence. Required competencies for school principals, as outlined in the Minister of National Education's Regulation No. 13/2007, include: managing teacher induction; performance assessments/appraisals; mentoring, promoting, and sanctioning teachers; disseminating teacher performance information to the local community and government; and accountability over schools' overall performance. A Principal Preparation Program is conducted by the Institute for the Development and Empowerment of School Principals (LPPKS) in some regions to promote such competencies (OECD/ADB, 2015, p. 279). There is also a Technical Guidance (BIMTEK) program to strengthen school principals' competencies (S2). Similar assessments for the

heads of BLKs are in place (G2, G4). Kemendikbud has recently designed a regulation to make industry/business management training mandatory for school principals (G3). Several workshops involving industry have been conducted to support its implementation.

As a side note, the selection process for teachers/lecturers and principals/directors may vary widely in practice. Some universities have their own standards for selecting their deans, which usually relate to their understanding of the faculties in question (U2). The selection process of polytechnic directors may be less transparent, according to a respondent (T1). This has in turn led some to question the legitimacy of polytechnic directors, again fuelling the stigma against vocational/TVET institutions.

In 2019, GIZ published a report on Standards for In-Company Trainers in ASEAN Countries, which also involves the views of experts representing the Indonesian Employers' Association (APINDO) and Kemenperin. The report lists four modules: 1) analysing work tasks and defining learning requirements; 2) planning and preparing training; 3) conducting training; and 4) evaluation and further development of training (GIZ, 2019, p. 5). Each module contains multiple competency areas, which include ICT- and other TVET-related skills. Figure 10 depicts the average scores of incompany trainers' skills based on the assessment of seven interviewees:

	Extent
Facilitate acquisition of the following "future skills":	
Numeracy and literacy skills	1
High-order cognitive skills (e.g. analysing; critical thinking; creating)	2
ICT-skills/digital literacy (e.g. applying devices and tools; reflecting on the impact of ICT applications)	2
STEM skills	3
Social skills (e.g. communication; cooperation in teams; conflict resolution; empathy; emotional intelligence)	2
Learnability (e.g. readiness to learn; learning motivation; curiosity; self-learning strategies)	2
Character qualities (e.g. ethical reflection; social and cultural awareness; agility)	2
Problem-solving in complex, technology-rich environments	2
Promote active, learner-centric teaching methods	2
Ensure alignment of objectives, teaching methods and assessment	2
Raise awareness in the workforce to take care of LLL	2
Contribute to the design and delivery of high-quality iTVET programs and cTVET courses	2

Figure 10: In-company trainer standards

Extent: (1) very high; (2) high; (3) quite high; (4) quite low; (5) low; (6) none

As noted in Figure 10, respondents think that in-company trainers do possess higher standards related to "future skills" relative to teachers. Nonetheless, it is important to note that some of the respondents in this study represent IT companies. Another caveat is that trainers' IT and STEM skills depend on their companies and positions: engineers or programmers may possess these skills more than secretaries or salespeople (B1, C4). In some companies, trainers need to hold globally recognised certificates relevant to the subjects they train in (e.g. android, cloud computing, machine learning, big data, etc.) (C2). Sometimes, degrees and certification are desirable, but work experience is valued more, explaining their high competencies in areas such as innovation and other practical skills. Similarly, problem-solving skills may be needed for certain higher-level positions but not lower ones, while social skills tend to be higher for managers than programmers (B1; C4). Trainers' contribution to TVET programs and courses also depend on their position (B1).

Learnability tends to be high because companies tend to naturally choose employees who are keen to learn and share as trainers at ministries or HEIs (C4). SMEs, however, may not have workers who have the skills or willingness to become trainers. As a result, company owners may either train their employees themselves or hire experts from other organisations (C3). There is still room for improvement in this regard. For example, some universities have initiated teaching exchange platforms: lecturers can become trainers at companies, while company personnel can teach at universities (U2). This has yet to be developed as a common practice at the national level. Additionally, Kemnaker has provided training for company workers to learn more about teaching methods (G2). However, only about 2,000 workers have joined the training, a number that is still low considering the number of companies in the country.

5.2. Recruitment of committed teachers (E3)

Act No. 14/2005 on Teachers and Lecturers specifies professional allowances that accompany the new certification process for teachers, which have led to pay increases, doubling the income of certified teachers (OECD/ADB, 2015, p.262). This has improved teachers' status as equal to professions in the field of law and medicine; it has also provided incentives for teachers to upgrade their qualifications and work in remote areas.

Nevertheless, interviewees provided interrelated insights as to why teachers' motivation is still generally low. First, negative public stigma on vocational education and government's fragmented provisions are important in influencing teachers' motivation (C1). An interviewee complained that the government still has not paid much attention to the development of polytechnics despite their role in bridging engineers and operators (T1). For example, little training funds are provided for

polytechnics. Second, many lecturers are not motivated to develop research on vocational education because they know it will not be rewarded, either financially or through career promotion (Π). The lack of proper rewards is exacerbated by heavy teaching burdens due to high student teacher ratios, which is also generally true for other academic and vocational institutions across the country. On top of this, teachers are faced with various structural/administrative burdens, which prevent them from attending training and increasing their skills (C2, U2). Thus, teachers often simply do not have the time to, for instance, do a part-time job in an industry for a few years to improve their skills and then go back to teach (C2).

Third, the passion for teaching plays a dominant role. Teachers without a passion to teach will be tempted to work and stay at companies (CI). A government official noted that after receiving their functional education allowance, many previously motivated teachers would choose to hire fresh graduates as assistants and delegate their responsibilities to them. Importantly, some interviewees feel that while older teachers tend to have stronger motivation to teach, they also tend to be less adaptable to change, which includes the acquisition of problemsolving skills, the adoption of technology-enhanced education, and delivery of student-centred learning (S1, G3). As such, incentives must be improved to include assistance in career development rather than just money (TI, GI, G3). A more personal and democratic approach needs to be adopted to persuade people to become or stay committed to the teaching profession (S1, S2). Fourth, accountability is important. For example, higher parents' expectation explains why teachers in more prestigious schools tend to be more motivated (S2). In a similar fashion, the existing system for teachers' professional development should not just include training but also better accompaniment and monitoring by school supervisors (U1).

5.3. Good practices

- Formal standards, including "future skills" for teachers/lecturers, school managers, and in-company trainers are embedded in various training programs.
- Teachers/lecturers and in-company trainers tend to perform well across all criteria.
- Variation in teachers' competencies is a good thing since it means that they can learn from each other through current/future partnership programs (e.g. training for trainer).

5.4. Key points/conclusion

- Formal standards for teachers/lecturers, school managers, and in-company trainers are coupled with some evidence of good performance.
- Teachers may demonstrate better social skills and character qualities, while in-company trainers may perform better regarding technical skills, although the standards of the latter are expected to vary by industry and job position.
- Despite financial incentives, there are existing challenges to teaching commitment: the lack of perceived rewards (especially in polytechnics), heavy administrative burdens, a declining passion for teaching, and a weak monitoring system to ensure accountability.

6. Engagement of the business sector in HRD

6.1. Areas of engagement in TVET and higher education (FI, F2)

Two government bodies mainly represent TVET institutions in Indonesia (G2). First, Kemendikbud is responsible for TVET education. TVET education itself is represented by SMKs at secondary education level. At the higher education level, it is represented by vocational tertiary institutions (e.g. polytechnics). Second, Kemnaker is responsible for TVET training (e.g. the provision of BLKs to prepare school leavers for the world of work) (G2). TVET bodies also include training and certification institutes within the two ministries.

Indonesia has been developing PPP at the national, regional, and international levels to diversify TVET and enhance its quality and delivery (SEA-VET, 2020). This priority is indicated in Presidential Instruction No. 9/2016 on Revitalising SMK, which highlights the need to integrate the demands of the business world and industry into the vocational education and training system. The commitment to PPP is illustrated by how for the first time in history, Kemendikbud has a Director of Partnership and Alignment of the Business World and Industrial World (G1). Kemendikbud has also been developing another internal cooperation platform between investors and innovators (G1). The platform comes in the form of a forum within Kemendikbud to exchange ideas between government officials, investors, innovators, and HEI lecturers. Kemendikbud currently has 150 memoranda of understanding (MoUs) on cooperation with companies, including on the provision of free education/internship opportunities.

At Kemnaker, in addition to BLKs, the Industrial Training Institute Communication Forum (FKLPI) serves to bridge industry and training institutions (G2). There is also the Apprenticeship Network Communication Forum (FKJP) at the national and regional levels, which is responsible for raising awareness on the importance of internships/apprenticeships to companies. Kemnaker also cooperates with BMOs, such as KADIN and APINDO, and the Indonesian Teachers Union (PGRI) through the National Vocational Training Committee.

Nonetheless, Indonesia is still in the process of designing a systematic TVET-specific regulation and there is no formalised PPP regulation, since each vocational institution is merely encouraged to initiate cooperation with industry (SEA-VET, 2020). Figure 11 depicts elements of business sector engagement in TVET according to 12 interviewees:

Figure 11: Business sector engagement in TVET

	Extent
Delivery of TVET programs (e.g. internship / apprenticeship)	3
Provision of equipment / teaching material to schools	3
Partner in assessments and examinations	4
Support in training of teaching personnel	4
Support in development of curricula and skill standards	3
Engagement in TVET bodies on national or local level	5
Others:	

Extent: (1) very high; (2) high; (3) quite high; (4) quite low; (5) low; (6) none

As is evident in Figure 11, the extent of TVET program and teaching material delivery to schools, as well as the business sector's support in developing teaching curricula and skills standards, is quite high. However, businesses have rarely been involved as partners in assessments and examinations, and they have not provided much support in training TVET teaching personnel. Moreover, companies' engagement in TVET bodies is still low.

In the Indonesian context, the concept of internships/apprenticeships⁷ is defined in the Minister of Manpower and Transmigration's Regulation No. 22/2009: "A part of a training program that is conducted based on the combination of mentorship at training institutions and guidance by senior employees (in the workplace) in the process of the production of goods or services in companies, with the goal to master a certain set of skills" (APINDO and ILO, 2015, p.13). Companies such as Astra International subsidiaries have their own internship programs (C1). Commitment in this area is also illustrated in training for trainer programs between companies and organisations such as the Institute of Trainer Profession Certification Indonesia (LSP Trainer Indonesia). In companies such as Astra and Microsoft, the programs involve theoretical and practical training in business and administration, HR, financial management, and others (CI, C4). Upon completion, participants receive trainer certificates. These are, however, still pilot projects. Indeed, Kemendikbud hopes that more companies will offer internship/ apprenticeship certification to help school graduates find jobs (G5). Some SMEs also offer internship positions for SMK students (C3). Kemnaker sends its BLK instructors to company internship programs to improve their competencies; although the total number is currently moderate, it is increasing (G2).

^{7.} Internship and apprenticeship are still generally treated as a one concept in the context of Indonesia.

Nonetheless, certain barriers exist. Industries are sometimes concerned about the high costs of certification and the disruption in business operations due to the integration of school activities (SEA-VET, 2020). This was confirmed during interviews. Sometimes companies do not offer short-term internships due to a lack of trainers who can monitor interns over a short period (U1, C4). Some are also hesitant to accept students without skill prerequisites for particular internship programs (G5). On the other hand, some people, especially millennials, are reluctant to work at a particular company for an extended period and choose to develop startup companies instead (C4). In addition, only a very few polytechnics have internship/apprenticeship agreements with industry (T1). Students in most polytechnics look for internships on their own and sometimes fail to learn new skills due to the lack of supervision. Furthermore, they may not receive certification after completion.

A few companies have provided equipment (e.g. books, stationary, etc.) to schools (C1, C3, G2, G3). Others, such as Dicoding and Microsoft, provide syllabus and learning content (C2, C4). However, companies' lower preference for cooperating with TVET institutions is also evident here: companies tend to support universities rather than polytechnics (G1). This was confirmed by a polytechnic representative, who claimed that they tend to receive equipment and teaching materials from alumni rather than industry (T1).

The concept of businesses and HEIs as partners in assessments and examinations is already present within the Directorate General of Higher Education in Kemendikbud (G1). In the last two years, problem-based learning for company employees is assessed by university lecturers. On the flip side, companies are involved in conducting assessments and certification processes at schools, universities, and TUKs (C3, U1, U2). However, there is again a preference for academic over TVET/vocational institutions in this regard (G1, T1).

Companies' support for training teaching personnel will become mandatory starting next year (G1, G5). More precisely, lecturers must not only hold a degree but also a training certificate from industry. At the moment, however, vocational teachers' training and certification in industry has not been prevalent (G3, C2). Notably, only about 1,000 out of 14,000 SMKs have this program. Implementation faces barriers; although some companies have provided this option, most lecturers are restricted by administrative obligations, as discussed in the previous chapter (T1). Some bigger companies have their own education institutes and therefore training assistance will be limited to such institutions (B1). Owners of smaller companies, meanwhile, tend to deliver training personally rather than as organisations (C3). BLKs invite independent assessors for instructor certification, but these assessors do not necessarily represent companies (G2).

Support for the development of curricula and skills standards will also be incorporated as part of Kemendikbud's assessment of companies' performance (G1). If companies want to get a positive assessment based on Kemendikbud's indicators, then they must contribute instructors for student assessment. As of now, some companies, including SMEs, are already engaged with schools and universities in this area (e.g. developing AI curriculum) (C2, C4). BLKs and LKPs also invite companies to participate in program development (G2, G5). However, cooperation is still limited to bigger and well-known academic and vocational institutions (G5). Companies also admitted that the curricula they propose are sometimes rejected by Kemendikbud, although such curricula have been unofficially adopted by schools (C2). Other companies have never been involved at all in this activity (B1). In some cases, teachers and lecturers are interested in joining industry training but not curricula development despite companies' invitation (C1). Overall, Kemendikbud acknowledges how the process of curricula synchronisation has faced obstacles given the interest of each industry sector and weak public-private association at this stage (G3).

The overall engagement in TVET bodies at national or local level is still very low, as noted in Figure 11. First, industry is generally reluctant to contribute to TVET bodies due to low incentives (GI). Companies and government bodies may not reach an agreement due to diverging interests. For example, Microsoft and BNSP used to cooperate on initiating professional certification (C4). However, the company preferred a global certification so that local workers can compete and be recognised internationally, while BNSP preferred a local certification, perhaps to protect local workers from competition. Because of this, companies such as Microsoft choose not to treat certification as mandatory and prioritise work experience instead. The cooperation between Dicoding, the Ministry of Communication and Information Technology (Kominfo), and the Ministry of Tourism and Creative Economy (Kemenparekraf) to develop game applications at the regional level represents a more successful example (C2). Still, the company believes that the government should allocate its spending for monitoring and follow-up interventions more effectively. This is especially important since some interventions will only show results after a number of years. On the other hand, government bodies tend to focus on their programmatic targets, and personnel changes frequently. In regard to cooperation with TVET schools, a company representative noted how some SMKs tend to enter into agreements for their own benefit without considering companies' Return on Investment (ROI) (e.g. financial profits, recognition) (C2).

Furthermore, cooperation platforms often fail because of industry's low absorption capacity of vocational graduates; according to Kemnaker and Kemenperin, industry's capacity to absorb vocational graduates is no more than 14% (TI). This relates to the

findings in the previous chapters; some large enterprises explained that they tend to recruit academic graduates due to their purportedly better quality and cognitive skills rather than vocational/TVET graduates. For the same reason, in-company trainers are not usually TVET graduates. The government cannot force companies to change their perception, as Presidential Instruction No. 9/2016 is once again merely prescriptive: encouraging Corporate Social Responsibility (CSR) but lacking a sanction mechanism (U1). Finally, companies may refuse to cooperate due to too many checkpoints or bureaucratic/regulatory burdens within the government (C2).

Figure 12 depicts the average scores regarding the extent of business sector engagement in higher education based on the assessment of seven interview respondents:

	Extent				
Support in development of courses and programs	3				
Support in delivery of courses and programs	3				
Support in training of university personnel	4				
Conducting of joint projects	4				
Provision of equipment / teaching materials	3				
Operation of industry - academia transfer institutes	4				

Figure 12: Business sector engagement in higher education

Extent: (1) very high; (2) high; (3) quite high; (4) quite low; (5) low; (6) none

Industry is engaged in supporting the development and delivery of government programs involving HEIs. Some examples of such cooperation were already mentioned in Chapter 3: the KSDI and DTS program between Kominfo and companies such as Dicoding and Microsoft (U2, C2, C4). Another cooperation platform is the Indonesian Human Capital Forum (FHCI), which was initiated by the Ministry of State Owned Enterprises (BUMN). This program includes a national certified internship program in which students join paid internships in industry, with a substantial proportion later absorbed by industry after graduation. The recent development of the Independent Campus program also includes a platform involving investors, innovators, Indonesian diaspora, and SMEs despite funding challenges (G1). For example, CIMB Niaga (an Indonesian bank) delivered a certified stock broker course to students at the University of Indonesia Vocational Education Program (U2).⁸ There are also internal certification modules developed with associations, such as the Indonesian Bankers Association (IBI), which are recognised by the BNSP.

^{8.} While the University of Indonesia Vocational Education Program can be regarded as a TVET institution, it is still a part of the University of Indonesia and is therefore assessed in relation to Figure 12.

Nonetheless, some interviewees claimed that the implementation of these initiatives has not been very smooth. The issue of geographical discrepancies was already explored in Chapter 3. Meanwhile, SMEs may not yet have the capacity to deliver courses and programs to HEIs (B1). A company representative noted how each ministry has its own platform, yet many platforms are not well-organised (C1). Additionally, most platforms are still state-minded in that they still tend to involve public universities rather than private ones. Cooperation MoUs between schools and companies are common, but many schools pursue companies just to report quantity, rather than the quality of cooperation (C2). Thus, mere numbers, rather than employment or learning hours, often become the prioritised metric.

The extent of the business sector's support in the training of university personnel with HEIs is still low, even in academic (i.e. non-TVET) ones (U1). One explanation is that some lecturers are reluctant to cooperate with industry for reasons related to academic prestige (B1). Only a few companies have conducted joint research and product-based learning with HEIs (G5).

As previously noted, companies' provision of teaching equipment to universities is more prevalent than their support to polytechnics. For example, CIMB Niaga donated mini banks and Metro TV (a television news network) donated broadcasting equipment to the University of Indonesia Vocational Education Program (U2). Finally, there are not many industry-academia transfer institutes in Indonesia (G3; C3). A few examples are the above-mentioned FHCI and early recruitment programs offered to some universities (U2). However, the scope of cooperation is again limited to certain larger and well-known universities and polytechnics (G5). Indeed, transfer institutes are usually already embedded within bigger universities in the form of career development centres, which are responsible for disseminating information and organising meetings between industry representatives and alumni (U1; U2).

6.2. Incentives for companies to increase engagement (F3, 5)

Incentives for industry involvement have not been significant. In particular, the obligation to provide CSR funds for education-related activities on top of paying business taxes can be burdensome for SMEs (LKY School of Public Policy, 2016, p. 35). In response, the Minister of Finance's Regulation No. 128/2019 provides tax deductions of up to 200% for businesses investing in developing talent in Indonesia (Medina, 2019). Interviewees in this study, however, maintained that implementation of this policy has still been minimal (G1, G3, C1, C2). A Kemendikbud government official noted that implementation of the tax deduction policy has only been 10%; the Ministry of Finance (Kemenkeu) is not yet entirely willing to free these taxpayers from their tax obligation (G1). According to

another official, only a few companies have been involved in this policy (G3). Despite increased awareness, companies are still reluctant to apply, perhaps due to their lack of trust in the government or the lack of technical guidelines provided. The current COVID-19 situation has further worsened the prospects for this policy.

Indeed, a company representative confirmed this (C1). For example, Astra International operates Astra Manufacturing Polytechnic to support vocational education. The polytechnic is operated by a foundation and is not therefore eligible for tax deductions. Some are worried about the potential negative implications regarding their ROI by applying for tax deductions (C2). In fact, some companies are holding back CSR programs due to a similar reason. To sum up, a good roadmap is in place, but it has not been followed by clear technical and operational guidelines (C1, C2). Meanwhile, the extent of other policy incentives is still very low (G1). One example is perhaps subsidies provided by Kemnaker for companies to open internship programs (G2).

With respect to SMEs, there are funds and programs offered by the Ministry of Cooperatives and SMEs, as well as by Kemenperin (C4). SMEs are also required to report their needs to Kemnaker's website (C3). In turn, they will receive training, including on how to improve turnover, marketing, company values, and HRD. Some large enterprises have experience in engaging SMEs in training programs, yet this is still rare and a knowledge gap between the two is evident (C4, U1). More recently, President Jokowi instructed ministries to report on their purchases of goods and services from SMEs (C1). Presidential Instruction No. 82/2020 on the Committee for Handling COVID-19 and National Economic Recovery does encourage government officials to cooperate with SMEs. This was acknowledged by an interviewee, who admitted that his company is exempt from income tax due to COVID-19 (C3). SMEs also join online learning, which focuses on survival in the midst of the pandemic.

6.3. Business Membership Organisations (F4)

KADIN, APINDO, and the National Competent Indonesia Movement (GNIK) organise internships/apprenticeships at the national level (CI). APINDO has its own training centres and KADIN has its training for trainers program. In this regard, these BMOs are often invited to provide inputs to companies and participate in designing competency standards for workers' training (e.g. in BLKs and companies) (G2). Kemendikbud (2020) recently established a Vocational Steering Forum in cooperation with KADIN, APINDO, and the Indonesian Industrial Estate Association (HKI). The key purpose is for these BMOs to establish stronger links between industry, especially constituents/members, and vocational institutions through activities such as workshops and regional visits (G5).

Future meetings have been planned between government ministries, KADIN, and HEIs, yet the extent of BMOs' participation in HRD is still relatively low (G1, U1, U2). Companies, including SMEs, also admitted that partnerships with BMOs have not been a priority as they are not yet fully aware of the benefits of becoming a member (C2, C3). Meanwhile, a KADIN representative explained that KADIN has not received much support from the government (B1). Some feel that the government has only supported entrepreneurship rather than local innovations, let alone HRD, which partly explains why companies tend to buy innovations from other countries. This finding was substantiated by other respondents, who added that KADIN and APINDO have focused on updating technologies rather than developing HRD (C3, C4). It is important to note that BMOs such as KADIN and APINDO are internally funded by their members (i.e. individual companies or employers) (G2, G3). As such, the lack of incentives for cooperation noted above likely influence the lack of BMOs' HRD initiatives.

6.4. Priority sectors (F6)

Some of the important sectors mentioned in the 2020-2024 RPJMN, are: 1) food and agriculture; 2) maritime and fisheries; 3) industry; 4) tourism; 5) the creative economy; and 6) the digital economy (Bappenas, 2019, p.32). The responsibility for these priority sectors is in turn divided across government agencies. For instance, the five priority sectors listed by Kemenperin (2018, p. 10) in "Making Indonesia 4.0" are: 1) food and beverages; 2) textiles and apparel; 3) automotives; 4) electronics; and 5) chemicals. Meanwhile, Kemendikbud's four priority areas in promoting SMKs as centres of excellence include: 1) manufacturing and construction; 2) the creative economy; 3) hospitality services; and 4) social/care services (G5).

Two things were particularly highlighted during the interviews. First, Indonesia still lacks qualified IT personnel: there are only between 300,000-400,000 IT graduates with varying competency out of the required 600,000 (C2). Second, there is still much to explore in the development of tourism (G1, G3). In this regard, HRD policies have so far not focused on developing the potential of each region (C1, U1). For instance, people in less developed eastern provinces may actually have high skills related to their geographical potential, so empowerment must be developed with respect to local cultures (C1). In other words, a one-size-fits-all approach must not be adopted in pursuit of industry 4.0, including in the development of technological literacy and tourism. The importance of equal development across provinces has already been highlighted in the 2020-2024 RPJMN (Bappenas, 2019, p.4). In light of Chapter 3, this affirms how adopting an inclusive approach may be precisely the best approach for the future development of HRD/LLL in Indonesia.

6.5. Good practices

- Evidence of stakeholders' commitment to PPP is to some extent highlighted by its implementation.
- Priority sectors and areas to be developed have been identified by the government.

6.6. Key points/conclusion

- Stakeholders have demonstrated a strong commitment to PPP and there is some evidence of good practices on the ground.
- However, there is an indication that companies are still cautious and selective. Most seem to prefer establishing cooperation with highly regarded academic, rather than TVET institutions. For the latter, this creates a feeling of being ignored.
- Cooperation between companies and the government often fails due to incentive problems, which mainly arise due to the government's overlapping/complicated regulations or somewhat contradictorily, the lack of technical guidelines. Policy inconsistencies likely arise from the coordination problems identified in Chapter 4

7. Conclusions

7.1. Key points

This report has painted a complex picture of HRD policy and readiness in Indonesia. As noted in Chapter 1, despite improving education enrolment and attainment over the years, only a relatively few Indonesians receive higher education. Geographical features still define HRD, explaining uneven development across provinces. Chapter 2 presents the key finding of the HRD Readiness Questionnaire: pronounced discrepancies between the extent of importance and achievement across most areas of intervention, which can be explained by various coordination and implementation challenges, as confirmed in the subsequent chapters.

Chapter 3 lists various inclusion-oriented education provisions. Implementation challenges revolve around the lack of adequate teaching staff and infrastructure to accommodate vulnerable groups, in which geographical discrepancies again play a prominent role. Additionally, government bodies, education institutions, and industry have not established a shared understanding of KKNI as a way to validate non- and informal learning credentials.

In Chapter 4, it is obvious Indonesia does not lack regulations. Basic education rights have been established and vocational education has been promoted in recent years. At the same time, coordination issues between government bodies and the resulting fragmented provision are highlighted in this chapter. The biggest implication is perhaps the difficulty matching the skills of vocational graduates with industry demand, which should become the focus of the forthcoming TVET Council.

Chapter 5 reveals that formal standards for teachers/lecturers, school managers, and in-company trainers have been coupled with a generally positive performance. Variations in their respective skills suggest that they can gain a lot by learning from each other. However, it also highlights existing incentive problems around the teaching profession.

Finally, Chapter 6 elaborates how good practices in PPP have been accompanied with a continuing negative stigma against vocational education and incentive issues around PPP.

7.2. Strengths and room for improvement/recommendations

The key strength in regard to HRD readiness in Indonesia is how policies have been meticulously designed by the government bodies in charge. In their design, these policies aim to involve a broad range of stakeholders; they are also supported by some evidence of renewed commitments and good practices on the ground. There is, however, room for improvement in the future. The key barriers discussed in this report substantiate those found in previous studies, including a shortage of funding, discrepancies resulting from Indonesia's geographical features, poor inter-agency coordination, a shortage of quality vocational teachers and lecturers, and a lack of incentives for industry involvement (LKY School of Public Policy, 2016, pp. 34-6). In light of these findings, this report proposes four main recommendations:

- Stakeholders should continue to promote the importance of vocational education to battle a long-standing public perception of it as a second preference. Initiatives must promote vocational institutions (e.g. SMKs and polytechnics) that are still being left behind.
- A better cross-sectoral understanding inof HRD policies must be developed.; a diversity of policies is good, but overlapping responsibilities should be reduced and avoided. Existing regulations should be clarified in a transparent way. The recent proposal to develop of a national TVET councilCouncil provides an unprecedented opportunity to accomplish these aims, which would in turn provide hints for better skills mapping.
- Since a shortage of funding proves to be an issue, stakeholders should work to find alternatives to financial incentives (e.g. better recognition for companies and career development for teaching personnel who deliver services to vulnerable groups).
- The potential of each region should be identified, explored, and developed accordingly.

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Annexes

Annex 1: Survey results

Figure 1: Respondents' institutional affiliation



- A total of 36 people responded to the survey.
- Figure 1 shows that the two largest categories of respondents were from the Ministry of Education and Culture (Kemendikbud) and the Ministry of Manpower (Kemnaker), while the remainder represented educational institutions and the business sector.



• Figure 2 shows that most respondents have expertise in general/basic education, technical and vocational education, or higher education.

Figure 3: Promote HRD culture

- Figure 3 shows most respondents think that an HRD culture is highly desirable.
- Many suggest that it is already in place, although some think that there is still room for improvement.
- Despite the notable gap between the importance and realisation of HRD culture, the charts still display at least some degree of consistency between the two.

Figure 4: Adopt inclusive approach

- As shown in Figure 4, most respondents feel that adopting an inclusive approach is highly important/desirable, although a small number think that it is not very important/desirable.
- This shows that perhaps the idea of adopting an inclusive approach has not been fully introduced in some institutions.
- The answers in regard to its realisation/achievement are more evenly distributed, suggesting more disagreement on the degree of realisation in this area compared to Figure 3.

Figure 5: Strengthen enabling structures

- As evident in Figure 5, most respondents think that the achievement in the strengthening of HRD enabling structures is quite high, a trend that can be explained by the various regulations that have been proposed in regard to HRD.
- Most respondents representing Kemendikbud and Kemnaker were particularly aware of these regulations.
- Figure 5 is similar to Figure 3. However, the distribution of responses in regard to the degree of realisation is again spread more evenly in Figure 5 than in Figure 3, suggesting a notable gap between the desirability/importance of strengthening enabling structures and its realisation.

Figure 6: Modernise HRD programs

 There is a notable gap between the extent of importance and achievement in the area of modernisation of HRD programmes, as highlighted in Figure 6: while almost all think that this category is either important or very important, a significant proportion still think that its achievement is either quite low or low.

Figure 7: Professionalise development of qualified teaching personnel

- In Figure 7, 31 out of 36 respondents think that it is either desirable or very desirable to professionalise the development of qualified teaching personnel.
- However, answers in regard to the degree of realisation is even more mixed than in other areas, suggesting a desirability-realisation gap. As explained in this report, this finding can be partly explained by the rupture between academic universities and vocational/TVET institutions.

Figure 8: Promote engagement of the business sector

- Figure 8 is also similar to Figure 3 and Figure 5. Notably, almost half of respondents think that the extent of realisation of business sector's engagement in HRD is already quite high.
- However, looking only at the "Very High" and "High" categories, the desirabilityrealisation discrepancy in Figure 8 is quite pronounced, and quite a significant number of interviewees still think achievement in this area is low or quite low.
- As explained in the report, this finding links to implementation challenges in this area.

Annex 2: List of key informants' organisations

A total of 36 HRD Readiness questionnaires were collected and 15 interviewees participated in the interviews. Given the limited timeframe of the study, the selection of respondents and participants was generally based on the networks that the national experts had previously established. Therefore, the study may not provide a geographically comprehensive view of HRD readiness in the country. A Terms of Reference (ToR) document in Indonesian and a specific letter of request was provided to each interviewee prior to the interview session.

Interviewee's Code	Institution
Cl	Company/Polytechnic: Astra International/Astra Manufacturing Polytechnic
C2	Company: Dicoding
C3	Company: Astoetik Indonesia (SME)
C4	Company: Microsoft ⁹
UI	University: Yogyakarta State University
U2	University: University of Indonesia Vocational Education Program
GI	Ministry of Education and Culture (Kemendikbud)
G2	Ministry of Manpower (Kemnaker)
C3	Ministry of Education and Culture (Kemendikbud)
G4	Ministry of Manpower (Kemnaker)
G5	Ministry of Education and Culture (Kemendikbud)
SI	Primary School: SD Santa Ursula Jakarta
S2	Lower Secondary School: SMPN 5 Yogyakarta
Π	Polytechnic: Bandung State Polytechnic
BI	Business Membership Organisation (BMO): Indonesian Chamber of Commerce and Industry (KADIN)

The list of 15 interviewees is as follows:

9 Former employee at Microsoft.

Annex 3: Survey questionnaire template

Human Resources Development Readiness Survey (HRD) in Indonesia

Thank you so much for supporting us with your skills!

The questions below examine your assessment of the six main areas of Human Resources Development (HRD).

For each area, we expect your assessment with respect to the level of importance and realisation. There may be a gap between what is desired and what is achieved.

To complete the following questionnaire, you will need approximately 5-10 minutes! Your responses will be kept strictly confidential!

* Required

- 1. Email address *
- 2. Your institution: *
 - Ministry of Education and Culture (Kemendikbud)
 - Ministry of Manpower (Kemnaker)
 - Ministry of Industry (Kemenperin)
 - Primary (SD/MI) or Lower Secondary School (SMP/MTs)
 - Vocational Higher Secondary School (SMK) / Polytechnic
 - University / Research Institute
 - Company
 - Business Membership Organisation (BMO)
 - Other:
- 3. Your field of expertise: *
 - General / basic education
 - Technical and vocational education
 - Higher education
 - Corporate learning and development
 - Non-formal / informal education
 - Other:

4. Promote HRD culture: There is an awareness and culture of HRD empowering people to make them resilient for an environment of constant change!*

	Very high (100%)	High (80%)	Quite high (60%	Quite Iow (40%)	Low (20%)	None (0%)
Important / Desirable						
Realised / Achieved						

5. Adopt inclusive approach: HRD includes specific programs and support for vulnerable groups at risk for being left behind! *

	Very high (100%)	High (80%)	Quite high (60%	Quite Iow (40%)	Low (20%)	None (0%)
Important / Desirable						
Realised / Achieved						

6. Strengthen enabling structures: HRD is clearly visible in terms of legislation, coordinated bodies and ministries at state level, platforms of cooperation, and funding and research on labour market developments! *

	Very high (100%)	High (80%)	Quite high (60%	Quite Iow (40%)	Low (20%)	None (0%)
Important / Desirable						
Realised / Achieved						

7. Modernise HRD programs: "Future skills" comprise especially: (1) cognitive skills (numeracy and literacy as foundation skills; low and high order skills(e.g. critical thinking, creating / innovating); (2) ICT skills / digital literacy; (3) STEM skills; (4) social skills; (5) learnability (e.g. readiness to learn, learning motivation, curiosity, self-learning strategies); (6) character qualities (e.g. ethical reflection and action, social and cultural awareness, agility, initiative); and (7) problem-solving in complex, technology-rich environments. These "future skills" are fully incorporated into curricula, teaching and learning resources and assessments in general, vocational, and higher education! *

	Very high (100%)	High (80%)	Quite high (60%	Quite Iow (40%)	Low (20%)	None (0%)
Important / Desirable						
Realised / Achieved						

8. Professionalise development of qualified teaching personnel: There are standards for the training of teachers and in-company trainers which address the acquisition of "future skills"! *

	Very high (100%)	High (80%)	Quite high (60%	Quite Iow (40%)	Low (20%)	None (0%)
Important / Desirable						
Realised / Achieved						

9. Promote engagement of the business sector: In the field of TVET and Higher Education, there are strong links between state bodies and the business sector in terms of public-private partnerships in HRD! *

	Very high (100%)	High (80%)	Quite high (60%	Quite Iow (40%)	Low (20%)	None (0%)
Important / Desirable						
Realised / Achieved						

ASEAN: A Community of Opportunities for All