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Background Study for the Preparation of the *RPJMN* for Education 2015 – 2019

Part 2

Senior Secondary, Vocational and Higher Education, Education Financing and Governance

2015

Background Study for the Preparation of the *RPJMN* for Education 2015 - 2019

Part 2: Senior Secondary, Vocational and Higher Education, Education Financing and Governance

Published by:

 Ministry of National Development Planning/
National Development Planning Agency (BAPPENAS)
Jakarta

ISBN: 978-602-1154-45-8

Kementerian PPN/ Bappenas

The Background Study is a series of chapters covering key issues in the education sector from Early Childhood through to Higher Education. Each chapter reviews progress and achievements over the past five years and identifies challengesfor the future together with proposed directions.

The chapters were prepared jointly by Bappenas staff of the Education and Religious Affairs Directorate and a small team of national and international experts. The preparation of the Background Study was enriched by a series of Focus Groups, Workshops and Consultations in Jakarta and Regional areas involving key stakeholders from all levels of government, also civil society members, teachers, academics and non-government organization representatives.

The Background Study is intended to be a useful summary document of achievements and challenges. It does not claim to be definitive and the views expressed in the document do not represent the views of the Government of Indonesia nor any other particular organisations.

Chapters of the Study have been grouped in two books for the ease of the reader. However, it must be recognized that issues such as access, education governance, education financing, teacher quality and quality assurance impact across the whole sector.

Part 1 contains the following chapters: Access to Quality Education; *Kurikulum 2013*; Character Education; Quality Assurance and Minimum Service Standards for Basic Education; Quality of Student Learning as Measured by National Exams; Quality of Student Learning as Measured by International Tests; Early Childhood Education and Development; and Teacher Quality and Management.

Part 2 contains the following chapters: Achieving Universal 12 Years of Education; Higher Education; Upgrading the Skills of the Labor Force in Indonesia; Strengthening Skills Providers and the Training Environment for Enhanced Productivity in Indonesia; Education Financing; and Governance and Education.

Background Study for the Preparation of the *RPJMN* for Education 2015 – 2019

Part 2

Senior Secondary, Vocational and Higher Education

Education Financing and Governance

Foreword

We give praise to God the Almighty for blessing us in the completion of the Background Study for the Preparation of the *RPJMN* for Education Plan 2015-2019. This analytic work serves as one of the inputs for the development of the Technocratic Draft of the Plan (*RPJMN*) and will guide our efforts to constantly improve the quality of education for all Indonesians.

The overall approach to the Background Study has been to review current achievements, challenges faced, policy options and proposed directions for each sub-sector - early childhood, basic, secondary, vocational and higher education.

Specific issues examined within the sub-sectors included: *access* to quality education, review of the *inputs* to education (e.g. minimum service standards, character education and the quality of the teaching workforce); analysis of the *learning outcomes* (as measured by national exams and international tests); and the *environment for provision of quality education and skills training* including the financing and governance of education and the role of the private sector in education, especially in vocational skills training and in higher education.

The Background Study drew on a considerable body of contemporary education research in Indonesia. Additional secondary research was commissioned to fill in gaps and to address emerging issues such as the options for universal 12 years education and strengthening skills for the labour market. The complete Background Study is the product of an iterative cycle of analysis and consultation with counterparts and stakeholders drawn from government at national and local levels, education institutions, research institutions, civil society organisations and development partners.The Study was greatly enriched by the wise counsel of present and former senior government officials and education academics.

I would like to acknowledge the contributions of the following –

Technical Coordinator:
Ir. Subandi Sardjoko, M.Sc, Ph.D. (Director of Education Bappenas)
Technical Team Members in Bappenas:
Ir. Suharti MA, Ph.D.; Drs. Amich Alhumami, MA, MEd, Ph.D.; Suprapto Budinugroho, ST, M.Eng.; Kalihputro Fachriansyah, ST; Dimas Suryo Sudarso, S.Mn.

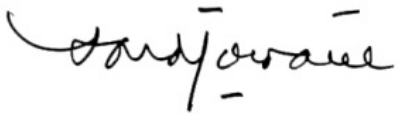
I would also like to express my appreciation to our international partners, namely the Australian Department of Foreign Affairs and Trade (DFAT) and the World Bank for their contribution of international experts in specific topic areas. The Analytical and Capacity Development Partnership (ACDP), jointly funded by DFAT and the European Union and managed by the Asian Development Bank (ADB) also contributed experts and played a key role in managing the consultation processes, translation, printing and logistics.

Experts and Supporting Team Members:
Hetty Cislowski, Samer Al Samarrai, Susiana Iskandar, Pedro Cerdan-Infates, Andrew Ragatz, Amer Hasan, Rosfita Roesli, *Cristobal* Ridao-Cano, Gutama, Adam Rorris, Soebagyo Mulyodiharjo, *Satryo* Soemantri *Brodjonegoro,* Chris Majewski, Alan Prouty, Abdul Malik, John Virtue, David Harding, Basilius Bengoteku, Devi Suryani, Budiarti Rahayu, Hillary Saccomanno, Harry Achillini, Mayla Safuro Lestari Putri, Daim Syukriyah, Laura Kartika Wijaya.

It has been my pleasure to lead and work alongside this very dedicated team and to engage with and learn from the many committed and enthusiastic members of the focus groups and discussions held across Indonesia.

Finally, I would also like to express my deep gratitude and appreciation to Prof. Armida.S Alisjahbana, MA. Ph.D., Minister of National Development Planning/Chair of National Development Planning Agency (BAPPENAS) and Ir. Lukita Dinarsyah Tuwo, MA, Ph.D., Vice Minister of National Development Planning/Vice Chair of National Development Planning Agency (BAPPENAS) of the Cabinet United Indonesia II, 2009-2014, for their valuable guidance and support in the implementation of this Education Sector Review. I would also like to convey my great appreciation to Prof. DR. Fasli Jalal, Ph.D., Dr. Ir.Taufik Hanafi, MUP, Wolfgang Kubitzki Principal Social Sector Economist, Asian Development Bank and Ms Hannah Birdsey Counsellor Education and Scholarships from the Australian Department of Foreign Affairs and Trade, for their rich and valuable contributions in numerous discussions when the Background Study was first initiated and during implementation.

My earnest wish is that this document will provide guidance and direction for the government and stakeholders and that it will also stimulate continuing and robust enquiry into the very complex issues which affect the delivery of quality education for all Indonesians.



Dra. Nina Sardjunani, MA

Deputy Minister for Human Resource and Cultural Affairs,

Ministry of National Development Planning/National Development Planning Agency

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Abbreviations

ACDP	Analytical and Capacity Development Partnership
AIDS	Acquired Immune Deficiency Syndrome
AK	*Akademi Komunitas* (Community Academy)
APBD	*Anggaran Pendapatan dan Belanja Daerah* (sub-national budgets)
APBN	*Anggaran Pendapatan dan Belanja Nasional* (central government budget)
AQRF	ASEAN Qualifications Reference Framework
ASEAN	The Association of Southeast Asian Nations
ATMI	*Akademi Tehnik Mesin Industri* (Technical College for Mechanical Engineering)
BAN-PT	*Badan Akreditasi Nasional Perguruan Tinggi* (National Accreditation Board for Higher Education)
BAN-SM	*Badan Akreditasi Nasional Sekolah Menengah* (National Accreditation Board for Senior Secondary Education)
BEC-TF	The multi-donor Basic Education Capacity Trust Fund
BERMUTU	Better Education through Reformed Management and Universal Teacher Upgrading
BKB	*Bina Keluarga Balita* (Under-five Child Family Development)
BKD	*Badan Kepegaiwan Daerah* (Regional Employment Board)
BKN	*Badan Kepegawaian Nasional* (National Employment Board)
BLK	*Balai Latihan Kerja* (Vocational Centres)
BLU	*Badan Layanan Umum* (Public Service Agency)
BOPTN	*Biaya Operasional PTN* (Operational Cost for Public University)
BOS	*Bantuan Operasional Sekolah* (School Operational Assistance Grant)
BOSDA	*Bantuan Operasional Sekolah Daerah* (Local School Grant)
BPKB	*Balai Pengembangan Kegiatan Belajar* (Center for Learning and Development Activities)
BRIICS	Brazil, Russia, India, Indonesia, China and South Africa
BSM	*Bantuan Siswa Miskin* (Program of assistance for poor students)
BSNP	*Badan Standar Nasional Pendidikan* (National Education Standards Agency)
CAS	Creativity, Action, Service
CIMU	Central Independent Monitoring Unit
CME	Civics and Moral Education
CPD	Continuous Professional Development Program
CREATE	Consortium for Research on Educational Access, Transitions and Equity
CSR	Corporate Social Responsibility
DACUM	Develop A Curriculum
DAK	*Dana Alokasi Khusus* (Special Allocation Fund)
DAPODIK	*Data Pokok Pendidikan* (School Self Evaluation and Essential School Data)
DAU	*Dana Alokasi Umum* (General Allocation Fund)
DBH	*Dana Bagi Hasil* (Shared Fund)
DFID	UK Department for International Development
DGHE	The Directorate-General of Higher Education
DID	*Dana Insentif Daerah* (Regional Incentive Fund)
DITJEN DIKTI	*Direktorat Jenderal Pendidikan Tinggi* (Directorate General of Higher Education)
DIPA	*Daftar Isian Penggunaan Anggaran* (Ministry Budget Implementation Documents)
DISNAKER	*Dinas Tenaga Kerja* (Local Government Labour Office)
DKI	*Daerah Khusus Ibukota* (Capital City Special region)
DSF	Decentralization Support Facility

EAP	East Asia and Pacific
EBTANAS	*Evaluasi Belajar* (national exam prior to the current *Ujian Nasional*).
ECER	The Early Childhood Environment Rating Scale
EMIS	Education Management Information Systems
EQAS	Education Quality Assurance System
ESCS	Economic, Social and Cultural Status
EU	European Union
GDP	Gross Domestic Product
GER	Gross Enrollment Ratio
GoI	Government of Indonesia
GPI	Gender Parity Index
GRDP	Gross Regional Domestic Product
GTT	*Guru Tidak Tetap* (Public school-hired teachers)
GTY	*Guru Tetap Yayasan* (Permanent foundation-hired teachers
HI ECED	Holistic and Integrated Early Childhood Education Development
HIV	The Human Immunodeficiency Virus
HPEQ	Health Professional Education Quality
HRDF	Human Resource Development Fund
ICCS	International Civics and Citizenship Study
ICT	Information, Communication and Technology
IDR	Indonesian Rupiah
IEA	International Education Association
IGTKI	*Ikatan Guru Taman Kanak-kanak Indonesia* (Association of non-formal ECED and Kindergarten teachers)
ILEGI	Indonesian Local Education Governance Indicator
IMF	International Monetary Fund
INAP	Indonesian National Assessment Program
INPRES SD	*Instruksi Presiden untuk Sekolah Dasar* (Presidential instruction for the elementary school construction program)
INSTIPER	*Institut Pertanian STIPER Yogyakarta* (Yogyakarta Institute of Agriculture)
IPB	*Institut Pertanian Bogor* (Bogor Institute of Agriculture)
ITB	*Institut Teknologi Bandung* (Bandung Institute of Technology)
ITS	*Institut Teknologi Surabaya* (Surabaya Institute of Technology)
JPS	*Jaringan Pengaman Social* (Social Safety Net)
KB	*Kelompok Bermain* (Play Group)
KKG	*Kelompok Kerja Guru* (Teacher Working Group)
KTSP	*Kurikulum Tingkat Satuan Pendidikan* (School-based curriculum development)
LAM	*Lembaga Akreditasi Mandiri* (Independent accreditation agencies)
LKP	*Lembaga Keterampilan & Pendidikan* (Institute for Skills development and Education)
LMIC	Lower middle income
LMS	Learning Management System
LPMP	*Lembaga Penjaminan Mutu Pendidikan* (Institutes for Education Quality Assurance)
LPTK	*Lembaga Pendidik dan Tenaga Kependidikan* (Teacher Pre-service Training Institutes)
ME	Monitoring and Evaluation
MenPanRB	*Menteri Pendayagunaan Aparatur Negara* (Minister of State Apparatus and Bureaucratic Reform)
MET	Measures of Effective Teaching
MGMP	*Musyawarah Guru Mata Pelajaran* (Subject Teachers Forum)
MI	*Madrasah Ibtidayah* (private Islamic elementary school)
MoEC	Ministry of Education and Culture
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs

MoMT	Ministry of Manpower
MOOC	Mass Open Online Courses
MoRA	Ministry of Religious Affairs
MoU	Memorandum of Understanding
MP3EI	Masterplan for Acceleration and Expansion of the Indonesia Economic Development
MSS	Minimum Service Standards
MT	*Madrasah Tsanawiyah* (private Islamic junior secondary school)
MWA	*Majelis Wali Amanat* (Board of Trustees)
NER	Net Enrolment Ratio
NGO	Non-Governmental Organization
NPSD	National Program for Skills Development
NQF	National Qualifications Framework
NSPK	Norms, Standards, Procedures and Criteria
NUPTK	*Nomor Unik Pendidik dan Tenaga Kependidikan* (Teachers' unique ID number)
DL	Open and Distance Learning
OECD	The Organisation for Economic Co-operation and Development
OMR	Optical Mark Recognition
P2TKPAUDNI	*Pembinaan Pendidik dan Tenaga Kependidikan, Pendidikan Anak Usia Dini, Non-formal dan Informal* (Professional Development program for educators and personnel in the ECED, Non-formal Education and Informal Education sectors)
P4TK	*Pusat Pengembangan Pemberdayaan Pendidik dan Tenaga Kependidikan* (Centres for Development and Empowerment of Teachers and Education Personnel)
PBPU	*Program Bantuan Peningkatan Mutu* (Quality Enhancement Support Program)
PBS	*Pengakuan Sebelum Belajar* (Recognition of prior learning)
PE	Physical Education
PEDP	Polytechnic Education Development Project
PENS	*Politeknik Elektronika Negeri Surabaya* (Surabaya National Electronics Polytechnic)
PerMenPanRB	*Peraturan Menteri PANRB* (Regulation from the Minister for State Apparatus and Bureaucratic Reform)
PIRLS	Progress in International Reading Literacy Study
PISA	Program for International Student Assessment
PKG	*Penilaian Kinerja Guru* (annual appraisal of work performance)
PMDK-PN	*Penelusuran Minat dan Kemampuan Politeknik Negeri* (national selection for public polytechnics by invitation)
PMU	*Program Menengah Universal* (Program for universal 12 years education)
PNS	*Pegawai Negeri Sipil* (civil servant)
PODES	*Pendataan Potensi Desa* (Statistical indicator of village potential)
PolMan	*Politeknik Manufaktur* (Polytechnic for the manufacturing industries)
POM	Performance Oversight and Monitoring (for the DFAT Education Partnership Program)
Posyandu	*Pos Pelayanan terpadu* (Integrated Services Post)
PP	*Peraturan Presiden* (Presidential Decree)
PPAS	*Program Peningkatan Akses* (Program to increase access to junior secondary education)
PPP	Public–Private Partnerships
PTN-BH	*Perguruan Tinggi Negeri-Berbadan Hukum* (Autonomous university)
QA	Quality Assurance
QSL	Quality of School Life questionnaire
RENSTRA	*Rencana Strategis* (strategic plan)
RCGP	Central Government within the Province
ROHIS	*Kelompok Rohani Islam* (Islamic Student Spiritual Mentors)
RPJMN	*Rencana Pembangunan Jangka Menengah Nasional* (National Medium Term Development Plan)
RPL	Recognition of Prior Learning

RSBI	*Rintisan Sekolah Berbasis Internasional* (International Standard Pilot School)
SD	*Sekolah Dasar* (Elementary School)
SMA	*Sekolah Menegah Atas* (Academic Senior Secondary School)
SME	Small to Medium Enterprise
SMK	*Sekolah Menengah Kejuruan* (Vocational Senior Secondary School)
SMP	*Sekolah Menegah Pertama* (Junior Secondary School)
SNMPTN	*Seleksi Nasional Masuk Perguruan Tinggi Negeri* (National Entrance Test for Public Universities)
SPN	*Standar Pendidikan Nasional* (National Education Standards)
SSC	Sector Skills Councils
SSE	School Self Evaluation
SSN	National Standard Schools
Susenas	*Survei Sosial dan Ekonomi Nasional* (National Social and Economic Survey)
TAPP	*The Aceh Politeknik Program*
TIMSS	Trends in International Mathematics and Science Study
TK	*Taman Kanak-Kanak* (Kindergarten)
TMOE	Taiwan Ministry of Education
TP	*Tugas Pembantuan* (Assistance Task)
TPA	*Day Care Center*
TVET	Technical and Vocational Sector
UAS	*Ujian Akhir Nasional* (National Exams)
UGM	*University of Gajah Mada*
UI	*University of Indonesia*
UK	United Kingdom
UKG	*Uji Kompetensi Guru* (Competency Testing)
UKK	Promotion Examination
UN	*Ujian Nasional* (National Exam)
UNESCAP	The Economic and Social Commission for Asia and the Pacific
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UT	*Universitas Terbuka* (Open University)
UU	*Undang Undang* (Law/Legislation)
WB	The World Bank
WPB	Work Plan and Budgeting

Overview

The role of education in achieving the broader goals of the RPJMN

Education can play a key role in achieving the overarching goal of the *RPJMN* for inclusive and sustainable development. Underlying this goal are three key principles. First, the plans outlined in the RPJM must be economically feasible and support strong economic growth. Second, the development path over the next five years must be socially acceptable. It will need to improve social harmony, encourage community participation and narrow inequalities across regions and between socio-economic groups. A third key principle underlying the RPJM is the need for greater sustainability and the need to protect the environment for future generations. A strong, vibrant and good quality education system can support all of these underlying principles.

The education sector can contribute to the improvements in economic productivity required to sustain higher rates of economic growth. The provision of good quality education can equip all citizens with the skills the economy needs to raise productivity and prosper in a region that is becoming increasingly more competitive. Recent international research shows that ensuring all children leave school with strong foundation skills can raise annual per-capita growth by up to one percentage point. This shows the importance of the role that education can play in supporting the transformation necessary if Indonesia is to maintain its strong record of economic growth and avoid the middle-income trap other countries have fallen into.

A strong and good quality education system can also lay the foundation for more inclusive development. Over the last five years, income inequality has been growing across regions and between different groups in Indonesia.Disparities in access to education are likely to be an important causal factor driving these growing inequalities. Failure to tackle this growing inequality has the potential to both lower future economic growth and also sow the seeds of future social tensions. Providing good quality educational opportunities to all children, regardless of the circumstances that they are born into, can reduce inequality and give children the skills they need to participate constructively in Indonesia's economy and its lively democracy.

Education can also be an important vehicle for promoting social harmony and building an environmentally responsible nation. It has a vital role to play in promoting social cohesion and building a peaceful and secure Indonesia. Schools can provide children with the skills and understanding needed to live peacefully and to build an awareness and tolerance of the religious, ethnic and linguistic diversity of Indonesia.Schools can also be used to highlight the importance of sustainability and to foster personal behavior that protects the environment for future generations. The education system can also support the development of the skills needed to encourage the necessary innovations to better adapt to the impacts of environmental change that will be seen in the coming years.

Strengthening the education system is imperative if Indonesia is going to fully exploit the opportunities that are likely to arise over the next five years. Between 2013 and 2025 the share of the population that is of working age will continue to increase. In the region as a whole, declining dependency ratios have been associated with more rapid per-capita growth because of the increased proportion of the population that is employed. The size of this demographic dividend will depend in part, on the ability of the education system to impart the skills the economy needs before the dependency ratio begins to increase again. Recent trends suggest that this will require improving access to post-basic education opportunities: since 2001, approximately 75% of the new jobs created have been for entrants with senior secondary or tertiary education. These trends are likely to continue with the closer integration of the ASEAN community in the lead up to 2015.

Key strategies to underpin the steps towards 12 years quality education

Ensuring all children receive 12 years of good quality primary and secondary education is a key step towards Indonesia's objective of inclusive and sustainable development. A good quality primary and secondary education system provides the basic cognitive and behavioral skills that employers are demanding and which labor market entrants increasingly need to be successful. It also provides young adults with a strong foundation to continue their studies to the tertiary level. While there are many strategies that will be needed to universalize access to 12 years of education they may be seen to fall under 4 main areas:

1. **Raising the quality of primary and secondary education**. Despite a considerable reform effort, international assessments of student achievement show that the quality of the education system remains low. Efforts to improve the quality of education need to be reinvigorated otherwise universalizing access to 12 years of education will not bring about the expected benefits in terms of development. While the required focus of quality improvement is in primary and secondary schools it is also important to strengthen early childhood development to ensure children are ready to learn when they start primary school.
2. **Increasing equitable access to senior secondary schooling**. There are approximately 6 million children who do not complete 12 years of education. The challenge of extending opportunities to these children is enormous and will require a combination of increased supply as well as a range of demand side measures to support children from poor households.
3. **Improving access to good quality educational opportunities for all.** In order to universalize access to 12 years of good quality education it is vital to develop effective strategies to support regions and population groups that lag behind. Despite significant gains in educational attainment amongst poor and vulnerable households over the last 10 years, a concerted effort is still required to reach children that are being left behind.
4. **Raising the efficiency of the education system.** Efforts to raise levels of attainment and increase the quality of education will not be successful without adequate investment. However, a large part of the required investment will need to be realized from efficiency savings in the current education budget as well as strengthening partnerships with the private sector.

Strategies aimed at achieving good quality primary and secondary education can also support the *RPJMN* goals for tertiary education. Increasing demand for tertiary education graduates in the labor market implies a need to expand access. In particular, the overarching *RPJMN* goal of inclusive development places a priority on expanding tertiary access for the poorest households. In order to do this, it is vital that children from poor and vulnerable families are able to complete a full cycle of good quality primary and secondary education. Ensuring that the governance of tertiary education institutions enables good quality provision that is relevant for the labor market, is also a critical challenge for the *RPJMN*.

Achievements in the education sector over the last 5 years

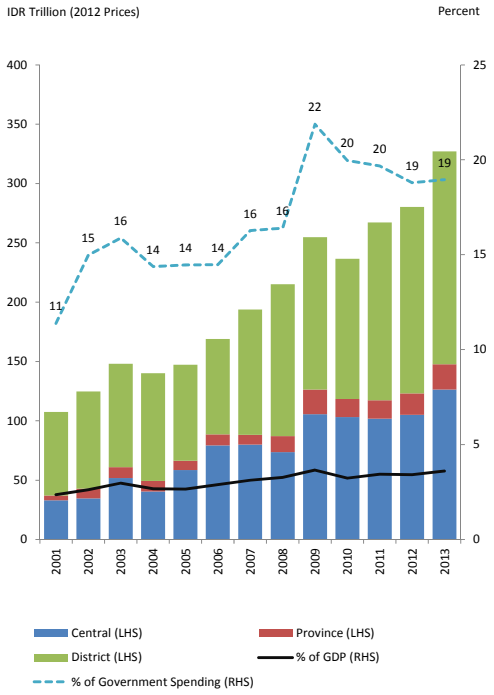
Over the last ten years, significant progress has been made in implementing a comprehensive education reform agenda. In 2001, the responsibility for many aspects of basic education service delivery was devolved to local governments. Further reforms were introduced in 2003 that provided the legal basis for school based management and formalized school committees in an effort to encourage local community participation and to strengthen accountability of schools to their communities.The Teacher Law of 2005 addressed shortcomings in teacher pay and quality by introducing certification and a strengthened program of continuous professional development. At the same time, the national school grants program (BOS) was rolled-out and gave schools vital resources to support their adoption of earlier school based management reforms. These three reforms brought the Indonesian system of education in line with modern education world-wide.

Across all subsectors of education services, the government also developed processes for quality assurance including introduction of minimum service standards, expansion of the program for accreditation of the school and higher education sectors, new laws for governance of the higher education sector, performance assessment of teachers and the framework for continuous professional development (CPD) of principals.

Despite significant global turmoil in 2008, the reforms above were backed up with substantial increases in public education investments. In 2009, a constitutional obligation to devote a fifth of the national budget was achieved for the first time. This resulted in a more than doubling of public education spending in real terms between 2001 and 2009, a rate seen in few other countries. Since then, public investment in education has continued to grow rapidly. Over the last four years (2009-2013), increases in the overall national budget have supported annual growth in public education spending of about 6.5 percent in real terms (Figure 1).

Figure 1. Public expenditure on education, 2001-2013

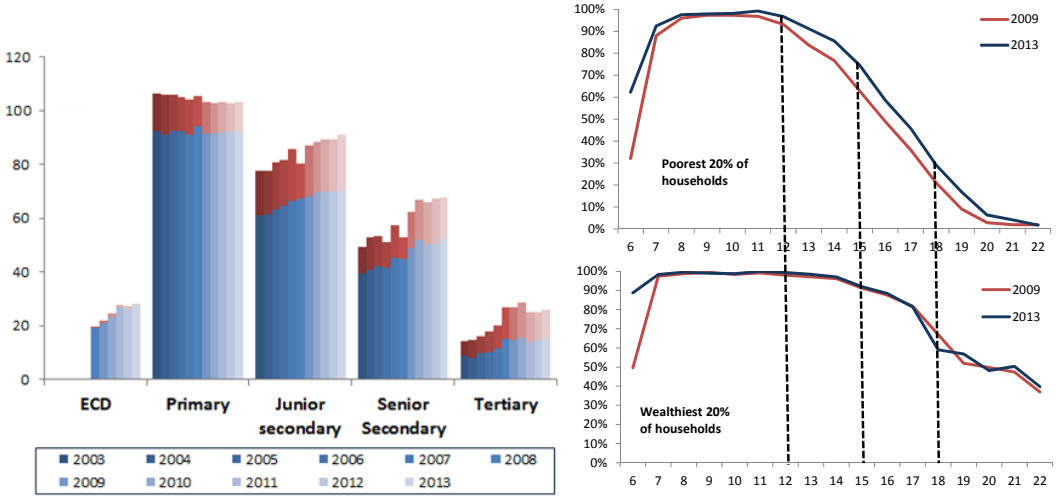
Source: 2010-2013 revised plan budget laws, MoF, BPS for Susenas and GDP and CPI deflators



So far the reforms and increases in public investment have led to an expansion of educational opportunities, particularly for the poorest children. Universal primary enrolment has largely been achieved and by 2013, almost all children, including the poorest were in school between the ages of 7 and 12. Enrolment rates in secondary schooling also increased significantly (Figure 2) and are now comparable to other lower middle income countries. Enrolments in tertiary education have continued to rise. Overall, the share of 6 -22 year olds that are enrolled in education has increased from 66 percent in 2006 to 73 percent in 2013. This means that since the beginning of the current RPJM (2010) an additional 7 million children and young adults have enrolled in the education system.

The improved participation rate has been driven mainly by the increased participation in education of the poorest households and has led to significant reductions in educational inequality (Figure 2). While enrolment for the wealthiest children has remained high and largely unchanged over the current RPJM, enrolment rates for children from the poorest households have increased significantly. For example, the share of 15 year olds in the poorest 20 percent of Indonesian households enrolled in school has increased from 63 percent to 74 percent between 2009 and 2013. A similar trend for poor and wealthy households can be observed for later ages and illustrates the reduction in inequality seen over this period. However, significant enrolment gaps remain. For example, in 2013, 59 percent of 18 year-olds in the wealthiest households were still in school compared to 29 percent in the poorest households.

Figure 2. Education participation rates, 2003-2013

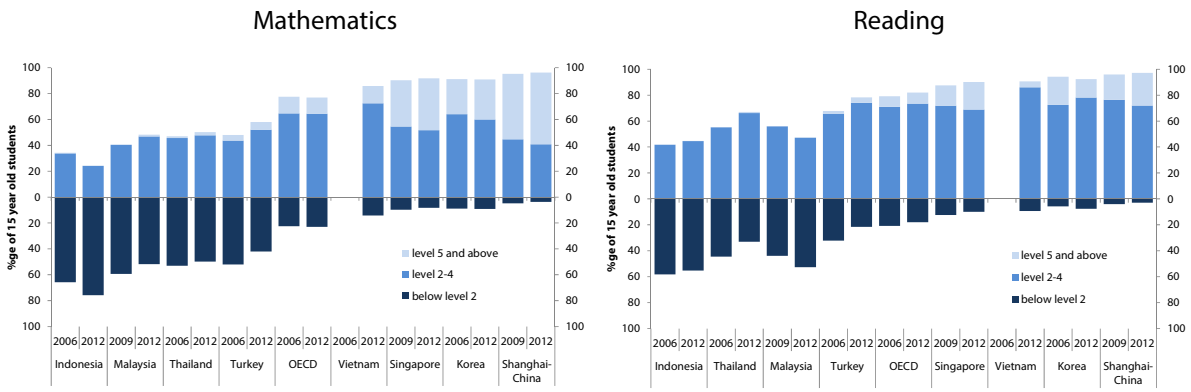


Source: Susenas, 2003-2013

While increased investment has led to some notable achievements in increasing educational opportunity, changes in learning achievement have been more mixed. The teacher law and the certification program have increased the proportion of teachers with a bachelor's degree from 36% to 63% between 2006 and 2012. This improvement in teacher qualifications is expected to improve the quality of teaching in the long-term. However, Indonesia has performed relatively poorly in international learning assessments when compared to other countries. For example, Indonesia fell below other countries in the region such as Thailand and Malaysia in the 2012 OECD PISA assessment. Trends in learning also show a mixed picture. Since 2006, learning achievement amongst Indonesian 15-year olds has improved in Reading but has not shown improvement in Mathematics and Science.

Average levels of learning also hide significant differences across countries in mathematics and reading proficiency levels (Figure 3). In Indonesia, the majority of 15 year-olds fall below level 2 proficiency, a level that is associated, in some countries, with difficulties for students wishing to continue into higher education or transition into the labor force. In 2012, three-quarters of Indonesian students were at level 1 or below where students are able to do 'very direct and straightforward mathematical tasks, such as reading a single value from a well-labeled chart or table'. Trends also suggest a drop in mathematics proficiency levels between 2006 and 2012.

Figure 3. Share of students at each PISA proficiency level in mathematics and reading in selected countries, 2006 and 2012



Source: OECD PISA 2013

Data from national examinations also show significant disparities in learning between students, schools and regions. For example, students who have parents with low levels of education or low incomes tend to do less well at school. Moreover, female students also tend to do better in national examinations than their male counterparts. These findings highlight the need to provide all children with access to good quality education opportunities in order for them to fulfil their full potential.

A comparison between the achievements and the increases in spending on education over the last five years also highlights a concern over efficiency in the sector. In particular, a large proportion of additional education spending has been directed towards hiring new teachers and paying them more through professional allowances associated with the national teacher certification program. While increased teacher spending has put significant additional burdens on the education budget it is not clear that it has had an impact on education outcomes and particularly learning achievement. Weaknesses in the mechanisms used to allocate resources to local governments and schools have also reduced the impact of public spending increases on education outcomes.

Key challenges that must be addressed in the next five years

On the 2014 Pearson Learning Curve rating, which is a composite score based on international test results and assessment of adult competencies, Indonesia is ranked at 40/40. One of the key lessons identified by the Pearson Report which is pertinent for this moment in Indonesia is that "*developing countries must teach basic skills more effectively before they start to consider the wider skills agenda. There is little point in investing in pedagogies and technologies to foster 21st century skills, when the basics of numeracy and literacy aren't in place*".

With this in mind, a **strong focus on the quality of basic education is still needed** and thekey priority for the next five years must be to improve the learning outcomes of students from schooling, from vocational skills training and from the higher education sector**.** High pass rates and high graduation rates have for many years masked the real level of achievement.Improvement and expansion to 12 years universal education will not deliver the desired individual or national outcomes if the quality is not really there.

A necessary step in improving learning outcomes should be **careful consideration of the whole system and culture of learning assessment,** including the exams, system monitoring of outcomes and school level assessment. The national exams appear to have reached a tipping point where the imperatives to maintain pass rates have seriously distorted the process and the results have little value. School marks are being awarded by teachers to ensure that all students pass and in doing so, provide a disproportionate bonus to the least able and lowest performing students. While some may see this as an equalizing strategy across the disparate regions of Indonesia, it is unfair to students who have worked hard and earned their marks. The imperative for all to pass is also what sustains cheating which in turn generates a high cost in human, social and fiscal terms and diminishes community confidence in the education system. The choices for government will be to reform, resource and significantly improve the existing system, or institute a new system of assessment. This is a hugely controversial area with many opposing ideologies but **it will be very difficult, and maybe impossible, to drive effective reforms in teaching and learning in the absence of valid and reliable assessment on which to base improvement efforts and for monitoring progress.**

If the quality of learning outcomes is not addressed with some urgency, and in a sustained and systematic way, **the current low quality of learning outcomes could hold the nation back**.For example, the potential of the anticipated demographic bonus will not be realized if the mass of students entering the workforce do not have adequate basic skills. The opening up of trade in the ASEAN community will create pressure for all countries to be more competitive and Indonesia must avoid the scenario in which it becomes primarily a source of semi-skilled labour in Asia, instead of leading in innovation, entrepreneurship and application of technologies.

The introduction of a new curriculum in 2013 had wide ranging and ambitious objectives for quality and relevance, including to drive new pedagogy and assessment, but the agenda was also driven by political imperatives which did not allow sufficient time for consultation, review, trialing and preparation. Not

surprisingly *Kurikulum 2013* became highly controversial and is now subject to a review. In moving forward on curriculum and assessment it is most important that the new government recognises the prime role of national standards and the subsidiary roles of curriculum and assessment as tools for quality teaching, quality learning and system monitoring.

In preparing young people for the workforce and for productive lives, the education system must include deliberate teaching of non-cognitive skills including character skills and so-called 21st century learning skills.A considerable body of educational research suggests that **non-cognitive skills** (e.g. persistence, self-discipline, effective communication) **are equally if not more influential than academic skills in predicting post-school outcomes**. While there are many different approaches in which schools can develop character skills, including religious education, a key message from meta-analysis of relevant research is that good teaching, effective leadership and a positive school climate can develop character skills naturally as part of the effective teaching of academic skills. The implication of this is that real reform in teaching can have a positive flow-on effect to the personal quality of school graduates , the well-being of the country and its economic status in the region.

The reform of the teaching process can happen **school by school, day by day, through the way that individual teachers, principals, supervisors and district officials view their job and take responsibility for their actions**. This approach is consistent with the *Mental Revolution* proposed by President Joko Widodo, which calls for a **new mindset in which citizens, including teachers and education officials, are empowered to make moral choices and behave in ways that will improve teaching and learning.** Principals, school supervisors and teachers themselves must be the leaders of change in this organic school-by school process which reaches into to every classroom.

Principals and teachers however cannot do this alone. They must be supported by **a system that values and supports teachers** through its selection methods, pre-service training, induction, school-based development procedures and effective performance management. National and local government must work together to ensure more effective management and deployment of the teaching workforce. This will result in more students having quality teachers who feel valued and act as professionals.

Part of the system-change required is to focus on school improvement. There are several, disconnected systems and tools for school quality assurance and accreditation. These need to be streamlined, aligned and implemented more rigorously, with appropriate incentives for improvement, sanctions for inaction and positive support to change. A key tool, the **Minimum Service Standards (MSS)** is not well understood and needs to be reviewed and reinforced as a responsibility of local government. From the 2013 MSS survey, around 70% of all schools did not meet MSS for text books and enrichment books and 40% did not have the basic resources for teaching science. On these and other indicators, the MSS survey showed very large **differences between public and private schools**, highlighting a serious issue of inequity between the systems which has yet to be addressed effectively.

Having qualified, competent and motivated teachers and leaders in every school is the key to improving learning. Given the huge investment in teacher upgrading nation-wide, this is clearly achievable if there can be system adjustments to the way that school staffing entitlements are calculated and the ways that teachers are distributed and supported.

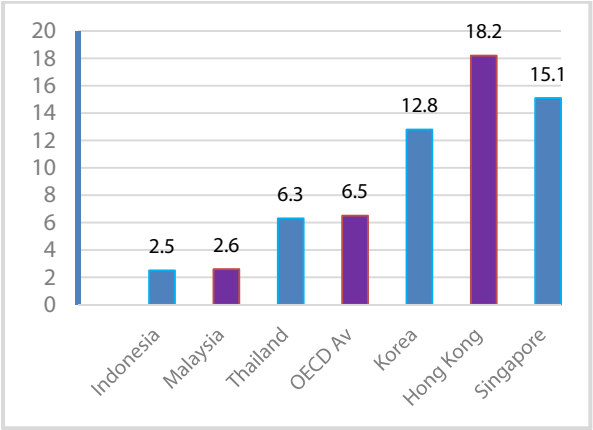
Even in the current situation, school level processes specified by the MSS should not be costly to improve (e.g. ensuring that every teacher has a lesson plan for every lesson, ensuring that principals visit classrooms and give constructive feedback to teachers) but will require principals and supervisors to provide professional leadership, support and supervision. This is lacking in many schools. Empowering parents and communities and encouraging their active engagement in schools, including in school committees and in school self-evaluation, will ensure they are better informed and better able to support school improvement.

The natural starting point for increased parent engagement in education is in **the early years of child development,** including good pre-natal care, nutrition education and support for the poor, and community based early childhood development centres. These are all examples of community-based programs which should be supported by a joint health-education approach in order to facilitate improved access, especially

by the poor, to good quality pre-primary education. Students who have two years of good quality pre-primary education will start school prepared for learning and continue to achieve more highly than those who missed that opportunity. The results on PISA tests of 15 year olds in Indonesia show that having two years of pre-primary education confers a benefit of 41 points, equivalent to being one year ahead in schooling, or 29 points if adjusted for socio-economic status. But sadly, twice as many rich students as poor students have this advantage. Poor students are more likely to start school late, experience early learning failure and repeat a grade - all factors which are associated with subsequent learning failure, drop out and, as a consequence, will continue the cycle of poverty.

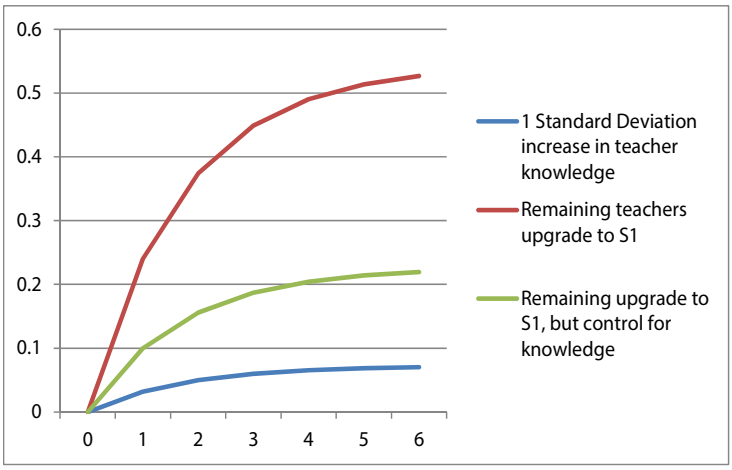
The lasting impacts of socioeconomic disadvantage on learning are also seen in analyses of the Indonesian PISA test results by equity quartile. The likelihood of adisadvantaged 15 year old "beating the odds" and scoring in the top performance quartile is described as an index of student resilience. On the Indonesian sample, a very low % of students, just 2.5 %, who are top scorers on the PISA tests come from the bottom socio-economic quartile.

Figure 4. PISA calculations of student resilience based on the percentage of top-scoring students coming from the lowest socio-economic quartile



Evidence of continuing inequity in the quality of education offered and in the learning outcomes of students suggests that the increased investment of the past 5 years has not delivered the desired results. The most disturbing example is the failure, thus far, of teacher reforms to demonstrate positive impacts on either teachers' competence, or students' learning: the majority of teachers fail the competence tests, and principals and supervisors as a group score even lower than the staff they must supervise. In retrospect, it appears that a high level of system inefficiency and weak accountability have prevented good reforms and policy instruments from being fully implemented as planned. The Joint Decree on teacher management provides a way forward for district governments to implement innovative solutions to address teacher needs and management issues. At the same time, improved remuneration and conditions for teachers are beginning to raise the quality of entrants to the profession. While the challenges of scale and the diversity in the operating environment are daunting, continued investment in improved teacher training and support to build the knowledge and skills of teachers will be associated with improvements in student learning.

Figure 5. Estimates of student learning over six years of Primary School based on teacher knowledge vs. degree



Source: De Ree, 2013

Clearly the higher education sub-sector in Indonesia has a key role in teacher improvement and quality improvement of the workforce in total. The higher education sector, like the school sector, has grown very rapidly. There are now over 3,500 institutions established, many of which are very small, private, poorly funded institutions which cannot provide quality programs and would in many other countries be regarded as unviable. A **more rigorous approach to accreditation and quality assurance** is needed to halt the proliferation of low quality institutions for higher education and to help improve the quality of all. There is also a problem of relevance in whichmany institutions (large and small) are not providing programs relevant to the skill needs of the country. Even in the area of teacher training, which has become a "cash-cow" for many institutions, many graduates emerge with little, if any, practical training in pedagogy and low subject knowledge, having been taught by lecturers who are not experts in classroom teaching. As is shown above in Figure 5, teachers' subject knowledge has a direct relationship with improved student learning.

Although enrolments in higher education have climbed steeply in response to both supply and demand factors, the enrolment is highly skewed across socioeconomic profiles.While 66.6 % of young people from the highest socioeconomic quintile are enrolled in degree courses, just 2.5% of those from the lowest quintile are enrolled. These figures are an eerie reflection of the PISA resilience index of 15 year olds. Such inequity requires a range of affirmative actions, not just scholarships, to be applied throughout the full continuum of schooling in order to prepare young people from every social background to enter and be successful in higher education.

In addition to addressing inequity arising from factors such as poverty, isolation and cultural difference, the policy reforms needed to improve quality in higher education include rationalizing and strengthening the institutional focus and mission of institutions and strengthening their processes for quality assurance, which are currently weak. Institutional support is also needed to address management and administration, the quality and qualifications of lecturers and their teaching and research skills as well as the capacity of individuals and institutions to reach out and serve the needs of industry and the workforce.

Efforts and incentives to improve the relevance of higher education will enhance individual employability and the quality and competitiveness of Indonesian businesses and entrepreneurial ventures. Decisions about priorities and reforms in both governance and relevance need to be informed by consistent policy and research.More autonomy in governance and improved funds channeling could provide the impetus for locally-driven initiatives and reform to improve the quality of university teaching and research, extend partnerships with industry and business and reach out to remote areas.

Like the higher education sector, skills training in the technical and vocational sector (TVET) has also expanded rapidly and is poorly regulated. It is described as having an "aura of chaos" with many issues and opportunities similar the higher education sector: the quality and relevance of courses provided and the

skills of teachers need to be greatly improved. Good quality TVET has an important role in increasing equity of opportunity by ensuring multiple pathways, flexible entry and re-entry, lifelong learning and transportable qualifications and credits within a national qualifications framework. Within such a framework, a more entrepreneurial, demand-driven approach oriented to local needs and opportunities as well as regional and global opportunities should fairly quickly generate more positive outcomes for students and raise national productivity.

The agenda sketched briefly above requires intense effort and coordination from national and local government.As a consequence of both the rapid expansion of local government entities and for many, their remote location and isolation from expertise that could be provided by others, the result has beenlow capacity of local government to manage and weak systems for data collection, management and analysis. **The systematic use of evidence for decision-making at both national and local level is a dream yet to be realized**. Around 30 % of local governments have been established in the last 10 years and many will need a decade to become fully effective. What is encouraging is that there is a strong link between**better quality local governance and better education performance**.

As the policy leader for education in Indonesia, the **national government** has huge responsibilities for management oversight of one of the largest education systems in the world. Understandably there are efficiency issues relating to timely disbursement of resources, ensuring that structures match functions, upgrading the workforce in qualifications, skills and work ethos, instituting performance management, reliable data collection and expert analysis to ensure a sound basis for decision-making. Planning for 12 years universal education, while at the same time improving the quality of the first nine years, is challenging and will require new ways of thinking and working. The greatest impact may come from developing systems with local government that will improve teacher allocation, distribution and support and identifying ways to free up misused resources and direct those to quality improvements. This will require systems improvement as well as a change in mindset.

Enhanced partnerships between levels of government and the public and private sectors is essential in this process. Given the imperative for quality improvement over the scale and diversity which characterizes Indonesia, it seems logical that **provincial governments could take a stronger role** in leading education monitoring and quality assurance. This may require enhancement or restructure of existing institutions and networks including partnership with universities that would focus on education improvement.More effective funds channeling will also require enhanced partnerships between levels of government, as well as reduction in the complexity and number of grants and reporting requirements in order to promote flexibility and responsiveness to local conditions.

Recognising the limited fiscal envelope for the desired expansion and quality improvements, there is a need for development of more innovative Private-Public partnerships and different ways of sharing the costs. These would need to include effective incentives for employers and community organisations to become engaged within agreed national frameworks and quality assurance mechanisms.

Quality assurance is going to be a key issue in moving forward on the expansion and policy agenda outlined in the Background Study. At school and institution level, the most effective approaches to quality assurance and quality improvement globally have been found to use both upward and downward pressure, and support. Increasing citizen demand, through more effective selection and training of School Committee Members, community stakeholders and employers, has been shown in many countries to be an effective way of accelerating improvement. Schools as learning communities flourish when they have both community and system support and a shared sense of vision and accountability.

Ideally the foundations for the changes envisaged in this sector review would be established in the first year of the *RPJMN* implementation and be reflected in the RENSTRAs at each level, providing a clear roadmap for the following 4 years. The Background Study provides analyses and proposed directions which can assist that process.

Chapter 9. Achieving Universal 12 Years of Education

Introduction

The recently announced Universal 12 Year Education Program (*Program Menengah Universal*, PMU) has set an ambitious target of 97 percent Gross Enrolment Rate (GER) at senior secondary level by 2020. After achieving nearly universal access to 9 years compulsory education (*Wajib Belajar 9 Tahun*), this is seen as a natural next step to improve access to education for all. The 9 Year Compulsory Education began in 1994 and it was nearly met in 2010, after reaching gross enrollment rate of 98 percent. The move to increase access is a laudable one. Expanding enrollments in post-basic education is necessary to move from middle income to high income status.[1] Beyond access, ensuring that children not only transition to senior secondary, but that they graduate with the right skills is even more important. As countries develop, the jobs available become more complex and demand a higher level and complexity of skills from the workforce.[2] Increasing access to senior secondary education is also equitable, since most of the drop-outs are from the lowest income quintiles and from rural areas. In a context of high returns to education, these increases in equity in access to education may contribute to reducing the fast increasing inequality in income distribution (Wai-Poi).

Achieving near universal senior secondary education by 2020 will be a challenge. In 2013 there were almost 10 million 7-19 year olds not enrolled in any form of education. The GER in 2013 for senior secondary is still 68 percent. Moreover, access to junior secondary education is still unequal as there are large disparities in enrollment rates between the poor and the rich. About ½ of the children from the lowest income quintile families are not completing junior secondary education. Further, disparities exist when comparing urban and rural areas. Over 60 percent of rural students not yet completing grade 9 (World Bank, 2012). There are evident signs that there are significant supply constraints, which mean that schools will need to be established (either built, converted or consolidated) and the facilities that come with it. Therefore, significant investment will be needed to achieve these goals.

Access will not be the only challenge - quality of basic education is still low in Indonesia. Judging by international tests, a majority of students who reach senior secondary education have not acquired the level of learning that is expected of them. Many students entering senior secondary lack the basic skills that the senior secondary curriculum assumes them to have, and there is evidence that a significant share of them do not have the skills needed to succeed in the labor market after graduating. These shortages may be accentuated by unequal quality of senior secondary schools, especially private ones. Expanding the system without addressing these quality shortcomings may only result in more graduates who access the labor market without the right skills, limiting the returns to the increased investment in senior secondary. Moreover, poor quality of education my drive drop out as parents may pull their children out of school if they know that the value of the education their children receive is low.

The GoI has already shown commitment to achieving this policy by increasing investment in senior secondary. In 2012, the government through the Universal Senior Secondary Program (*Program Pendidikan Menengah Universal*, Program PMU) initiated the disbursement of the School Operation Fund (*Bantuan Operasional Sekolah*, BOS) for students in senior secondary education. In 2013, the program provided a

[1] Jimenez, Nguyen and Patrinos (2014), Stuck in the middle: Human Capital Development and Economic Growth in Malaysia and Thailand

[2] See October 2014 East Asia Pacific Economic Update, Skilling up

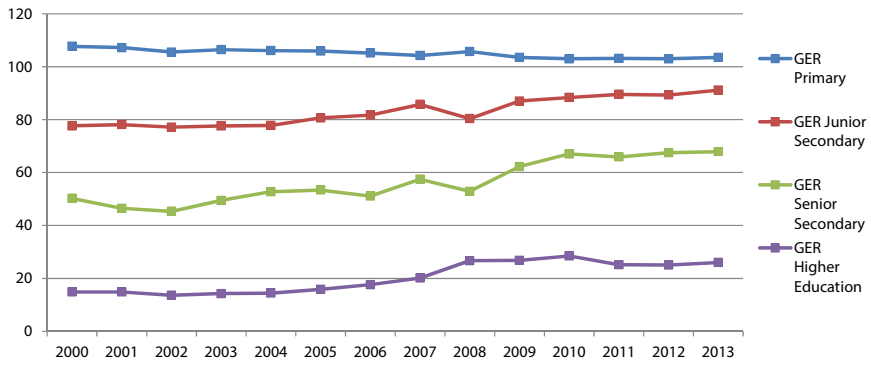
nominal amount of IDR 560.000 per student per year (Ministry of Education, 2013) to both public and private senior secondary schools. Starting from the academic year 2013/2014 the government has significantly increased the nominal amount of BOS for senior secondary education to IDR 1.000.000 per student per year for both public and private senior secondary schools in both the general (*Sekolah Menengah Atas*, SMA) and the vocational track (*Sekolah Menengah Kejuruan*, SMK) (Ministry of Education, 2013), covering around 8.9 million students. Complementing the funds from BOS, GoI also provides a subsidy directly to poor students (*Bantuan Siswa Miskin*, BSM) with IDR 1,000,000 per student per year, which covered over 2 million students attending both public and private schools in 2013. To further support the expansion of senior secondary education, the government is also committed to building new schools and classrooms, and improving the qualification and competency of teachers and education personnel.

As Indonesia implements the 12 years universal education policy, the main objective of this chapter is to provide some policy directions to meet the goals of expansion and quality in a context of limited growth in resources. This chapter is organized around 3 main questions: (i) *Why should Indonesia expand enrollment in senior secondary?* (ii) *What are the existing challenges in senior secondary enrollment?* (iii) *What are the challenges in Universalizing?* and (iv) *What are some policy directions to address this challenges?* In particular, the chapter argues that in a context of limited growth in resources there is a need to use resources strategically to leverage private spending and provision, offering 3 areas for possible policy intervention: a) targeting subsidies better through a program of scholarships for the poor; b) using public-private-partnerships strategically, and c) avoiding fixed ratio targets for general and vocational tracks while focusing on improving the quality and relevance of both tracks

1. Why should Indonesia expand enrollment in senior secondary?

Indonesia has seen fast improvements in access to education. Gross enrollment rates have increased for all levels of post-primary education over the past decade. Between 2002 and 2013 the gross enrollment rates for primary education have been more or less stable. In contrast, the gross enrollment rate for junior secondary has increased from 77 to 91 percent, senior secondary has increased from 45 to 68 percent and tertiary education have increased from 13 percent to 26 percent. Junior secondary, senior secondary and tertiary education have been the fastest growing sub-sectors in terms of coverage during the past decade. It is clear that Indonesians, including the poorest segments of the population, are demanding more and better services for post-basic education. The Government's ambitious goals for expansion are in line with this increased demand.

Figure 6. Trends in gross enrollment rates, 2001-2013

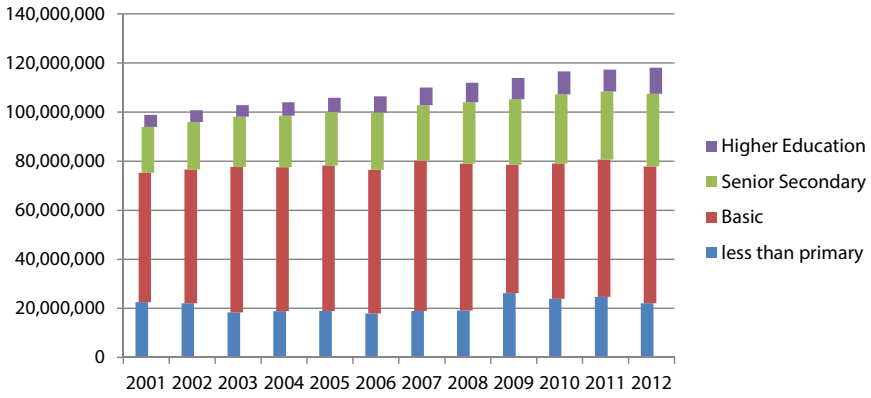


Source: SUSENAS (2000-2013)

These increases in enrollment are clearly visible in the attainment of the labor force. Indonesia's labor force is rapidly becoming more educated. Most of the expansion of the labor force over the past decade has been in senior secondary and tertiary education graduates. As a result, while the majority of the population still has at most only completed basic education, there are now almost 30 million senior secondary

graduates and more than 10 million tertiary education graduates in Indonesia's labor force. Over the past five years, the labor force with tertiary education has increased by around 1 million annually and the labor force with senior secondary by around 2 million annually. These numbers are likely to increase in the near future, driven by the Government's policies to provide universal access to senior secondary education through the universal 12 years of education program, and doubling enrollment in higher education by 2020. Under reasonable assumptions,[3] the number of Indonesians with tertiary education will more than double over the next 10 years.

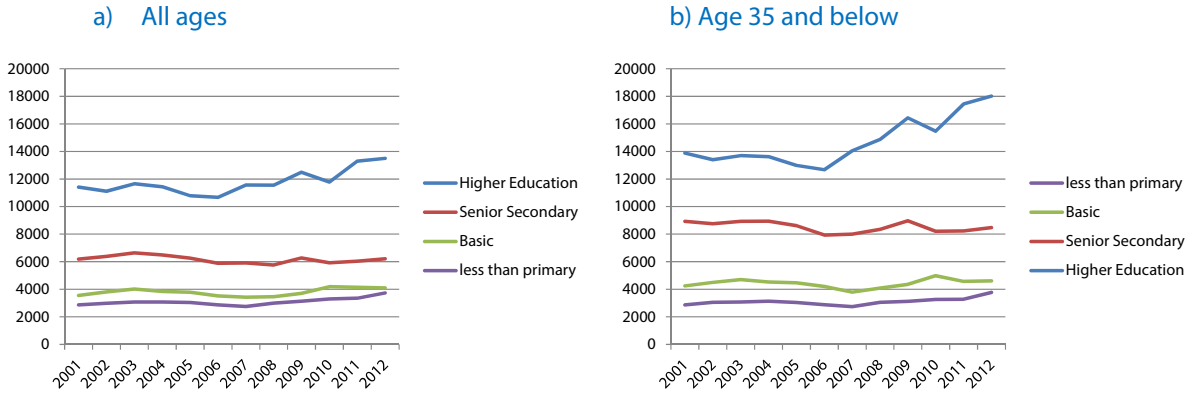
Figure 7. Educational attainment of the labor force, 2001-12



Source: Sakernas

Despite this rapid influx of graduates, the average wages of more educated workers have not declined, suggesting that the demand for skilled workers is still outpacing the supply. Comparing hourly wages for different levels of education[4] show largely constant differences across workers with different levels of education over the last decade. If anything, the differences in the wages of tertiary education graduates seem to be increasing faster than those with less education. The differences in wages for senior secondary and tertiary graduates relative to junior secondary graduates appear to be constant over time suggesting that despite increases in the supply of new graduates, there is still a large demand for them.

Figure 8. Trends in average wage by level of education, all labor force and younger than 35, 2001-10



Source: Authors' calculations using Sakernas, employed for wages.

The demand for skilled workers is likely to increase further. When asked in a survey conducted by the World Bank in 2008, employers almost universally considered that skill requirements will increase, identifying higher-quality standards, a more competitive business environment and export orientation as

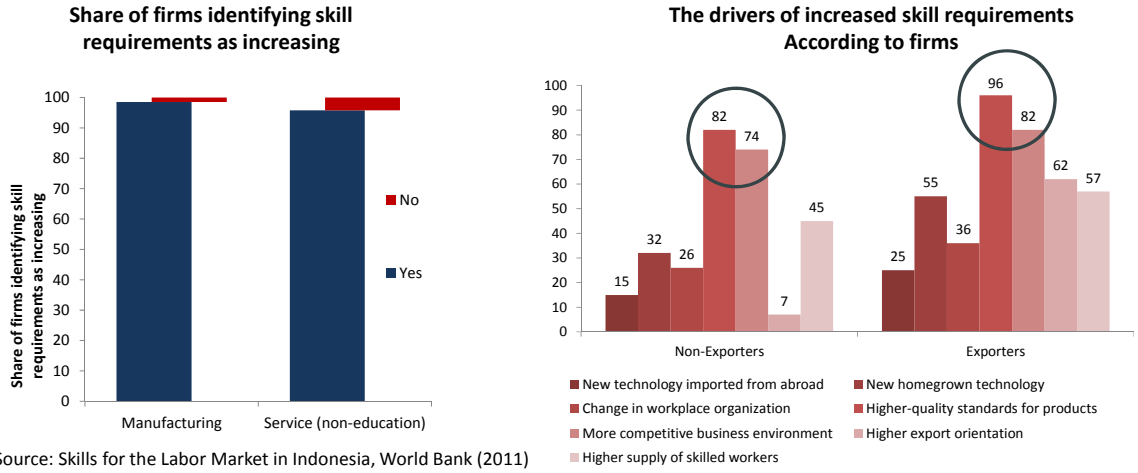
[3] Using linear growth in enrollment rates in higher education.

[4] The picture looks very similar when running mincer equations, so we use comparison of hourly wages for easier reference.

the main drivers for increased requirements. This is in line with Indonesia's ambitions to become a high-income economy, macroeconomic trends (ASEAN, China's raising wages) and the raising middle class (which will demand higher quality products and services).

In the context of a globalized economy with increasing international competitiveness, Indonesia's expansion to senior secondary education is no longer an option but a necessity. The ASEAN Economic community is planned to be established in 2015, freeing the movement of labor across the 10 ASEAN countries. Vietnam, Malaysia, and Thailand have been investing heavily in expanding quality senior secondary and tertiary education, and Indonesia will need to ensure that it is not left behind. With this, the cost of not expanding senior secondary education, particularly in the long term may be higher than the cost of expansion itself.

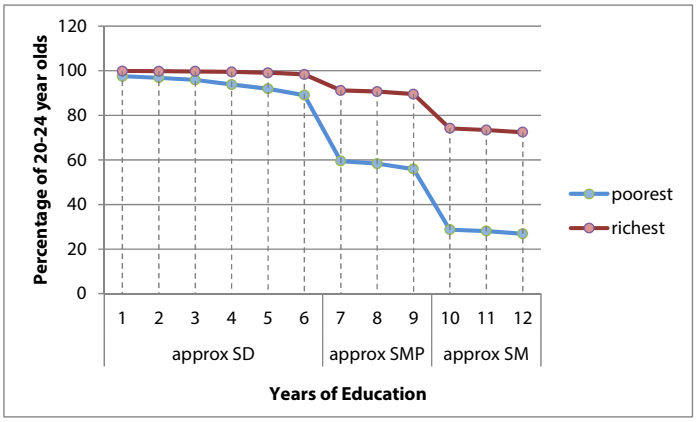
Figure 9. The demand for skills is increasing



Source: Skills for the Labor Market in Indonesia, World Bank (2011)

Expanding access to senior secondary is also important from an equity perspective, since a majority of the current drop-outs are from the poorest economic quintile. Many students drop-out before reaching senior secondary, therefore preventing drop-outs in junior secondary is crucial. According to SUSENAS 2013, nearly 90 percent children from the richest quintile of the families reach Grade 9, compared with less than 56 percent from the poorest quintile. Furthermore, enrollment in senior secondary education is still concentrated on children from socioeconomically better-off households and from urban areas (World Bank, 2012). Looking at the characteristics of out of school children it is clear that the main challenge of increasing enrollments in senior secondary is preventing drop-out for children from the poorest quintiles, especially those in rural areas.

Figure 10. Education Attainment Comparing Poorest and Richest Income Quintile



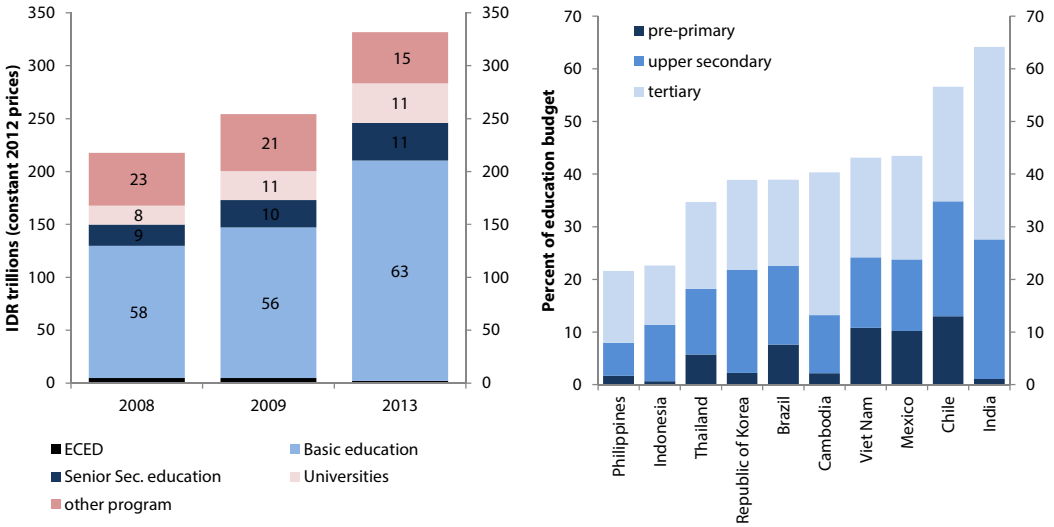
Source: SUSENAS (2013)

In summary, the evidence is clear that expanding access senior secondary education in Indonesia is desirable. It is clear that families are demanding more and better services for post-basic education, and this will likely increase in the future. The transformation into a more value-added, innovation-driven economy will inevitably come with a stronger demand for skilled workers, which the current labor force is unlikely to meet - a majority of Indonesians in the labor force or over 77 million still have basic education or less. There are indications that this demand for skilled workers is already high and growing, including for tertiary education graduates. The massive influx of new graduates following important improvements in access to education has not been accompanied by decreases in the returns to education, which reveals that there is demand for skilled workers. All of this indicates that there is indeed demand for significant expansion of access to senior secondary and tertiary education. And since a majority of drop-outs are from the poorest quintiles, this expansion will contribute to reducing income inequality in the country. From the efficiency and equity point of view, expanding access to senior secondary is crucial for the future of Indonesia.

2. What are the existing challenges in senior secondary enrollment?

The Government's budget on education is high relative to neighboring countries, but the share allocated to senior secondary education is still small. The GoI's commitment to education is reflected through its constitutional obligation to allocate 20 percent of the Government budget to education. The budget for senior secondary education has slowly increased overtime, accounting for 11 percent of the total budget. Allocations for basic education continue to absorb most of the budget and its share of the total has increased in recent years. This will presumably change in the future - the share of the budget that goes to basic education in countries with a higher GDP per capita in the region is much smaller than in Indonesia. However, it should be noted that cross-country comparisons are merely indicative as government spending for each level of education will depend on several factors: the number of years allocated for a particular level of education and the proportion of vocational and general tracks as it has budget implications.

Figure 11. Government spending trends by level of education



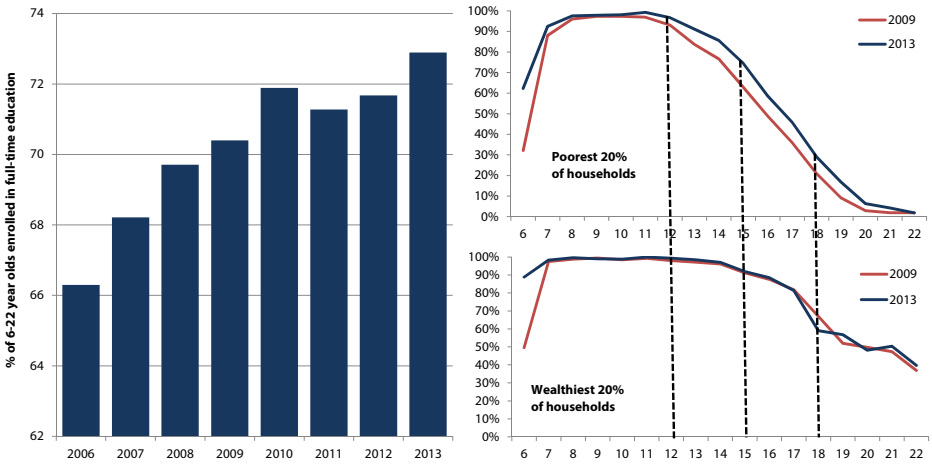
Source: World Bank (2013c) and MoF for Indonesia data. Other indicators are from UNESCO Institute of Statistics Online database.

Notes: The breakdown of the education budget for Indonesia in 2013 uses the proportion of teachers in each level to allocate local government education spending to each level (see appendix). Information for 2008 and 2009 uses a more detailed and accurate measure and are therefore not strictly comparable (see World Bank (2013c) for details).

The improvements in access associated with this increase in spending have benefited students from poor backgrounds the most. School enrollment among 18 year olds from the poorest quintile has

increased from 21 percent 2009 to 29 percent in 2013. Therefore, students from poor families are enrolling earlier and staying in school longer (World Bank, 2013). In contrast, enrollment among 18 year olds from the richest quintile has experienced a reduction in enrollment with enrollment rates from 67 percent in 2009 to 59 percent in 2013.

Figure 12. Share of children enrolled in school by age and quintile, 2006-2013

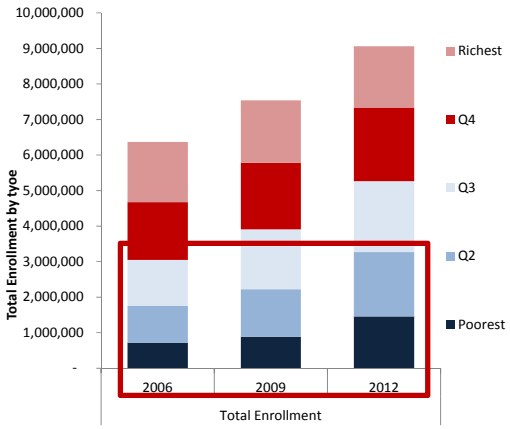


Source: Susenas

Notes: Methodological changes in survey implementation and the corporation of 2010 population census information are likely to explain the drop in enrolment rates in 2011

As a consequence of this increase in access for the poorest segments of the population, access to senior secondary education is becoming more equitable. The growth in enrollment in senior secondary has come mainly from the poorest two quintiles of the population. Between 2006 and 2012 total enrollment in senior secondary increased by 50 percent, adding almost 3 million students to the system. Most of them came from the poorest two quintiles of the income distribution. With this, the student population from the poorest quintile enrolled in education almost doubled over 6 years.

Figure 13. Senior Secondary Education Enrollment by quintile, stream and type

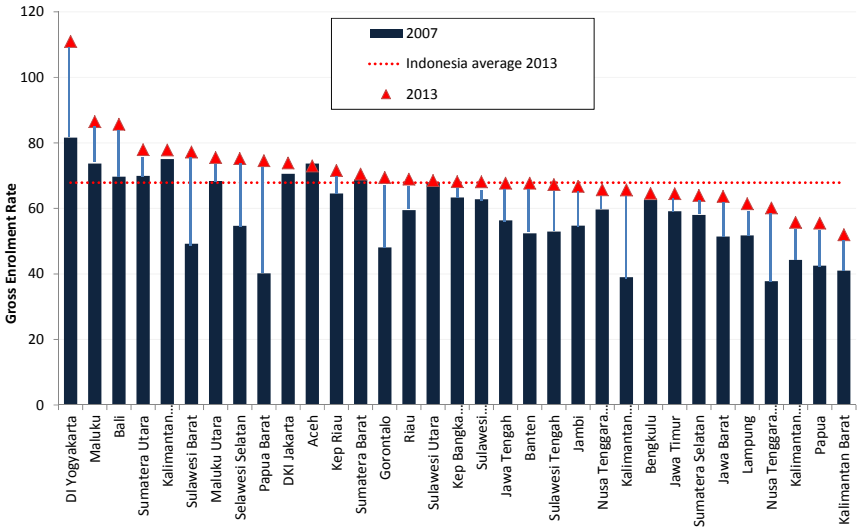


Source: Susenas (2012)

The improvements in access have been particularly impressive in some provinces. Others have progressed little, despite starting from a lower base. Most provinces saw enrollment rates in senior secondary increase significantly. Province with enrollment rates above 80 percent are: DI Yogyakarta, Maluku, and Bali. In contrast, some provinces are still struggling to catch up, namely Kalimantan Barat,

Kalimantan Tengah, and Papua. Therefore, although gross enrollment has increased in Indonesia as a whole, some provinces are still left behind, while other provinces such as Papua Barat were able to successfully increase enrollment from a very low base to enrollments above 70 percent.

Figure 14. Gross enrollment rates in senior secondary by province, 2007-2013

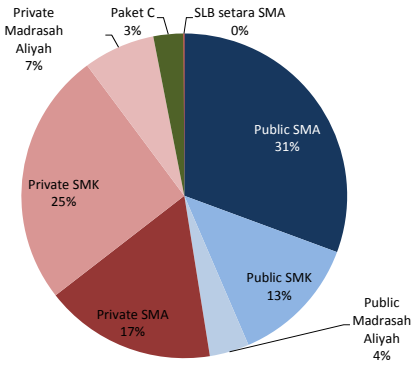


Source: Susenas (World Bank staff calculations)

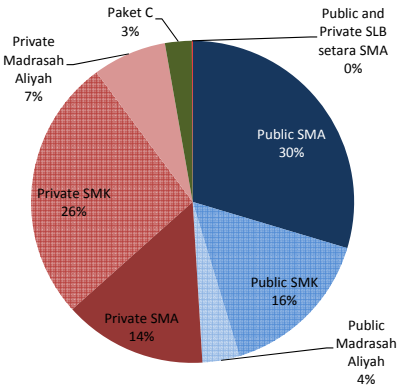
Breaking down enrollment by type of school (general vs vocational and public vs private), almost ½ of students are enrolled in private schools, but most of the recent growth in enrollment has been in public vocational schools. In academic year 2011/2012, enrollment in private senior secondary schools accounted for almost half of enrolment emphasizing the significance of private providers in senior secondary education. Comparing the two tracks, vocational education relies more on private providers than general education - only slightly over 1/3 of students in the vocational track are enrolled in public schools. In contrast, 2/3 of students in the general track are enrolled in public schools. The enrollment in Madrasah schools accounts for 10 percent of the total enrollment in 2012.

Figure 15. Senior Secondary Education Providers Based on the Number of Students Enrolled

a) 2008 – 2009



b) 2011 - 2012

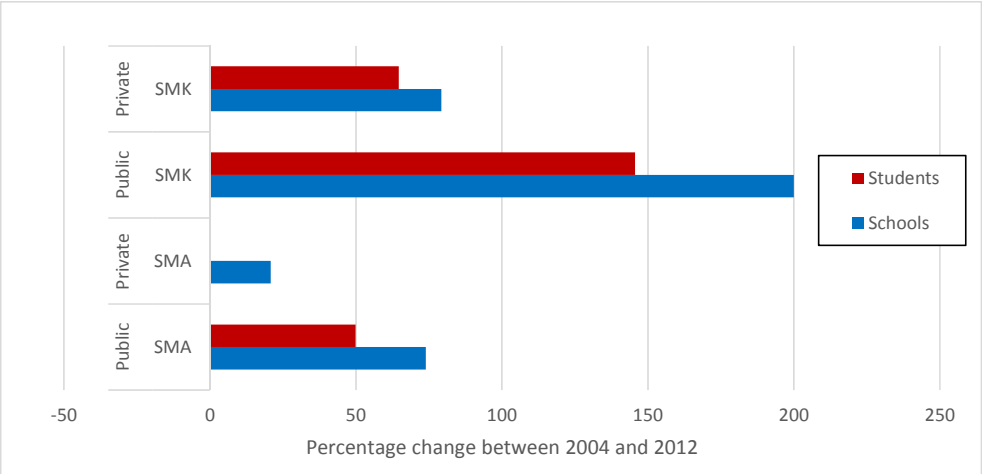


Source: MoNE statistics and MoRA statistics

The growth in vocational education enrollments has been faster than in the general track, particularly in public schools. This is likely the outcome of a government policy over the previous Medium Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional*, *RPJMN*) to increase enrollment in the

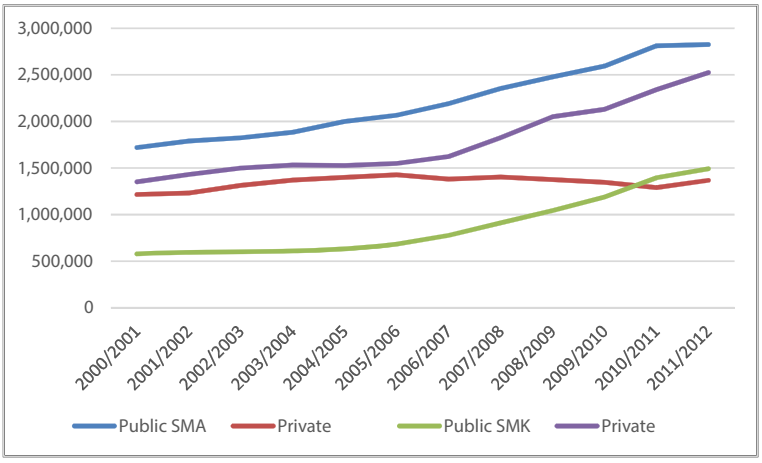
vocational track, which has indeed resulted in a much higher growth in the number of schools in the vocational track over the last 8 years. As expected, the private sector has also responded to this policy, with 80 percent increase in the number of private SMKs between 2004 and 2012. Consequently, growth in private SMK schools are catching up with public SMA schools while at the same time the growth in enrollment from public SMKs are also growing. By contrast, the number of students in private SMA decreased, despite a small increase in the number of schools.\

Figure 16a. Senior Secondary Education Providers and Student enrollment changes between 2004 and 2012



Source: Author's calculations using MoEC statistics

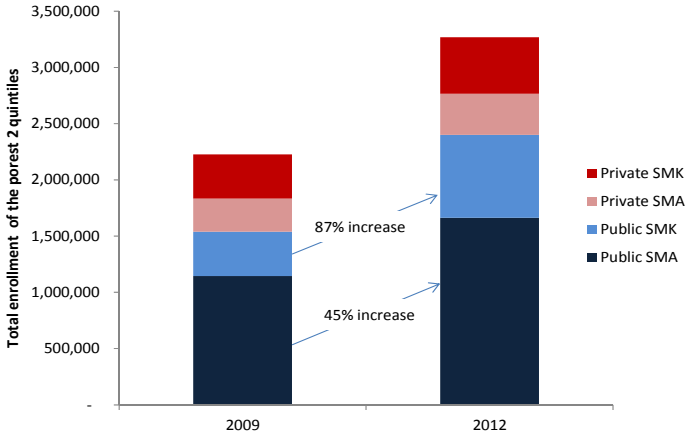
Figure 16b. Senior Secondary Student enrollment changes over time



Source: Author's calculations using MoEC statistics

The increase in enrollment of students from the poorest quintiles occurred mainly in public schools, mostly SMK. Overall, the enrollment in any type of senior secondary education coming from the poorest two quintiles increased by 50 percent between 2009 and 2012 - a very large increase. However, not all types of schools grew equally. Total enrollment for the bottom two quintiles in public SMA increased by 45 percent, while the enrollment in public SMK increased by 87 percent. In contrast, the number of students from the poorest 2 quintiles attending private SMK increased only by 25 percent.

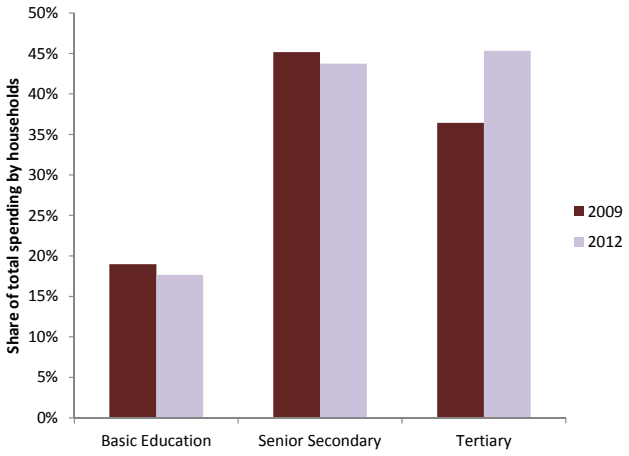
Figure 17. Enrollment by type of institution for the poorest 2 quintiles, 2009-2012



Source: Susenas

To a great extent due to the high proportion of private providers, the cost of the expansion in access has so far largely been born by households. Household spending accounts for 45 percent of total education spending in secondary education from public and private sources – about the same share as in tertiary education. This is in contrast to basic education, where less than 20 percent of the total spending comes from households. The contribution of households to total spending in senior secondary decreased only slightly between 2009 and 2012, suggesting that the cost burden of attending senior secondary has not changed much in recent years.

Figure 18. Share of total spending by level born by households, 2009-2012



Source: Susenas education modules and Ministry of Finance

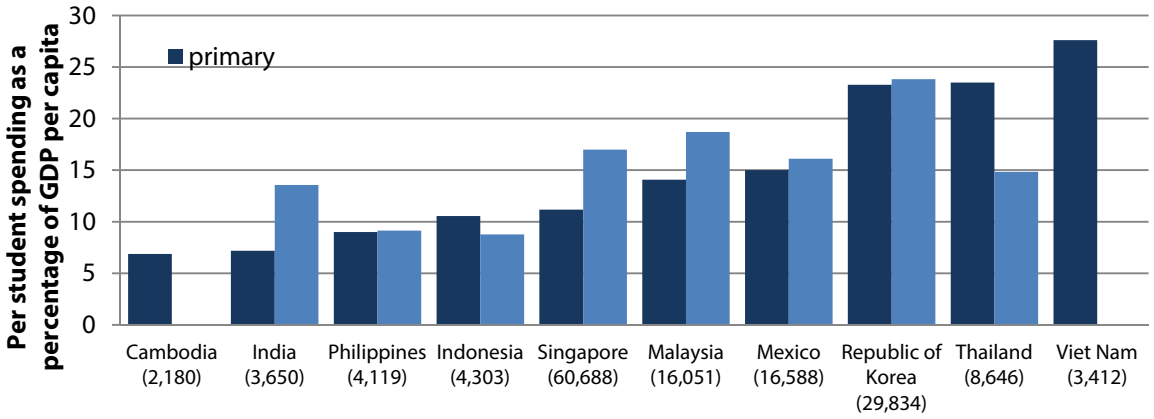
The Government is committed to facilitate access to senior secondary and reduce the cost burden of attending senior secondary. Public spending in senior secondary is set to increase significantly. As stated in APBN, the GoI will provide BOS for 8.9 million senior secondary students. Besides BOS, the central government will also create 224 new schools and 6900 new classrooms. Further funding is also available for poor students in the form of scholarships (*Bantuan Siswa Miskin*, BSM) with the nominal amount of IDR 1.000.000 per student per year available for 1.7 million high school youngsters (Ministry of Education, 2013). In addition to national programs such as BOS and BSM, local governments also invest a significant share of their budget in education, though a large share of it goes to paying teacher salaries[5]. Indeed, some local governments have played a very active role in education financing. This is the case of DKI Jakarta, which has

[5] Spending more or Spending Better, World Bank (2013).

allocated a significant amount of their budget for education, particularly with the aim of expanding secondary enrollments.

This increase in resources is needed – Indonesia spends less per student as a percentage of GDP per capita than most other countries in the region. Indonesia only spends around $370 on secondary education, significantly less than Malaysia (around $3,000) and less than Thailand (around $8,646) or India (around $3,650). An ambitious enrollment target like the one Indonesia has set will necessarily require an increase in resources if it is to be achieved. However, solely adding more resources will not be enough to meet the goal. Additional resources must be used efficiently so that there are improvements in quality.

Figure 19. Public spending on primary and secondary education, latest year



Source: UNESCO Institute of Statistics Online Database and UNESCO (2012). Indonesia data for education spending as percentage of GNP and as a share of total government expenditure are taken from Ministry of Finance data.

Note: Information for all countries is 2010 or latest available year. Figures in parentheses are GDP per capita figures for 2010 reported in 2009 PPP dollars.

While this increase in spending seems unavoidable, the allocation of public investments needs to be carefully considered in a context of limited fiscal space in overall resources for education[6] The resources devoted to the teacher certification program and the inefficient allocation of teachers are placing serious financial constraints to the expansion of the system. It is important to use this increase in funding strategically. Access to basic education was drastically expanded by eliminating fees and instituting BOS, a per student amount that is supposed to cover all operational expenses at the school.[7] This strategy will require, at least, a doubling of the current spending in senior secondary, even if enrollments did not increase. Combined with the large expected increase in enrollments from universalizing access, this makes providing free senior secondary education largely unaffordable in the absence of big improvements in efficiency of spending. In addition, expanding access to senior secondary in the same way runs the risk of crowding out household spending from households who can afford it, thus using up public resources that could be better directed towards improving quality and helping the worse off. How the system expands matters for spending and for quality. The next section looks at some of these challenges.

3. The challenges of universalizing

The scale of the challenge in the universalization of senior secondary education will be determined by several factors: (i) the size and the characteristics of the out of school population, especially those who have

6 See Education Financing, Chapter 13.

[7] Excluding teacher's salary

not yet completed senior secondary; (ii) the availability of existing school infrastructure to accommodate the increase in the number of students enrolled; (iii) how many additional teachers are needed and what kind of teachers?; (iv) related to the previous points, the cost of such a massive expansion in relation to the availability of funds to support senior secondary and (v) the need to improve quality education while the system expands significantly.

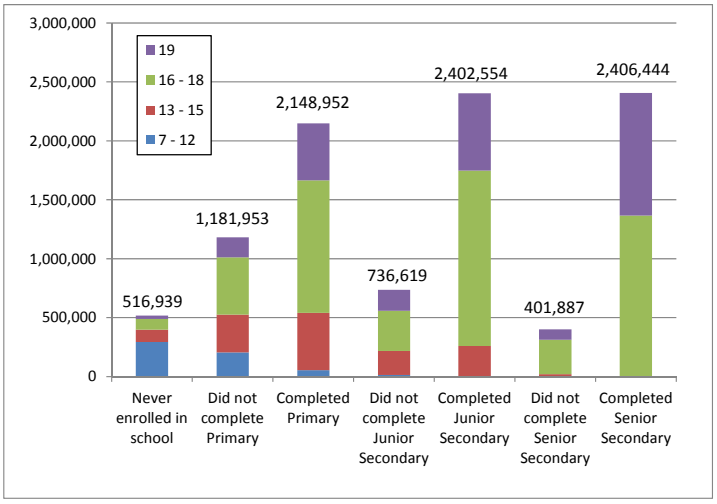
i) The magnitude of the challenge: Who is out of school and why?

The magnitude of the challenge is significant: there are currently almost 7.4 million 7 to 19 year olds who have not completed senior secondary and are out of school. Only 5 percent of them (around 400,000) dropped out *after* starting senior secondary. About 1/3 of them (2.4 million) have completed junior secondary but never started senior secondary and the rest either never enrolled (about ½ million) or dropped out before finishing junior secondary education, most of them in the transition from primary to junior secondary.

Put together, these figures underscore the need to address drop-out before children enrol in senior secondary, with special attention to the transition between levels. Drop-out rarely happens within levels of education, once a student starts a level she /he is likely to complete it. It is the change between levels that drives most of the drop-out. The government will therefore need to provide special attention to students in between levels of education, starting from primary to junior secondary.

Around 3.8 million 7-19 year olds only have primary education or less and most can no longer enroll in formal education. More than half of out of school 7 – 19 year olds have only completed primary school and of these, most are above 16 years old which means that if they wish to upgrade their level of education up to junior secondary, they will need to be enrolled in non-formal education or equivalency packages such as *Paket* A and *Paket* B. There are also 2.8 million out of school students with junior secondary certificate**,** and they can also enroll in non-formal education. Therefore there will be a need to strengthen non-formal education to ensure that out of age children can enrol.

Figure 20. Education attainment of 7 - 19 year olds currently no longer at school

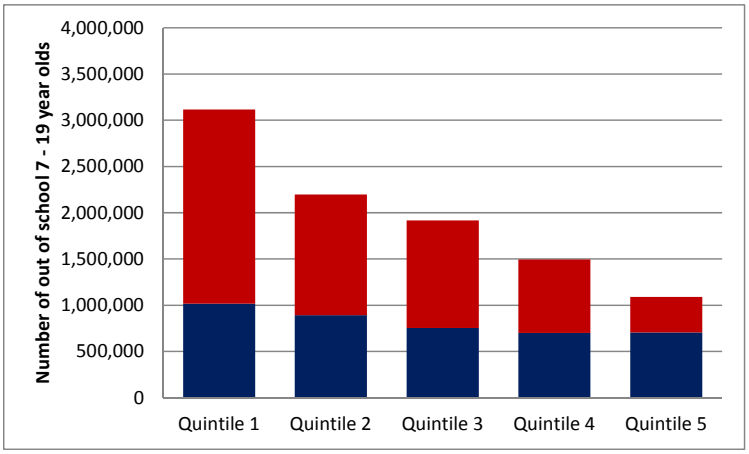


Source: Susenas (2012) Author's Calculation

These out of school children tend to be poorer and living in rural areas so spending on education for these families will need to be reduced considerably. Over 3 million out of school children come from the poorest quintile compared to over 1 million children from the richest quintile. In terms of the urban/rural divide 6 million (or close to 60 percent) are living in rural areas, while around 4 million (40%) live in urban areas. Although this is partly due to the differences in income across urban and rural areas, that is not the whole explanation. Income seems to matter more in rural areas than urban areas when determining

enrollment. In urban areas, the proportion of out of school children increases if they are poorer, but only slightly. Moreover, in urban areas, there are almost as many out of school children from the richest quintile as there are from the poorest. In contrast, in rural areas, the differences are much larger, so the poorer the child, the less likely they are to enroll. Almost all drop-outs in rural areas come from the poorest 2 quintiles.

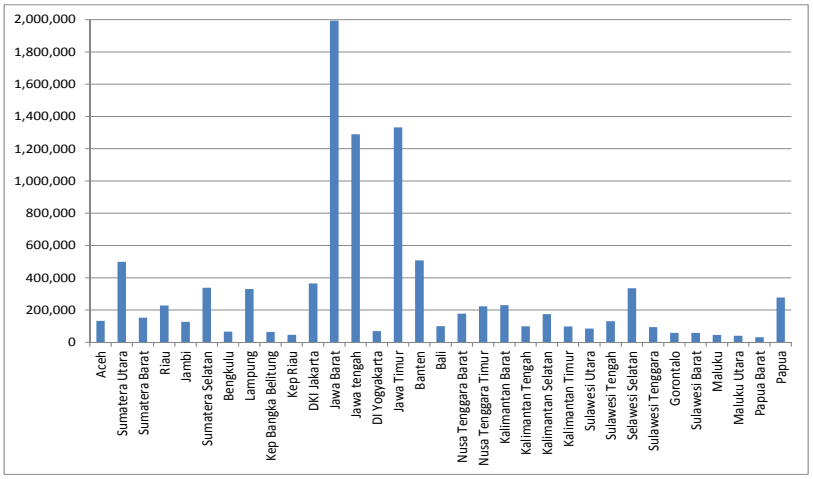
Figure 21. Share of out of school 7 - 19 year olds by quintile, Urban and Rural Areas



Source: Susenas (2012)

Most out of school children are largely located in rural areas, and most are located in mainland Java. This is due to Java's high population density compared to other islands. This poses an opportunity because groups of out of school children that live more closely together are relatively easier to deal with than if they were spread evenly across the country. Infrastructure in mainland Java are also known to be better than other parts of Indonesia so the cost of enrolling these out of school population may be relatively less expensive.

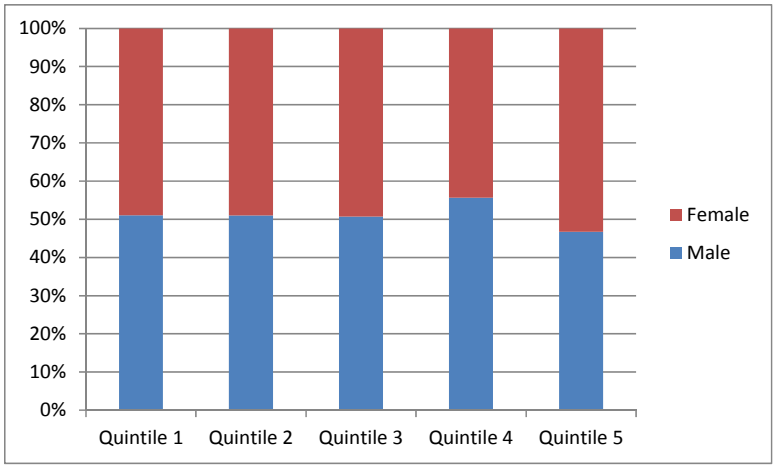
Figure 22. Share of out of school 7 - 19 year olds, by province



Source: Susenas (2012)

In general, the proportions of out of school male and female are more or less the same, although females from the richest quintile are more likely to be out of school than males. The fact that the differences between the out of school male and female are not large is good news for Indonesia in terms of gender equality, because worldwide figures compiled by UNESCO show that females are more likely to be out of school than males. The share of out of school male and females are more or less the same across the different quintiles. However, females from the richest quintile have s slightly higher share of out of school 7-19 year olds compared to males. The fact that females are more likely to be out of school at the richest quintile may suggest that being out of school is not always necessarily due to financial constraints.

Figure 23. Share of out of school 7 - 19 year olds by quintile and gender



Source: Susenas (2012)

The number and the characteristics of out of school children suggest that the current pace of expansion in access is unlikely to result in universal access to 12 years of education by 2020. BOS and BSM are designed to reduce the cost of attending school so that no student drops out because she/he cannot afford to enroll. However, almost 4 million still do, and more than half of them do so in the transition between primary and junior secondary. Preventing their drop-out will require policy changes, especially to the BSM program. Increasing the scholarship amount, improving the targeting and aligning the timing of the disbursement of the scholarship with the school calendar (so that students have the cash to pay for school fees and registration) are the main recommendations of recent reports.[8] An additional 2.5 million complete junior secondary, but do not continue on to senior secondary. For them, BSM can also play a big role in facilitating this transition to senior secondary, but their constraints may go beyond cost. While it is clear that the number of primary and junior secondary schools is sufficient, and in fact there seems to be room for using existing infrastructure more efficiently (see Education Financing, Chapter 13), it is less clear for senior secondary. The next question is then: would the current infrastructure be enough to accommodate the expansion?

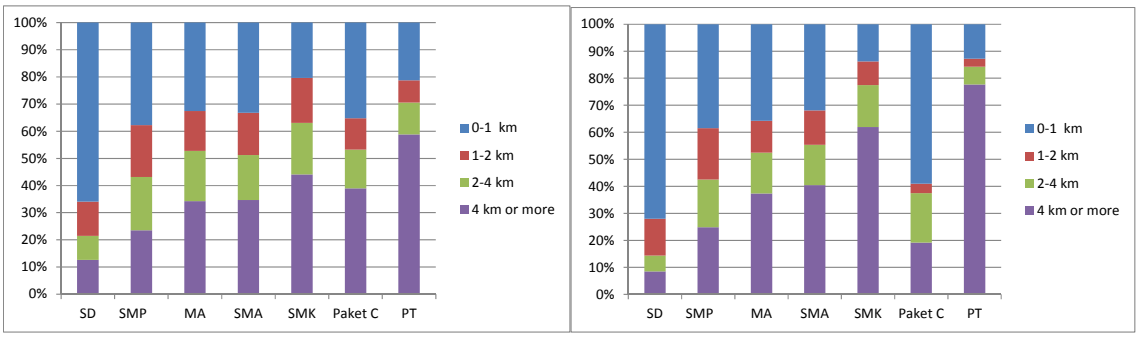
ii) Is the current infrastructure able to accommodate expansion?

The supply of senior secondary education remains insufficient, measured by the distance between the student's house and the closest schools. In 2012 approximately 43 percent of senior secondary students have to travel 4 kilometers or more to get to the nearest school. While 4 km might seem manageable in the presence of adequate infrastructure and transportation, these conditions are not always in place. In addition, the added transportation cost almost doubles the cost of education. This does not include those who have dropped-out of school so the average distance if drop-outs are included would likely be greater. Drop outs are mostly from rural areas so distance to school seems to be a major access barrier. Expansion must take into consideration where the existing of schools are located and whether there are spare capacity in those schools, and the demographics of the population in that particular are to determine the size of the school that is needed.

[8] Spending more or Spending Better, Social Assistance PER Indonesia – World Bank.

Figure 24. Distance between house and school

a) Urban b) Rural

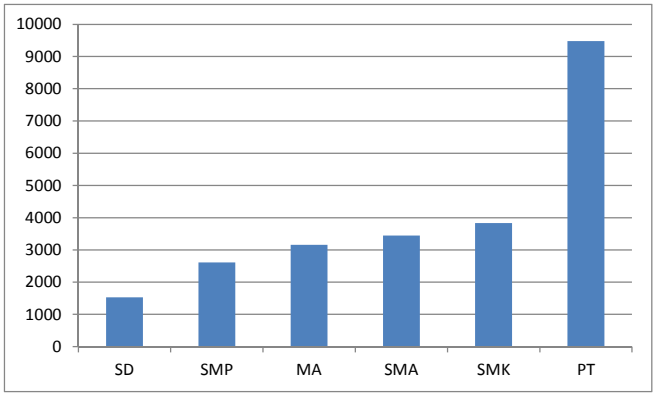


Source: Susenas (2012)

Senior secondary students in rural areas have to travel further to school than students in urban areas. The distance between a student's house and the nearest primary or junior secondary schools are not too different between urban and rural areas. For senior secondary education, however, 40 percent of students in rural areas have to travel 4km or more to the nearest SMA, while it is 35 percent of students in urban areas. Similarly, 60 percent of students in rural areas have to travel 4km or more to get to the nearest SMK, while it is 44 percent of students in urban areas. These differences only include those who already enroll in school, if those out of school are also considered; differences in urban and rural areas are likely to be greater.

As well as distance from school, transportation costs also reveal the supply constraint for post primary education. The transportation cost between primary and senior secondary are more than double. It is also worth noting that these transportation costs are reported by those who are currently in school, the transportation cost for those who are out of school to their nearest school are likely to be higher.

Figure 25. Average transportation cost per day by level of education



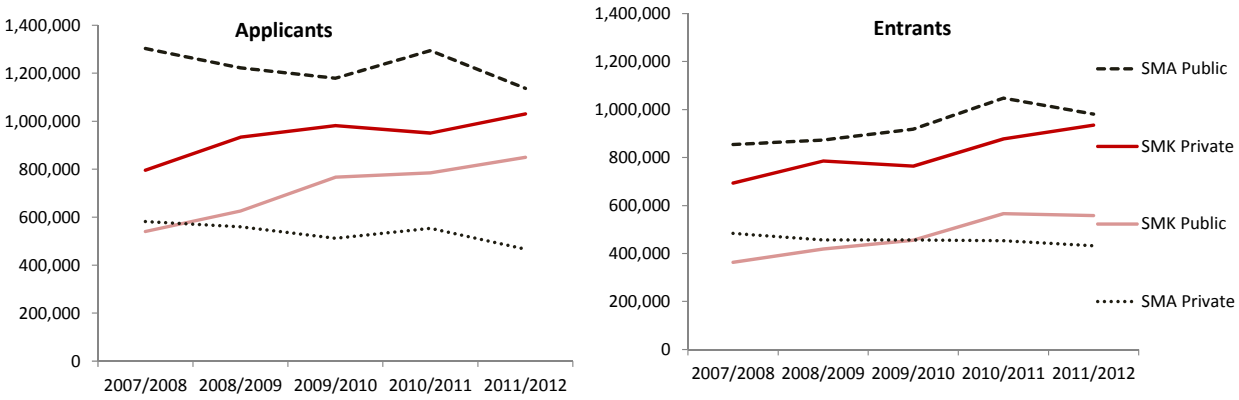
Source: Susenas (2012)

Note: for those who walk to school, transportation costs are made equal to zero.

Judging by the trends in the number of applicants to each track, the demand for the vocational track is growing, whereas the demand for SMA is declining. While the reasons for the impressively increased interest in SMK are unclear, the number of applicants to SMK programs increased by 40 percent since 2009, whereas the number of applicants to SMA decreased by 15 percent. The emphasis on SMK placed by the GoI in the last RPJM has likely contributed to a large extent to this switch, but the supply of both public and private SMK have responded to this change in government policy and demand. Both public and private SMK saw a large increase in demand (Figure 26, red lines). Such has been the difference in trends in the number of applicants between SMA and SMK that while in 2007 SMA schools received 40 percent *more* applications

than SMK schools, by 2012, SMA schools received 17 percent *fewer* applications than SMK. Because of capacity differences in each track, the differences in enrollment (entrants) are not so striking. SMK did see an increase in entrants of 40 percent since 2007, but the number of entrants to SMA also increased slightly (5 percent).

Figure 26. Number of Applicants and Entrants (by type of Senior Secondary School)



Source: PDSP

The construction of new schools and classrooms, and additional classrooms in existing schools will be necessary. The class to classroom ratio for public schools are above 1 which means that some classrooms in both public SMA and SMKs are used by more than one class. For private schools, however, this ratio is below one which means not all classrooms are occupied by a class in a given time. With limited spare capacity, additional classroom construction will be needed, especially when the number of students enrolled is expected to increase significantly by 2020. However, the number of additional classrooms that is needed will depend on the extent to which the government can utilize existing classrooms in private schools. It makes sense for the general track to have a class to classroom ratio that equals to one as learning takes place mostly in classrooms. In contrast, the class to classroom ratio for the vocational track may be more than one as vocational related subjects may take place outside the classroom.

Figure 27. Student Class Ratio and Class to Classroom Ratio (by type of Senior Secondary School)

Source: PDSP(2011/2012)

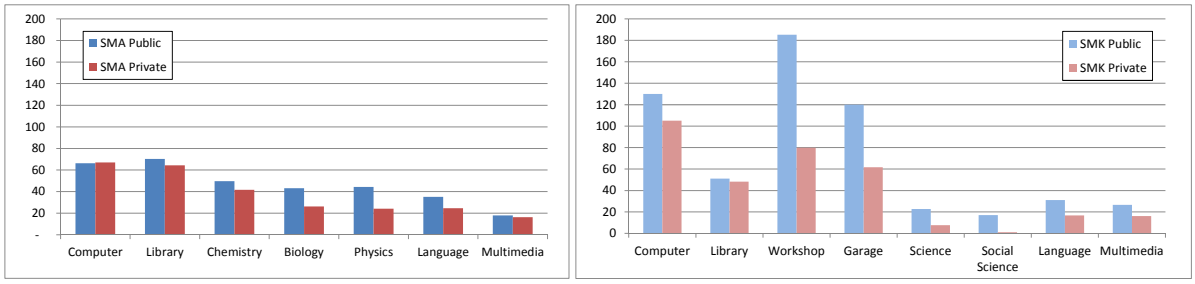
Note: Left handside axis shows student class ratio and it is represented by the blue line. Right handside axis shows class to classroom ratio and it is represented by the red bars.

There are limited capacity in existing classess despite making the best use of existing senior secondary classrooms. The student to class ratio is close to the maximum class size allowed in the regulations (32 students per classroom for SMA, SMK, MA, and MAK). While there are some spare capacity in MAs, it is limited. Senior secondary schools may not be able to easily operate in double shifts, like primary and junior secondary schools, as the weekly learning hours for senior secondary education are longer than

primary and junior secondary education, on average around 35 and 38, compared to 44 hours. With this, increasing enrollment in senior secondary may require additional classroom construction or rehabilitation.

Even when there are sufficient schools, the facilities need improvement, especially in private schools. Comparing public SMA to private SMA, it is evident that there are more laboratories in public SMA compared to private SMA. That said, only 60 percent of private SMAs have computer labs. Similarly, public SMKs have better facilities than private SMKs for all type of facilities. It is clear that public senior secondary schools have better facilities than private senior secondary schools, yet not all schools have these facilities. Therefore, both public and private providers from both streams need to invest more in school facilities.

Figure 28. Percentage of SMAs and SMKs with laboratories and other facilities, by provider and tracks



Source: PDSP (2011-2012)

Note: PDSP data does not identify schools with or without the relevant facilities. The percentage is derived from the total number of facilities divided by the total number of schools in each track. The number can exceed 100 percent because it is possible for a school to have more than one facility.

iii) How many more teachers will be needed to universalize, and what kind of teachers?

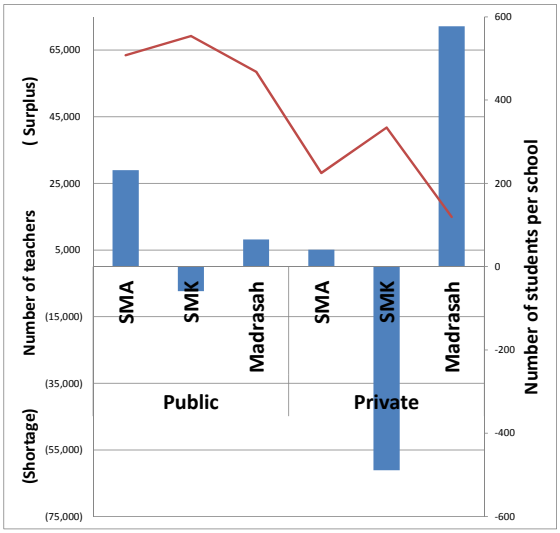
The need for additional teachers in 2020 will depend on how many of the existing teachers can the government better utilize. If Indonesia is to achieve GER of 97 percent by 2020, the number of students attending senior secondary will continue to expand, therefore, overtime, there will be a need for more senior secondary teachers. To minimize the number of teachers necessary for expansion the government should first identify whether there are surpluses in existing teachers in senior secondary or indeed other levels or education, and then consider where additional teachers are required and in which subjects.

Accommodating the expansion in SSE enrollment while maintaining the current student teacher ratio of 19 would add an extra 245,000 teachers by 2020.[9] However, if the student teacher ratio increased to 20, there will only be a need of 200,000 additional teachers by 2020. As shown in Education Financing, Chapter 13 of this report, the cost implications of changing the student teacher ratio are enormous. The current teacher law stipulates that the standard classroom teaching hours for a teacher is 24 hours per week which is high by international standards. However, many teachers still do not meet the minimum number of hours. So it is crucial that teachers are able to meet this standard.

Currently, there seems to be a surplus in the total number of teachers in senior secondary, however, most of the surpluses come from religious schools. There is an excess supply of around 45,000 teachers which could be used to accommodate increases in enrollment. The reason for this surplus may be due to the low number of students and small number of classes in private madrasah schools. In contrast, there seems to be a lot of shortage in SMKs, especially for private SMK as the student teacher ratio is high. Nevertheless, this shortage needs to be treated with caution as SMKs may have excluded other members of the teaching force like the laboratory specialist, mechanics, and installation supervisors.

[9] See Education Financing, Chapter 13 for details.

Figure 29. Number of surplus or shortage of teachers by track



Source: PDSP 2011/2012 and MoRA Statistics

Note: In calculating the number of surplus/shortages in teachers, the number of classes are multiplied by the number of each track's student learning hour. According to the 2013 national curriculum, for the general track the number of student learning hour per weeks is 42 hours for grade 10 students and 44 hours for grade 11 and 12 students. For the vocational track, it is 48 hours per week for all grades. Then, the total number of the student learning hours is deducted from the number of teachers in each track times by the 24 hour per week teaching rule.

While there is some spare capacity in the number of teachers to support expansion, they will need to be retrained. Pre-service training teacher for secondary is level-and-subject specific (there is no subject based teaching in primary), which means that in order for a teacher to teach a different subject or the same subject in a different level (say move from teaching mathematics in junior secondary to senior secondary), she/he needs to be retrained. Looking specifically at SMA and SMK, it seems that surplus/shortage varies depends on the different subjects. Therefore, it is important to consider whether teacher training should be across level of education or across similar subjects. The other option is for teachers to teach in different schools, however, this may be less desirable for logistical reasons.

Retraining of teachers may be a significant added challenge, especially considering the low level of subject knowledge and competencies that teachers have shown in recent assessments conducted by MoEC.[10] Training existing teachers will also be necessary in the light of senior secondary expansion, as they will face with a greater variety of students, which calls for more sophisticated teaching skills.

The private sector plays an important role in making efficient use of teachers as they can more easily hire teachers when there are shortages and are able to more easily dismiss underperforming teachers. Broadly speaking, teachers in Indonesia can be divided into two categories, civil servant teachers (*Pegawai Negeri Sipil*, PNS) and non-PNS. PNS are hired by the government while non PNS are generally hired by schools. PNS teachers are generally located in public schools, although there are private schools with PNS teachers. Around half are PNS teachers and the other half is non-PNS, which means that around half of the teaching workers are relatively flexible. Chapter 8 on Teacher Quality and Management provides a more detailed analysis on teachers in Indonesia.

The supply of senior secondary schools and its facilities are clearly limited. In order to achieve universal senior secondary education, the Government of Indonesia will need to increase the number of schools, classrooms, and teachers in senior secondary education. Whether the expansion is sustainable or not will depend, to a large extent, on the use of existing resources. The increase in demand should not be met

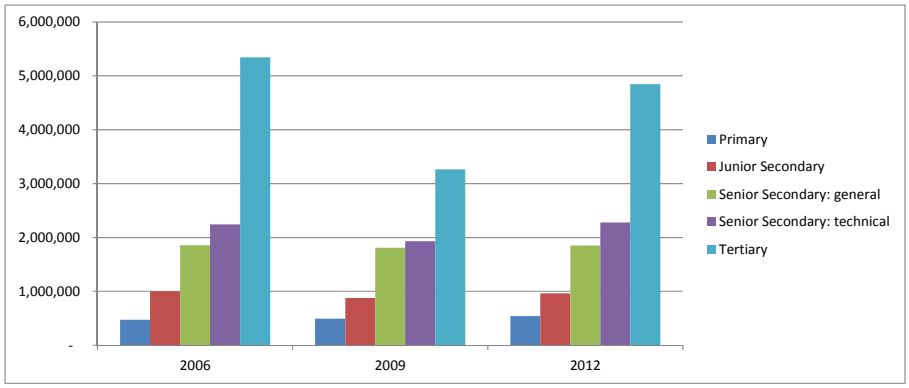
[10] See Analysis of the Teaching Workforce, Part 1, Chapter 8, for more details.

through merely building additional infrastructure. As the financing chapter highlights, there is room for improving the use of existing infrastructure, particularly of small schools. The one roof policy, whereby both basic and senior secondary education are offered in the same school, may be a good way of using existing schools to increase the supply of classrooms. Adding classrooms to an existing school is more cost-effective than building a new one. Where a school exists but is too far, subsidies could be provided for transportation as opposed to building a new school where the demand may not be sustained in the medium term. In addition to adding classrooms, there seems to be a need to improve the quality of facilities, especially in private schools.

iv) Is the cost of attending a constraint?

Household spending for senior secondary education is double the cost that of junior secondary. In 2012, the average household spending on junior secondary was almost IDR 1 million per year while the spending on senior secondary was almost double (IDR 1,8 million) for the general track and it was even more expensive for the vocational track (IDR 2.2 million). This substantial difference in education expenditure between junior to senior secondary may partly explain lower enrollment rates for senior secondary education**.**

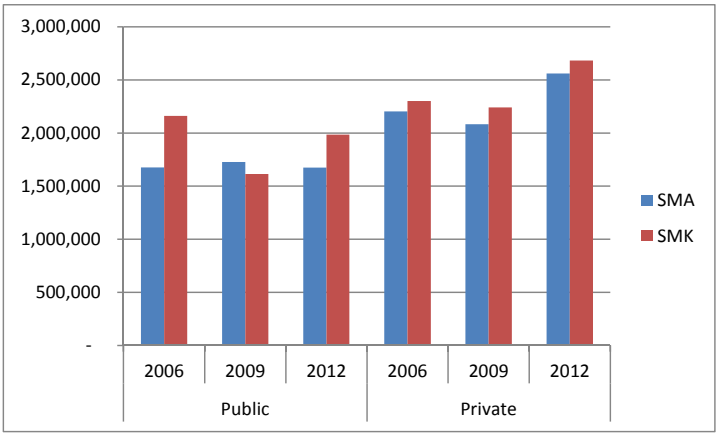
Figure 30. Household education spending by level of education



Source: World Bank calculations using SUSENAS

As one would expect household expenditure for attending private schools is higher than for public schools. The household expenditure dedicated for attending SMK is also higher than SMA. Average spending in senior secondary increased significantly between 2009 and 2012, except for public SMA. For both public and private, households spend less for the general stream (SMA) than they do for the vocational stream (SMK). The cost of attendance is highest for private vocational senior secondary education (SMK) as households spend around IDR 2,7 million a year. In contrast, students in public SMA spend almost half that at IDR 1,7 million a year. Further expansion of senior secondary education must therefore take into account the differences in costs between SMA and SMK.

Figure 31. Household expenditure in private schools is higher than in public schools



Source: World Bank calculations using SUSENAS

The cost of attending senior secondary seems to be a big constraint for poor households. Calculating the total cost burden of education for families is not straightforward. The average share of total household spending spent on education likely underestimates the true cost burden, since families who do not enroll their children in school because they cannot afford to will therefore not be included in the statistic. Figure 32 shows the share of total household spending that the typical family in each income quintile would have to spend if they wanted to enroll all their children in school, using the average spending in each level of education in each quintile. This calculation, which accounts for differences in household composition and differences in spending across income quintiles, presents a more accurate picture of the cost burden of education for households, and shows that the poorest household would have to spend almost 50 percent of their total household spending on education to enroll all children in school. More tellingly, this share has not changed too much since 2003 - despite declining by 2009, it went back up in 2012. This is a significant constraint, which likely goes a long way in explaining student drop-out within the poorest quintiles. In contrast, the richest households would have to spend less than 20 percent of their total household spending on education and this share has declined significantly since 2003.

Figure 32. Share of household education spending by quintile

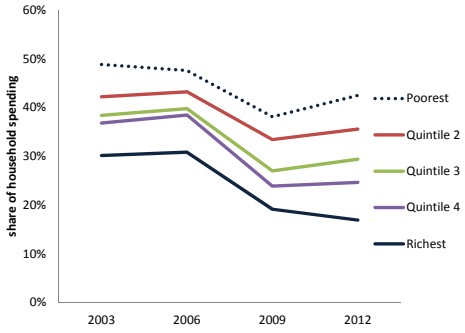
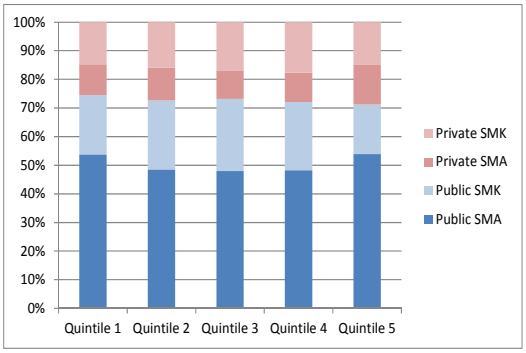


Figure 33. Proportion enrolled by quintile

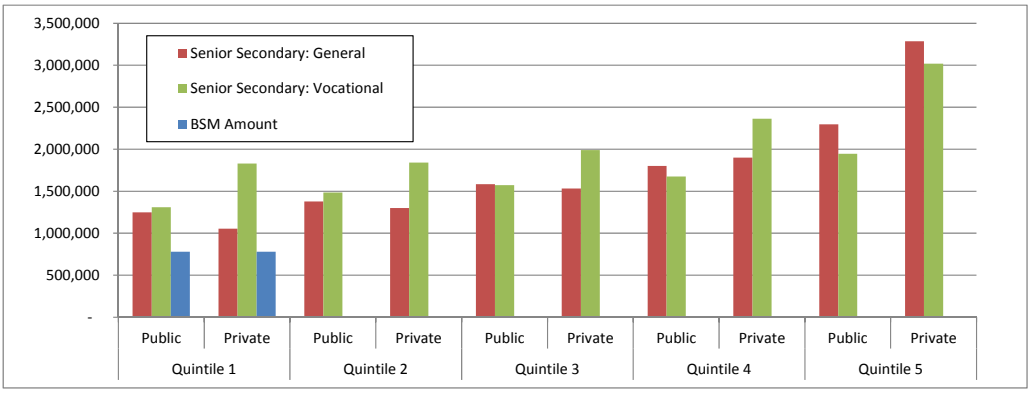


Source: SUSENAS (2012)

While the targeting for BSM has improved, the amount of BSM is inadequate in meeting the financial needs for education of the poorest households. The amount of benefits from BSM is lower than the cost of attending (IDR 1,000,000 per student per year compared to IDR 1 million and IDR 1,5 million for the first two quintiles). With this, the amount allocated per student for BSM needs to increase so that families from the first two quintiles can afford to send their children to school. Furthermore, BSM is currently supposed to cover around 27 percent (quintile 1) of households with the lowest welfare status. In reality, however, not all in the bottom quintile are covered and some in the richest quintile may be covered. BSM coverage will

therefore need to cover more of the economically challenged households and this can be achieved through a better targeting system utilizing the Unified Database.

Figure 34. Household expenditure by quintile and BSM amount

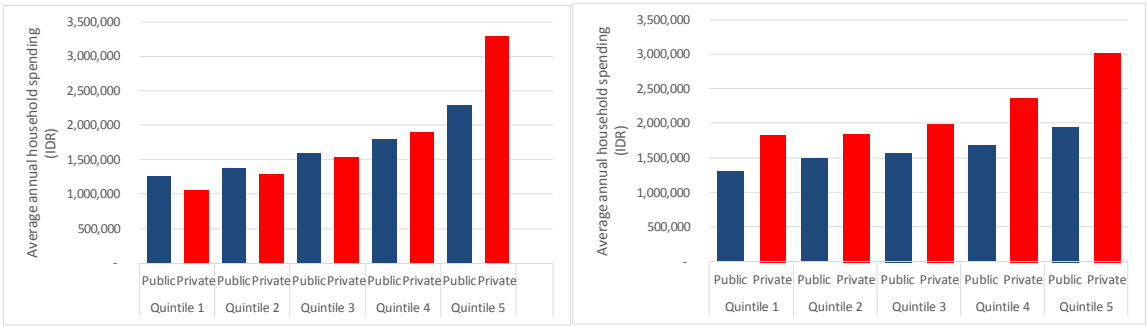


Source: Susenas (2012)

The track and type of provider have strong cost implications for households. Somewhat surprisingly, households in the poorest four quintiles spend more when attending a public SMA than a private SMA, while private SMK are significantly more expensive than public SMK for all quintiles. These differences have clear implications for the expansion. If the differences in cost between public and private schools respond to differences in efficiency of service provision (but not quality), expanding through private provision would bring about increased efficiency. If, on the other hand, this is a signal of a difference in the quality of private schools that different segments of the population have access to, this is a reason for concern. If private schools catering to poor students are of significantly lower quality than public schools, expanding access through private providers would be problematic in the absence of strong quality assurance mechanisms for these schools.

Figure 35. Average household spending by track and type of provider by quintile

a) General Senior Secondary **b) Vocational Senior Secondary**



Source: Susenas (2012)

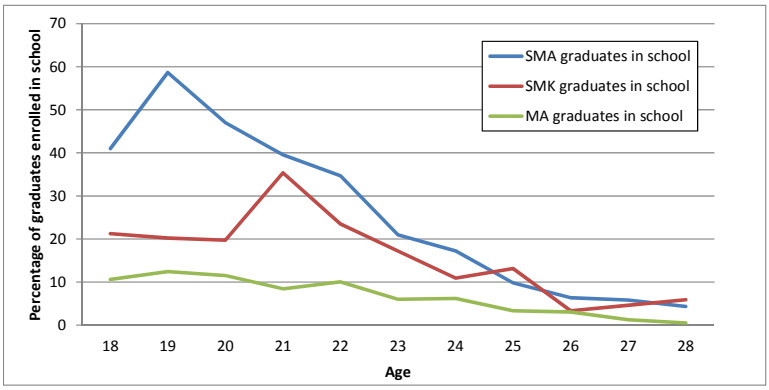
Note: These averages are calculated only for those households with at least 1 child in that level of education

v) Is the quality of education good enough for the investment in the expansion to pay off?

Without providing a good quality of education from all types of providers in both tracks, the expansion of access will not bring about the expected benefits. Recent reports have pointed to the lack of significant improvements in quality of basic education despite large increases in spending (World Bank, 2013). While these reports have focused on the quality of basic education, there are few reasons to think that

the quality of senior secondary does suffer from the same problems. However, measuring the quality of senior secondary education is less straightforward. For about more than 65 percent of youth who complete senior secondary, this is the last level of education they attend before entering the labor market. The rest continue to higher education. The share of those who continue to tertiary education is higher for SMA than for SMK, but it is far from universal for either. An important role of senior secondary is thus to prepare youth for the labor market, and its role in providing cognitive skills is also crucial.

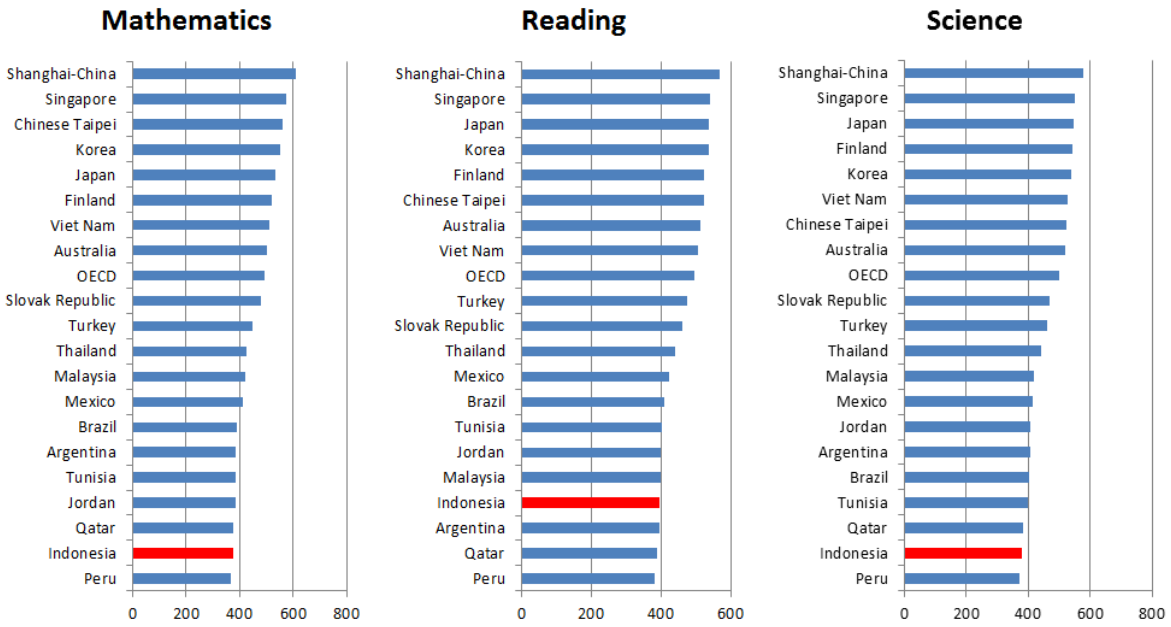
Figure 36. Percentage of SMA, SMK and MA graduates who continue to higher education



Source: SUSENAS (2012)

In learning assessments conducted under PISA, Indonesia continues to perform poorly, comparing unfavorably with other middle income economies and East Asian neighbors. PISA tests 15 year olds who should still be enrolled in junior secondary, so these results are not a reflection of senior secondary education quality. However, they do reflect the skills that senior secondary students come with. Indonesia's PISA performance is not so disappointing compared to that of Malaysia and Thailand, countries with a much higher per-capita income. But then again, compared to Viet Nam, a country with lower GDP per capita, 15 year-old students in Indonesia register lower learning levels.

Figure 37. Average score in math science and reading, 2012

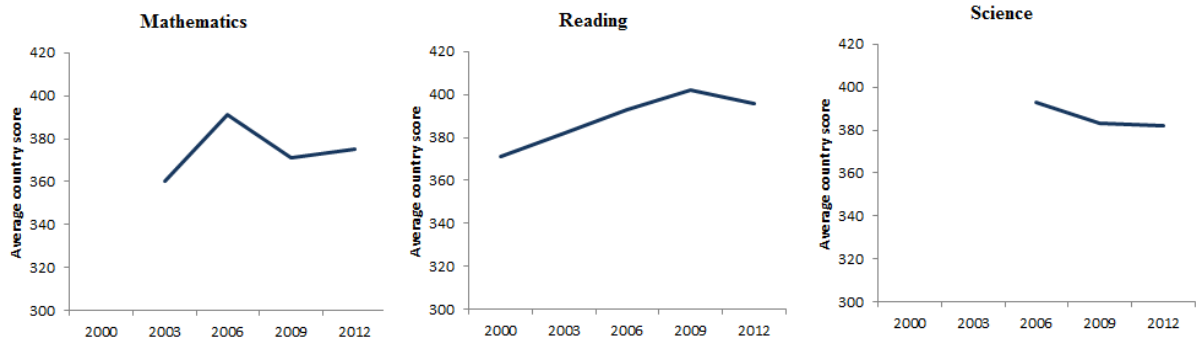


Source: OECD Pisa 2012 Results: What Students Know and Can Do: Student performance in reading, mathematics and science.

Notes: 15 year old students in Indonesia are expected to be in the last grade of junior secondary school and have completed 9 years of formal basic education.

Despite large increases in public and private investment over the last decade, the quality of education has not improved as much as expected. In reading, gains have been relatively rapid compared with other countries. For example, Indonesia was ranked in the top tercile when annualized improvements in reading achievement were compared. In mathematics, Indonesia ranks relatively poorly in terms of the magnitude of improvements. While improvements have been seen over the long term, more recent changes in learning achievement paint a more worrying picture. Since 2006, mathematics achievement has declined and there has been no statistically significant change in reading and science scores. This is natural given that enrolments expand much quicker than gains in learning outcomes for all students, especially when current increases in enrollment comes from students from the poorest quintiles.

Figure 38. Improvements in learning over recent times have been small

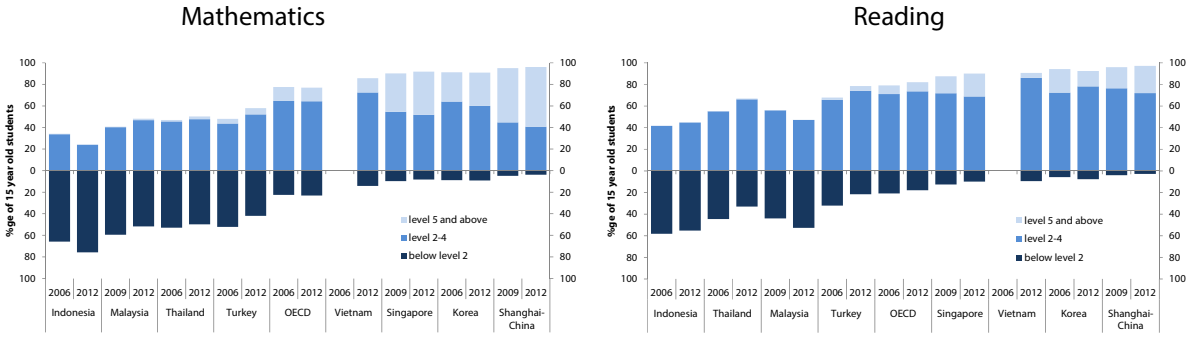


Source: OECD PISA

Notes: One standard deviation is equivalent to 100 test score points. Changes between 2003 and 2012 are statistically significant for mathematics and changes between 2000 and 2012 are statistically significant for reading. Changes in science scores are not statistically significant.

In Indonesia, the majority of 15 year-olds fall below level 2 proficiency in their mathematics and reading scores. In some countries this low skill level is associated with student difficulties in continuing into higher education and making a successful transition into the labor market. Moreover, in 2012 three-quarters of Indonesian students were at level 1 or below. In mathematics students scoring at this level are only able to do 'very direct and straightforward mathematical tasks, such as reading a single value from a well-labeled chart or table'. Trends also suggest limited improvement in proficiency levels between 2006 and 2012.

Figure 39. The proportion of Indonesian students leaving basic education without a strong skills base is very high



Source: OECD PISA

KEY FEATURES OF PISA 2012

Content

- The PISA 2012 survey focused on mathematics, with reading, science and problem-solving minor areas of assessment. For the first time, PISA 2012 also included an assessment of the financial literacy of young people.

Participating countries and economies

- All 34 OECD member countries and 31 partner countries and economies participated in PISA 2012, representing more than 80% of the world economy.

Participating students

- Around 510 000 students between the ages of 15 years 3 months and 16 years 2 months completed the assessment in 2012, representing about 28 million 15-year-olds in the schools of the 65 participating countries and economies.

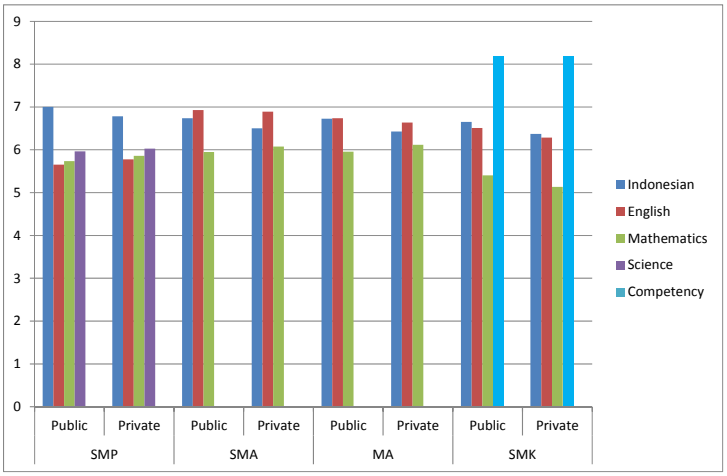
The assessment

- Paper-based tests were used, with assessments lasting two hours. In a range of countries and economies, an additional 40 minutes were devoted to the computer-based assessment of mathematics, reading and problem solving.
- Test items were a mixture of questions requiring students to construct their own responses and multiple-choice items. The items were organised in groups based on a passage setting out a real-life situation. A total of about 390 minutes of test items were covered, with different students taking different combinations of test items.
- Students answered a background questionnaire, which took 30 minutes to complete, that sought information about themselves, their homes and their school and learning experiences. School principals were given a questionnaire, to complete in 30 minutes, that covered the school system and the learning environment. In some countries and economies, optional questionnaires were distributed to parents, who were asked to provide information on their perceptions of and involvement in their child's school, their support for learning in the home, and their child's career expectations, particularly in mathematics. Countries could choose two other optional questionnaires for students: one asked students about their familiarity with and use of information and communication technologies, and the second sought information about their education to date, including any interruptions in their schooling and whether and how they are preparing for a future career.

Source: Extracted from OECD. Pisa 2012 Results in Focus: What Students Know and What They Can Do With What They Know

Student National Examination (*Ujian Nasional*, UN) scores in the public and private general track are more or less the same. However, students in the private vocational track (SMK) seems to have lower scores compared to public SMKs. Public vocational students have an average math score of 5.4, while private vocational senior secondary school students have a lower mathematics score with an average of 5.1. With this, there is a clear need to strengthen student performance in vocational schools, especially private vocational schools.

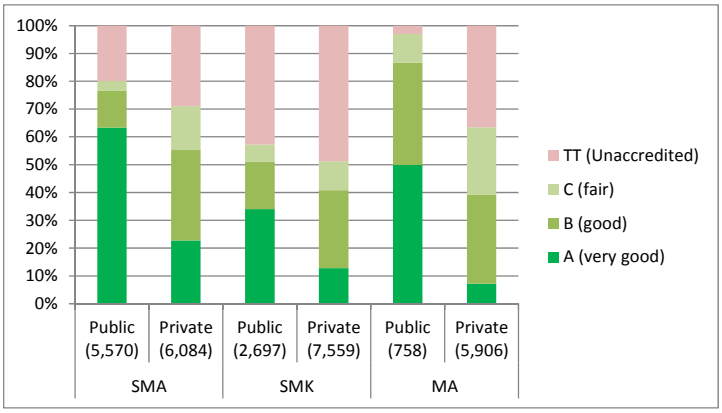
Figure 40. National Examination scores by subject



Source: Ujian Nasional *(2012/2013)*

An important objective measure of quality should be the level of school accreditation. Public senior secondary schools have better accreditation than private schools. One way of comparing the quality of both streams is by looking at their accreditation levels which ranks from A (being the best) to unaccredited status. According to the School National Accreditation Board (*Badan Akreditasi Nasional Sekolah*), private schools lag behind public schools. For the general track, more than half of public schools have accreditation "A", while less than a quarter of private schools have accreditation "A". With respect to the vocational track, private schools also lag behind public schools, however, in absolute numbers, there is more "A", "B" and "C" accreditation in private SMKs than there are in public SMKs. This is because the number of private SMKs is significantly larger than the number of public SMKs. Similarly, for religious schools, because the number of private MAs is significantly larger than public MAs, in absolute numbers, there are more private religious schools with accreditation compared to public religious schools.

Figure 41. Share of schools accredited at each level, by stream and provider



Source: PDSP 2011/2012 and MoRA 2011/2012

Note: Figures in parentheses represents the number of schools.

While accreditation ratings provide an indicator of a schools quality, currently there are still over 9800 schools with no accreditation status. According to the Ministry of Education and Culture rule no 29 year 2005, accreditations are conducted every 5 years unless the relevant school/madrasah asks to be re-assessed before then. Accreditation ratings are determined utilizing criteria based on the National Education Standards. Currently there are over 9800 schools with no accreditation, of which 2800 are SMA schools, 4800 are SMK schools, and 2100 are religious schools. This is because although it is compulsory for education providers to ensure education quality (according to PP no 19 year 2005) it is not compulsory for them to obtain an accreditation status. No accreditation status can therefore mean either that the school has not been assessed or it has not met the accreditation standard. Moreover, there also seems to be limited consequence of not having accreditation status. Schools with no accreditation status are still able to operate and carry out national examination tests. Thus, it is important to encourage schools to get accreditation status so future students have an idea of their quality. Furthermore, there is also a need to ensure that the accreditation status of a school is made publicly available.

This section has shown that the challenge to achieve universal access to 12 years of education is a big one, and has identified some areas for need of improvement. In particular:

i) **The infrastructure is insufficient** to meet the demands of expansion in terms of accessibility to a school (distance), the capacity of existing schools (students per classroom), and the quality of facilities.

ii) **The cost of attending senior secondary is high for families** – and prohibitively so for the poorest segments of the population. There are also important differences in the cost between tracks (vocational vs general) and type of provider (public vs private) that have implications for the potential cost of expansion to attain universal access.

iii) **There are limited opportunities for those who are already out of school.** While access to non-formal education is limited, there are currently 3.8 million 7-19 year olds with only primary education or less and most can no longer enroll in formal education.
iv) **Enrollment from the poorest quintiles are mostly in SMKs**. While SMK graduates are less likely to pursue further education, being poor is also associated with not enrolling in higher education. Therefore, there is a need to ensure that there are opportunities for SMK students, especially from the poorest households to pursue further education.
v) **There is a need to increase public investment in senior secondary**, in order to improve the supply and lower the cost for the poor. However, funds need to be used strategically. There is room for improving the use of existing school infrastructure to accommodate the expansion and to target subsidies more effectively. In addition, public private partnerships can be used to support private provision while ensuring quality of services.
vi) **The quality of education remains low,** so expanding access cannot be done without improving quality as demand for senior secondary education are largely determined by quality.

4. Policy directions

Expanding access to senior secondary with the goal of making it universal is a laudable objective, but how the expansion happens will have large cost implications and considerable impact on equity and economic growth. No matter how efficient the expansion is, an increase in public spending for senior secondary education is necessary and even with conservative assumptions, this added cost will have important implications for the rest of the education budget. If the expansion is not planned carefully and efficiently, these costs will skyrocket. In addition, if expanding access is done at the expense of quality improvements, the associated benefits of the expansion will be much lower than expected.

This section explores three broad policy directions to expand access efficiently and effectively: (a) improving the current BSM scholarship program for the poor; (b) expanding and improving the supply through Public-Private Partnerships; and (c) managing the tracking of students between the general and the vocational track more effectively during expansion,

a. Targeting subsidies through *Bantuan Siswa Miskin* or *Kartu Indonesia Pintar*

Expanding the infrastructure alone will not be enough as most of the children who leave school before the end of secondary come from the poorest households (Al-Samarrai and Cerdan-Infantes, 2013). These families get by on an annual income of around IDR 10 million and will struggle to cover the average annual costs of senior secondary schooling of IDR 2 million (Al-Samarrai and Cerdan-Infantes, 2013). To provide scholarships to these poor students will cost an additional IDR 8 trillion. With this, the government plays a key role to ensure that cost is not a reason for dropping out and one way to achieve this is to increase the amount for BSM.

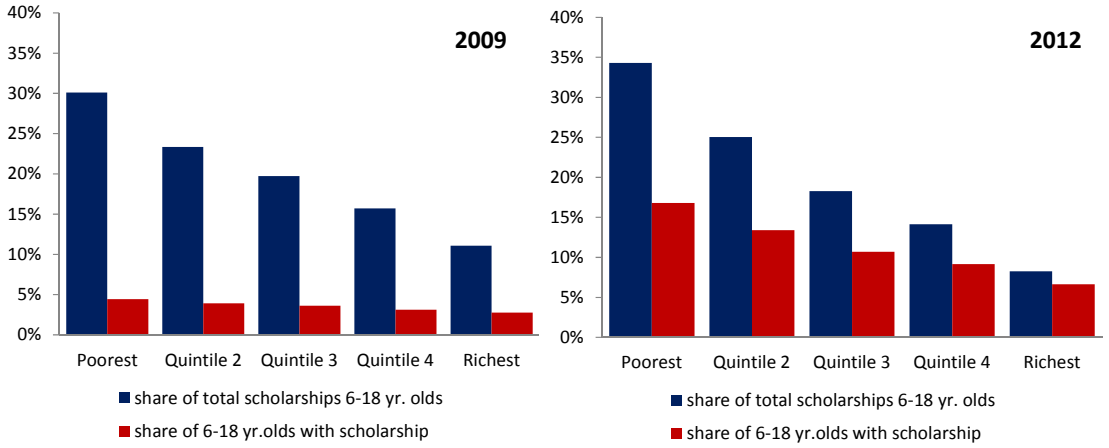
The transitions between levels of education are when most of the drop-out happens. Following the same group of students since 2001, the dropout rate between primary to junior secondary school are around 20%, while the drop out from junior secondary to senior secondary are around 6%. Cost associated with moving from one level to another include: registration cost, entrance fee, and new school uniform, just to name a few. Transition bonuses can be introduced to minimize drop outs between levels of education.

Timing plays a significant role in fully realizing the benefits of the subsidy. Timing is an important factor as students entering a new level of education will need to know whether they will receive BSM before they make the decision to continue on the next level of education. Therefore, BSM for students in between levels of education (for example from junior secondary to senior secondary) needs to be disbursed before the school year begins so that these students have money to cover costs associated with moving schools.

Furthermore, disbursement of BSM needs to happen on a regular basis and it must be disbursed on time in order for the benefit to be fully realized.

Expanding BSM alone is not enough, because despite recent improvements, there is still a need to further improve its targeting. There have been important improvements in the targeting of BSM in the last 3 years. In 2009, the share of students receiving BSM was similar across income quintiles. Students in the richest quintile were as likely as those in the poorest quintile to get BSM. This changed significantly by 2012, but some indications of inadequate targeting remains. About 17 percent of the poorest quintile receives scholarships, while about 7 percent the richest did. These improvements in targeting have likely contributed to the big increase in enrollments of students in the poorest quintiles.

Figure 42. Coverage and targeting of BSM



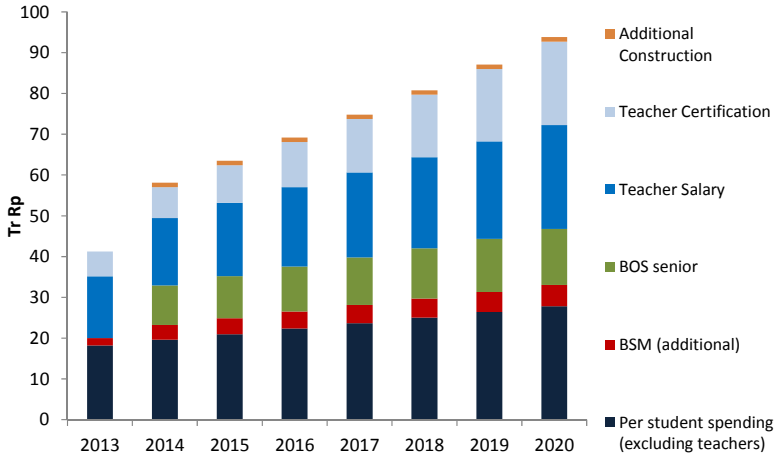
Source: World Bank calculations using Susenas, 2009 and 2012

b. Expanding and improving the supply through Public Private Partnerships

The cost implications of providing universal access to 12 years of education are large even under conservative assumptions. Maintaining the current structure of spending in senior secondary[11], i.e., similar student to teacher ratios while continuing to expand teacher certification (which essentially an allowance equal to a teacher's salary), including a BOS for senior secondary of IDR 1 million per student, and factoring in some conservative estimates on construction needs, while also expanding scholarships, would all in all more than double spending in real terms by 2020. The annual spending for senior secondary would go from the current 40 trillion to about 90 trillion. However, these estimates are based on the current spending patterns which rely heavily on households to cover the cost and have resulted in a shortage of classrooms and facilities.

[11] Meaning, similar overall per student spending

Figure 43. Cost estimates of attaining universal to 12 years of education by 2020



Source: World Bank calculations using population census, Susenas, and expenditure data from MoF. For details on the costing model, see Education Financing, Chapter 13.

Considering the characteristics of the out of school population and the current supply constraints, additional spending under the same funding model will likely prove insufficient – which calls for a new funding model of senior secondary education. The amount needed to expand will likely be different, and it will depend on key policy decisions about how resources are spent. Student teacher ratios will be an important determinant of these costs, as will be the certification of existing PNS teachers. Similarly, the cost of construction will depend on how the expansion is conducted, under existing structures (i.e. one roof school that includes SMP and SMA) or in new ones. Finally, a blanket BOS that sought to cover all operational expenses in SMA/SMK schools would need to be much larger than IDR 1 million per student per year, so providing universal access by subsidizing all construction and operational cost would likely make expansion unaffordable.

Public-private partnerships can play an important role in expanding access to senior secondary education. In general, PPP can take in the form of private finance and public provision or public finance and private provision. Private finance and public provision for senior secondary education is the norm in the context of senior secondary funding in Indonesia, as the fees in public schools are similar to those in private senior schools. While limiting access for the poorest, the willingness of households to pay for senior secondary school signals the value of senior secondary education for households, and as access expands this household contribution should be embraced, not crowded-out, while targeting scholarships effectively ensures that no one drops out for reasons of cost.

The second form of PPP is public finance and private provision, with the public sector fully or partially financing private providers of senior secondary education. The modality can be very effective at exploiting private sector efficiency under the right conditions.[12] PPP tend to have more flexibility than purely public sector provision (for example in hiring and firing teachers). The intensity of the partnership between the public and the private providers can vary – the BOS program can, in a sense, be considered a PPP, albeit a light version. In BOS, the government pays private providers a fixed per student amount, which is equivalent to subsidizing the cost of attendance for that student. The GoI has already included in the 2013/14 budget a BOS for SMA/SMK/MA, which will partially cover the school's operational costs. However, while the funds can be used to reduce the cost of attendance for poor students, it is not designed to reduce the cost for the neediest and it does not cover the full cost of tuition in many schools. The provision of vouchers is similar to BOS, except the students are the direct recipients of the voucher, which may facilitate school choice because there may be more flexibility in the voucher amount (vs a fixed per student amount).

[12] Woessmann (2005)

BSM is a kind of school voucher but it is only aimed at covering student's personal cost of attending school so the funds do not necessarily go into schools and are not intended to cover school fees.

Despite the existing BOS and BSM, for a majority of private schools in Indonesia being private primarily means being under-resourced. It also means that without public intervention, the learning gap between public and private students will likely to increase, as private schools tend to enroll those who are not able to enter public school system with lower academic achievement at junior secondary school level. Targeted demand-side financing such as school vouchers can serve as an instrument that provides incentives and financial means to improve private schools as they make efforts to attract students and resources. However, the success of vouchers depends on the amount being sufficient to cover the fees in the recipient school and the ability to sort out the quality of providers according to an objective measure, usually the level accreditation. As the previous section shows, the few indicators of quality available indicate that private schools lag behind public schools in accreditation levels, facilities and resources and both the BOS and BSM amounts are fixed and insufficient to cover the cost of attending senior secondary.

Broader and more intensive partnerships can be used for construction, management, maintenance, and the full contracting of provision of education services and operations. Currently, there are not enough senior secondary schools in Indonesia so any increase in enrollment is limited to the available school places. The government can engage with the private sector trough private finance initiatives to provide school infrastructure. As school places increase, the government can also use subsidies to publicly finance private schools through vouchers or scholarships (World Bank, 2009).

When PPP contracts are conducted by means of an open bidding process, there can be an increase in educational outcomes. The government defines specific requirements for the quality of education that it demands from the contractor. The contracts will therefore include measurable outcomes and clauses that specify the condition to deliver a certain quality of education, and the contractor with the best or lowest cost proposal is then chosen. With this, provided that the bidding process is conducted transparently, good quality education can be achieved with the lowest cost. In Indonesia, a PPP contract of such kind has never been developed. However, both private and public schools must meet the National Education Standards.

While it is important for the government to identify opportunities to work with the private sector to provide senior secondary education, PPP should not be seen as a panacea. To ensure successful PPP, several things need to be considered. Governments should choose their private partners by means of transparent, competitive, and multi-stage selection process. They should clearly define the roles and responsibilities of private providers, establish strong quality assurance mechanisms by developing appropriate performance measures for contractors, and devise incentives to achieve performance targets as well as sanctions for nonperformance (World Bank, 2009). While the potential for these schemes to work well in the Indonesian context is large, given the significant portion of private provision, they should be piloted and evaluated before scaling up. In particular, the lack of a strong quality assurance system may limit their applicability in the short run.

In addition, relying only on private sectors to expand is unlikely to be sufficient, especially when there are evidence of low quality at the outset of the process, so there will also need public provisions. However, considering existing infrastructure before building is crucial to expand sustainably. Possible areas of expansion does not necessarily mean building new schools, it could be increasing the number of classrooms within schools or even using excess capacity in some schools.

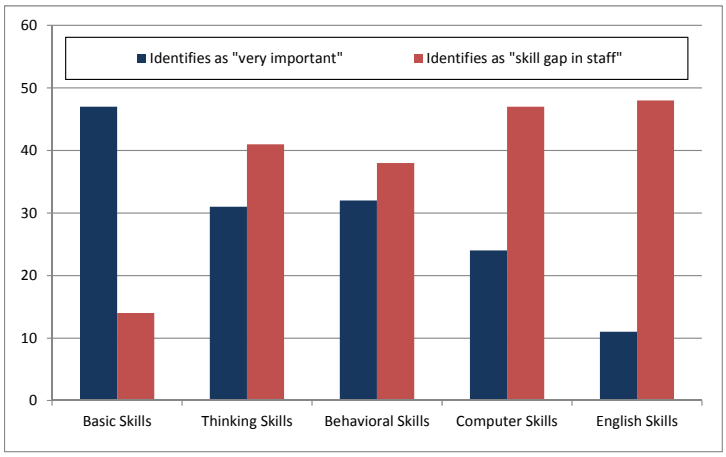
c. Making both tracks of good quality and relevant, without fixed targets

Universalization of 12 years education will require a variety of options to meet the different needs of students, therefore there is room for expansion for both the general and vocational track. Senior secondary education has two key roles, one is to prepare students for transitioning to the labor market and the other is to prepare students for tertiary education. Students will generally choose to enroll in the

vocational track if they want to enter the labor market directly upon graduation. Differently, students will choose to enroll in the general track if they want to continue on to higher education. Regardless of their destination, graduates need to be equipped with a solid foundation of basic skills needed in the 21st century. These skills have been shown to be critically demanded by employers and they also set the base for further study, be it in university or in more vocational oriented courses (diplomas, community colleges). It is thus important to ensure that both tracks provide graduates with basic skills (i.e. math, language, IT) by i) balancing the content of both tracks and ii) strengthening the quality assurance system.

Although students may be enrolled in different tracks, there is a need to ensure that they all have a good basic skills base. When asked in 2008, employers cite basic skills as the most important. Thinking skills and behavioral skills follow. An important role for both tracks of senior secondary is thus to provide students with a strong basic skill set, to prepare students for both the labor market and for further education. Hanushek and Wossmann (2008) highlight the importance of the cognitive skills of the population, rather than mere school attainment. They measured cognitive skills of different countries using comparable international tests of mathematics, science, and reading, and found that cognitive skills are highly related to individual earnings, the distribution of income, and to economic growth.

Figure 44. Types of skills identified by employers are very important



Source: World Bank, Skills for the Labor Market in Indonesia, 2011

The current curriculum has adopted some of the subjects that will allow students to develop some of the basic skills. The 2013 Curriculum in senior secondary education has a selection of core compulsory subjects, and it accounts for approximately half of the total learning hours. Regardless of which track or subject specialization a student chooses, there are compulsory subjects with a set minimum number of hours that has to be completed.[13] The rest of the learning hours are allocated based on the student's choice of track or subject specialization. The core curriculum provides a good avenue in ensuring that senior secondary graduates have at least some of the basic skills that can easily be transferrable.

There is also a need to provide the opportunity for vocational experience in both tracks and to make the vocational curriculum be made more flexible. A spectrum of different intensities of vocational subjects can be considered. For example, some may just be vocational course work, while others may require significant immersions and internships at firms or production units. The vocational certificate in addition to senior secondary school diploma can reflect these varieties. SMA students can also have access to SMK coursework through school partnerships, or even night courses offered by SMK with capacities, and obtain similar vocational training certificates. The "3+1" program, which was put forward by MoEC in 2010 has offered another alternative for streamlining the senior secondary education. After 3 years of solid education, a fourth year can offer a variety of options for senior secondary graduates: to sharpen vocational skills through practices in the world of work, or to continue with advanced course work preparing for

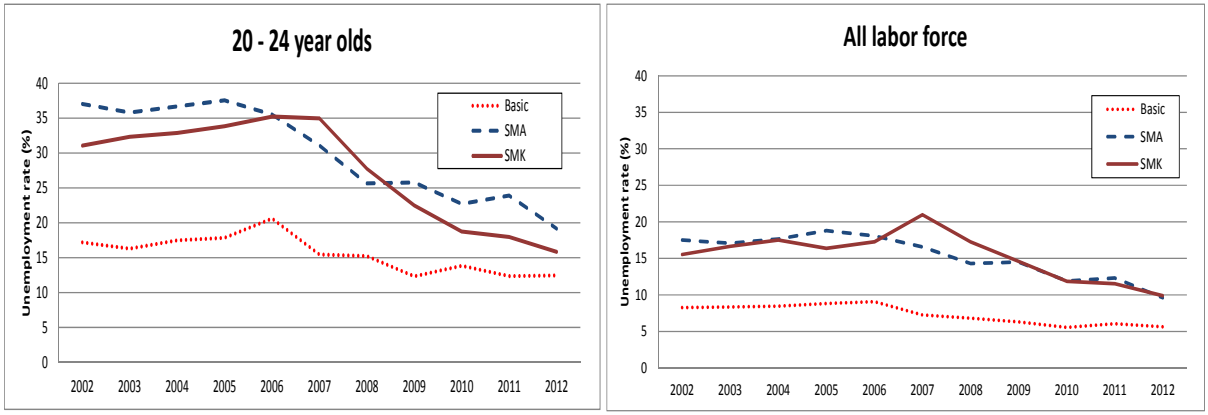
[13] Compulsory subject are: religious studies and character, civics, Bahasa Indonesia, Mathematics, Indonesian History, English, Art and Culture, Sports and Health, and Craft and Entrepreneurship,

entering polytechnics. The expansion of community colleges may provide an opportunity to consolidate the curriculum in senior secondary and delay acquiring vocational skills until later. These types of reforms have been successful in other countries to raise the skills of graduates and to facilitate the transition to further education and training opportunities, all of which adds to the employability capital of those graduates.

Fixed targets on the share of enrollment between general and the vocational have big implications for the trends in enrolment which in turn matters for the cost of expansion and the quality of provision. A supply driven shift from SMA to SMK (or vice versa) runs the risk of resulting in an inefficient allocation of student across tracks, limiting the ability of students with the potential to continue to post-secondary studies by having them attend SMK, or providing general education to students that are not interested in continuing their studies and could be better served by a locally relevant vocational education. While the latter could be mitigated by a well-functioning vocational training system and/or non-university tertiary education system, the inefficiency of these supply driven targets remains. The SMA-SMK proportion targets might be justified if there were clear differences in the education and labor market outcomes of students in both tracks. In particular, considering the higher cost of providing and attending vocational school, a proactive expansion of SMK enrollments would have to be grounded on significantly better labor market outcomes for its graduates, compared to those who enter the labor market only with SMA. However, there are limited evidence that the labour market outcomes of the two are significantly different.

The similarity in the readiness for the labor market of the two tracks is reflected in their similar labor market outcomes. Unemployment rates upon graduation are similar between SMA and SMK graduates. While it appears that SMA graduates are less likely to be unemployed upon graduation than SMK graduates in recent years, the differences are very small. While this comparison does not account for the different characteristics of SMA and SMK students, other research have shown that these differences are consistent even controlling for these factors. Chen (2008) finds that there are no significant differences in terms of unemployment, and that it has been declining rapidly in recent years. Comparing SMK and SMA graduates who do not go to college, SMK graduates seem to have a better chance of obtaining a job upon graduation. However, this simple comparison does not take into consideration the fact that a significantly larger proportion of SMA graduates go to college. Newhouse et al (2009) showed that there is no significant earnings difference for fresh graduates, but the earnings of SMK graduates depreciates much faster after 7-8 years. Looking at the average wage of graduates for both streams who did not continue on to higher education, the positive wage differential for SMK graduates has been reduced in recent years.

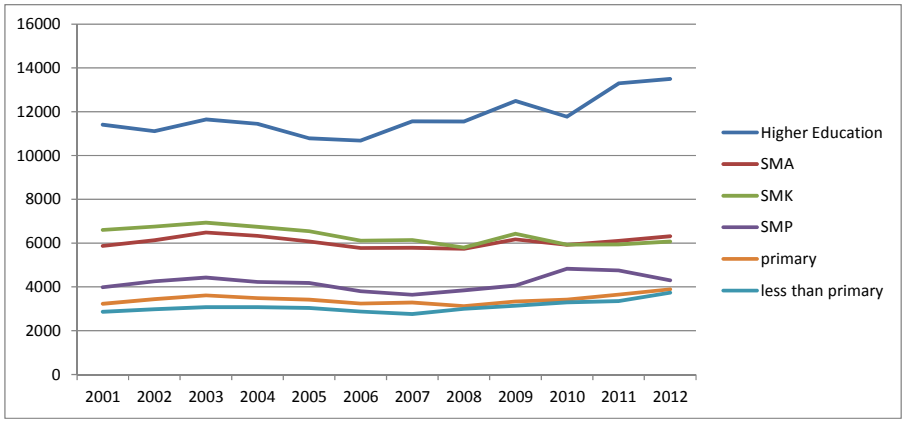
Figure 45. Unemployment Rate for SMA and SMK Graduates



Source: Sakernas (various years)

Comparing the returns to education for each track confirms their similarity. While SMK graduates have traditionally enjoyed a small premium in the labor market over SMA, this premium has decreased in recent years. While the difference increased slightly again in 2010, the differences are not large. Considering unemployment rates and returns to education, the two tracks do not seem fundamentally different in their capacity to equip graduates with skills for the labor market.

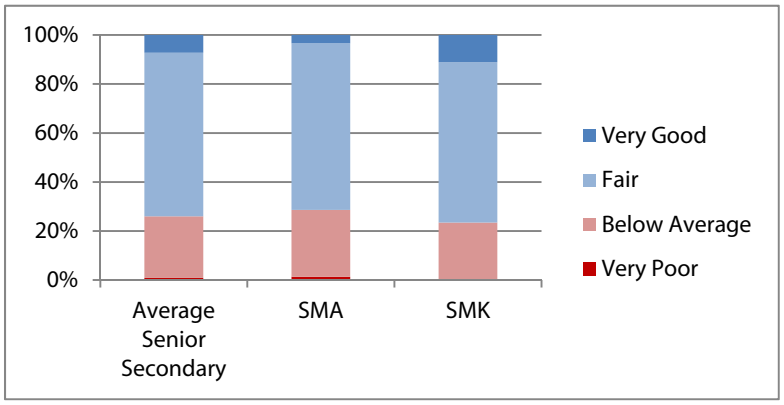
Figure 46. Relative wage SMK to SMA Graduates



Source: World Bank calculations using Sakernas, 2001-2012 (real terms)

According to the Employer Skills Survey conducted, a significant share of senior secondary graduates does not meet the expectations of the employers, and there are no significant differences between SMA and SMK graduates. Approximately a quarter of employees with senior secondary education are considered of poor quality. Further, only 7 percent of them are considered to be "very good" and most of them are considered "fair". Interestingly, there are some differences between the vocational and general streams in that employees from the vocational stream have a higher percentage of "very good" and lower percentages of employees seen as "poor". Nevertheless, despite these differences, the overall quality of employees with senior secondary education seems to be an issue for both streams.

Figure 47. Employers Opinion of Quality of Employees with Senior Secondary Education (%)



Source: Indonesia Employer/Employee Survey of Skills/Labor Demand and Job Vacancies 2008, Employee Module.

Providing universal access to 12 years of education will not bring about the expected benefits if the expansion is done at the expense of quality. This is because the demand for senior secondary education is different from that of primary and junior secondary education as quality plays a more prominent role in the demand for senior secondary education. If the quality is low, prospective students may decide not to enroll. This is not only due to the cost of attending senior secondary education, but also the opportunity cost of working. In the context of a limited budget, there is a trade-off between increasing access and sustaining quality. There are limited benefit in increasing access at the expense of a reduction in quality.

Improving the quality assurance system is crucial, especially considering the large share of private providers. Making accreditation compulsory, with clear consequences in case of not meeting the standards, and making the information from the accreditation easily accessible to the public, are both crucial to leverage private provision and private spending without sacrificing quality. Students should have access to reliable information about the quality of providers and those that do not meet a minimum standard should not be able to operate.

With a functioning quality assurance system and flexible arrangements for the expansion of supply under PPP, the mix of SMA/SMK and public/private institutions could be demand driven. The performance of graduates from both tracks in the labor market suggests that neither track is significantly better than the other without further study. Graduates from each might suffer from different shortcomings. While the vocational secondary school provides a fast route for training mid-level skilled workers for the immediate needs of the labor market, it may not provide graduates with a sufficient foundation of general skills that makes them employable in the future. Thus, widening the openings for the SMK graduates to pursue skills upgrading will be increasingly needed in the future with more sophisticated demand for skills from the labor market. SMA graduates who do not enter tertiary education likely lack sufficient job-relevant skills. There is a need to offer opportunities of obtaining necessary labor market skills through practical experience and vocational courses, especially of community colleges and non-university tertiary degrees. As Indonesia's economy becomes more sophisticated the labor market demand for higher skills levels will increase and the two tracks are likely to converge at a more integrated system. This is consistent with international experience – while delaying tracking has generally led to improvements in learning outcomes, different countries have taken different approaches in their expansion of senior secondary and the division of vocational / general enrollments. Their success lies in ensuring permeability between tracks and opening up paths for continuing skills acquisition for vocational graduates.

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Chapter 10. Higher Education

1. Introduction

In our globalised world, a nation's competitiveness becomes the central prerequisite for growth. In this context, higher education should not be seen as merely another level of schooling. Its role extends into the realm of knowledge creation, innovation in science and technology, guardian of the values, and the moral force for a nation in transition.

As an emerging economy, Indonesia is considered as a low middle-income country entering the third stage of economic development, called the "efficiency driven economy" by the World Economic Forum (WEF 2012). Indonesia needs to address many complex issues to improve its competitiveness as it makes the transition to a new phase of economic development. Well-educated human resources, excellence in scientific research and better linkages to industry and government are regarded as key policy priorities in nearly all countries in this stage. Therefore, the government should develop explicit innovation strategies, properly supported by a range of strategies that will encourage universities to take on a greater role in the development of the economy.

2. Indonesia's achievements in higher education

2.1 Providing access to the younger generation

In the last five years, the government has successfully expanded access to higher education through various programs, as demonstrated by a significant Gross Enrolment Rate (GER) increase from 21.26% in 2008 to 27.1% in 2011. This GER is still considered moderate compared to other ASEAN countries such as Malaysia (40.2% in 2009), the Philippines (28.9% in 2008), and Thailand (47.7% in 2011) (UNESCAP, 2012).

The change in Indonesia's demographic structure, with a trend of slowing the increase in the 19–23 yearsage bracket, has also positively affected the GER. The total number of students in higher education increased to almost 5.5 million in 2012, up from 4.5 million in 2008. The increase is mainly in the private sector, which increased by 21% between 2008 to 2011, compared to the public sector which only increased by 10.07% in the same period. The high participation of female students has also been sustained since 2008, whereby more than 52% of the student population is female (Moeliodihardjo 2013).

Table 1. Gross enrolment rate 2008–2011

	2008	2011
Public	965,970	1,063,274
Private	2,410,276	2,928,890
MoRA	556,763	620,938
Open university	521,281	666,763
Service institutions	47,253	101,351
TOTAL	**4,501,543**	**5,381,216**
GER	**21.26%**	**27.10%**

Source: DGHE

The number of institutions has been increasing every day, with a proliferation of new institutions with small number of students. This is problematic as small private institutions with low enrolments are wholly dependent on tuition fees will struggle to survive and maintain the quality standards that are expected. In the last five years, the government has also established a number of new public institutions, mostly by converting the status of existing private institutions. In 2013, the total number of public institutions reached 100, a significant increase from 82 in 2008. The number of private institutions has multiplied to more than 3,353 (DGHE 2013).

The expansion of access in the last five years has included beginning to systematically reach out to the poor population. To tackle the problem of disparity in terms of economic background, a full scholarship scheme was launched in 2010. The scheme, Bidik Misi, is targeted to poor students with a good academic record in their final year of high school and covers eight semesters for an S-1 degree or six semesters for a Diploma D-3. It started with a modest 19,669 scholarships in 2010, and has expanded to cover 144,799 students (cohort, accumulated) in 2013, costing more than Rp 1.5 trillion. After being adjusted in 2013, the scholarship provides Rp 3.6 million for tuition per student-semester and Rp 2.4 million for living allowance per student-semester.

The expansion of the scholarships program was funded by a significant increase in the government budget for higher education over the last five years, rising from Rp 14,058 trillion in 2009 to Rp 32,605 trillion in 2012. More than 70% of the budget is absorbed by personnel costs, particularly the allowances (incentives) for certified lecturers and active professors, as mandated by the Law 14/2005 on Teachers and Lecturers. In 2012, the Directorate General for Higher Education DGHE introduced a type of formula funding for public institutions, whereby the operational budget (BOPTN) is allocated based on enrolment, field of study, geographical location and special affirmative policy.

While distance learning is an attractive option for significantly increasing enrolment in higher education, it has not yet been fully capitalised. The only institution providing distance learning on a large scale is the Open University, which enrolled 11.58% of the total national student enrolment in 2012. The Open University was designed to accommodate the needs of high school leavers who could not attend the traditional institutions but most of its 650,000 registered students (2012) are actually school teachers upgrading their qualifications. In its current form, the Open University cannot be considered as a real option for high school leavers, and its operation relies mostly on the traditional mode of printed modules.

2.2 Contribution to the nation's competitiveness

For the higher education sector to contribute meaningfully to the nation's competitiveness, its programs must be relevant. This can be gauged by the employability of its graduates, its industrial linkages, and its activities related to innovation, such as research, development, patenting, establishment of incubators, science parks and various spin-offs.

The labour market demand for university graduates remains robust despite large increases in supply. This is reflected by a steady decrease in the unemployment rate from 13.66% in 2009 to 6.01% in 2013 for Diploma graduates, and from 13.06% in 2009 to 5.5% in 2013 for S-1 degree graduates.

Table 2. Unemployment rate by education attainment 2009–2013

Unemployment rate	2009	2013
Primary education and less	3.78	3.51
Junior Secondary	8.37	7.60
Senior Secondary	14.5	9.74
Vocational Secondary	14.59	11.19
Diploma	13.66	6.01

Unemployment rate	2009	2013
University/Institute	13.06	5.50
Total	**7.87**	**6.25**

Source: BPS 2013

The education sector is not the sole contributor to the improved unemployment rate, as there has been healthy economic growth in the last five years. Moreover, the majority of employers are still complaining about the mismatch between the competencies needed and the graduates' skills. To tackle this problem, many universities have launched activities to improve the relevance of graduate skills, such as establishing a job placement centre, organising a careers fair, conducting training, and developing linkage with employers. Some more progressive institutions hold competitions to select students' business proposals, whereby the best proposals will receive support from industry through seed money. A few study programs, departments and faculties have established advisory councils to solicit input from industry and employers for improving the relevance of their curricula and teaching process. In general, private institutions tend to be more sensitive to the issue of graduate employability and they are more aggressive in embracing initiatives to improve relevance.

Examples of institutions where graduate skills almost perfectly match employer expectations include Politeknik Manufaktur Bandung (PolMan), ATMI Surakarta and Politeknik Elektronika Negeri Surabaya (PENS). Considering the importance of polytechnics in supplying a relevant workforce, the Polytechnic Education Development Project (PEDP) was launched in 2012 to further strengthen polytechnic education, focusing on improving quality and relevance, equitable access, public–private partnerships, and strengthening governance and management.

The Directorate-General of Higher Education (DGHE) offers a broad spectrum of funding schemes to support the diverse research objectives of universities, including fundamental research, applied research in collaboration with industry and research focused on community services. Six different funding schemes are available and directly managed by DGHE, and another seven schemes are decentralised and managed by individual universities. In 2012, university researchers published 16,139 articles (ranked 63rd in the world), and 126 patents were awarded to them[i].

Although the number of research outputs is increasing, it still lags significantly behind neighbouring countries. According to the Global Innovation Index, Indonesia is grouped between "under performers" (Venezuela and Algeria) and "learners" (Malaysia and Thailand) (Global Innovation Index, 2013). The relatively low number of research outputs is directly correlated with the low level of budget allocated for research. Indonesia only allocates 0.09% of its GDP for research; this is far behind Malaysia (0.7%), India (0.85%), or China (1.6%) (Battelle 2012). In 2012, the government allocated only 0.75% of its budget (APBN) for research, and DGHE allocated less than 1% of its budget for supporting research activities in universities.

In 2010, the government launched the Masterplan for Acceleration and Expansion of the Indonesia Economic Development (MP3EI) by assigning six regional corridors, each with its own specific development focuses. To materialise the plan, it needs strong support from local universities in term of graduates, as well as skills and knowledge about the local condition. DGHE is offering at least three relevant funding schemes to provide support for collaborative research between university researchers and their industrial partners.

Universities can only make meaningful contributions to the nation's competitiveness when the quality standard has been achieved. In Indonesia, one of the main quality indicators is the result of the accreditation process conducted by the national accreditation Board (BAN-PT). Although most study programs are considered as 'accredited', more than half of all undergraduate programs have the lowest rank ('C') as illustrated in Table 3.

Table 3. Accredited study programs

	Diploma (1-3 years)			Undergraduate program (S1)			Graduate programs (S2/S3)		
	A	B	C	A	B	C	A	B	C
Public institutions	60	358	148	491	921	311	349	423	93
Private institutions	42	562	1,672	263	1,994	3,807	37	279	242
Islamic institutions	0	11	5	36	387	481	4	40	17
Service institutions	4	68	24	1	13	12	0	1	2
Total	106	999	1849	791	3315	4611	390	743	354
	3.59%	33.82%	62.59%	9.07%	38.03%	52.90%	26.23%	49.97%	23.81%

Source: BAN-PT 2013

The number of study programs to be assessed continues to increase and has reached a level beyond the limit of BAN-PT resources, with the estimated backlog as high as 50%. To cope with the challenges, BAN-PT is transitioning from accrediting study programs to accrediting institutions. According to the regulation, institutions that fail to acquire institutional accreditation by the deadline of August 2014 are prohibited to conduct educational programs. The diverse quality of institutions is shown by three Indonesian universities being ranked in the top 500 in the world in 2012, while many other institutions are not even accredited by BAN-PT.

Some study programs in the professional stream have also acquired the accreditation status issued by international professional organizations, such as the Accreditation Board for Engineering and Technology. To ensure the quality standards are respected, the medical education has introduced a mandatory national competency test for all of its graduates (medical doctors, dentists, and later, nurses and midwives). However, quality improvement requires significant additional resources that the weaker medical schools simply cannot afford. Medical education, particularly at the clinical stage, is the most expensive education and requires the highest student unit cost. Therefore, the Health Professional Education Quality (HPEQ) project, launched in 2010 in cooperation with the Ministry of Health, provides resources to enable the weaker schools to meet the standards.

2.3 Regulatory framework

In order to play in a much broader role in economic development, the autonomy of universities is a critical prerequisite. As a basic core principle, universities must be responsible for and able to achieve quality in the teaching-learning process, the conduct of relevant and quality research and preserve and promote their academic values. Higher education governance and management reform, focusing on increased autonomy in university resource management, has been on the policy agenda at least since the mid 1990s. Finally, in 2009 Parliament passed a bill allowing public and private universities to convert their status into a legal entity. This was a significant step towards autonomy. To support implementation of the law, the DGHE initiated capacity building programs for university staff to improve their capability in areas such as financial management, information management, asset management, and human resources management.

The law, while providing a clearer framework for improving management and governance, was challenged in the constitutional court and was revoked in 2010. The law was considered unconstitutional on the grounds that it imposed a uniform legal status and governance system for public as well as private institutions. The higher education system was in limbo after the UU 9/2009 was revoked. During this period, the national system lost its legal basis and had to operate based on interim terms. Many regulations had to be revoked without a new legal basis in place. In the absence of the necessary legal infrastructure, DGHE had

to rely on the prevailing regulations on public finance, i.e. PP 23/2005 on BLU (*Badan Layanan Umum*) and its new revision PP 74/2012. This regulation allows public institutions to use their self-generated revenue with a bit more flexibility. Since PP 74/2012 was only able to regulate financial management, the other aspects of governance were not addressed and consequently another regulation (PP 66/2010) on the governance in public institutions had to be issued to provide a temporary legal basis for the operation of universities.

After lingering for almost two years, the new Law on Higher Education (UU 12/2012) was finally enacted in August 2012. It provides a fairly comprehensive legal basis for higher education development, covering key elements such as: wider and equitable access, qualification framework, quality assurance system, strengthening of vocational education and training, as well as institutional autonomy. To open up wider and more equitable access to higher education, the law stipulates that universities shall charge fees to students based on their ability to pay.

Vocational education is being strengthened, not only in terms of more equal treatment for polytechnics and academies compared with universities, but also through introduction of a new type of vocational training institution called "*Akademi Komunitas*", similar to a community college. This new institution is another measure to provide wider access to higher education, particularly at the district level.

A national qualifications framework has been established by law to systematize and articulate links between education pathways (e.g. academic, vocational, professional) and to facilitate more flexible movement of students in and out and across different pathways. In addition, the law emphasises the implementation of the national quality assurance system for higher education which includes external (accreditation) and internal systems to be implemented by individual institutions.

Institutional autonomy is subsequently voiced by the new law as it was already advocated explicitly in the Education System Law No 20/2003. In terms of legal status, public universities are now grouped into three categories: autonomous universities (PTN-BH), public universities with a degree of financial management flexibility (BLU), and public universities (PTN). The new law does not regulate private institutions, and almost allows individual foundations to develop their own internal regulations. Since the establishment of an autonomous university (PTN-BH) requires government regulations, new legal instruments (PPs) have been issued for conversion of four universities to autonomous institutions: University of Indonesia (UI), Bogor Agricultural University (IPB), Institute of Technology Bandung (ITB), and Gadjah Mada University (UGM). A separate PP 58/2013, regulating financial management in autonomous universities has also been issued.

3. Challenges in higher education

The following discussion on challenges in higher education for the next five years is grouped into four sections: quality, relevance, equity, and governance. Although providing access to higher education is still an important issue requiring attention in the next medium-term development plan, it is no longer the single top priority. The provision of access will be discussed within the context of quality, relevance, and equity, as presented in the following sections.

3.1 Quality

3.1.1 Mission differentiation

Higher education in Indonesia is a highly diverse system with 3,502 institutions made up of universities, institutes, colleges (Sekolah Tinggi), polytechnics and academies (see Table 4). In terms of quality, three institutions are listed in the world's 500 best universities, while hundreds of other Indonesian institutions are not even accredited. In terms of institutional resources, the higher education system is highly differentiated in its institutional mission.

Table 4. Number of Indonesian higher education institutions

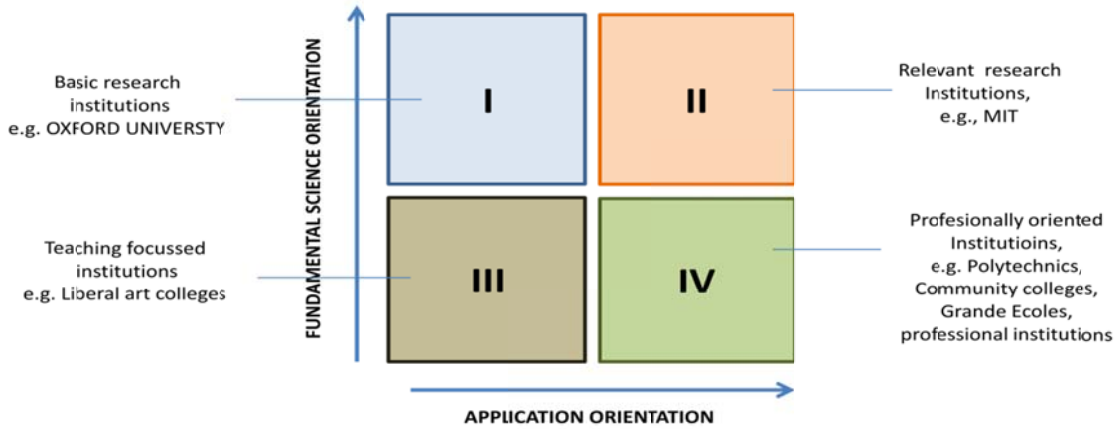
	University	Institute	College	Polytechnic	Academy	Total
Public	53	8	2	33		96
Private	440	52	1463	158	1240	3,353
Islamic	52					52
Open University	1					1
TOTAL	546	60	1,465	191		3,502

Source: DGHE 2013

Although the sector is highly differentiated, it appears that most institutions do not adequately focus their activities according to their specific mission/purpose and location. The elite universities, which are heavily invested with modern laboratory equipment and facilities and the best academics, also conduct low-level almost trivial activities that do not reflect their purpose, e.g. running short-term non-degree training courses or Diploma programs. On the other hand, many regional universities, instead of focusing on the fields of study relevant to the region, aspire to cover broad academic disciplines similar to the top national universities such as UI, ITB, IPB, or UGM, without sufficient resources to do so.

A significant number of universities have been invested with sufficient resources to excel in their specific mission as illustrated in Figure 48, but they have failed to implement the chosen mission consistently. It is clear that without a clear focus on their stated mission, institutions will require enormous resources and a much longer timeframe to achieve excellence, which a country in transition cannot afford. It is important that once the mission is chosen, an institution needs to be consistent in implementing it. Excellence in the chosen mission is particularly important for Indonesia at this point of time as it is embarking on the transition to an efficiency driven economy. The successful transformation of the economy requires tremendous input and contribution from higher education, without which it will fail to move up the ladder.

Figure 48. Conceptualisation of mission differentiation in higher education



Source: Hatakenaka 2008

3.1.2 Quality assurance

To apply the national standards, as stipulated in PP 19/2005 on National Education Standards, education programs should be evaluated as to whether they have achieved the minimum standards or not. But in the first place, an effective quality assurance system requires ownership; it needs to be internally motivated instead of an externally driven initiative. It is critically important that the ultimate responsibility for quality assurance should rest at the institution level, where the stakeholders are directly visible. Internal quality assurance should be used by institutions thoughtfully to make continuous improvement. Compliance with external requirements, though important, will not be sustainable in the longer term.

With external quality assurance, as the workload to periodically assess almost 20,000 different study programs is beyond BAN-PT's capacity, the strategy has shifted from program evaluation to institutional evaluation. However, the mechanism of evaluating an institution is significantly different from evaluating a program. It requires assessors with different competencies, which currently are still scarce and further impacted by the August 2014 deadline. This is a huge task for BAN-PT.

In dealing with such a massive task, BAN-PT has to work in a more systematic way using standardised formats. In addition to checking the quantitative achievement, an external quality assurance should also include a qualitative assessment conducted by peers on the performance and outcome. Such a scheme has been widely used during the peak implementation of competitive funding, and it is strongly suggested that it be revitalised again in the near future.

Quality assurance requires consistent and strong commitment to the collection and maintenance of accurate data, but this is still lacking at all levels of the sector. It is critically important to invest, develop, and maintain data collection systems at the institution level, as well as at the central level.

3.1.3 Proliferation of institutions

The current enrolment varies from small private institutions with less than 500 students to very large public institutions with more than 50,000 students. In 2013, the average enrolment in each institution was around 1,435, which is low in term of efficiency. Institutions with student enrolment less than the acceptable threshold[iii] are considered unviable, both at risk of not surviving and unable to provide excellent learning outcomes.

Clearly some measures will need to be imposed to increase enrolment and improve quality. Effective implementation of quality standards should reduce the number of small non-viable institutions Establishment of new institutions should be dependent on ability to meet the standards, thereby making the process more selective and smaller institutions should be encouraged to merge with larger ones. Appropriate incentives could be provided to larger institutions willing to amalgamate with smaller ones. With fewer institutions, it should be easier to strengthen management capacity, improve the quality of research and teaching. Quality assurance processes will also be able to be implemented more effectively and regularly and both quality and efficiency will be improved.

3.1.4 Research and innovation

A key dimension of quality in higher education is the quality and quantum of university research undertaken by academic staff and post-graduate students. Although research has been seriously underfunded by both government and industry for a long time, there have been significant achievements and the number of publications and patents registered has moderately increased in the last five years.

It is now critical for the level of research and innovation to be intensified. Economic development and transition to an efficiency-driven economy is highly correlated with innovation and effective partnerships between research and industry.

3.2 Relevance

In an efficiency driven economy, Indonesia can no longer rely upon labour-intensive industries based on low wages, nor can it continue to depend on natural resource-based industries. Its competitiveness will be increasingly driven by factors that enhance productivity. While Indonesia is ranked 50th globally for its competitiveness, its scores are low in three of the six critical factors upon which this phase of economic growth depends. These three critical factors are: higher education and training (ranked 73rd); well-

functioning labour markets (120th); and the ability to harness the benefits of existing technologies (85th) (WEF 2013).

If the current trajectory of growth continues, or worse, if the economic growth is to be accelerated, the mismatch skills will rapidly become acute. This is because the current mode of 'jobless growth' which arises as a result of stringent labour regulations and skills shortages particularly at the lower end (World Bank 2012) will demand firms to go for capital intensive growth, which typically requires a higher order in managerial and professional skills from future graduates, particularly in adapting to foreign technologies and in undertaking process-innovations. The following sections describe aspects in relevance that need serious attention.

3.2.1 Transferable skills

A survey conducted by the World Bank in Indonesia in 2008 sheds some light on the nature of the skills mismatch (World Bank 2010). It found that 80% of the firms surveyed experienced difficulties in filling managerial vacancies and 60% experienced problem in filling professional positions. The three weaknesses identified are English proficiency, leadership, and computer skills. As these skills are transferable across academic disciplines, they need to be provided to all students regardless of their study program.

Graduates mastering these skills will have a much broader choice of occupations. It is undeniable, however, that certain occupations require specific skills, e.g. medical doctor or accountant. But such occupations absorb relatively small number of graduates nationally, while the bulk of university graduates have to find jobs on the open market. In a market that requires just a small portion of specific skills, the currently implemented over-specified qualification framework becomes a serious concern.

3.2.2 Entrepreneurial skills

Responding to complaints from industry regarding competency mismatch, the Ministry of Education and Culture (MoEC) has been actively promoting entrepreneurial education in the last few years. Since 2010, the DGHE has allocated funds for universities to develop entrepreneurial training programs for students and staff. In many cases, the training aimed to develop entrepreneurship through a one-day workshop by national TV star motivators for incoming students, followed by one to two credit courses on business practices for more advanced students.

Such training may work for those who already have a strong intention but less competence. However, it may be less effective for those who are less motivated. Unless the spirit of entrepreneurship is embedded within the teaching process of other courses and topics, it may be difficult to achieve the intended outcome.

3.2.3 Culture of relevance

Many universities are least concerned over developing a culture of relevance. Some conduct tracer studies just to meet the requirements of accreditation process, instead being internally motivated to improve their graduates' employability. Many have never invited industry to discuss their requirements nor exposed their students to the world of work. Often practical courses, such as entrepreneurial training, are taught by teachers with limited industrial experience.

The regulatory framework is not encouraging either. Due to the mandatory requirement by the Law 14/2005 on Teachers and Lecturers for all lecturers to have at least a postgraduate degree qualification (S2 many polytechnic lecturers with industrial experience pursue S2 degrees in institutions focusing on academic study rather than a practical orientation, such as found in the applied studies of universities such as the Institute of Technology Bandung (ITB) and 10 November Surabaya Institute of Technology (ITS) and the Faculties of Engineering in other universities. The result is a shift of focus in many polytechnics from practical orientation toward more academic education.

A recent study (Moeliodihardjo, et al. 2012) found that many universities still develop their research agenda in complete isolation from industry, and almost none of the existing patent rights acquired have been licensed by commercial companies. Although the number of patents registered is increasing, most universities only have vague ideas about what lies beyond patent applications; they have limited capacity in marketing patents and very little understanding about how benefits might be shared between institutions and individual academics.

This study also revealed the following weaknesses in university operation that hamper their ability to develop industrial partnerships:

- lack of mutual trust - universities see industry as too profit oriented and lacking idealism, while industry see universities as ivory towers and too bureaucratic to provide useful assistance
- inflexible financial management and cumbersome bureaucratic procedures in universities are incompatible with the rapid responses required in the dynamic industrial world
- lack of institutional support for individual academics who initiate industrial partnerships, (e.g. academics could receive credits points to reward staff involved in industrial partnerships, they need qualified and competent support staff, the necessary resources (fund, office equipment), and internal regulatory framework); it is crucial that research expertise is judged more broadly, taking into account any significant industrial projects, commercialisation experiences and other contributions made to the society
- universities are segregated by academic disciplines but most industrial problems are so interdisciplinary in nature that a mono-disciplinary approach to solutions is inappropriate; university leaders themselves must be in touch with the external worlds – with leading industrialists and government thinkers
- local universities are too weak to provide meaningful support to the surrounding industries in the context of MP3EI; a twinning arrangement with more established universities is needed to improve capacity.

A significant proportion of industries are still reluctant to invest in long-term R&D investment. To provide a comprehensive solution, consistency in government policies is critical to the long-term technological ambitions of private companies driving them to create technology, instead of merely adapting existing technologies.

3.3 Equity

3.3.1 Social and economic background

Indonesia is a highly diverse country in population, culture, climate, natural resources and regional economic development. As Indonesia enters the efficiency driven phase of economic development, the issue of disparity needs to be properly addressed. A study on enrolment by income brackets using the Susenas data reveals that disparity becomes more visible and striking in secondary education. Only 36.08% of the population with the lowest income bracket (quintile-1) was in school compared to 89.23% for the highest income bracket (quintile-5) in 2010. The figure drastically drops for higher education, where only 2.54% of quintile-1 was in a S-1 degree program compared to 64.66% in quintile-5 in 2010.

Table 5. Gross Enrolment Rate (GER) by income brackets, using Susenas data

	Quintile-1 (lowest income)		Quintile-2		Quintile-3		Quintile-4		Quintile-5 (highest income)	
GER	**2008**	**2010**	**2008**	**2010**	**2008**	**2010**	**2008**	**2010**	**2008**	**2010**
Primary	106.05%	104.75%	106.05%	103.83%	106.46%	102.23%	105.43%	102.69%	103.93%	99.18%
Junior Secondary	63.86%	75.33%	79.48%	88.62%	84.94%	92.69%	91.41%	95.63%	89.23%	96.81%
Senior Secondary	23.21%	36.08%	42.95%	59.13%	57.65%	72.90%	67.16%	84.19%	74.09%	89.09%
D1-D2 (Diploma)	0.46%	0.28%	0.85%	0.49%	1.51%	1.03%	2.01%	1.79%	2.49%	1.84%
D3-D4 (Higher Diploma)	0.07%	0.18%	0.61%	1.10%	0.90%	1.61%	2.87%	4.47%	10.34%	9.29%
S1 (Degree)	3.76%	2.54%	6.00%	6.37%	11.02%	13.88%	22.54%	28.32%	55.41%	64.66%
S2-S3 (post grad Degrees)	0.00%	0.05%	0.00%	0.13%	0.20%	0.07%	0.11%	0.21%	1.92%	2.43%

Source: BPS 2008 and BPS 2010

The disparity is systemic and structural, as school leavers from basic education cannot afford financially and academically to be admitted to the better schools in more established regions; they have to stay at inadequate quality local Senior Secondary schools. Since public universities and better private universities require entrance examinations, most of the poorer students from low quality secondary schools will not be competitive and their only option if they aspire to higher education is to enroll in low quality institutions, which cannot provide the necessary skills to gain proper employment. Their economic background, the secondary school they attended and the type of university they might attend all maintain the disparity and segregation that education aims to alleviate. The low enrolment of the poorest students (quintile 1) in higher education is not going to be improved by greater access to low quality secondary education (Moeliodihardjo, 2013).

3.3.2 Regional disparity

Another dimension of disparity is the disparity between the Western and Eastern regions, as illustrated in Table 6. While the population living under the poverty line in Sumatera (6.17 million) or Java (15.82 million) is much higher than in other regions, the percentage is relatively moderate, between 11% to 12%, due to their overall large population. The poverty in Maluku and Papua is only 1.6 million, but it represents almost a quarter of its entire population (24.14%). This percentage will be even higher if NTT province is added to Maluku and Papua[iv]. An affirmative policy is required to provide school leavers from the Eastern regions with better access to good quality universities. Unfortunately many universities do not prepare proper entry and support programs to assist matriculating students from less developed regions. Once admitted, they have to cope with challenges that are not limited to academic issues. Most also have to struggle with the cosmopolitan lifestyle, culture and even slang. And yet most universities do not have professional counsellors assigned to provide these students with advice on academic and non-academic matters.

If the economic growth is to be more geographically equitable and include regions outside Java, the skills mismatch could be quite large. Many companies voiced concern about the fact that it was extremely difficult to recruit the best graduates for positions outside Java. Some companies also expressed concern about differences in the academic quality across institutions – particularly about the low quality of most institutions outside Java, which suffer from a triple jeopardy of generally poorer quality staff, worse equipment and facilities, and students who are less prepared. Since five of the six targeted economic development corridors (MP3EI) are outside Java, it will be difficult to achieve the desired MP3EI outcomes if these problems are not properly rectified.

Table 6. Poverty by region in September 2012

	Population ('000)			Living in poverty		
	Urban	Rural	Urban + Rural	Urban	Rural	Urban + Rural
Sumatera	2,049.64	4,127.54	6,177.18	9.93%	12.88%	11.72%
Jawa	7,119.22	8,703.35	15,822.57	8.67%	15.05%	11.31%
Bali, NTB, NTT	626.02	1,363.55	1,989.57	11.75%	16.55%	14.66%
Kalimantan	254.60	678.33	932.93	4.17%	8.18%	6.48%
Sulawesi	337.09	1,708.50	2,045.59	5.59%	14.36%	11.41%
Maluku, Papua	121.20	1,505.60	1,626.80	6.11%	31.67%	24.14%
Total	10,507.77	18,086.87	28,594.64	8.60%	14.70%	11.66%

Source: BPS 2013

As a longer-term solution, the regional disparity could potentially be remedied by improving the quality of regional universities, allowing students to have access to good quality higher education closer to their homes. Geographical limitation could also be improved by introducing mixed delivery modes, by combining distance learning with other traditional learning modes.

3.3.3 Bidik Misi scholarship

The existing Bidik Misi scholarship scheme is a positive government initiative, although it still requires considerable effort to improve its effectiveness. Since the enrolment of the Q-1 population in Senior Secondary is only 36% (see Table 5), the main challenge is to identify potential candidates. Particularly problematic is that the selection scheme uses academic performance instead of academic potential as the criterion. Poor students tend to have lower academic performance due to insufficient learning resources and other obligations, i.e. income earner for the family. In many cases, it is easy to identify the poorest students (eligible) and the richest (ineligible), with the most difficult task setting the cut-off point to determine those who are in and those who are out.

3.4 Governance

It is globally recognised that innovation and creativity within universities can only flourish when autonomy is guaranteed, as adopted by the European Council in 2007 (Estermann and Nokkala, 2009). The trend of providing more university autonomy has also significantly changed the governance and organisation structure of higher education in many Asian countries, such as Japan, Thailand, the Philippines, China, and Indonesia as well. The following sections analyse the four main pillars of autonomy: organisational autonomy, financial autonomy, staffing autonomy and academic autonomy.

3.4.1 Organisational autonomy

The governance of a university is very much dependent on its organisational autonomy. Both the National Education System Law (No 20/2003) and the Higher Education Law (No 12/2012) stipulated explicitly that universities are autonomous for both academic and non-academic affairs. The term 'autonomous', however, still needs to be defined.

Public universities are essentially parts of the government bureaucracy (MoEC) with limited ability to establish their structures and governing bodies, and to define the modalities of their leadership models. A

similar relationship is applicable for private universities with their governing foundations. Apart from the autonomous universities (Perguruan Tinggi Negeri – Badan Hukum or PTN-BH), universities in Indonesia do not have the autonomy to set their internal academic and administrative structures. This decision belongs to the government in the case of public universities, and to the foundation in the case of private universities. In autonomous universities, the Board of Trustees (Majelis Wali Amanat or MWA) is an independent governing board. Other categories of universities must comply with the structures defined by the government (public) or its foundation (private).

Having said that, the intention to decentralise by providing more autonomy to universities will be difficult to implement when the organisation at the central authority has not undergone reform. After decades of centralisation, shifting the mindset for decentralising authority to universities will not be easy. A comprehensive study needs to be conducted to analyse all relevant aspects, and international experiences could be capitalised to enrich the study.

3.4.2 Financial autonomy

Financial management is derived from the governance structure of an organisation. Financial autonomy can only be enjoyed by universities with autonomy status. Financial management in universities becomes more complex as the various sources of funds include the government, students and private enterprises. The channeling of government funds is carried out through a rigid and line-itemised budget, where the budget is pre-allocated; reallocation between budget components is prohibited, and the standard procedure is uniformly imposed for all government entities.

Law 17/2003 on Public Finance stipulates that self-generated revenue in public universities is considered as State revenue and must be deposited into the State Treasury. The PTN-BLU universities are exempted and given a certain level of autonomy in managing their revenue. The autonomous universities (PTN-BH) have the privilege of using their self-generated revenue in a much more flexible manner, as stipulated in the recently issued PP 58/2013. Only private and autonomous universities can accumulate reserves; the other universities must deposit any unspent budget back to the State Treasury at the end of the fiscal year. Private universities must adhere to the regulations issued by their foundations, although they still have to comply with the relevant regulations when using government funds.

Although the authority to set student tuition feesis generally considered an indicator of institutional autonomy, the MoEC decree 55/2013 regulates student tuition fees in public universities. Flexibility is given however in setting the student tuition fee for postgraduate and non-regular programs. The appropriate balance between the public interest and the need to cover the ever-increasing cost of higher education will eventually be found.

Accountability should be seen as much broader than merely compliance with regulations in financial management. Ultimately, accountability should be directed to the stakeholders for the results, particularly whether the initial objectives (as reflected in the mission) have been achieved or not. Although compliance to financial regulations is important, the achievement of objectives is equally, or even more important. Therefore, a performance audit to assess the university's effectiveness in achieving its objectives is critically important. As the auditing process is currently conducted to compare the procedures followed with the relevant administrative procedures, effectiveness is not considered as an issue. The LAKIP (report on institution's performance) does not include outcome indicators, and focuses on the achievement of quantitative output indicators (Moeliodihardjo and Basaruddin, 2013).

3.4.3 Staffing autonomy

In public institutions, all teaching and administrative staff are civil servants. The State Civil Service Agency (BKN) carries out the hiring and firing of staff centrally, after recommendations from the universities. In private institutions, this authority lies with the foundation. The limited autonomy in staffing management,

combined with a rigid financial management regime, develop a strong culture of compliance within the organisation, bureaucracy, and the implementing officers.

The rigidity of centralised personnel administration does not fit well with the spirit of academic freedom and university autonomy, which are key factors in promoting innovation and creativity. To cope with the challenge of contributing to the transition process toward an efficiency driven economy, the current personnel administration in public universities needs to be transformed to human resources management, where the central issue is performance and efficiency, instead of compliance.

At the end of 2013, the Parliament passed a bill on the Civil Service (UU Aparatur Sipil Negara). The new Law is considered a major breakthrough, shifting from personnel administration to human resources management, from a culture of compliance to a culture of merit, and from a rigid and uniform system to a flexible and efficient system. The necessary government regulations (PPs) now need to be drafted and issued to implement the Law.

3.4.4 Academic autonomy

Academic autonomy is broadly defined as the ability for an institution to determine its own institutional strategy and academic profile, to introduce or terminate degree programs, to decide on the structure and content of these degree programs, as well as on their roles and responsibilities with regard to the quality assurance of programs and degrees, and finally the extent to which it can decide on student admissions.

The Law 12/2012 guarantees freedom of academic inquiry to all members of academic communities (students and lecturers), freedom to teach and communicate ideas is given to lecturers, and freedom for an institution to manage its own academic affairs. However, in reality, the regulations for introducing or abolishing education programs are in the hands of MoEC. The national qualification framework, in addition to providing guidance for degree and diploma granting, regulates prescribed learning outcomes for each level of degree which every institution has to observe. Regarding student admission, MoEC sets the minimum of 50% new intake to come from the national admission scheme, though the decision to admit or reject applicants is entirely up to the individual university.

In general, the academic autonomy at an individual level is implemented reasonably well. Both lecturers and students are given full freedom to pursue their academic inquiry and exercise their academic freedom within or outside campus. However, academic freedom at the institutional level is problematic, particularly in introducing or terminating degree programs and schemes for student admission (Moeliodihardjo and Basaruddin, 2013).

3.4.5 Consistent policies

For universities to become pioneers in continuous quality improvement of education, careful analysis of labour market needs and graduate career paths of graduates is required. And yet, today's environment offers very little push for a culture of continued quality improvement. The competitive funding approach, which was terminated in 2010, was pushing institutions into a 'compliance' culture. It is noted that there had been a strong sense of crisis within the sector, particularly among the leading lights in quality improvement of public institutions. If institutions were to be innovative in meeting future economic needs, they would be expected to be able to operate independently. There never was a greater need for institutions to develop the culture of independence and accountability than today, so that they tackle the complicated issues of the further quality improvement needed for Indonesia's future.

Overall, the implementation of institutional reform to achieve university autonomy as envisaged in the law is feasible. The new higher education law provides an avenue for more autonomous and accountable university governance, i.e. through the scheme of PTN-BH. This scheme should become the eventual goal of institutional development for all public higher education institutions in Indonesia. However, this necessitates MoEC to implement a consistent policy towards university autonomy as mandated by Law

12/2012, and to systematically develop the institutional capacity of the public universities which have the potential to be transformed into PTN-BH. A number of ministerial decrees and government regulations need to be synchronised with the autonomy reform agenda

Promoting organisational autonomy among universities in Indonesia requires systematic institutional capacity development programs, whereby self-governing principles should become part of the organisational culture. Accountability measures should become the priority to be put in place as the pre-requisite for providing organisational autonomy to any institution. Such programs should cover public as well as private institutions, including those under MoRA and other technical ministries.

4. Recommended Policy directions

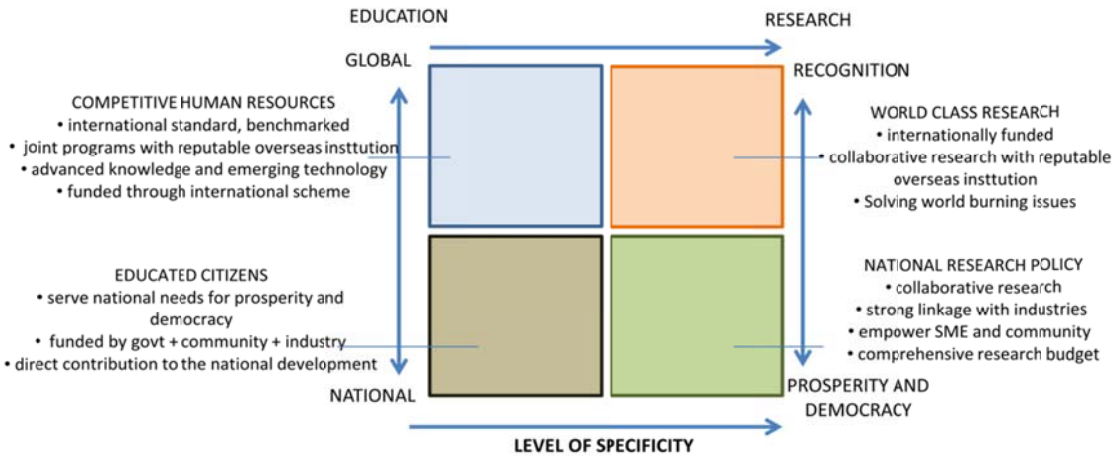
The policy direction presented in the following section highlights salient points that need addressing in the next five years. The logical framework comprises more detailed recommended activities and performance indicators are presented in the appendix.

4.1 Improving quality

4.1.1 Strengthening institutional focus

In order to drive institutions to focus more on their stated missions, the government should align its funding policies according to the chosen mission. Institutions might need assistance in selecting its mission due to insufficient management capacity, and the government will provide the necessary resources, training and advice for this purpose. A possible scenario of the differentiated mission and its products is presented in Figure 49. Once a mission is chosen, the institutional strategic plan could be developed and the government could allocate its budget accordingly.

Figure 49. Institutional mission and its differentiated outputs



Source: Brodjonegoro 2013

It is recommended that the government should not rely on a single scheme for channeling funds. To effectively achieve the intended objectives, different schemes should be used to fit with the purpose, such as direct allocation, competitive, tiered, or proposal based grants. New innovative schemes need to be developed, piloted and evaluated to find the most appropriate fund channeling mechanisms.

4.1.2 Strengthening quality assurance

External quality assurance conducted by BAN-PT should be strengthened by increasing the number and quality of its institutional assessors. The accreditation forms should be continuously improved, particularly the format for institutional accreditation. Since quality assurance should be primarily an internally driven mechanism with only periodic accreditation visits, the main effort should be directed to provision of more intensive and on-going training to improve the capacity of internal quality assurance units.

A number of independent accreditation agencies (LAM) will need to be established, particularly to assess the professional programs. Efforts to develop cooperation with the professional organisations will be far from simple, and a large number of assessors will need to be trained. At the same time, it is highly recommended that efforts be directed to revitalising peer evaluation in the context of performance audits.

Quality assurance requires a reliable information system to provide accurate data and information such as enrolment, student progression rate, completion and drop-out rate. A verification mechanism needs to be developed and implemented to maintain accuracy. Therefore the requirement for institutions to provide data, as stipulated in article 56 in the Law 12/2012, should be consistently enforced.

4.2 Improving equity and access

The issue of equitable access to higher education must take into account quality, relevance, and equity, instead of just using access (i.e. enrolment numbers) as the criterion for evaluating progress. The most disadvantage students should have equitable access to high quality and relevant programs in order for enrolment to confer the desired benefits.

4.2.1 Scholarship schemes

The existing scholarship schemes for degree (S-1) students have successfully provided the necessary assistance needed, and such support should be continued and strengthened. However, some measures are of the scholarships scheme, particularly improved targeting of recipients and the on-time transfer of the scholarship funds to them.

In order to find eligible candidates, recruitment based on academic potential (instead of academic performance) should be conducted in Grade 10. Selected candidates should be given partial support (i.e. for tuition only) for additional remedial lessons and coaching for two years to improve their academic performance prior to the taking the university entrance examination at the end of senior secondary. Those who are successfully admitted to university through the entrance examination should then receive full support, (tuition and living allowance) for four years (S1 degree program) or three years (D3 diploma program). By targeting students earlier and increasing their chances of entry to high quality higher education, the education system facilitates the social mobility, creating more equitable life-long outcomes for the most disadvantaged segment of the population.

4.2.2 Institutional support

A capacity building program should be developed and provided to enhance the management capacity of universities. This should include the capacity of units assigned to manage scholarships, which is currently very low. Support should include training for officers responsible for managing scholarships, counsellors and mentors.

Institutional support should provide targeted assistance to the weaker universities, particularly the newly established universities. In addition to providing capacity development this should include support for

infrastructure and additional resources (physical and personnel) needed to deliver quality programs. The existing deployment program of senior staff from more established universities (*detasering*) should be improved and expanded and linked to a comprehensive and detailed development plan before a particular program is approved. Twinning arrangements with more established universities should also be encouraged and supported.

Consideration should be given to establishing new institutions in the regions endowed by rich natural resources, such as Papua. The new institutions should focus on academic disciplines relevant to the local needs and comparative advantages.

4.2.3 Distance learning opportunities

Distance learning is an attractive alternative to provide more access for high school leavers who live in remote and isolated areas. A mixed mode (e.g. distance and face-to-face modules) is particularly recommended as younger students are still at a developmental stage where they require considerable social/emotional support from their families whereas adult students can focus on cognitive skills only. In implementing open and distance learning, institutions should capitalise more on the rapid developments in information and communications technology. However some caution is needed. The very rapid growth of mass open online courses (MOOC) apparent in many countries in the last few years has revealed that many proponents do not fully understand the risks and benefits of the new delivery mode and too easily jump on the bandwagon (Carr 2012).

Quality assurance is a central issue in distance learning and considerable efforts must be given to evaluation using quality standards and indicators such as those developed by Seamolec (Seamolec 2008). This should occur prior the provision of support and scale-up.

4.2.4 *Akademi Komunitas* (community colleges)

The newly introduced concept of *Akademi Komunitas* (community colleges), as stipulated in article 59 in the Law 12/2012,could fulfil important roles in higher education which are complementary to the university sector, relieving the university sector of activities which are not core business and at the same time providing an alternative for expanding access without sacrificing quality.

The roles which could be adopted by the community colleges include: provision of inexpensive short cycle training programs, especially those which focus on professional, as well as occupational, orientation; adult education training for people over the usual university age group, the demand for which is expected to increase rapidly in the next 5 years as Indonesia extends into the industrialisation stage of economic development; act as a feeder institution to the university system, by providing remedial and matriculation courses for high school leavers who failed to pass the entrance examination.

In each of these roles, the opportunity to develop public–private partnerships is very promising, particularly if the fund channeling issue from central government can be resolved.

4.3 Improving relevance

Indonesian economic development will rely strongly on the contribution from the higher education subsector. The efficiency driven economy requires a constant input of competent university graduates, university innovation to make the industrial sector competitive, and university scientific knowledge to solve other real world problems. The following sections present recommendations for actions to be carried out.

4.3.1 Structured university–industry encounters

A recent study reveals that confidence building measures are needed to overcome the lack of mutual trust between universities and industry (Moeliodihadjo et. al. 2012). There must be national and regional efforts to develop a situation where leaders from government, industry and universities can meet and work with one another. Whenever the government provides university funding relevant to industry, the leading lights from industry should be involved in the decision-making process.

4.3.2 Reaching out strategy

Support and incentives should be provided to encourage universities to reach out to industry. The university units responsible for developing partnerships with industry should be significantly strengthened by providing staff training programs for liaison activities, with a possibility of twinning with more established universities, or even overseas universities.

Departments and faculties should be encouraged to establish advisory boards so that industrial representatives can be consulted in the process of developing the curriculum, as well as in the research agenda and to voice any concerns about graduate skills. Experts from industry could be invited as guest lecturers in relevant courses. They could also become external examiners or reviewers in evaluating students' final projects.

4.3.3 Industry fellowships

An exchange program between university and industry researchers should be established, including a fellowship for the staff involved in the program. This program would allow university researchers to have one semester sabbatical work in industrial laboratories, and for industry researchers to work in the university laboratories, as well as supervise students' final projects. For a medium-term objective, a fellowships program for university staff to identify the appropriate topics before departing for pursuing a S-3 degree could be piloted.

A re-entry program for staff returning to their institution/organization would be needed to fully capitalise on the learning and adapt it to their local situation. This should be systematically developed in partnership with local industries and community.

4.3.4 Developing public–private partnerships

Public–private partnerships (PPP) are a very attractive addition to government funding and student tuition, and they are highly feasible. A pilot program for a university–industry partnership grants should be run over a number of years. A critical feature in this new scheme would be increased flexibility in funds channeling from the DGHE.

Another feature which will be critical for success will be the nature of the unit established for this purpose. Its organizational structure would need to be outside the existing university structure, enabling the industry partner to be directly involved in policy and decision-making processes, something which is currently not possible. More work is needed to develop these arrangements before a pilot program is initiated.

4.3.5 Tracer studies

Tracer studies generally survey students after they have graduated, as well as the companies who have employed the graduates. Tracer studies are highly critical for universities to solicit input from graduates and employers, and follow up with the necessary actions. However, many universities only conduct a tracer study to comply with the BAN-PT accreditation requirements. The result is superficial - insufficient number of

respondents, shallow analysis and poor follow up. To rectify this situation, support should be provided for universities to conduct well designed periodic tracer studies. The reports produced should be rigorously reviewed, with sanctions applied for poor quality work or non-compliance.

Tracer studies should also solicit important information from employers about future trends and directions, the required skills and knowledge, as well as the geographical distribution of the industry's operations. To meet expectations from students and parents about quality and align the content and course with job requirements and opportunities, the findings should be followed up with an improvement program using the information from the tracer study as the main input.

4.3.6 Strengthening graduates' transferable skills

Responding to complaints from industry on graduates' weak transferable skills, the government should encourage universities to strengthen these skills in their students. To better prepare graduates for a rapidly changing labor market, programs to strengthen their generic and transferable skills should be encouraged and supported.

In addition to traditional core skills such as English proficiency, IT skills and communication skills, the government should support experimentation in introducing new course structures and composition, such as a core liberal arts component in undergraduate education. Liberal arts have long been a tradition in many other countries. However, it would need to be a carefully designed strategy, particularly considering that many universities do not have the required experienced teachers.

4.4 Strengthening governance

In light of the recent Law 12/2012 on Higher Education, the strategic framework in higher education governance and management policy should ensure that the implementation of the law will establish an enabling environment conducive to improving performance. The recently passed Law on Civil Service (UU Aparatur Sipil Negara) provides the opportunity to reform human resource management in the civil service system, though the necessary Government Regulations (PP) to guide the implementation are yet to be issued.

The following sections present recommended policy directions for assuring the effective implementation of the two laws:

4.4.1 Strengthening institutional management

A series of capacity building programs should be conducted to strengthen institutional governance and management in universities, according to the target set for each category of university (PTN, PTNBLU, or PTN-BH). In setting the target status, a careful and rigorous assessment will be conducted by external peers. It is important that the target status is proposed by the university itself instead of imposed by the central authority. Each university should submit a target status proposal, comprising a self-evaluation report and a detailed transition plan.

The capacity building program would need to include the provision of necessary resources, technical assistance and training in financial management, human resource management, as well as information management. The governance system should demonstrate its accountability to the stakeholders (students, staff, industry, local community and the general public), instead of just to the direct supervisor. The proposal should include plans to improve efficiency in managing resources and improve effectiveness in the use of public funds.

4.4.2 Policy studies

Introducing more autonomy and decentralising authority to universities requires many changes, both at the university level and at the central level. Strengthening university governance and management will have limited impact if the central authority does not change. Therefore, a policy study should be conducted to comprehensively evaluate and analyse the existing governance and management system at the DGHE level, and assess the possibility of introducing changes in the context of implementing Law 12/2012.

Another aspect requiring in-depth study and analysis is the method used for channeling government funds to universities. In addition to examining the existing schemes, the study should look at the possibility of developing new and more innovative schemes to facilitate the reintroduction of university autonomy. In order to learn from other countries' experiences, the study should include views from outside Indonesia by inviting international experts to share experiences and expertise in governance and management and university funding schemes.

4.5 Financing the higher education system

While the scheme used for channeling funds is a primary concern, the capacity to finance the entire system still needs to be carefully analysed. In the last few years, a number of studies on financing have been conducted, supported by development partners as well as DGHE itself. The following section presents selected findings from relevant studies.

4.5.1 System-wide financing

According to a recent World Bank study, the 19–23 years age group is projected to steadily increase, and will only start to decrease in 2022 from a peak of 21.91 million (World Bank 2013). This will create strong pressure to increase the capacity in higher education. Anticipating the current trend towards national middle income status and higher family income and aspirations, demand for higher education will certainly outpace the population growth.

The increasing demand for higher education requires additional financing from public, as well as private, sources. In general, the system-wide financing consists of the operational expenditure, development or capital (investment) expenditure, and self-generated revenue. A rough estimate is that projected enrolment will reach 6.7 million in 2019, requiring a total of Rp 140 trillion[v] (Brodjonegoro 2013). The government is expected to contribute 50% to 60% of this cost (around Rp 70 to 80 trillion in 2019), with the remainder being covered by students, parents and industry.

4.5.2 Operational expenditure

In many nation-wide higher education systems, the operational expenditure or recurrent expenditure is allocated based on student enrolment, with a condition that the minimum service standard is met. A formula-based student unit cost requires accurate information on student movement, progression rate, drop-out rate and completion rate. Since a reliable data collection system does not yet exist, this needs to become a top priority.

As stipulated in Article 88 of Law 12/2012, the government has the authority to set the unit cost for higher education, based on the national standard, type of study program and regional price index. The *Biaya Operasional PTN (*BOPTN) is considered as an attempt to implement this article, although the current data is far from accurate. Therefore, it needs to be improved by, among others aspects, considering the quality indicators as reflected by the achievement of the standard. Only by more accurately assessing the quality can a formula-based student unit cost be appropriately implemented. Otherwise institutions tend to increase enrolment without adequately considering quality.

For universities to play a more active and direct role in economic development, the budget allocation for research and development should be significantly increased. As targeted in the MP3EI and I747 initiative, the budget allocation will be gradually increased to reach 1% of the government budget. Research in graduate education should be more integrated with staff research. Article 89 of Law 12/2012 requires that 30% of the operational budget (BOPTN) be allocated for supporting activities in research and development.

The scheme for channeling research funds is equally important. Without significant improvement in fund channeling, the effectiveness of the budget increase will be in question. Universally it is accepted that many research activities cannot be fully predicted in advance and a certain degree of flexibility is needed. Therefore, the research fund has to be provided as a grant instead of as a line-itemised contract.

Summary of issues covered by the recommended policy directions –

- improving quality
    - strengthening institutional focus
    - strengthening quality assurance
- improving equity and access
    - better targeted scholarship schemes
    - provision of institutional support
    - distance learning options
    - role of community colleges
- improving relevance
    - structured university-industry encounters
    - reaching-out strategy
    - industry fellowships
    - public-private partnerships
    - tracer studies
    - strengthening graduates' transferable skills
- strengthening governance
    - strengthening institutional management
    - policy studies
- reforming financing for higher education
    - system-wide financing
    - operational budget

To meet the demands of the future as well as to address the current disparities in access to quality higher education, there are many changes identified above that need to made in the capacity, culture and organization of universities, as well as in the systems for funding, targeting of scholarships and accreditation at the national level, and by industry in the extent to which it becomes an effective partner with universities, supporting research and innovation to drive economic development. Most of these changes will depend on effective implementation of the law and the spirit of autonomy for universities.

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Appendix 1. Logical Framework for Higher Education

Recommended Policy Direction	*Nature of the PD*	*Proposed Strategy*	*Proposed Activities*	*Proposed KPIs*
1.1 Improving quality	Funding policy	Innovative funding models	Strengthening institutional focus through relevant programs support	Number of relevant programs, research grants, industrial partnerships, accredited programs,
	Funding policy	Proposal based	Support for experiments in new innovative courses, e.g. liberal arts, mixed mode delivery, MOOC	Number of new courses and delivery modes
	Capacity building	Allocation	Strengthening accreditation, quality assurance, establishment of independent accreditation agencies (LAM), introduction of performance audit	Number of institutions evaluated, improvement of the assessment mechanism, number of LAMs established, number performance audit conducted
	Funding policy	Competitive tiered grant	Support for research through various funding schemes	Number of research grants, thesis, publications, and patents
	Capacity building	Proposal based	Twinning programs with established universities	Number of universities and programs nurtured
	Selection process	Proposal based	Assessment of capacity to develop institutional focus	Number of universities assessed
1.2. Improving equity and access	Capacity building	Training	Training for university officers, i.e. Mentors, councellors, scholarship managers	Retention rate of scholarship recipients
	Funding policy	Partial scholarship	Support for poor SMA/SMK/MA students with academic potential, including its management and operational cost	Number of student admitted to good universities through entrance examination, student academic performance
	Funding policy	Scholarship	Continuation of *Bidik Misi* and other existing scholarship schemes	Number of scholarship recipients, progression rate
	Funding policy	Proposal based	Dual mode course delivery (face to face and distance learning)	Number of students served, geographical distribution, and their academic performance
	Funding policy	Proposal based	Support for newly established public universities located in remote and isolated areas	Number of universities assisted
1.3 Improving relevance	Capacity building	Fellowship	Fellowship to improve relevance, i.e., pre PhD, exchange researchers with industries	Number of S3 students studying relevant topics
	Funding policy	Competitive tiered grant	Grant for developing university - industry partnership	Quality and quantity of partnership with industries

Recommended Policy Direction	*Nature of the PD*	*Proposed Strategy*	*Proposed Activities*	*Proposed KPIs*
	Capacity building	Proposal based	Developing strategy for institutional partnership with industries	Quality and quantity of partnership with industries
	Funding policy	Competitive tiered grant	Relevant university research involving graduate students	Number of graduate students involved, number of thesis produced
	Capacity building	Competitive grant	Developing tracer study, industrial involvement, relevant curriculum, strengthen structured encounter, etc.	Graduates' waiting time to acquire first job, decreasing unemployment rate
1.4. Strengthening governance	Capacity building	Proposal based	Strengthening of institutional governance, financial management, information management, and human resource management	Number of potential PTN to be converted into PTN-BH
	Policy study	Allocation	Reform at the central authority	Policy recommendations
	Policy study	Allocation	Developing strategy for funds channeling	Policy recommendations
	Selection process	Proposal based	Assessment of institutional capacity to become PTN-BH	Number of PTN converted into PTN-BH
	Training	Allocation by regions	Dissemination of principles of university autonomy and Law 12/2012	Booklets, flyers, articles, seminars, website, writing competition

Chapter 11. Upgrading the Skills of the Labor Force in Indonesia

Indonesia is at a development crossroads. It successfully weathered the 2008 international financial crisis and it has shown resilience in current turbulent times. Its economy is now one of the largest 20 economies in the world and it has ambitious plans to achieve high-income status and join the G-7 by 2030. Yet the challenges are important. As highlighted in the recent Indonesia Economic Quarterly report by the World Bank[1], the status quo may not be enough to maintain current growth rates in light of domestic and policy pressures. And maintaining current rates of growth will not bring the country to high income status by the target year. Accelerating growth is crucial to achieve the intended goals. National and international trends present both opportunities and challenges: the growing middle class and subsequent growth in the internal market, rapid urbanization, the opening up of markets in ASEAN countries. With the right policies in place, all these trends can catapult Indonesia to faster growth, faster poverty reduction and shared prosperity. Without these policies, Indonesia risks losing a great opportunity to materialize these gains.

A skilled labor force is crucial if Indonesia is to be able to leverage the opportunities that are available. No country has achieved high income status without a skilled labor force. Without a skilled labor force, opening up to ASEAN may pose more problems than it creates opportunities. Without the right skills amongst urban migrants, Indonesia's transition towards urbanization will not bring about the benefits of scale and the agglomeration effects that it could or should. Without the right skills for youth, the demand for higher quality products and services from Indonesia's growing middle class may be satisfied by importing foreign goods as opposed to increasing the value-added of domestic firms. Finally, without ensuring that poorer segments of the population have the skills to contribute towards these trends, even if the overall productivity gains are realized, the benefits will fail to trickle down to the poorest and most disadvantaged groups.

There is evidence that the supply of skills in the labor force does not match the demand, and these mismatches are likely to increase in the near future. Employer surveys highlight the difficulties employers face in filling skilled and semi-skilled positions. At the same time, a significant share of fresh graduates have difficulties finding jobs according to their level of education, and many end up employed in occupations below their skill levels. The mismatches are most evident in the returns to education and employment trends in some sectors, which show clear signs of being supply constrained (manufacturing, for example).

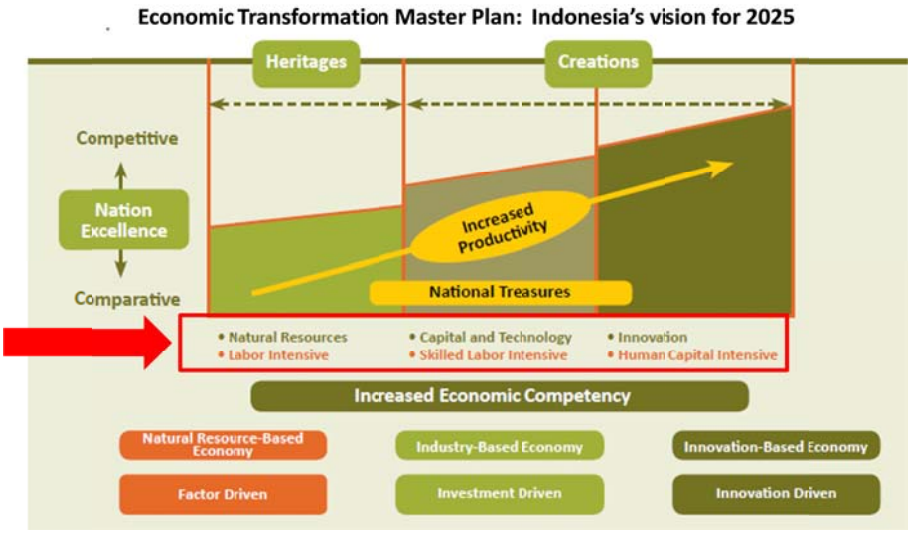
The central question of this paper is what to do about the significant numbers of youth who have entered or will enter in the labor force without the right skills. This paper argues that there is an urgent need to upgrade their skills if Indonesia is going to materialize its economic transformation into a more skilled, more innovation driven economy in the short or medium term. But even though the foundations for a functioning skills upgrading system based on competencies exists, the system is still small, underfunded and fragmented. The supply of training providers is concentrated around basic vocational skills, and their average quality is low. Training based on competencies is still rare. Firms in Indonesia train their employees very little compared with other countries in the region and in the world. The proposed policy directions include expanding the coverage of the system, developing the quality assurance system, reducing fragmentation in the system. But perhaps most importantly is use public investment strategically, to leverage private investment in training while targeting the most disadvantaged for public subsidies.

[1] Indonesia Economic Quarterly, Pressure Mounting, July 2013, World Bank Jakarta

The paper is organized around 2 questions: i) why should Indonesia worry about skills upgrading? and ii) what can be done in the short and medium term to upgrade the skills of the labor force? The paper concludes with some policy directions.

1. Why worry about skills upgrading?

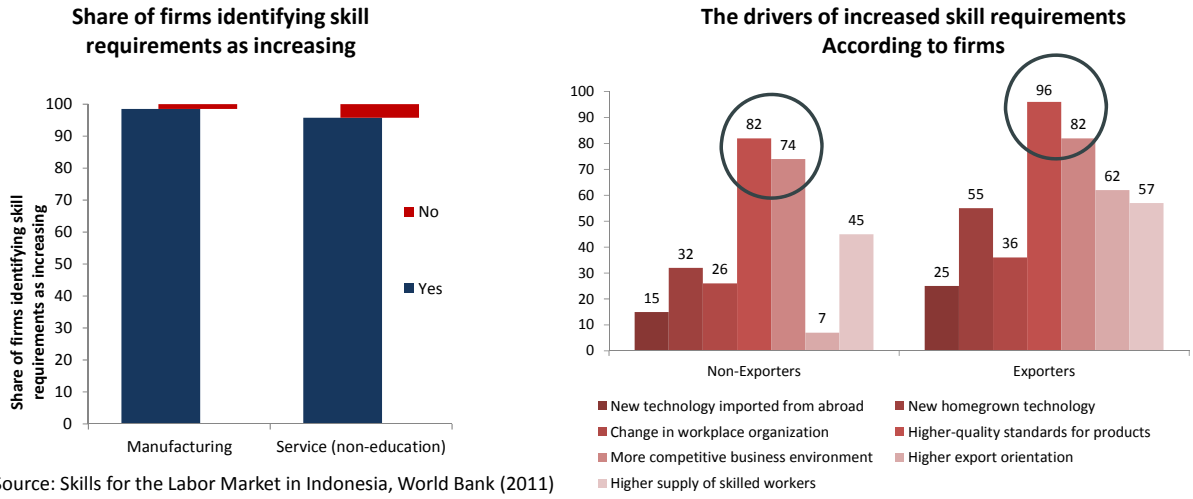
Indonesia aspires to be one of the 10 major economies in the world by 2025 which will undoubtedly result in an increasing demand for skilled workers. This aspiration is the motive behind the Masterplan for the Acceleration and Expansion of Economic Development of Indonesia (MP3EI). The 2025 vision is expected to be achieved through three main goals. First, is by engaging in value added industrial production processes as well as allowing the industry to access and utilize natural resources and human resources. The second goal relates to increasing efficiency in production which means that workers' productivity needs to increase. The last goal focusses on strengthening the national innovation system which will allow Indonesia to be an innovation driven-economy. With this, if the MP3EI is to be implemented, the demand for skills will not only increase, but there will also be demand for people with higher level of skills.



Source: Masterplan for Economic Transformation

The demand for skilled workers is high and increasing. When asked in a survey conducted by the World Bank in 2008, employers almost universally considered that skill requirements will increase, identifying higher-quality standards, a more competitive business environment and export orientation as the main drivers for increased requirements. This is confirmed by Indonesia's ambitions to become a high-income economy, macroeconomic trends (ASEAN, China's raising wages) and the raising middle class (which will demand higher quality products and services). If the government approved Masterplan for Economic Transformation (MP3EI) is implemented, the demand for skills will only accelerate. But even if it is only partially implemented, the economic trends clearly suggest that the requirement for skills in the labor force will increase in the short and medium term.

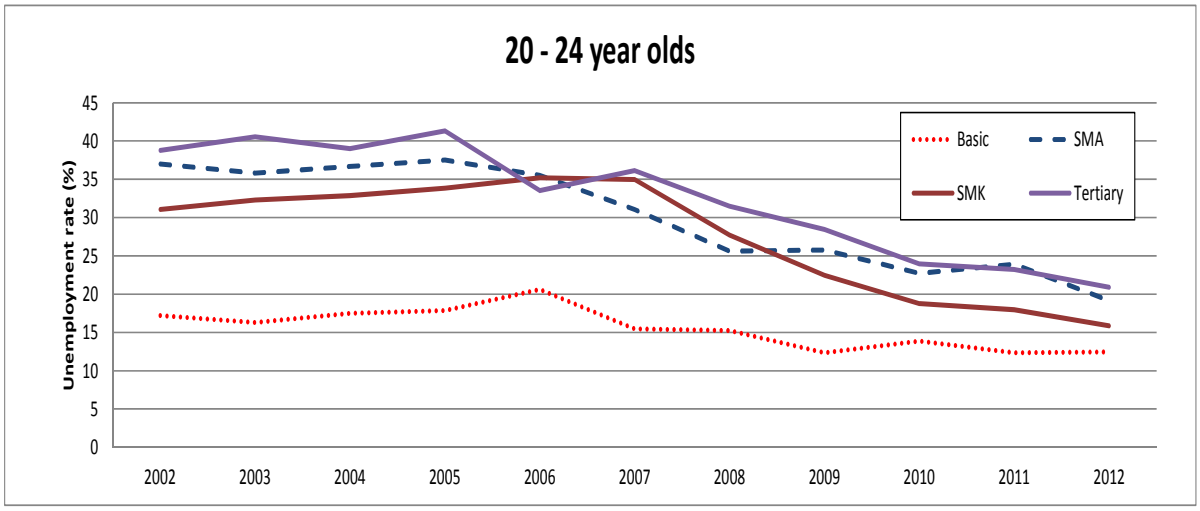
Figure 50. The demand for skills is increasing



Source: Skills for the Labor Market in Indonesia, World Bank (2011)

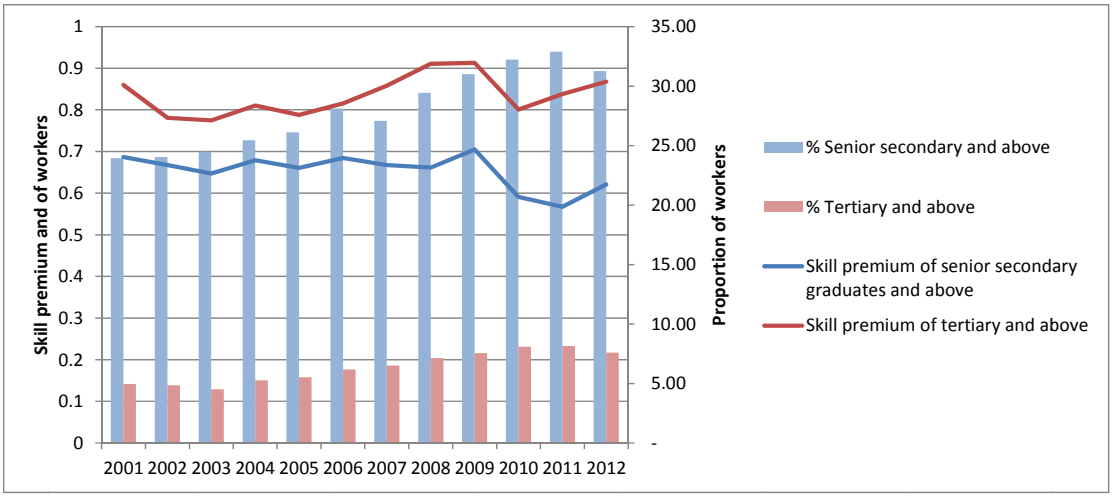
The demand for skills is growing in spite the increase of the stock of educated workers. Looking at the labor market outcomes and returns to education of 20-24 year olds, it is clear that unemployment rate continues to decrease overtime. Even when the number of people in the labor force with senior secondary education and above has doubled between 2001 and 2012, the skill premia for senior secondary education and tertiary education (the additional income associated with a given higher level of education) remained largely constant.

Figure 51. Unemployment rate of 20-24 year olds.



Source: Author's calculations using Sakernas, employed for wages (hourly)

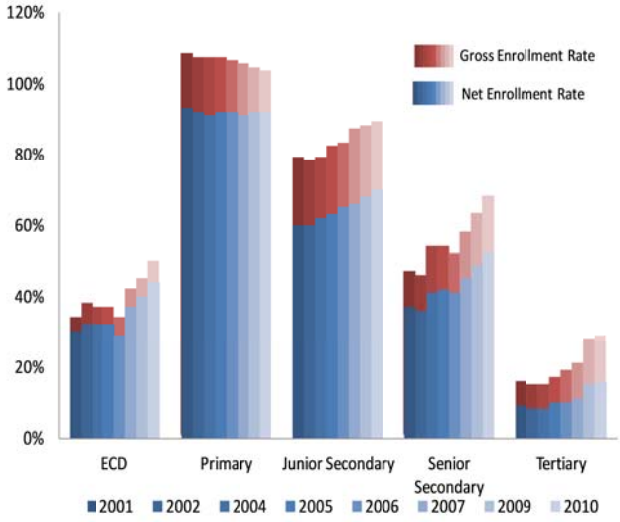
Figure 52. Changes in skill composition of labor force and in skill premia



Source: Author's calculations using Sakernas, employed for wages (hourly) and education attainment of the labor force

These trends are understood by the Government of Indonesia (GoI), which has made a great commitment education. Over more than a decade, the GoI has drastically increased investment in education and instituted important reforms at all levels of education. Overall spending has tripled in real terms, to over 30 trillion rupiah. This has led to rapid increases in access, especially for the poor. Enrollment rates in senior secondary and higher education have increased significantly. The number of higher education students has doubled in 5 years.

Figure 53. Enrollment rates by level of education, 2001-10



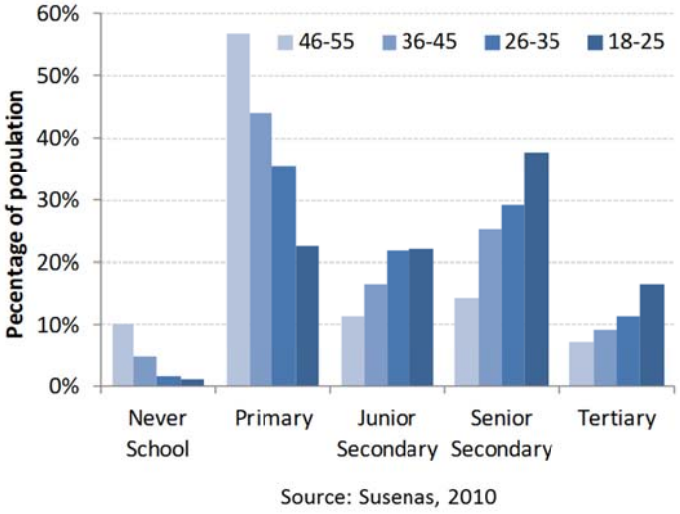
Source: World Bank calculations using Susenas

Labor market entrants are more educated than ever…

These increases in access are transforming the educational profile of labor market entrants, as is evident when comparing age cohorts of the population. The considerable efforts that Indonesia has made to increase access to education over the past two decades are paying off. Most of the expansion of the adult population over the past decade has been in senior secondary and tertiary education graduates. In about

one generation[2], the share of the population with primary education or less has gone from 55 percent in 46-55 year olds to 25 percent in 18-25 year olds. The share with senior secondary education completed has gone up from 15 to almost 40 percent for the same age group.

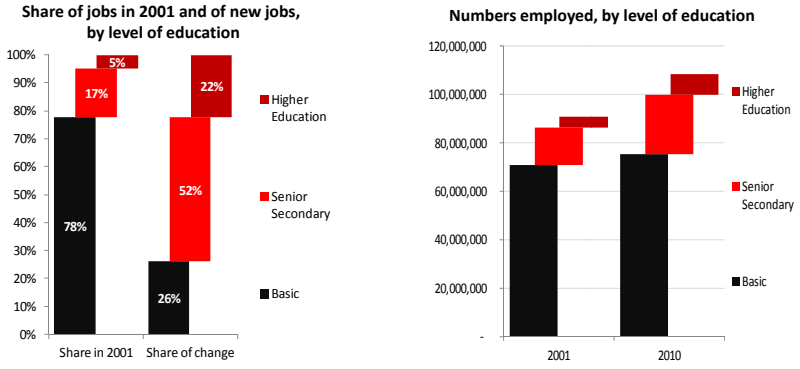
Figure 54. Educational attainment by age group, 2010



Source: Susenas for enrollment rates (February round)

Despite these improvements, the stock of working age population still has low levels of education. About 2/3 of the labor force (75 million people) has basic education completed or less. An additional 30 million have completed senior secondary. Only 10 million have graduated from tertiary education. New labor market entrants have significantly higher educational attainment. Over the past five years, the labor force with tertiary education has increased by more than 1 million each year, and the labor force with senior secondary by more than 2 million each year. This means that almost ¾ of the growth in the labor force between 2001 and 2010 has been in post-basic education graduates, almost ¼ tertiary graduates (Figure 55, left figure). These numbers are likely to increase in the near future, driven by the Government's policies to provide universal access to senior secondary education through compulsory 12 years of education, and to double enrollment in higher education by 2020. As enrollment rates continue to increase, the rate of growth in the educational attainment of the labor force will likely accelerate. Under reasonable assumptions,[3] the population with tertiary education will more than double over the next 10 years.

Figure 55. Labor force by level of education, 2001-2010



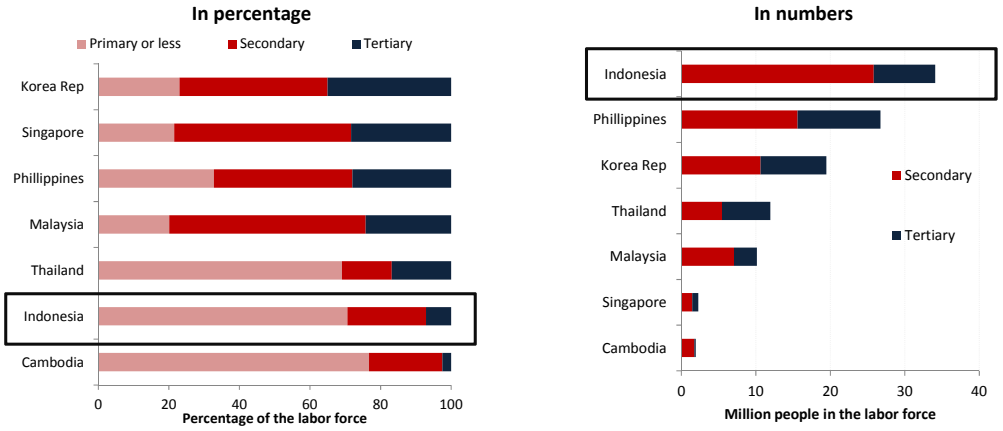
Source: Author's calculations using Sakernas

[2] A generation is usually defined by 20 year.

[3] Using linear growth in enrollment rates in higher education.

The share of educated workers is smaller in Indonesia than in most other countries in the region, but its population size means it has a majority of post-basic graduates. The percentage of the working age population with primary or less is similar to Thailand and significantly more than Malaysia or the Philippines. However, given its large population, Indonesia has the largest stock of senior secondary graduates in the region (excluding China), and more higher education graduates than Thailand. In addition, half of them are under the age of 35. If the stock of educated workers continues to increase at the same rate, Indonesia will soon have the largest number of educated workers in the region.

Figure 56. Labor force by level of education compared to other countries in the region, 2010



Source: WDI, Edstats

… but many of these workers do not have the right skills

Despite this large influx of more graduated workers, there are strong signals that the education system is not providing its graduates with the right skills for the labor market.. If quality of education is low, attending school does not guarantee that students learn. In addition, the skills required in the labor force are not necessarily limited to those learned traditionally in schools. The recent literature on skills highlights the complexity of the skills that are demanded and used in the labor market. These go beyond technical and cognitive skills, and include behavioral (i.e. perseverance) and social skills (i.e. team work). There are several initiatives[4] to try to understand and define these skills better and countries are carrying out surveys that try to map the supply and demand of the complete set of skills and compare them across sectors and occupations. This information can then be used to identify gaps. However, these tools are not yet available in Indonesia[5]. In the absence of such mapping, there are two main ways to identify these skills shortages: i) asking employers (the receivers of these skills) through surveys and ii) looking at the labor market performance of graduates

a) Employer surveys

A first sign of skills shortages is that employers report difficulties in filling semi-skilled and skilled positions. In a survey of employers carried out by the World Bank in 2008, two-thirds of them complained that finding employees for professional and manager positions was either 'difficult' or 'very difficult'.[6] This was especially the case for exporters and manufacturing firms (as opposed to services). Almost 70 percent of employers in manufacturing reported finding it 'very difficult' to fill professional-level positions (engineers

[4] World Bank's Skills Toward Employment and Productivity (STEP) Skills Measurement Survey, OECD's Programme for the International Assessment of Adult Competencies (PIACC), UNESCO

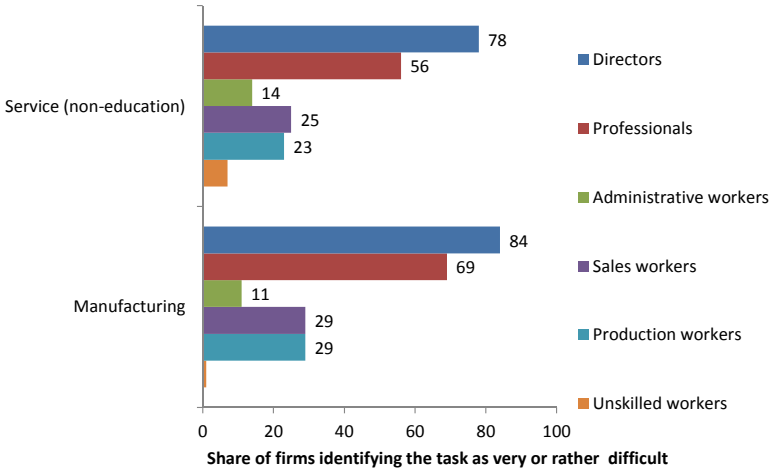
[5] PIACC is underway in Jakarta, but no results are available.

[6] Skills for the Labour Market in Indonesia (2011)

and similar). Exporters even reported difficulties in finding skilled production workers to meet their higher quality standards.

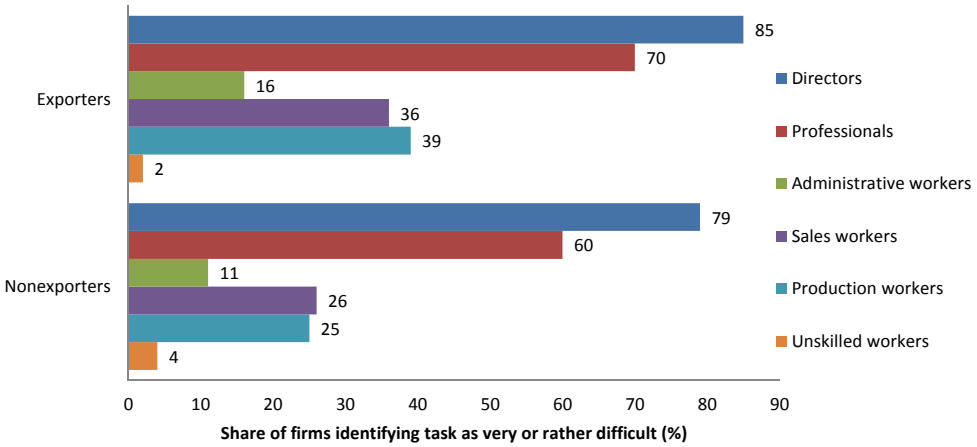
Figure 57. Share of firms identifying the task of finding workers very or rather hard, by type of job

a) Service and Manufacturing



Source: Skills for the Labor Market in Indonesia, World Bank (2010)

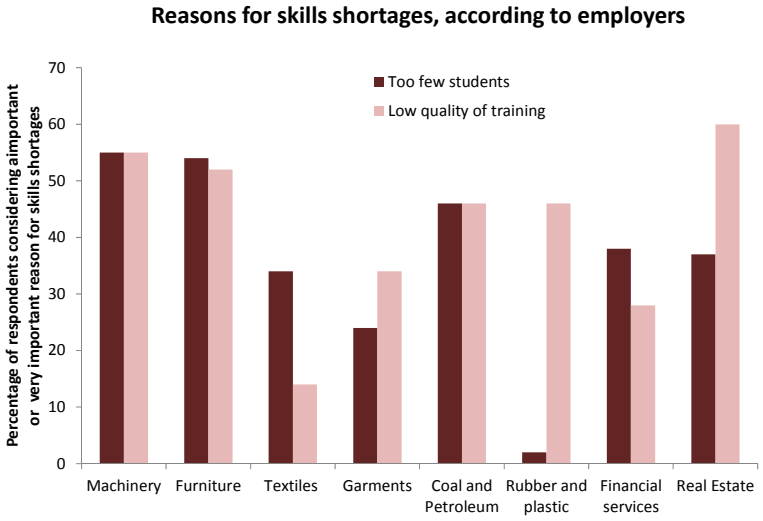
b) Exporters and Non-exporters



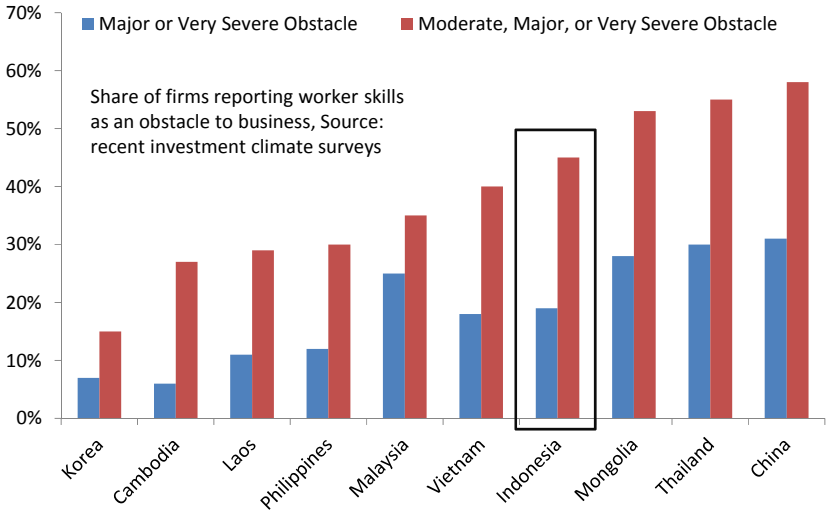
Source: Skills for the Labor Market in Indonesia, World Bank (2010)

The reasons for these difficulties vary by sector. Some sectors report insufficient graduates as the reason (for example, in textiles), whereas other sectors complain about the skills of existing graduates (for example, in rubber and plastics). This suggests two types of mismatches. On the one hand, the education system does not seem to be providing enough graduates in certain areas (for example, in textiles). On the other, even when enough graduates are produced, they may not have the right skills. These mismatches have likely increased since 2008. In 2009, about 60 percent of Indonesian firms were reporting that skills were a constraint. Almost 20 percent considered them a severe constraint.

Figure 58. Reasons for skills mismatches according to employers, 2008



Source: Skills for the Labor Market in Indonesia, World Bank (2011)



Source: Investment climate surveys, latest year (2009 for Indonesia)

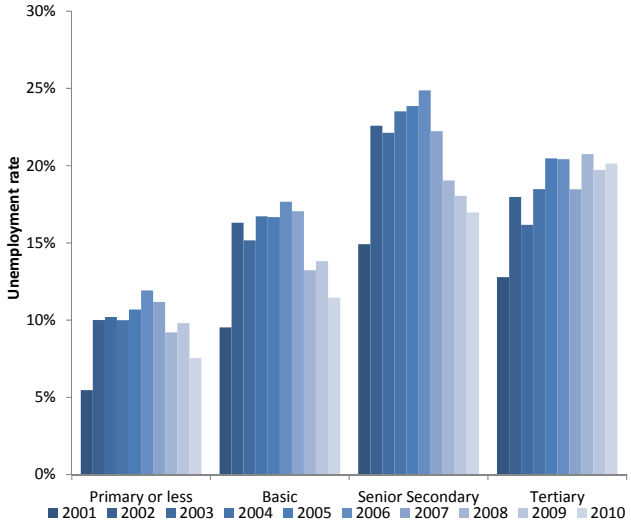
b) Labor market performance of graduates

A natural test for how well graduates are prepared to enter the labor force happens in the labor market. If the graduates are active in the labor force, have "good jobs" in occupations according to their level of education and get a high return to their education, it is a sign that their skills are demanded in the market. It is not definitive evidence, since even though graduates may be doing well, but far from their potential, for example being employed in sectors with low value added or slow growth. However, considering that the demand for skilled workers is high and sustained, the combination of unemployment rates, the types of occupations graduates hold and the returns to education should provide a good picture of whether graduates come equipped with the skills that employers demand.

While employers struggle to find the right skills, unemployment rates for educated youth are higher than for non-educated youth. The unemployment rate for 20-29 year olds is almost twice as high for senior secondary and tertiary graduates than for basic education graduates. The rate went up for tertiary graduates between 2001 and 2005 and has remained stubbornly high since then. The rate has come down significantly for senior secondary graduates, however. But the fact that graduates find jobs does not mean they are

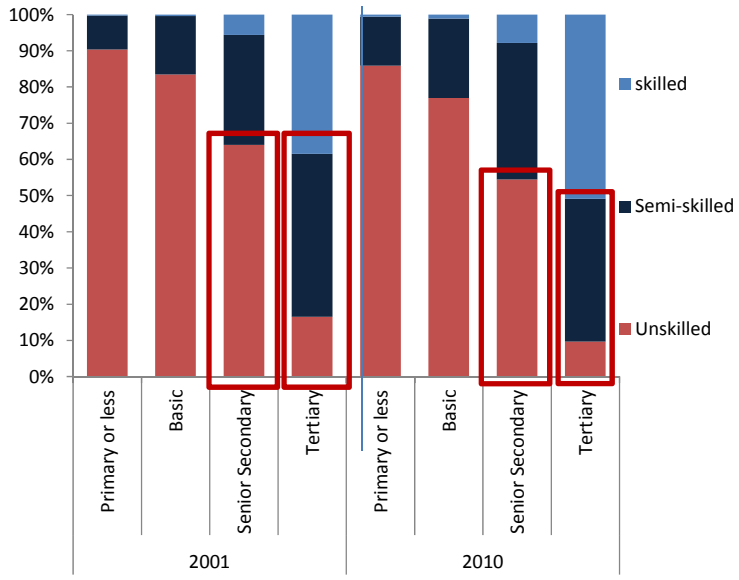
equipped with the right skills. Unemployment in the hopes of finding a job may be considered a luxury for most, which may lead to graduates accepting lower quality jobs because of need.

Figure 59. Unemployment rates by level of education, 20-29 year olds



In fact, more than ½ of senior secondary graduates are employed in unskilled occupations (blue-collar, laborers in agriculture) and 1/2 of young tertiary graduates are employed in occupations below their level of education. This is worrisome and a good indicator that despite holding the degree needed for higher level occupations, they lack the skills. These percentages have gone down since 2001, which may indicate that the quality of graduates has improved. Still, a significant share of recent graduates has entered the labor market without the necessary skills to succeed, which has pushed them into unskilled positions. The country has invested a lot in these graduates, and even if their skills do not meet the demands in the labor market, they have a stronger skill base than school drop-outs. With some skills upgrading, these young educated workers are best positioned to drive the economic transformation Indonesia is aspiring to.

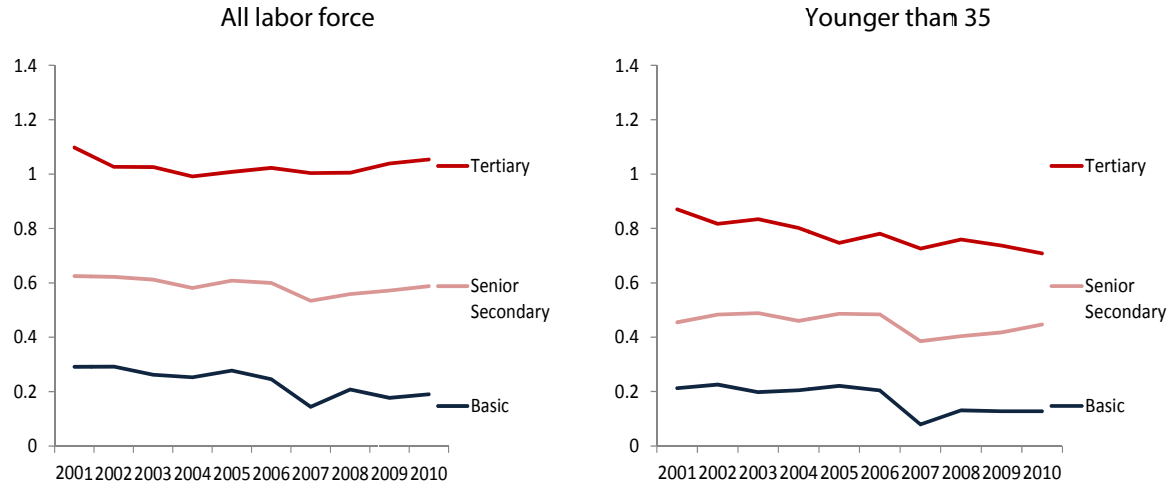
Figure 60. Type of occupation for senior secondary graduates, 2001-2010



Source: World Bank calculations using Sakernas

These mismatches are behind the recent decline in the returns to education for young graduates. The returns to senior secondary show a slight decline since 2006, though they are increasing slightly in recent years. However, these are the returns only for those graduates employed for wages, which excludes many unskilled positions. The decline in returns to higher education is still small, and it is not in all sectors.

Figure 61. Trends in returns to education, all labor force and younger than 35, 2001-10

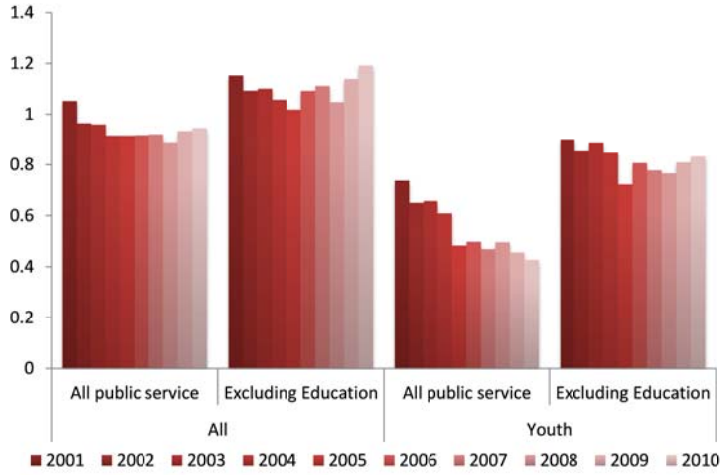


Source: Authors' calculations using Sakernas, employed for wages.

The sectoral distribution of employment goes a long way in explaining the broad indicators of labor market performance of graduates. When looking at the entire labor force, higher education graduates seem to be doing well. They are more likely to be active in the labor force, though slightly more likely to be unemployed, they get better jobs at higher wages, and the returns to education, despite the large influx of graduates seem to be largely constant. They are increasingly in high skilled "professional and managerial" positions. The fact that almost 60 percent are in public sector jobs, and 40 percent are teachers goes a long way to explain these trends.

This influx of new graduates from teacher training colleges has resulted in a sharp drop in the returns to education in the public sector driven by the education. Figure 62**Error! Reference source not found.** shows the returns to education in the public sector for both the whole labor force and younger than 35 year old, with and without education. Education sector explains the declining trend in returns in the public sector. Excluding the education sector, turns the trend flat.

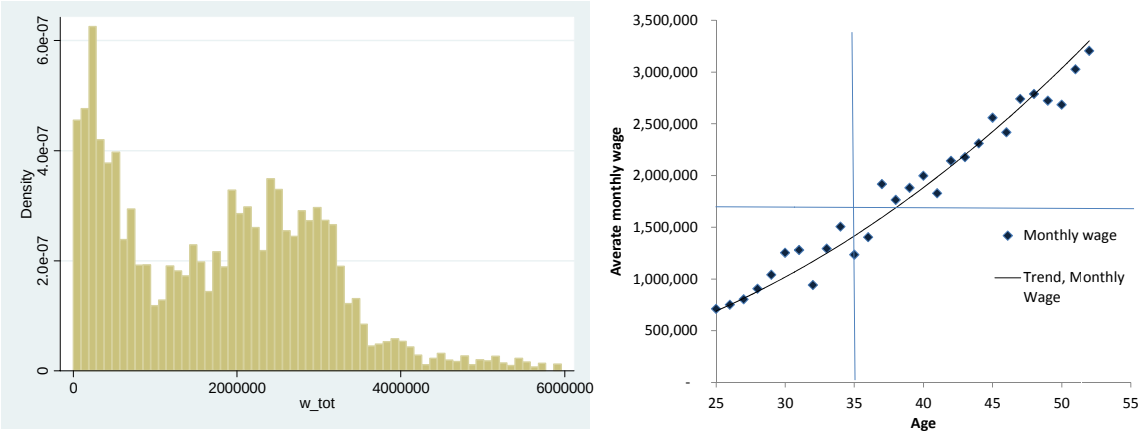
Figure 62. Returns to tertiary education in the public service sector, with and without education, 2001-2010



Source: Authors' calculations using Sakernas

What is driving this declining trend in wages? Despite what the teacher certification law promises, the distribution of teacher salaries is well below what the salary scale of a certified teacher would promise. In fact, about 40 percent of teachers are below the starting salary of a civil servant teacher (1.8 million, see Figure 63), which means they are under a different contract. Since these new teachers are not under civil servant contracts, their salaries are more likely to be driven by supply and demand. The large influx of new graduates from teacher training colleges may actually be driving the returns to education for teachers.

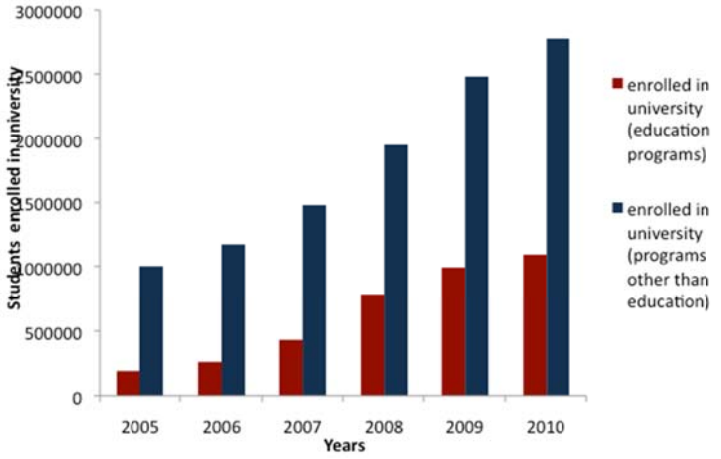
Figure 63. Average wage of tertiary graduates working in the education by age, 2010



Source: Sakernas 2010

In a clear example of the disconnect between labor market needs and the higher education system, the demand for teacher training programs is not slowing down despite the decline in the returns to education in the teaching profession. The increased demand has resulted in a fast growth in the number of students enrolled in teacher training colleges. Enrollment in teacher training colleges tripled between 2005 and 2010. This large demand for teacher training colleges may have a bigger negative externality than driving down contract teacher wages. To the extent that enrollments in teacher training colleges crowd-out enrollment in other degrees, thus starving non-public sector of capable graduates, this trend may have an additional cost in terms of competitiveness of the other sectors.

Figure 64. Enrollment growth in education and non-education higher education programs, 2005-2010



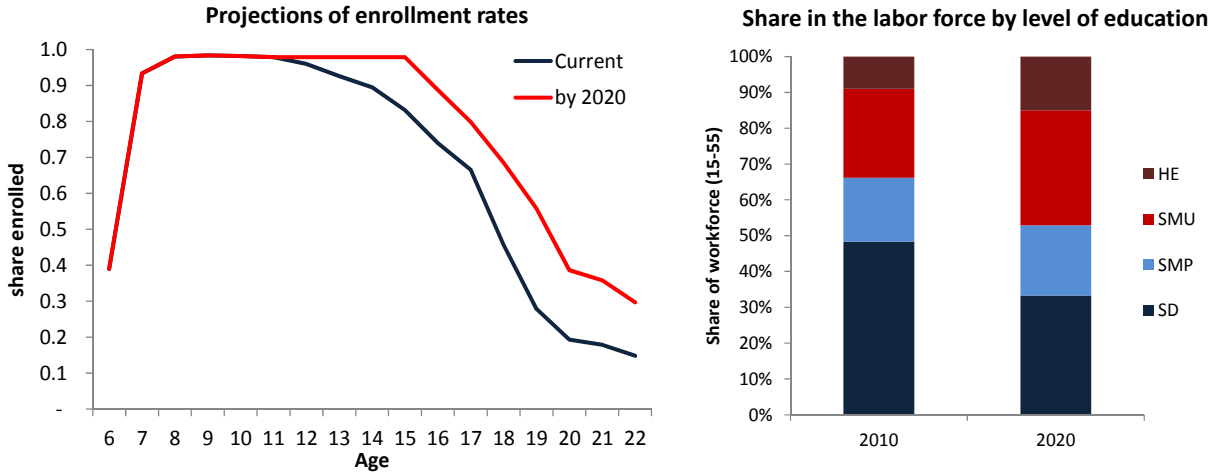
Source: MoEC, DIKTI (http://www.pdpt.dikti.go.id/dashboard/v002/), all students of all study programs combined, then all student of education programs (excluding in-service and open university)

The evidence from employer surveys and labor market outcomes of young graduates suggest that while the demand for skills is growing, a significant number of graduates have entered the labor market without the right skills. This includes people at all levels of education, so upgrading their skills should be a priority. While employers find it difficult to fill skilled and semi-skilled positions, especially exporters and manufacturing firms, unemployment rates are higher for more educated graduates. Once they find employment a high percentage of graduates end up in unskilled positions, which is affecting the returns to education. At the same time, some sectors report being severely skilled constrained in semi-skilled and skilled positions. Put together, these trends suggest that a significant share of graduates have joined the labor market without the right skills, while employers struggle to find workers with skills. Reducing these mismatches is critical to increase productivity and improve the livelihoods of these graduates, most of whom invested a significant amount in their education studies in the hope of getting good jobs.

2. What can be done to upgrade the skills of the labor force in the short and medium term?

The plans for expansion of access to senior secondary and higher education are aggressive, but updating the skills of the labor force only through the education system will take time. The Government of Indonesia has set targets for universal senior secondary and ambitious goals in higher education. The GoI plans to triple the number of students in technical programs and increase the number of doctoral students fivefold by 2025. In 2013, the government is starting to pilot the move from 9 to 12 years compulsory education. This push, accompanied by an increasing provision of scholarship[7] will grow the pool of entrants to Higher Education Institutions (HEIs). The new higher education law establishes that each district should have its own community college. Indonesia has been putting policies in place to continue expanding access to senior secondary and higher education. Moreover, the opening of Community College (*Akademi Komunitas*[8]) to support local development in districts, mandated by Law 12/2012 will further increase access. The country is close to meeting its 2014 GER target (30 percent) with more than 5 million enrolled students or as many as 27 percent GER in 2011.

Figure 65. Projected educational composition of the labor force if enrollment targets are met in 2020



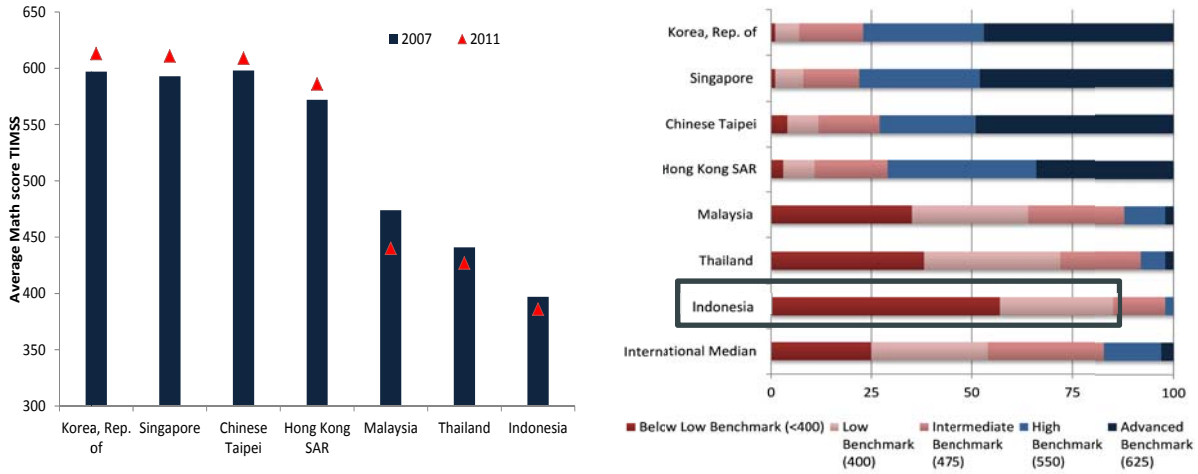
Source: Susenas and Sakernas

[7] See more discussion on scholarship in Equity and Access in Higher Education (2013) and Improving Access and Equity to Indonesian Higher Education for Candidates from Economically Disadvantaged Background (2013)

[8] Commonly expressed, community college, but it should not be seen as the US-type of community college.

Expansion is not enough since the origins of the skills shortage start with the quality of basic education. This is evident from international tests, in which Indonesia lags behind its neighbors, including Thailand and Malaysia. Perhaps more importantly, despite starting from a lower base**,** Indonesia is failing to catch up with these countries and has even seen declines in some tests—in the most recent round of the Trends in International Mathematics and Science Studies (TIMSS) administered to 8th graders, the average score of Indonesian students saw a slight decline.[9] What this means in practice is that more than 50 percent of Indonesian students are below the 'low' level of performance, 25 percent more are at that 'low' level and the rest are mostly at the 'intermediate' level, with a very small percentage of 'high' performers. There were no students in the sample that scored at the 'advanced' benchmark. These levels are translated into actual, objective competencies in mathematics, so these results are worrying. Both the average score and the percentage of high performers have been shown to have consequences for long-term economic growth.[10]

Figure 66. Average scores and share of students by level in TIMSS, 2007-11



Source: TIMSS

Improving the quality of basic education

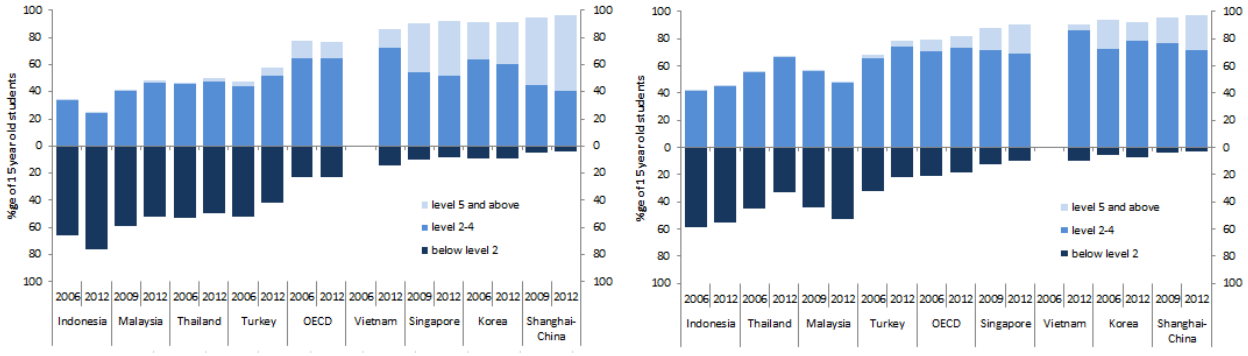
Ensuring that the workforce has the right skills to respond to the demands of Indonesia's economic transformation requires a three-pronged strategy. First, there is a clear need to ***improve the quality of basic education***, starting with early childhood education. Skills beget skills, and a strong base of cognitive skills is needed to acquire the higher-level skills that will be needed by the workforce if it is to realize such a large-scale economic transformation.

Indonesia's performance in the Programme for International Student Assessment (PISA) falls below other countries in the region. Indonesia' PISA performance is low compared to Malaysia and Thailand. However, these two countries have a much higher GDP per capita than Indonesia. Comparing Indonesia to Viet Nam, a country with lower GDP per capita, Viet Nam's performance is better. Indonesia's PISA scores show that a majority of 15 year olds in Indonesia are not able to go beyond proficiency level 2, a level that in some countries has been shown to be associated with difficulties for student wishing to continue into higher education or transition into the labor force (OECD 2013).

[9] Not statistically significant.

[10] Hanushek and Woessman (2009, 2010, 2012).

Figure 67. Share of students at each PISA proficiency level in mathematics and reading in selected countries, 2006 and 2012



Source: OECD (2013)

Raising the level of skills of the general population through basic education will take time. Even if the educational system could be perfected instantly, the first graduates would only join the workforce in about 20 years' time. **It is therefore essential to find short- and medium-term s**olutions for the current skills constraints: the second and third prongs of the strategy are thus ***improving the relevance of feeders into the labor market*** (technical and vocational education, and tertiary education) and ***upgrading the skills of the labor force***.

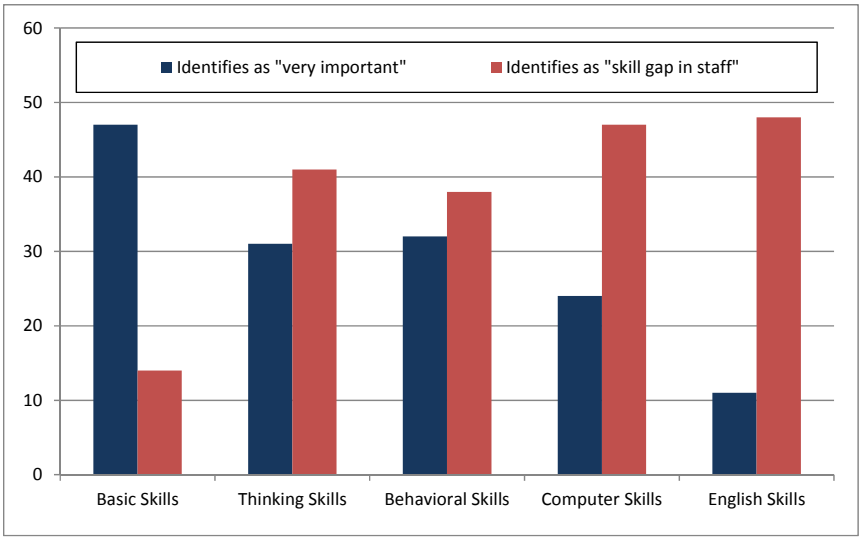
Improving Relevance of feeders into the labor market

For many youth, senior secondary is the final step before entering the labor market, so ensuring a smooth transition from senior secondary education to the labor market is important. In Indonesia, 40 percent of senior secondary students are enrolled in the vocational track, while 60 percent are enrolled in the general track. Analysis on returns to education and labor market outcomes, found in the Universal 12 Years chapter show that labor market outcomes of the two tracks are similar.

The two senior secondary tracks, general and vocational needs to ensure that graduates are equipped with enough skills for them to do what they set out to do. There are key differences between the two tracks. The general track is aimed at preparing its graduates for further educations so it focuses more on developing thinking skills. In contrast, the vocational track aims to prepare graduates for the labor market, focusing largely on technical skills development. However, there is a need to ensure that graduates from both tracks have a solid basic skill that will allow them to either pursue further education or enter the labor force.

According to the employer survey in 2008, basic skills are the most important of all. Interestingly, less that 15 percent of employers identify that there is a skill gap in basic skills. Around 30 percent of employers identify thinking and behavioral skills as very important and almost 40 percent identifies a skill gap in both of these skills. Therefore as well as equipping students with basic skills, there is also a need to provide them with thinking and behavioral skills.

Figure 68. Types of skills identified by employers as very important



Source: World Bank, Skills for the Labor Market in Indonesia, 2011

It is important to build on the strengths of both tracks while addressing their common weaknesses.

Skills needed in the labor market are not necessarily technical skills . Technical skills, while also important, were secondary. Employers valued practical work experience much more than vocational and technical education. This highlights the need to:

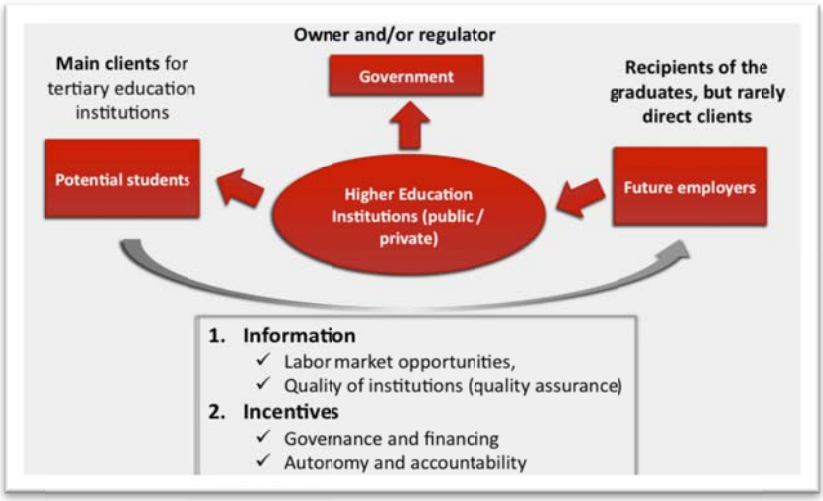
a) Balance the senior secondary curriculum of both tracks to ensure a strong base of cognitive skills by improving the quality of SMA and increasing the general curriculum in SMK, especially in the early years
b) Prioritize practical experience through internships or other programs over technical education in the classroom in SMK

For those continuing to tertiary education, there is a need to improve its quality and relevance. In higher education, isolated policy changes are unlikely to result in drastic improvements. There is a need to intervene in different aspects of the system simultaneously to make policy changes effective. Without the right systems in place, educational institutions will not necessarily respond to the labor market**.** This is one of the main disconnects seen across most Asian countries, and identified in the recent World Bank regional report titled *Putting Higher Education to Work* (World Bank, 2012). Tertiary education institutions tend to respond naturally to their 'clients', comprising potential and current students. They also tend to respond to their owners or regulators. As a result, if students' demands are not in line with the labor market (because of lack of information, for example) or the regulatory framework prevents educational institutions from responding to the demands of their 'clients' (rigidity, for example), then the tertiary education system will not respond to the demands in the labor market.

The key aspects of the tertiary education system are information and incentives, both of which are problematic in Indonesia. Without ***information*** about labor-market trends (for students, employers and educational institutions) and about the quality of institutions (*quality assurance)*, the choices of potential students will not be aligned with those of the labor market, and educational institutions will not have the incentives to align their offerings to the demands of employers. If employers cannot properly distinguish between good and bad educational institutions, then the rewards for their graduates will not be clear either. But information is not enough. Even if the right information is in place, it is still important to provide the right ***incentives***. This requires *autonomy* and *accountability*), *incentives for performance* (especially in public institutions) and opportunities for *direct links between institutions and employers* (for example apprenticeships, staff exchanges, research collaboration). Advanced tertiary education systems go beyond these basic elements and attempt to address further disconnects: between higher educational institutions themselves, between higher educational and training institutions, and between senior secondary and

tertiary education (in addition to the role of tertiary educational institutions as catalyzers of innovation). Both information and incentives are problematic in Indonesia.[11]

Figure 69. A framework of accountability of higher education institutions



Source: Authors' elaboration.

However, even if the quality and relevance of senior secondary and tertiary education are improved, upgrading the skills of the labor force is crucial in the short term. As the previous section showed, there is a significant stock of youth who entered the labor market without the right skills. Some did that without completing senior secondary education. Others completed senior secondary, therefore receiving a stronger skill base than drop-outs, but did not meet the demands of the labor market so they were pushed to low skilled occupations. They are an important asset for Indonesia that needs to be tapped, but in order to do so their skills need to be upgraded.

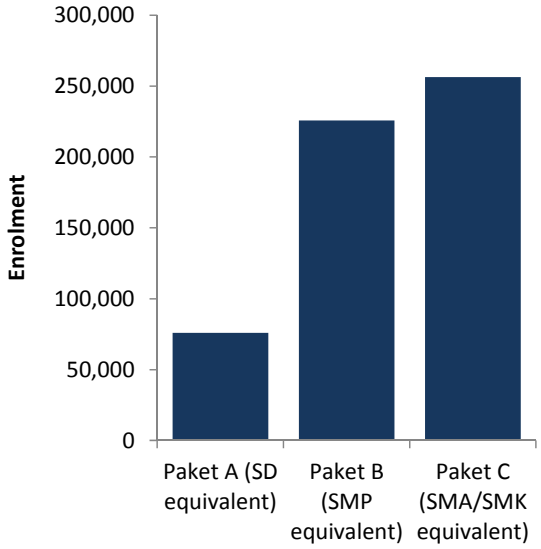
Upgrading the Skills of the Labor Force and Labor Market Entrants

Presently, the training sector does not seem to be serving two of its main objectives: i) offering second chance opportunities for drop-outs and ii) upgrading the skills of more educated labor force to meet higher demands from employers. The current system is small and serves more educated workers. Data from the labor force survey shows that only 5 percent of people in the labor force report having received some form of training leading to a certificate. Most of them have completed tertiary education, followed by senior secondary. The share of those with junior secondary or less is much smaller. Looking at the sectors of employment, the financial, public service and electricity sectors stand as clear outliers. Training in traditional sectors like industry and mining is rare. This seems to indicate that training is generally used in sectors where these certificates are a requirement (for example, accountants, or teachers).

While more than ½ of the labor force still has completed only primary or less, there are limited opportunities for those to enroll in non-formal education. There are more than 75 million people in the labor force with primary education or less, and this is large considering current enrollment in non-formal education. Number of those enrolled in *Paket* A, equivalency program for primary education are around 60,000 people. Enrollment for *Paket* B, an equivalency program for junior secondary education and *Paket* C, an equivalency program for senior secondary are 225,000 and 250,000 respectively. Therefore, the current capacity for non-formal education institutions to enroll those with only primary education.

[11] See Relevance of Higher Education for the Labor Market in Indonesia, Cerdan-Infantes and Mileiva (2013).

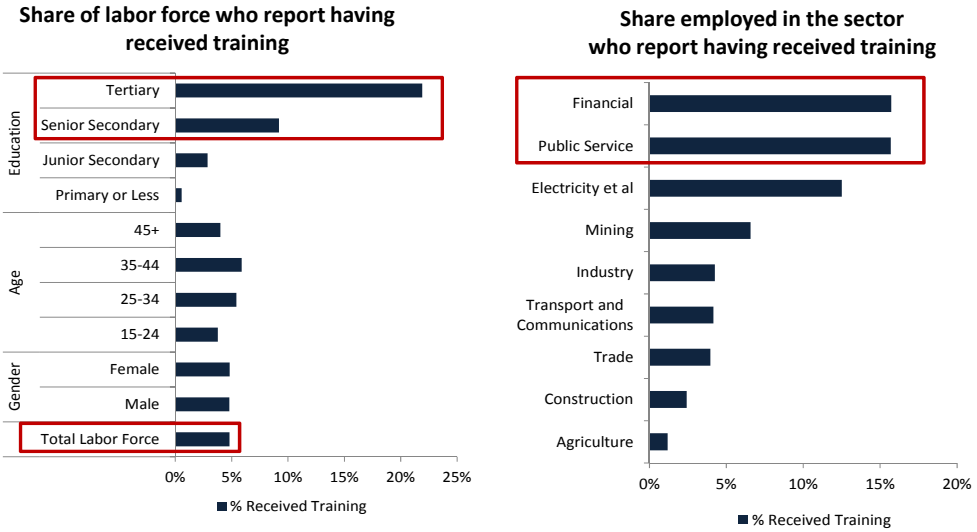
Figure 70. Equivalency Program Enrollment, 2011



Source: Indonesia Educational Statistics in Brief 2011/2012

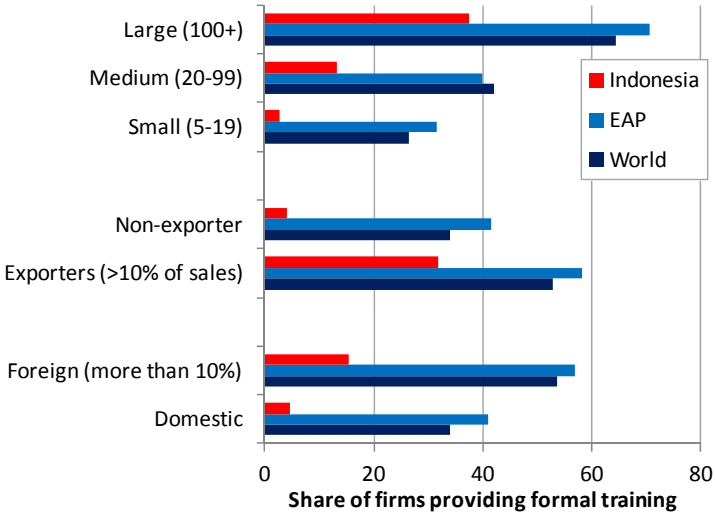
Firms offer few opportunities for training their employees. Small firms tend to offer less training opportunities in all countries, but in Indonesia almost none of them offer training (compared to 30 percent in EAP). Even among firms with more than 100 employees, only about 40 percent of them provide training opportunities (vs 70 percent in EAP). Exporters and foreign owned firms tend to offer more training opportunities, but they still lag those in other countries in the region. It is somewhat of a puzzle that even though firms report facing difficulties in finding employees with the right skills, they do not provide training opportunities for them.

Figure 71. Share of people who report having received training



Source: Employer Skill Survey (2008)

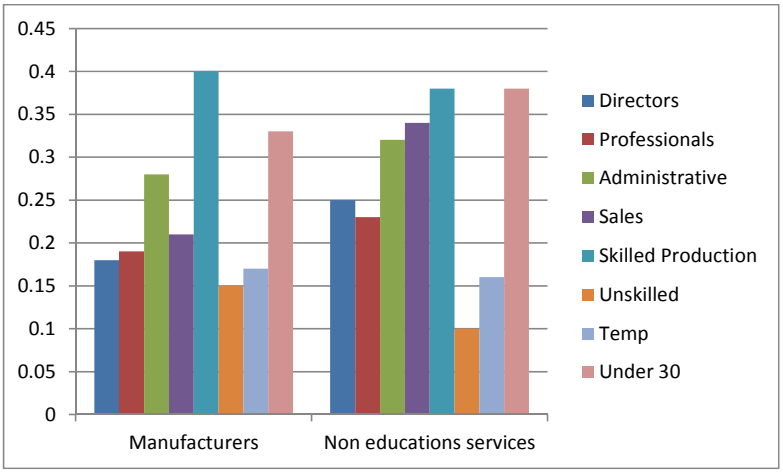
Figure 72. Share of firms providing training opportunities to employees, 2009



Source: World Bank, Enterprise Surveys 2009

Firm training are largely used as a minimum remedial or upgrading mechanism to address some of the skills deficiencies pre-employment, rather than an avenue for life-long learning. Firms provide formal on the job training programs to their employees and training appears to be targeted first and foremost at relatively skilled and young workers. On average, 30 to 35 percent of firms provide training to workers under the age of 30. Interestingly, only 10 to 15 percent of firms train their unskilled workers.

Figure 73. Share of firms providing in-house or outside training to staff

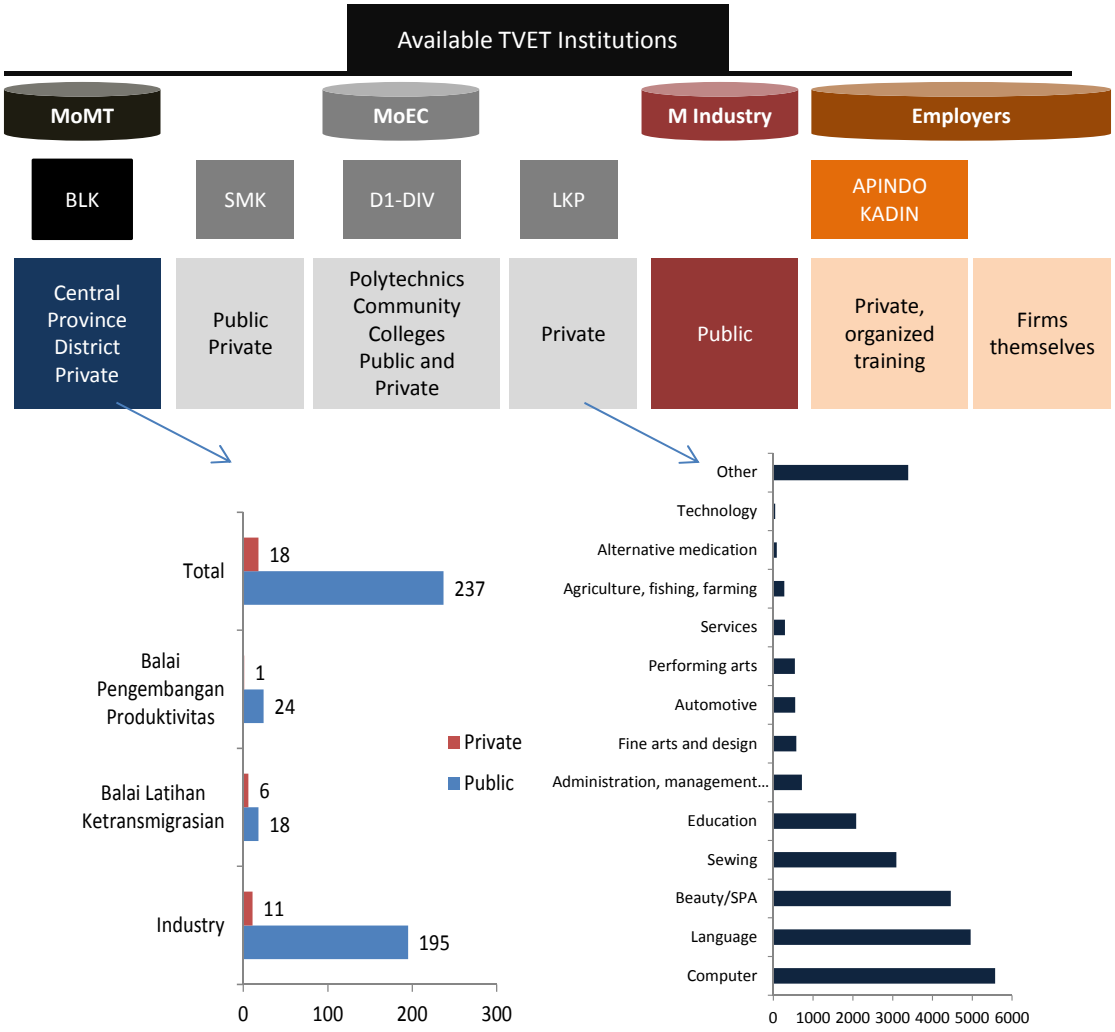


Source: Employer Skill Survey (2008)

The low quality of training providers likely contributes to the lack of training. The supply of technical and vocational education and training institutions spans public and private institutions, and they are registered and/or provided under different ministries – mainly the Ministry of Education and Culture, Ministry of Manpower, Ministry of Industry. There are only 265 public training centers under the Ministry of Manpower, some belonging to the ministry and others to local governments. The largest suppliers of training are private training providers registered under the MoEC. There are about 15,000 of these institutions but their supply is biased towards low level occupations. The two largest employer associations

have their own training providers, but they are small. The funding for training is equally fragmented, with MoEC subsidizing training centres (Lembaga Kursus dan Kepelatihan, LKP), MoMT subsidizing public training centres (*Balai Latihan Kerja*, BLK) and other ministries their own training providers. Most of the funding is input based, especially of public training providers. Private training providers outside of those under the MoEC are largely unsubsidized.

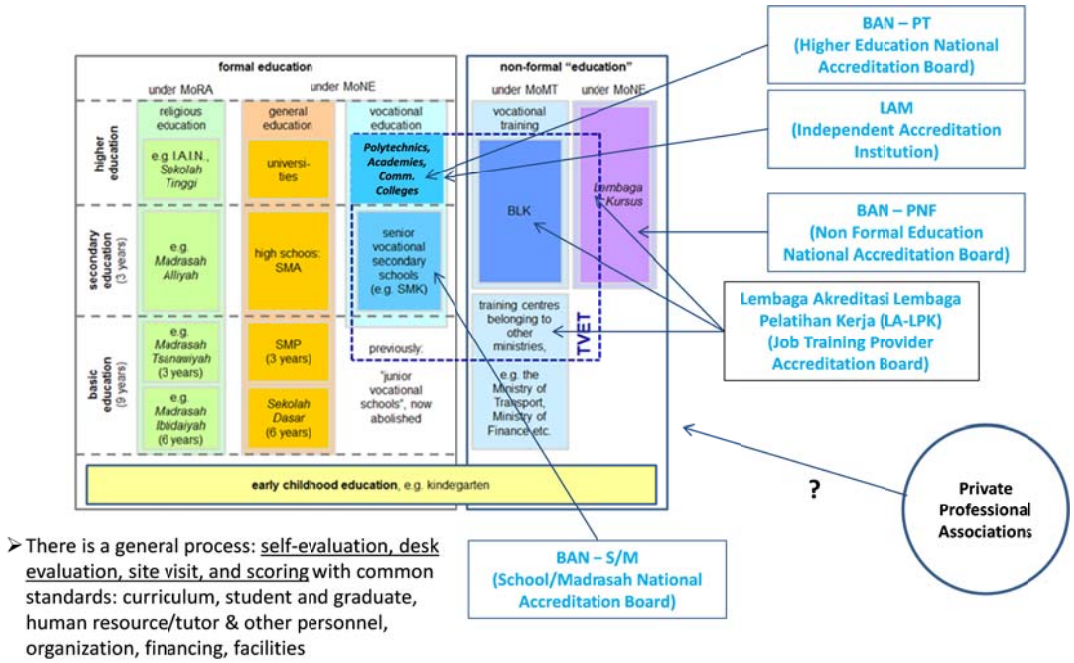
Figure 74. A picture of vocational education and training providers



Source: MoEC, MoMT, MoI, and other sources

The information about the quality of training providers is very incomplete. Quality assurance systems are fragmented, with each type of institution subject to their own system. Accreditation is voluntary and the different criteria and different levels of accreditation means the systems are not comparable. As a consequence, it is very difficult for a trainee to ascertain the quality of the different training providers. Since the issuance of competency based certifications is also very rare (even in public institutions), trainees tend to only get certificates of attendance to these courses. In the absence of well-developed accreditation, employers find difficult to differentiate the quality of the certificates that trainees obtain from these trainings. This limits the returns of training in the labor market.

Figure 75. A picture of the complexity of accreditation systems



The institutional set-up to develop a professional certification system and competency-based training is largely established, but the training system is unfunded and fragmented. Coverage is very low, with only about 5 percent of the labor force reporting having received any formal training. On-the-job training is rare, with firms in Indonesia much less likely to report offering opportunities for training to their employees than in other countries in the region (even large Indonesian firms). Supply is limited and most existing training-providers are concentrated in low-value-added areas, such as beauty salons and spas, and basic computer skills. Information about the quality of institutions is incomplete, with multiple accreditation systems with different criteria and different levels of development diluting the signals to training-seekers and firms about the quality of training. The input-based financing and the governance of public training centers (mostly managed by local governments with little interest in funding them) isolates them from the labor market. The result is that there are very few incentives for training-providers to adopt competency-based training given the high cost of quality improvements and the uncertain returns. There is a need to increase funding for skills upgrading, but at the same time to ensure that the resources are used strategically. Developing a credible quality assurance system and channeling funds only to accredited institutions is a first step. Providing targeted services to hard-to-employ populations is also important.

There is also a need for better data and monitoring and evaluation of the many non-formal training institutions. Since training programs are managed by at least three different ministries, namely the Ministry of Education and Culture, Ministry of Manpower, and Ministry of Industry, there may be a need for an integrated data to for monitoring and evaluation purposes. Furthermore, the National Labor Force Survey (Survei Angkatan Kerja Nasional, SAKERNAS) does not contain any questions on some of the aforementioned training institutions, so currently there is no way of determining the effectiveness of these training institutions.

3. Policy directions

One of the objectives of the education sector should be to produce graduates who are ready for the labor market, but many graduates are entering the labor market without the right skills. Ensuring workers have the right skills is not the responsibility of only the education sector. While the education sector has clear responsibilities in providing students with completely transferable skills (for example language skills) Employers benefit directly from having employees with skills that are specific to their economic activity, so sector specific and firm specific skills should be the responsibility of employers. Where the responsibility of the education sector ends and the responsibility of firms and individuals begin is a blurred line.

There is a need for public intervention in the skills upgrading system. There are plenty of reasons why firms may not train their workers and why the unemployed may not choose to pursue farther training even if it benefits them. These may have to do with structural factors like the size of firms, inefficiencies in the labor market (excessive employee turnover), but they may also be related to specific policies. For example, the lack of reliable information on the quality of training providers may prevent potential trainees from deciding to invest in training.

The fragmentation of the current training system and the underdeveloped quality assurance system is a severe limitation for its development. While the concept of competency based training is embedded in GoI's policy, its implementation relies on two parallel systems. Institutions under different ministries have their own system of standards, skills provision and certification. In addition they also have different quality assurance systems, each with their own criteria and their own level of accreditation.

As a consequence, the policy directions should deal with increasing resources, reducing fragmentation and leveraging private spending.

i) **More resources are needed for training, but they should not all come from the public sector**. Skills upgrading is not the responsibility of the public sector, since firms and individuals also benefit from the upgrading. Resources should come from both public and private sources, by using public funding strategically to incentivize private spending from employers. For example,. Many countries have implemented training funds from both public and private sources to incentivize training by partially subsidizing it

ii) **Improve quality of training and the use of training based on competencies by incentivizing quality improvements from training providers**. Accreditation is largely voluntary at the moment and there are no consequences of not going through the accreditation system. Competency based methodologies are rarely used in training. The increase in public funding should go to incentivizing these changes. Again, training funds are a possible tool to incentivize these changes in training providers, if these are used as conditions to access funds.

iii) **Accelerate expansion of supply of quality training institutions that deliver relevant training in higher value-added skills in strategic sectors.** The current supply of training providers is concentrated on low skilled occupations, while there is an undersupply of training providers in strategic sectors of the economy that require larger fixed investments to be established (food products, manufacturing). Expanding this supply will be critical to ensure skills upgrading happens in the right sectors.

iv) **Incentivize training for specific group through demand side subsides**. Small and medium size enterprises tend to underinvest in their workers because of logistical constraints, since the cost of sending one worker to training means stopping production. Hard to employ populations most in need of retraining may face financial constraints to access training, even if that training is relevant and of good quality. Strategic industries may also face short time constraints in developing training providers. Public investment are thus best be used to target these populations on equity and productivity grounds.

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Chapter 12. Strengthening Skills Providers and the Training Environment for Enhanced Productivity in Indonesia

This Chapter builds upon the analysis, observations and recommendations of the preceding Chapter (*Upgrading the Skills of the Labour Force in Indonesia)* by developing the case that improvement in the provision of skills is a necessary but not sufficient component for improving employment and productivity. In addition to the acquisition of quality skills, a number of critical issues need to be addressed to ensure a healthy enabling environment such as labour market intelligence, linkages between and within training provider institutions, linkages between skills providers and industry, a national skills development framework, strong governance and coordination between central and local levels, and innovative financing instruments. This paper examines the five main skills providers operating in the Indonesian context and proposes specific policy options to improve demand-oriented, high quality TVET as well as ensuring, through the enabling environment, that quality *skills acquisition* becomes *skills utilization,* addressing the changing needs of the labour market.[1]

The paper is organized in five sections each with its specific recommendations:

1. Skills Development and National Development
2. Improving the quality and relevance of skill providers;
3. Enabling environment, including governance and financing;
4. Reducing regional disparities.
5. Conclusion: Specific Policy Options

1. Skills and National Development

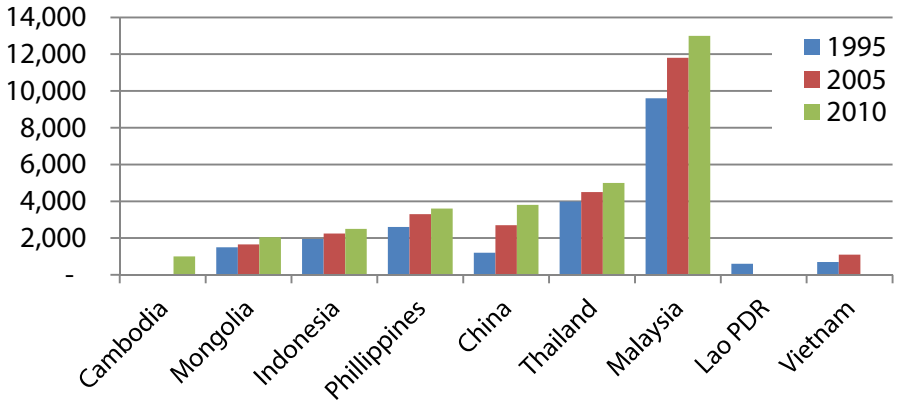
The earlier paper, "Upgrading the Skills of the Labour Force in Indonesia," highlighted the skills mismatches that are occurring in the Indonesian labour market. Significant numbers of youth are entering the labour force without the skills needed by employers. While more and more young Indonesians are completing senior secondary and tertiary education, employers continue to report difficulties in filling skilled positions. At the same time, unemployment rates of senior secondary and tertiary education graduates are higher than those of less educated members of the work force. This suggests major problems with the quality and relevance of the education received in post-basic education institutions. The type of roles senior secondary and tertiary education graduates take on upon entering the labour market also lends support to the idea of mismatches. More than half of senior secondary students that manage to find employment are employed in unskilled position. Similarly more than half of young tertiary graduates are employed in occupations below their level of education.

1.1 Reaching high income status

The paper addresses issues that Indonesia will need to face in order to achieve its aims in the coming decade. As stated in the Masterplan for Acceleration and Expansion of Economic Development (MP3EI), Indonesia aims to raise per capita GDP from current levels to roughly $15,000 by 2025, transforming Indonesia into one of the top ten major economies in the world. Reaching high-income status will depend on economic transition from a natural resource based economy to an industry-based economy and,

eventually, an innovation-based economy. Reaching high-income status will also depend on Indonesia's ability to address emerging skill needs and skill mismatches. Sustained productivity growth and greater capacity for innovation will be key to this transition, both of which must be supported by human capital development.

Figure 76. Value Added per Worker (2005 PPP$)



Source: Iryanti, R., 18 Sept. 2013, Kementerian PPN/Bappenas

Skills development and other investments in human capital are one set of a number of factors necessary for productivity growth. Improving skills and developing the higher-order skills of the workforce is also central to fostering innovation. Current trends in productivity growth and the capacity for innovation must be corrected if Indonesia is to achieve the ambitious goals set out in MP3EI. However, the risk in MP3EI is that it becomes a stand-alone activity targeted at defined priority sectors restricting skills development in geographical regions (economic corridors) without extending to a range of skills necessary for local development and increased opportunity for workforce mobility both within the nation and for migration outside.[2] Indonesia needs to continue to move to deliver higher value services, overhaul its skill systems and make these skills available as other countries in the ASEAN region and beyond will become recipients of offshoring (assuming Indonesia develop the appropriate level of skills in demand).Skill development systems need to respond to changing workforce demographics and the challenges of skill development, re-skilling and up-skilling.

1.2 Challenges of the integration of ASEAN labour markets

ASEAN integration will also bring opportunities throughout the region to qualified Indonesians. Indonesians employed in foreign countries benefit the domestic economy by sending remittances back into Indonesia. In 2010, overseas workers contributed 6.7 billion USD to Indonesia's economy.[3] For Indonesians to gain opportunities to work abroad, the government will need to ensure the qualifications provided by Indonesia's skills providers are recognized in other countries. The government can do this by linking its National Qualifications Framework (NQF) with the pending ASEAN Qualifications Reference Framework (AQRF).[4] However, Indonesia will have to do more than facilitate mobility to benefit from ASEAN integration. Importantly, households that are currently receiving international remittances remain poor since migrant workers are often forced to pay high recruitment fees and experience extortion. Additionally, the families of migrant workers, who remain in Indonesia, do not have knowledge of productive ways of investing remittances.[5]

Regional disparities in employment opportunities and the largely informal nature of rural economies can lead to income gaps, since employees' incomes are usually higher and more stable than casual workers, which in turn can lead to higher migratory pressure and urban unemployment. Migrant workers are

predominantly from deprived households. Most migrant workers have a poor educational background, only with primary education and some are without any formal education or skills training. In 2010, over 575,000 Indonesian migrant workers left home to work overseas. Many of them are from East Java, Central Java, West Java and West Nusa Tenggara provinces. Approximately 80 per cent of migrant workers are women, the vast majority work in the informal economy as domestic workers, and the main destination countries remain Malaysia and Saudi Arabia.[6] In addition to Indonesians migrating to work in the region, ASEAN integration will lead to a greater number of migrants from neighbouring countries seeking work in Indonesia. This will have implications for greater co-ordination on issues of regulation, skills planning and qualifications between the relevant ministries, such as the Ministry of Manpower and Transmigration and the Ministry of Industry etc.

1.3 The challenge of developing innovation skills

Indonesia's innovation performance appears weak on various measures compared with its neighbours. Gross expenditure on R&D is less than 0.1 per cent of GDP and most R&D is undertaken by public research organisations.[7] In 2009, Thailand spent 0.25 per cent of GDP on R&D, while R&D expenditure amounted to 1.01 per cent of GDP in Malaysia in the same year and rose to 1.07 per cent in 2011.[8] In addition to low expenditure on R&D, numbers of patent applications and scientific and technical publications are relatively small. Indonesian manufacturing outputs expanded at a rate well below the average rate of the BRIICS group during the period 2000-2008.[9] In 2011, high-technology exports constituted just 8 per cent of Indonesian manufactured exports. High-technology exports contributed a far high proportion to the manufactured exports of Philippines, Malaysia and Thailand in the same year (46%, 43% and 21% respectively).[10] The World Bank's Innovation Index (part of the Knowledge Index) ranks Indonesia 103rd of the 145 countries assessed.[11]

Innovation is key to developing new markets and employment within an increasingly competitive commercial national, regional and global marketplace. Innovation is widely recognised as promoting productivity at the enterprise and, ultimately, the national level. In HEIs, particularly in universities, there is a dire need to strengthen basic research while encouraging, through a system of multiple incentives, a more 'application-oriented' research, in line with the greater emphasis placed on external linkages and collaboration with industry and business. [12] Although higher education-based scientific and research skills are needed for the type of Research and Development (R&D)[13] necessary in, for example, biotechnology industry, engineering field, other more basic forms of innovation are necessary at other skills levels. These creative skills may not necessarily relate to the development of new technology but rather the transfer of existing technology to improve the competitiveness of local production processes as well as to improve the quality of living in local communities.

Increasingly, these skills of creativity and innovation also make use of ICT skills, necessary for the emergence of a competitive economy. Skills relating to innovation are key drivers of more innovative, productive and more commercially competitive workplaces. Trades and technician occupations also need to become more involved in research and development since skills at these lower levels are important for the development of new goods and services innovation. Creativity and problem solving needs to be nurtured as part of the instructional methodology in TVET to ensure a level of research as well as marketing, business management, and entrepreneurship. This ***innovation continuum*** from the level of artisan/technician to applied research in science and engineering, will need to be part of the curriculum and methodology in the range of skills providers mentioned in this paper.

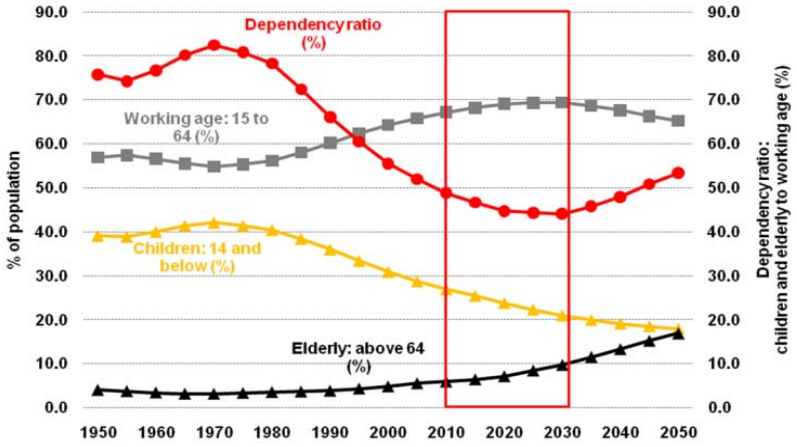
1.4 The middle-income trap

Without improvement, Indonesia runs the risk of falling into the 'middle-income trap'. The term middle-income trap is used to characterise middle-income countries that seem unable to reach high-income status.

These countries are sandwiched between low-income, low-wage producers and highly skilled, fast-moving innovators. Cost-advantages of trapped countries in labour-intensive sectors have weakened and they lack sufficient human capital and institutions to be able to grow through innovation like high-income countries. They face new challenges, such as a large pool of unemployed young people, weakening social cohesion and millions of citizens stuck in poverty. Trapped countries are characterised by productivity slowdown, as returns to cheap labour and imitation start to decline.[14]

However, demographic changes in Indonesia and Asia as a whole could support Indonesia's aspirations to become a high-income country. Developing a responsiveness to change is necessary. Eventually, it will also be crucial that Indonesia moves beyond a "factory" model to higher value-added products and services that will be required to transcend from middle income to high income levels. Knowledge intensive industries will necessitate upgraded skills to strengthen research and development, branding, development of niche products and marketing.[15]Indonesia is currently experiencing a 'demographic dividend', whereby the working age population is increasing as a proportion of the total population and the dependence ratio is falling. The dividend is predicted to last until 2030, when the dependency ratio will start to increase as a result population aging and a declining fertility rate. This relative increase in the working age population will significantly increase Indonesia's productive capacity. In addition, the working age population will decline in Japan during this period[16] (and later in South Korea). This could see Indonesian firms benefitting from outsourcing opportunities in manufacturing and service industries. These trends could also create employment opportunities for skilled Indonesians in these countries, who are then able to support Indonesia's development through remittances. The ability to take advantage of both these trends depends on Indonesia's capacity to give people of working age the skills needed to support the economy both at home and abroad. If these new labour market entrants do not have the right skills, the demographic dividend could become a demographic burden characterised by high unemployment and sluggish growth.

Figure 77. Demographic Dividend



Source: Chaudhuri, Shubham. 2012

1.5 Skills and employment

Reducing mismatches will also be key to reducing high rates of youth unemployment and supporting downward trends in general unemployment. Youth unemployment fell dramatically from a peak of 33.4 per cent in 2005 to 19.56 per cent in August 2012. Despite this reduction, youth are nearly six times more likely to be unemployed than those aged 25 years and above. In addition, the fall in youth unemployment since 2005 is not simply a result of better labour market insertion. A significant proportion was due to declining youth participation rates caused by increasing numbers of youth deciding to pursue higher education.[17] Given that youth unemployment accounts for nearly 56 per cent of total unemployment, tackling high rates

of youth unemployment will be central to further reductions in total employment, which fell steadily from just over 9 per cent in August 2007 to close to 6 per cent in August 2012.[18]

Despite improvements on various indicators of labour market performance during the last decade, informal employment as a share of total employment has remained high. Informal employment constituted roughly 60 percent of total employment in 2010 and the share of informal employment declined only modestly between 2001 and 2010 (see Figure 78). The informal economy in Indonesia is both a rural and urban phenomenon with a huge disparity among the regions. Productivity of informal employment is generally lower than formal employment and so are working conditions.[19]

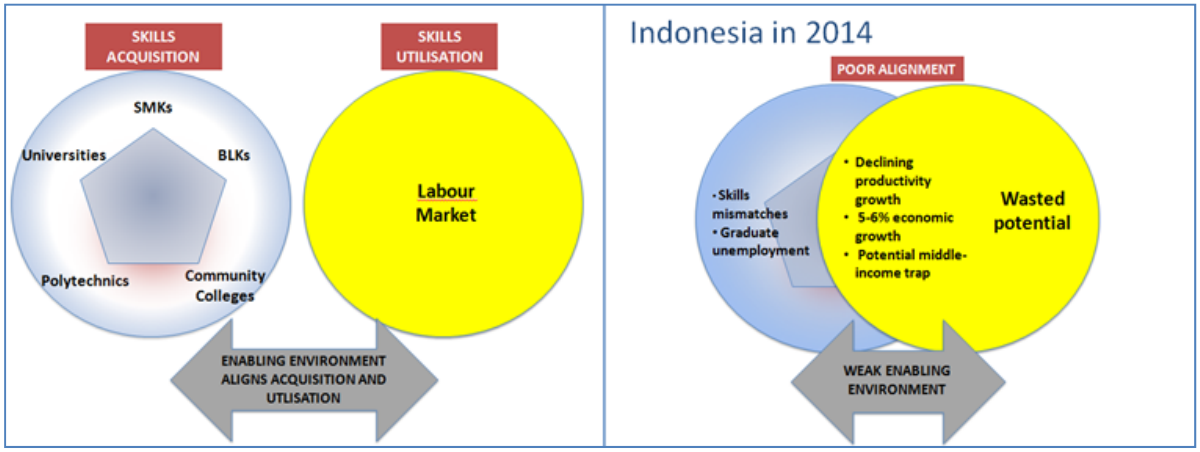
Figure 78. Informal Employment (age 15+, %)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	61.5	63.3	64.7	63.2	63.2	62.8	62.1	61.3	61.6	59.0
Male	57.9	60.4	61.9	60.5	61.4	61.4	59.9	59.3	60.1	57.2
Female	67.5	68.3	69.5	68.2	66.6	65.4	65.9	64.5	64.0	61.8

A recent study by the Results for Development Institute has revealed that employers in the informal sector in developing countries report similar skills deficits as those in the formal economy. Informal employers have a significant, and often unmet, need for strong technical skills. Employers also value workers with well-developed non-cognitive skills, such as communication, organizational and problem solving abilities, which many education and training programs neglect to develop in their students. Business and entrepreneurial skills are also often found to be lacking in job seekers and employees in the informal sector. Employers reported dissatisfaction with the qualifications held by those in the pool of potential workers and expressed desire for improved skills development programs.[20]

Skills are essential in the informal economy to raise productivity and incomes.[21] Developing skills through education and training can also disrupt cyclical poverty and improve livelihoods by increasing job opportunities for beneficiaries in the informal sector and enhancing workers' formal-sector employability.[22] Skills training is often oriented towards wage employment, neglecting skills central to success in the informal sector, especially business skills. There are many options available to governments seeking to support productivity, employment and livelihoods in the informal sector. These include reorienting existing training institutions to better address the demands of the informal sector and stimulating a supply response from independent trainers, such as master craftspeople, through financial incentives. Improving apprenticeship schemes, which are the dominant form of skills acquisition in the informal economy, for example though market demand and supply analysis, can also support productivity and employment.[23]

Figure 79. Aligning Skills Acquisition with Skills Utilisation



1.6 Aligning skills development with needs

Achieving alignment between the skills that are acquired in Indonesia's education system and the constantly evolving needs of industry will be central to reducing youth unemployment and realising Indonesia's ambitions to reach high income status. Aligning skills provision and needs entails improving the quality and relevance of the education received by students at Indonesian technical and vocational skills providers. Improving alignment will also depend on the ability of GoI to develop a TVET system in which members of the labour force can continuously upgrade and update their skills to match needs. However, developing a high quality, relevant and flexible system of skills acquisitions requires tackling problems with the skills providers themselves and creating a strong enabling environment.

2. Improving The Quality And Relevance Of Skills Providers

TVET Institutions play a vital role in Indonesia's provision of a skilled workforce and in reducing existing skills mismatches by providing opportunities for formal skills development programmes, short-term skills upgrading and lifelong learning. Skills are acquired in multiple ways: formal education and training in such courses within institutions, involving internships and apprenticeships in industry and business, as well as informally at the workplace. Since skills are developed and deteriorate over time, it is essential to develop mechanisms for enhancing the quality of skills provision and for creating new pathways (or routes) by which workers can upgrade skills during the course of their lifetimes ("lifelong learning"). Skills development should be accessible to individuals from different academic, socioeconomic, ethnic and cultural backgrounds. To ensure that skill development programmes lead to an increase in employment and productivity, it is critical that the skills acquired are adaptable to the changing needs of the labour market.[24] As the knowledge and skills needed to perform new jobs develop over time, additional technical and vocational skills are demanded in addition to the traditional academic core skills such as literacy and numeracy.[25] Ensuring the provision of a balance between core skills and TVET skills is essential for supplying a workforce with the increasingly sophisticated skills needed to produce higher value products for competitive markets. The ability of Indonesia's skills providers to develop quality programmes will be necessary to ensure the country's continued economic growth.

2.1 Improving access and quality of skills provision

Upgrading the quality of the skills providers encompasses seven main components: (i) good teaching staff that has the requisite academic and TVET skills necessary to nurture students in acquiring relevant and practical skills leading to gainful employment; (ii) a curriculum and methodology that provides linkages between the training institution and industry or business in the form of work experience, internships or innovative apprenticeship schemes; (iii) the creation of alternative pathways and "second chances" within the context of "lifelong learning" for students and workers to upgrade their skills by means of short courses and/or entry into other institutional providers (based on a consideration of merit in their vocational skills and possibly a recognition of prior learning and experience at the workplace); (iv) the identification of relevant competences and skills facilitated by the inclusion of industry/business, academia, and government coordination (see, for example, in Skills Cluster Councils in Section C); (v) innovative financing mechanisms that ensure a diversity of public and private resources to increase quality and relevance of instruction; (vi) institutional learning from shared "good practice" and innovative programmes; and (vii) relevant modality of instruction that can ensure high quality, relevant as well as fair and equitable access to skills development.

The use of ICTs has expanded at a significant rate – particularly mobile technology and use of distance learning - and with the provision of new infrastructure such as the high band-width fiber optic submarine cables, Indonesia will be able to greatly expand the use of ICTs for TVET particularly in extending access to rural and remote areas such as in the Papuan provinces.[26]The issue of the modality of instruction and the use of Information and Communication Technologies (ICTs) is key for improving the provision of quality TVET.

Access to employment increasingly depends on a person's ability to effectively and efficiently use ICTs and, by providing an alternative modality to conventional face-to-face instruction, ICTs help improve the quality of education and training as well as making it available to students who would otherwise not have access. ICTs also improve the provision of learning content, and communication between teachers and learners. The use of ICTs have expanded at a dramatic rate although major challenges are faced in terms of capacity development, access, connectivity, and localisation, customisation and content development.

2.2 The five skills providers and their interlinkages

This paper discusses five TVET skills providers, which offer formal and non-formal education[27] and issue certificates, diplomas or degrees: *Sekolah Menengah Kejuruan* (SMK), Community Colleges or *Akademi Komunitas* (AK), polytechnics, universities and *Balai Latihan Kerja* (BLK). SMK, which provide secondary education, and the newly established (AK), polytechnics and research universities, which provide post-secondary education, fall under the responsibility of the Ministry of Education and Culture (MoEC). *Balai Latihan Kerja* (BLK), which provides non-formal TVET training, falls under the administration of the Ministry of Manpower and Transmigration (MoMT).

SMK is the only secondary education institution that provides vocation education and was established to produce secondary graduates who were ready for the workplace. However, the TVET system has several possible routes by which SMK graduates can transfer between skill providers and/or education institutions in order obtain tertiary education and to upgrade their skills (See Figure 80 below). SMK graduates can choose to go to the recently established AK institutions, polytechnics or universities for tertiary education, enrol in trainings or short courses in BLK, or go directly to the labour market.

Routes between AK, polytechnic and universities, however, are not very clear. AK graduates' options are vague, meaning that whether they are limited to polytechnic or open to both polytechnic and universities. Moreover, the vocational D4 diploma is only roughly equivalent to a bachelor's degree from a university. Hence, there is little assurance that a polytechnic student is able to transfer to university when it is desired. Such transfer requires polytechnic students to pass an entrance test, which focuses on theoretical knowledge.[28]

Figure 80. TVET Skills Providers within Life-long Learning Framework

A major impediment to establishing flexible pathways through this system is the entrance exam and assessment. For example, SMK graduates often at a disadvantage in gaining entry into tertiary education. Entrance exams of polytechnics tend to focus heavily on academic skills and, consequently, have favoured SMA graduates rather than SMK graduates. Public polytechnics have taken measures to assess SMK graduates based on their achievement at school through the PMDK-PN[29] (*Penelusuran Minat dan*

Kemampuan Politeknik Negeri), a national selection for public polytechnics by invitation.[30] However, it is unclear if technical and vocational skills will be adequately assessed. Moreover, most entrance exams at universities use the national selection test with a sole focus on theoretical knowledge (*Seleksi Nasional Masuk Perguruan Tinggi Negeri/SNMPTN*) for public universities and/or an "academic potential test" (*Tes Potensi Akademik/TPA*) for private universities.

2.3 Generally perceived weaknesses

Although each skill provider has different strengths and weaknesses, TVET has mainly been criticised for the poor quality and relevance of the training provided despite the success it has seen at increasing enrolment and the number of certain TVET institutions. Employers report that a significant percentage of SMK and polytechnic graduates does not have the skills needed to perform well in their positions.[31] Employees report that vocational schools curriculum is neither derived from the demands in the labour market nor keeping pace with current technology and innovation, and this is exacerbated by out-dated learning facilities in several skills providers[32].

TVET institutions also carry a stigma as they are considered to be where students failing the academic stream and those of low socio-economic background continue their study[33]. The significant problem of public perception on TVET in Indonesia can also be found in other Asian countries. These problems include the lack of well-established model for quality apprenticeship with the industry and the low level of formal employment, which affects TVET graduates more than graduates from the general education.[34]

The public and even parents consider the vocational education track as fit for only the academically less endowed. In many countries, students entering the vocational education stream find it difficult, if not impossible, to proceed to higher education. There is the need to make TVET less dead-end.

2.4 Senior Secondary Vocational School (*Sekolah Menengah Kejuruan*/SMK)[35]

To reduce high youth unemployment and skill deficits, GOI has targeted an increased proportion of vocational secondary students to 70% of all secondary students.[36] Although there are doubts in the government committing to this goal, some progress has been made in meeting this target. In 2012, enrolment of vocational secondary students reached 37.2% of total secondary students, after slightly decreasing from 36.1% in 2001 to 34.3% in 2006.[37] Since 2012, the number of SMK institutions in Indonesia has also increased from 10,256 to 11,727. The majority of SMKs are located in Java (57%) and Sumatera (21%)[38]. Private SMK institutions comprise the largest proportion of SMK institutions, and they also see the largest number of enrolments (See Annex A: Factsheet on TVET)[39].

Increasing enrolment rates and the number of SMK institutions is not sufficient to reduce unemployment and skill mismatches, if TVET does not provide training in practical skills demanded by industry. A few SMKs have established close linkages with industry in an attempt to improve the quality and relevance of SMK graduates[40].

Linkages with local industry and business provide opportunities for workplace experience and the development of relevant skills (see Box 1 below). This can become a valuable opportunity of linking the academic curriculum (mathematics, science, life skills, etc.) to the reality of the everyday experience, enhancing the relevance of the curriculum by demonstrating its application to the vocational track. There are two major challenges in linking curriculum to the industry. For one, the principals of SMKs who need to have an adequate knowledge and experience of the workplace and be able to develop and creatively use networks within local enterprises to enhance the learning of their students and to seek to develop private-public partnerships. Also, there is a challenge for MOEC and MORA in granting the necessary autonomy and incentives for SMKs to seek creative ways of interacting with enterprises while ensuring that the regulatory framework is securely in place to maintain the schools' focus on learning rather than serving as a cheap

source of labour. The role of the principal and the school supervisor (*pengawas*) is critical in this regard and specialized training for these functionaries is needed for the quality assurance the SMK.

Box 1. Good Practice in SMK-Industry Linkages

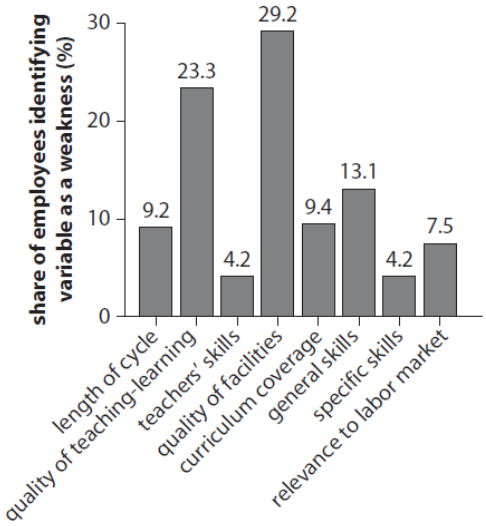
In 2002, the private vocational school SMK '*Warga*' Solo in Central Java cooperated with Suzuki Indomobil Motor, a private company producing motorbikes in Jakarta, by becoming services provider to Suzuki motorbikes in Solo. Suzuki facilitated the school by giving facilities and equipment and providing teacher training in service technologies. Teachers give a follow-up course in "automotive mechanics" for SMK graduates who then become eligible for a permanent position as Suzuki mechanics upon passing an examination conforming to industry standard. Other industry partners have shown interest since then. SMK '*Warga*' worked alongside the public vocational school SMK-N Trucuk and KIAT Motors in the 'Teaching Factory' project, which developed the 'Esemka', a handmade 1.5-liter engine driven SUV.

SMK-N Trucuk in Klaten, Central Java developed a strong relationship with the industry after they analysed the local labour demand and extended their training portfolio. The school principal visited companies to promote his school and invited them to work together in developing the curriculum. These companies agreed and soon after they also provided training for teachers to upgrade their practical skills. The school made a Memorandum of Understanding with the industry for internships and asked the companies to evaluate students' performance.

Source: Lessons Learned on Public-Private Alliances in the Vocational Education System of Indonesia (ADB, 2012)

However, in many cases, SMK education is not adequately responding to the skill needs of industry (see Figure 81 below). Although generally employers prefer SMK graduates to SMA graduates, unemployment among SMK graduates is now higher (11.2%) than among SMA graduates (9.7%). Employers reported that most SMK graduates are not meeting their expectations, and considered 20% of new hires with SMK education of poor or very poor quality. According to employees, the general curriculum of SMK is inadequate in teaching general skills and the facilities and teaching quality are poor. Employees also state that vocational strand of the SMK curriculum is not demand driven and does not provide training that allows them to meet the needs of the manufacturing sector[41]. According to a World Bank working paper, returns to SMK education have decreased and converged with those of SMA.[42]

Figure 81. Main Weaknesses of SMKs as Perceived by Employees



Source: Indonesia Employer/Employee Survey of Skills/Labor Demand and Job Vacancies 2008 (di Gropello, Kruse and Tandon, 2011)

Possible reasons that SMK education is poorly coordinated with labour market demands include that the technical portion of SMK curriculum is still devised by MoEC, which does not coordinate with Ministry of Industry and Ministry of Manpower and Transmigration and receives little input from relevant industries.[43] A study from the Centre for Policy Research in MoEC shows that cooperation in planning and developing the curriculum with the industry is still ineffective and that the majority of SMKs in the study had not involved

the industry in curriculum planning. Moreover, only few SMKs cooperated with the industry in the provision of facilities and equipment. The same study also shows that there is lack of labour market information for SMK graduates, except for one local government agency, which made a 5-year forecast based on anticipated demands from local industries.[44] Additionally, only a few teachers have both teaching and working experience, which also contributes to providing an education with less relevance than desired in the workplace.[45]

Nor is the academic track of SMK institutions strong enough to give graduates adequate academic skills. The World Bank working paper finds that SMK students score lower than SMA students on EBTANAS[46] and/or other national exams, which leads to their lower attendance of tertiary education. SMK entrants had lower score by 2.7 points than those of SMA in their national exam for junior secondary school and this gap became more significant as it grew from 2.7 points gap in 1997 to 6.9 points gap in 2000.

2.5 Vocational Training Centres (*Balai Latihan Kerja*/BLK)

BLK provides training and short courses, meaning that if offers a certificate but not a diploma or degree, and is governed by government agencies managing labour. There are three types of BLK according to the government level; central BLKs are directly managed by the Ministry of Manpower and Transmigration (MoMT), while provincial and district BLKs are locally managed by the local government's labour section (*Dinas Tenaga Kerja*/DISNAKER). Main benefits of BLK are that it offers a second chance to poor individuals who dropped out of the primary and secondary education. A major characteristic of top-performing education systems is the existence of alternative routes for learning and the provision of "second chances" for students who have not had the advantages of supportive learning environments early in their lives or have found it difficult to flourish in the regular school climate.[47]Often the opportunity of linking academic curriculum with the practical experience of production (strengthening the connection of school and work), the discipline of working in teams, keeping to time schedules and deadlines, etc., provide a more effective and stimulating learning environment from which the student can graduate to higher levels of learning, perhaps by transferring to a community college or other HEI to pursue higher level studies. [48] Additionally, BLK provides an opportunity for Indonesians of all ages to access short courses providing industrial-oriented technical skills to maintain the relevance of existing skills[49]. BLK graduates have high employment rates (between 85-90%)[50].

The main weakness of BLK is that it is inadequately linked to other training providers. By offering a certificate instead of a degree or diploma, BLK offers training that may be more relevant in the workplace but that is neither recognized by other education institutions nor capable of being transferred into other educational qualifications.[51] An integrated national qualification framework with a unit credit system would be needed to ensure pathways between BLK and other institutions in the larger education system.

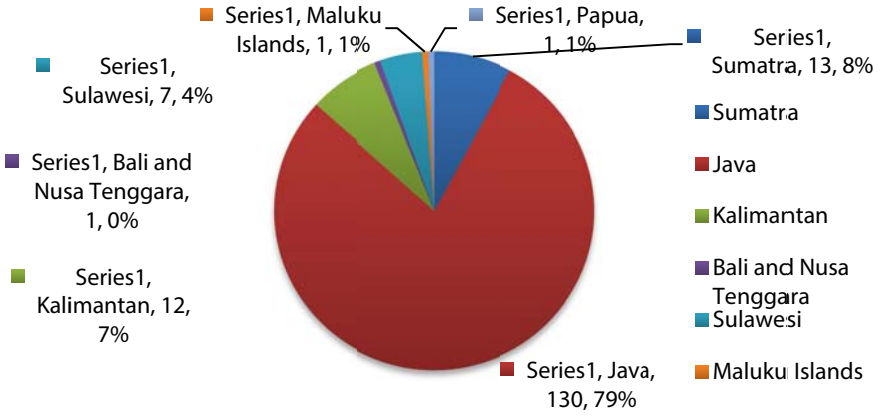
BLK suffers poor quality of the equipment, with a majority of it being outdated and having been deteriorated. In the BLK survey conducted by the World Bank, 67% of BLKs had not received any new equipment since 2000 for the most essential equipment in each skills area. On the other hand, only 17% of them had received new equipment. Although new equipment has been added promptly since 2003, it is important that BLKs have the necessary equipment to provide up-to-date training relevant to current standards of the industry and technology.

BLK institutions also have extremely high operational costs at Rp 17 million per student in the central level. Training is funded by the government and costs the same as would one year of tertiary education. Centrally governed BLKs have significantly higher operational costs than provincially or district run BLKs, almost twice as much as that at provincial BLKs and four times as that at district BLKs, despite having the same set of operational guidelines. The difference in operational costs between BLKs suggests that there are either disparities in efficiency and/or qualities of training.[52] For example, in district-level BLKs, salaries take the highest proportion of expenditure and the training materials take the lowest proportion of expenditure.

Almost all funding for BLK operations came from the ministry, provincial and district budgets. Only very few BLKs have additional income from fee-based courses and in the 2011 World Bank study only one BLK reported income from a contract with a private enterprise although it was reported that a small proportion of funding at a few BLKs were provided by local communities or corporate interests.[53] Almost all courses in BLK have no tuition fees, except for several courses on industry-specific skills where participants have to pay for a low fee. The government does not subsidise all industry-specific skills. In these cases, participants have to pay, albeit only a low fee. This self-generated funding through tuition fees constituted only 2% of the total BLK budget in 2009 and the challenge facing BLK is to diversify its financial resources, particularly with partnerships with the private sector, in order to strengthen its school-industry connection.

BLKs are distributed disproportionately throughout Indonesia, presenting a problem of equity (see Figure 82 below). BLKs are located mostly in the western regions of Indonesia (Java and Sumatra) and with only a small concentration in the eastern part of Indonesia.[54] Without taking central BLKs into account, each province or district BLK serves just over a million people on average. In more populated provinces, there is more competition for places in BLKs than in lesser populated provinces. Moreover, the size and capacities of BLKs differ between central, provincial and district level. In 2009, the average number of central BLK graduates was 1,300 people, compared with 650 provincial BLK graduates and 340 district BLK graduates.

Figure 82. Distribution of BLKs in Indonesia (by Region)



Source: Ministry of Manpower and Transmigration website

2.6 Community Colleges (*Akademi Komunitas*/AK)

As a mandate of the 2012 Higher Education Law, the GOI planned to build 497 Community Colleges (AK) at the district level. So far, 20 have been established. The cost of building these community colleges is extremely high, estimated to be Rp. 50 billion per institution[55]. There are several types of AK, including those that are run and managed by the polytechnics, those which collaborate with SMK, BLK and teacher training institutions (*Pusat Pengembangan Pemberdayaan Pendidik dan Tenaga Kependidikan*/P4TK), those which are established and managed by the industry, and those which are independently organized by private institutions[56].

AK can provide formal education in the form of short courses. Like polytechnics, AK provides sandwich programs, which mean that an internship stint is "sandwiched" between education courses. Offering Diploma I and Diploma II degrees, AK has spans two years maximum, which is shorter than polytechnics.[57]

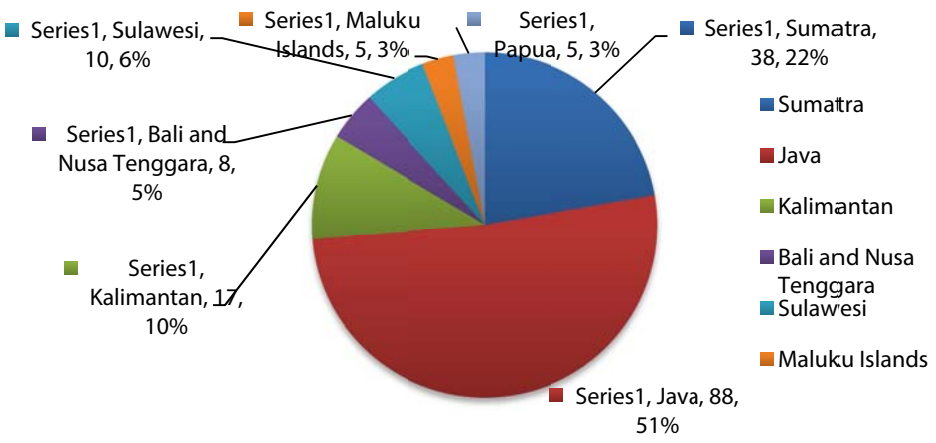
Like BLK, AK can provide second chance learning opportunities to secondary education graduates, mostly SMK graduates, who do not progress into polytechnics or universities. One year of study at AK costs as much as one of BLK's short courses, making it an economic alternative. The exams to gain entrance to AK, however, emphasize academic competence more than technical and vocational competence[58].

AK is still in the early stages of implementation. Therefore, its impact on skill mismatches is yet to be seen. However, several issues may arise from AK. Firstly, as AK focuses on specific technical skills based on local economic activities, skills provided by AK might not be easily transferable to other industries across Indonesia. Secondly, the role of AK might not be adequately differentiated from polytechnics, as both are intend to provide progression from SMK even though polytechnics alone provide (D1-D4) as well as allowing their D4 graduates to progress to academic post-graduate degrees.

2.7 Polytechnics

While AK offers D1-D2, polytechnics are the only higher education institution (HEI) offering D1-D4 qualifications. In 2009, the government committed to investing in polytechnics, offering an estimate of Rp. 20 million per student.[59] There are approximately 170 polytechnic institutions, 38 of which are public institutions and 133 of which are private. Although having fewer institutions, public polytechnics enrol around half of polytechnic's approximately 50,000 students (See Annex A: Factsheet on TVET for a detailed breakdown).[60] Like with SMKs and BLKs, polytechnics are heavily concentrated in the western part of Indonesia, as shown in the Figure 83 below.

Figure 83. Distribution of Polytechnics in Indonesia (by Region)



Source: DGHE database website (http://pdpt.dikti.go.id/)

Although a significant level of public funding, polytechnics are not adequately responding to the demands of Indonesia's rapidly changing labour market. One reason for this might be that polytechnics have not organised industry linkages. According to an employer survey, polytechnic graduates perform worse than university graduates in terms of search times and quality of jobs.[61] According to Interviews with employers, several public polytechnics were indicated as "out of touch with the world of work" and graduates were indicated as having inadequate technical skills and poor working attitudes. Nor did polytechnics strongly respond to local skills deficits.[62] Research by the International Labour Organisation and the World Bank shows that graduate employment is very low (below 30%) and that it takes 6-12 months for graduates find employment in related areas of study. Moreover, public polytechnics are operating under the central government administration and not as publicly granted independent institutions. Without institutional autonomy, polytechnics are less responsive to labour market needs and not actively seeking partnerships with the industry.[63] It has limited the recruitment of quality teaching staff with practical skills, which are mostly outside of civil service recruitment norms. The lack of financial autonomy in polytechnics has made it difficult to engage and manage any form of industrial contracts, which will improve their relevance and supplement their revenues.[64]

Although polytechnics were intended to provide higher education options for SMK graduates, their selection processes tend to favour students with academic qualifications. Because entrance exams tend to emphasize academic knowledge more than technical knowledge, SMK graduates, who generally have lower academic achievement than SMA graduates[65], will face difficulties in gaining acceptance. As the household and labour force survey data show, only 10% of SMK graduates continue their study to higher education and training, while the rest enters the labour market directly.[66]

The quality of education provided by polytechnics has also been questioned, due to poor teaching quality, poor and outdated learning facilities[67] and the lack of an adequate monitoring and evaluation system. Although improving teaching quality has been part of the National RENSTRA's agenda, few lecturers have the work experience needed to deliver relevant and quality instruction. The selection system for lecturers tends to favour academic qualifications more than occupational background. In addition, lecturers are neither encouraged nor incentivised to accrue technical training or industry experience, and the reward system is not based on performance. The monitoring and evaluation system needs better procedures, standards and goals. Establishing such system is hindered by little consensus and understanding of what the polytechnic mission is.[68] However, despite existing problems with the quality of education provided by polytechnics, a few examples exist of polytechnics that are performing well. (See Box 2).

Box 2. The Bandung Polytechnic for Manufacturing and Politeknik Aceh

The Bandung Polytechnic for Manufacturing (Polman) implements the concept of "production-based education" and attracts industries to outsource production through contracts. Due to these contracts, Polman is able to bring an industrial environment to its workshop and provide relevant experience to students and staff. These contracts also contributed to Polman's income to top up the insufficient government budget. They are recognized internationally and now they are working with several international institutions, such as the Malaysian government and Japanese universities.

Aceh Polytechnic (Politeknik Aceh/PA) was established in 2008 post, a result of joint-cooperation between Badan Rehabilitasi dan Rekonstruksi (the disaster rehabilitation and reconstruction), USAID via Swisscontact, Chevron Corporation, and the Government of Aceh.69 Teaching and learning materials are developed with industry participation and through program-specific DACUM (Develop A Curriculum) processes. PA has established linkages with at least 35 companies located inside and outside Aceh province for a six-month student internship. PA strategy was to attract students from poor background by allowing them defer payment of 85% of tuition fee until they find employment. Students report that its curricula are relevant, supported by modern equipment, it has a balanced theory vs. practical teaching and supportive lecturers.

Source: Developing Strategies for University, Industry, and Government Partnership in Indonesia (ACDP, 2013); The Aceh Politeknik Program (TAPP): Final Evaluation (USAID, 2010).

Like with SMKs, the quality of private polytechnics is significantly lower than that of public polytechnics in terms of learning outcomes. This might be caused by human resource and financial constraints in private polytechnics, although private polytechnics have greater autonomy in funding and linking with industry.[70]

Information on polytechnic students and their employability tends to be out-dated and inconsistent. There is lack of manpower and labour market information in the system. Moreover, there are insufficient basic channels of data to review polytechnic effectiveness in terms of producing graduates with the required skills.[71]

Box 3. DACUM as a system for developing curriculum

A system that has been used effectively by Aceh Polytechnic (see Box 2) is DACUM. The acronym DACUM refers to developing a curriculum and it is a leading on-line resource for Occupational Analysis developed by Ohio State University, USA. It is a process that provides a picture of what the worker does in terms of duties, tasks, knowledge, skills, and characteristics - and often the tools the worker uses. The process presents information in graphic chart form and can include information on critical and frequently performed tasks and the training needs of workers. This information is converted into competencies and skills and, finally, into an instructional curriculum. This form of occupational analysis is particularly effective for the design of TVET curricula and it often provides an analysis of both novice and top-performing veteran workers in order to develop a gradation of knowledge, skills and competences linked to certification and promotion.[72]

Source: http://www.dacum.org/about.asp

2.8 Universities

As of August 2013, only 5.5% of university graduates were unemployed.[73] However, inadequate labour market information may mask the reality of the situation. In addition, unemployment rates do not indicate cases in which graduates find employment below their skill levels. It is reported that half of tertiary graduates are underemployed, taking jobs that require skills below their actual competence.[74]

The relevance of the education provided by universities has been questioned.[75] "Practical knowledge of the job remains weak across the board for university graduates.[76] There are several reasons that universities are not providing training that is relevant to industry needs, including an incentive structure that intends to promote internationally publishable research over efforts to develop application oriented ideas, develop partnerships with industry in R&D and to move downstream and embrace higher value products in sectors like mining and agriculture. A study done by the World Bank found that firms have linked with universities yet only "few of these relationships were richly developed". Poor technical quality of university graduates was also highlighted.[77]

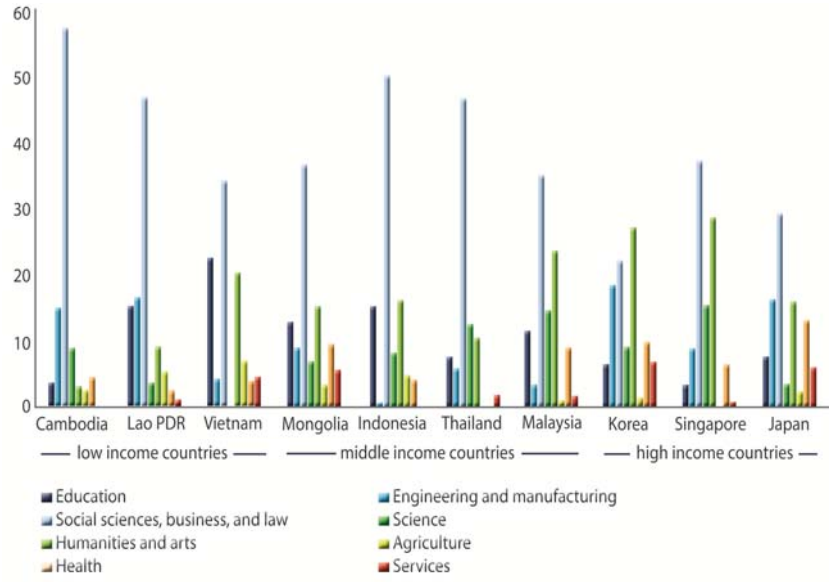
Box 4. An Innovation in University and Agricultural Sector Linkages

Institut Pertanian STIPER Yogyakarta (INSTIPER), a leading private university in plantation sector, suffered from the declining number of applicants in the agricultural study programs. As a private university who depends almost entirely on students' tuition and fees, INSTIPER made an effort to overcome the situation by shifting its education programs to cater more to employers' needs. Despite being criticised for providing a very specific learning outcome, the current enrolment of 2020 students has exceeded the enrolment's survival threshold for a private university. With its alumni, it cooperated with almost all major palm oil industries. INSTIPER invited the industry to develop a curriculum to best suit their needs and to fund students through scholarships. The education program has turned into an in-house training for the industry where students are also trained companies' organization culture. Moreover, most of its graduates have successfully found employment before their graduation.

Source: Developing Strategies for University, Industry, and Government Partnership in Indonesia (ACDP, 2013)

In addition to skills mismatches, universities are not producing graduates in fields relevant to labour market demands. The reported shortages of graduates in the manufacturing sector presumably indicate skills mismatches originated from a lack of manufacturing-relevant fields of study. Only 16% of students graduate in engineering, manufacturing and construction. In contrast, there are 39% of students in social science, business and law (see Figure 84 below).[78]

Figure 84. Proportion of Higher Education Students by Fields of Study



Source: Putting Higher Education to Work (World Bank, 2012)

In addition, the governance of universities does not allow them adequate autonomy to make strategic actions and engage in partnerships. Although higher education autonomy was established and stipulated in the 2012 Higher Education Law and eight public universities and institutions were targeted to become financially autonomous, only four have officially converted their status to being legal entity state universities (PTN-BH). Otherwise, university funding comes mostly from public allocations and is not diversified or competitive. Thus, institutions are not forced to innovate or engage with industry.[79] In addition to lack of financial autonomy, universities also lack staffing autonomy as its human resource management is restricted by the civil servant regulation.[80] The result is that universities face difficulties in recruiting quality teaching staff.

Box 5. China: University-Industry Linkages

In Beijing, China, universities have built close linkages with the industry through joint projects, consulting and training. From 8,278 research projects in 2000, 1,540 were undertaken by cooperating with firms and 795 projects with technology service contracts. The universities work with the industry by establishing for-profit enterprises. Two prominent universities, Tsinghua University and Peking University, have established an internal technology licensing organization to strengthen their linkages with the industry and to promote industrial technology transfer.

Source: Skills for the Labor Market in Indonesia – Trends in Demand, Gaps and Supply (di Gropello, Kruse and Tandon, 2011)

Most universities are located in Western Indonesia, contributing to regional disparities in opportunities to gain skill provision. There are 1,903 universities in Java and Sumatera, compared to only 724 universities in the rest of Indonesia.[81] Pre-existing regional disparities in secondary education also contribute to issue of access and equity. Secondary graduates from Eastern Indonesia are not competitive in gaining admission to quality higher education.

2.9 Summary - improving the quality of skills providers

The 5 TVET skill providing institutions – SMKs, BLKs, community colleges, polytechnics, and universities – will need to make significant changes in their curriculum and methodology in order to ensure that are responsive to labour market needs if they are to contribute to gainful employment and increased productivity. To do this, they must have an understanding of the supply and demand for learning and skills necessary to meet current and future labour market needs. The labour market is both complex and dynamic,

created through a constant interaction between 'supply' (individuals looking for work) and 'demand' (employers seeking to recruit individuals as employees to help them deliver the goods and/or services they produce). The system of skills provision is equally complex with different funding streams, regulations, requirements and often with different and outmoded interpretations of supply and demand. Reforms will need to be well coordinated and linked with an adequate system of incentives and sanctions based on institutional performance. However, skills provision is only part of the picture. Another vitally important consideration to ensure employment and productivity is the need for producing the necessary enabling environment to foster the utilization of skills that these institutions provide. This will be discussed in the next section.

3. The enabling environment, including governance and financing

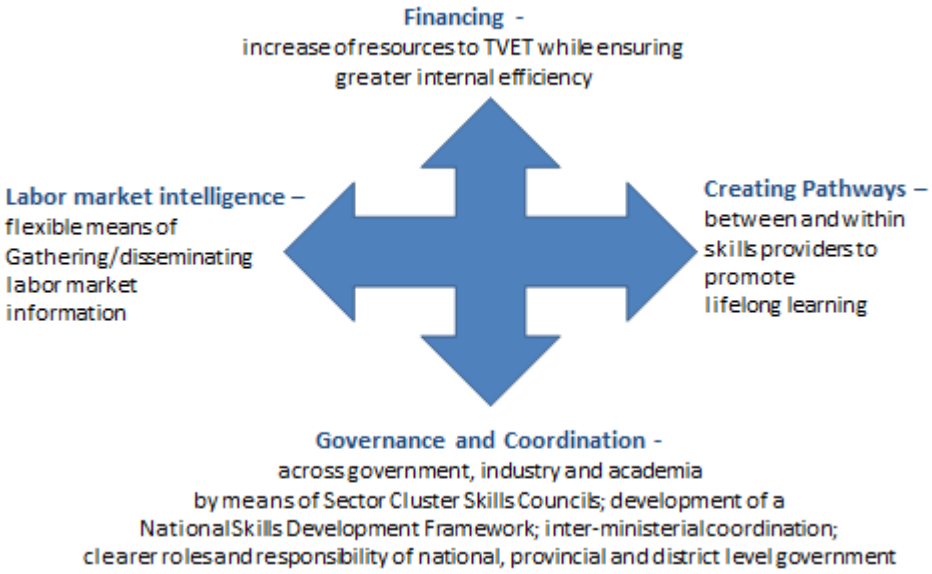
In addition to strengthening providers, the government must develop a strong enabling environment. A strong enabling environment supports alignment through providing students, teachers and institutions with information on labour market developments and needs, develops pathways within and between education institutions and provides an overall framework for national skills development within which providers can work. An effective enabling environment is also characterised by aligned planning between national and local stakeholders, co-ordination between relevant ministries and innovative ways of financing skills acquisition that can reduce stress on already stretched national budgets.

3.1 Coordination, consultation, knowledge creation

Coordination is critical among government, the skills providing institutions, and industry/business in order to define priority competences and skills. The identification of competences for TVET is too important to be left to the government to decide and should involve the active participation of all stakeholders including industry/business. Increasingly, developed countries as well as India and many countries in the ASEAN region, have established Sector Skills Councils (SSCs).[82] These are independent, employer-led, nationwide organisations committed to working in partnership to create the conditions for increased employer investment in skills, which will drive enterprise and create jobs and sustainable economic growth. Through their sectoral reach, SSCs are ideally placed to articulate the voice of employers on skills, to develop innovative skills solutions and to galvanise employer ambition and investment in skills and job creation. In doing so, they are key strategic partners in creating the conditions for increased investment in skills as well as ensuring that with the inclusion of large as well as small and medium enterprises (SMEs), the identification of skills changes with labour market demand.

Helping students and teachers access up-to-date information on labour market trends and needs assists students to choose courses that enhance their employability and aids teachers in delivering relevant knowledge and skills. A strong system of analysing and anticipating current and future labour market needs includes micro-level analysis, for example through graduate tracer studies, sector- or regional-level analysis, for example through employer surveys and vacancy monitoring, and macro-level analysis, for example through quantitative projection.[83]

Figure 85. Enhancing Environment for Skills Development



Undertaking multiple methods of analysing labour market trends and needs on a regular basis could support skills matching.[84] Developing effective methods of disseminating available labour market would also support matching. Promising examples includes the University of Indonesia's career service, which, in addition to arranging careers expositions and on-campus recruitment also support students' labour market integration through training sessions that aim to develop skills highlighted by industry as often-lacking in job seekers.[85] However, evidence from Sulawesi suggests that many students do not have access to labour market information and do not receive quality guidance from their institutions. The vast majority of students surveyed as part of the Sulawesi study relied on oral information to inform their job search.[86]

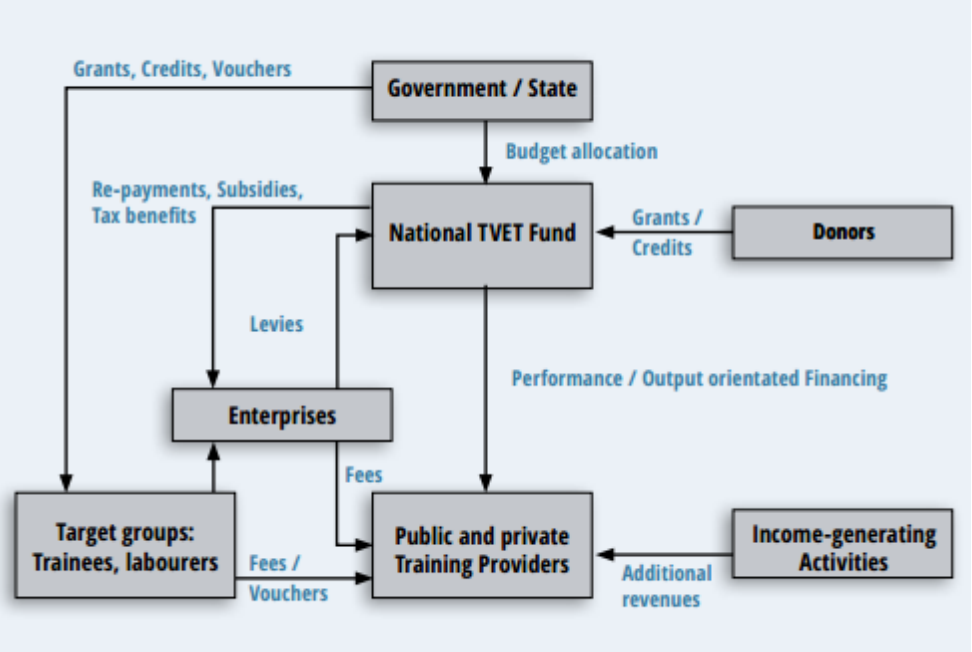
3.2 Creating pathways

Clear pathways within and between education institutions will support lifelong learning and enable flexible and demand-driven skills acquisition. Over the last few years, Indonesia has made progress in integrating the country's wide spectrum of education providers and programmes, initiating the development of national competency standards and a national qualification framework. Presidential Regulation 8 of 2012 on the Indonesian National Qualification Framework provides the overarching framework and principles for implementation, including an outline of qualification levels with general descriptions of competencies. While this constitutes a promising start, the development of the system is still at an early stage. Supporting instruments such as subject/profession specific competencies, systems for recognition of prior learning and credit transfer are yet to be established. Developing these will be crucial to facilitating flexible pathways through education and training in the context of lifelong learning. The qualification framework and its supporting instruments must be developed with reference to and in co-ordination with on-going work on the ASEAN Qualification Reference Framework.

Introducing innovative means of financing skill acquisition supports matching without putting additional strain on government budgets. The large increases in public expenditure that occurred during implementation of the current *RPJMN* (2010-14) are unlikely to continue during the next *RPJMN* period. The current medium-term expenditure framework for 2015-17 assumes that spending will grow at a rate of 2 per cent annually, while the IMF suggests that the budget will grow at a higher rate of 5 per cent. In either eventuality, growth in funding available for reform will be lower than the average 9 per cent growth rate recorded between 2010 and 2014.[87] Given this, developing innovative and cost-effective funding mechanisms will be critical to funding necessary reforms in the TVET sector. Greater involvement of the

business community in generating funds is one way of doing this. Increasing Business community participation can be achieved in different ways, including, for example, establishing training funds and levy systems (see Figure 86 below).[88] A good practice example from Malaysia, the Malaysian Human Resource Development Fund, is outlined below (see Box 6).

Figure 86. Diversified TVET financing system



Box 6. The Malaysian Human Resource Development Fund (HRDF)

The HRDF aims to encourage employers to engage in the training of the workers and thus increase the overall productivity and competitiveness of the Malaysia's economy. The Fund collects human resource development levies from business and disburses funds through training schemes administered via a grant system. There are currently seven schemes that target retaining and the upgrading of the existing workforce and four that focus on initial training. Different schemes promote employer engagement in training in different ways. For example, one scheme promotes the purchase of training equipment by companies. Others give support for apprenticeships and enable employers to receive refunds if they jointly commission an external training institution to conduct training for their employees. Some schemes focus on special target groups, emerging industrial sectors and entrepreneurs (SMEs). Two schemes are dedicated to supporting IT training

Both the manufacturing and services sectors contribute to the fund, with 21-23 sub-sectors participating. Businesses in these sectors contribute a human resource development levy equivalent to between 0-.5 and 1 per cent of employee wages. The exact percentage paid by each firm depends on the firm's size, which is measured by the number of employees and paid-up capital. Small companies, those with fewer than 10 employees, are exempt. Participation is optional for firms in the manufacturing sector that have fewer than 50 employees and capital below RM 2.5 million. For larger firms, the levy is mandatory. Altogether, more than 13,000 employers with over 2.2 million employees have register with the Fund.

The HRDF's Board of Directors includes representatives of both the public and private sectors. Board members include representatives of the Federation of Malaysian Manufacturers, the Ministry of Human Resources, different chambers of commerce, trade associations and unions. The involvement of a broad spectrum of stakeholders has been key to the Fund's success. Acceptance by the private sector and wider society and a strong legal basis have also supported the achievement of the Fund's goals.

Sources: GIZ, 'TVET Quality Breakthrough: Documentation', Regional TVET conference in Viet Nam, 10-12 October, 2012; GIZ, 'TVET Quality Breakthrough: General Technical Background Paper', Regional TVET conference in Viet Nam, 10-11 October, 2012.

4. Reducing regional disparities

As we have noted, one of the most important features of TVET is its orientation towards the world of work and the emphasis of the curriculum on the acquisition of employable skills. TVET skills providers are therefore well placed to train the skilled and entrepreneurial workforce that the country needs to create wealth and emerge out of poverty. Another important characteristic of TVET is that it can be delivered at different levels of skill while ensuring that talented students and workers have access to higher skills levels through the provision of multiple pathways and "second chances". This means that skills provider institutions can respond to the different training needs of learners from different socio-economic and academic backgrounds, and prepare them for gainful employment and sustainable livelihoods. The youth, the poor and the vulnerable of society can therefore benefit from TVET.

Regardless of which case is made for reducing regional disparities, it is widely agreed that policies that pursue economic growth alone will not reduce regional disparities. Skills provision plays a large role in improving the employability of both rural and urban workers, allowing them to find formal employment either in rural or urban areas, and training the families of migrant workers to make productive use of remittances, using them to improve rural communities.

4.1 Linking employment and training opportunities

Economic activities in Indonesia are concentrated in the capital, industrial hubs and places with rich natural resource endowments. Nearly half of GDP is generated in three provinces in Java: DKI Jakarta, East Java and West Java. DKI Sumatra and Java combined produced more than 82 percent of Indonesia's GDP, and provinces like Banten, Sulawesi, Tengah, Sulawesi Tenggara, Sulawesi Barat and Papua Barat recorded two-digit annual growth rates between 2006-2010. Labour productivity- measured by total value-added of the province (GRDP) per worker, is also outstanding in DKI Jakarta where businesses are concentrated, East Kalimantan with rich natural resources, and Riau and Riau Islands that house industrial hubs. The labour productivity of DKI Jakarta, 84.4 million Rupiahs per worker is over quadruple of the national average at 20.5 million Rupiahs per worker.[89]

In contrast, Eastern provinces lag behind in wealth generation. Papua has been stagnant since 2006. The economic activity in Aceh has contracted annually by 2.3 per cent on average during the phasing out of reconstruction and rehabilitation projects. Agriculture-dominant provinces without much exportable natural resources or thriving industry tend to have low labour productivity. Output per worker in Bengkulu, Gorontalo, Sulawesi Barat, Nusa Tenggara Barat, Nusa Tenggara Timur, Maluku and Maluku Utara were less than a half of the national average in 2010.[90]

Labour market outcomes reflect disparities in GDP and labour productivity. In particular, informal employment is generally more widespread in eastern provinces**.** The proportion of the labour force working in the informal sector is far higher in Papua, Maluku and Bali-Nusa Tenggara than in Jakarta, Banten and West Java. Incidences of informal employment vary significantly among regions ranging from 27.3 per cent in DKI Jakarta to 79.8 per cent in Papua. At the national level, informal employment declined 2.5 percentage points between 2001 and 2010; however, this is not a common trend among regions and geographical groups of provinces. In fact, Sumatera, Kalimantan, Sulawesi and Maluku recorded considerable declines in informal employment during the same period, whereas DKI Jakarta and Papua saw increases in informal employment. [91]

Giving informal workers the means and opportunities to access training is one way of enabling them to move into the formal economy. Other countries have found effective methods of providing training for workers in the informal sector. In Kenya for example, vouchers were used to create a supply side response to serve the skill needs of the informal sector, and in Rwanda, "micro-trainers" created a new source of skills training for the informal sector.[92] Creating opportunities for students currently within the system to develop skills *and* members of the workforce to upgrade existing skills must be part of strategies to reduce

informality in eastern Indonesia. Additionally, better linking of economic planning, including MP3EI, to human resource planning would promote the development of relevant skills, allowing the working population to benefit from Indonesia's growth.

Currently, a regional divide exists in transition rates and coverage of TVET institutions. Transition rates from junior secondary school to vocational secondary school are much lower in eastern Indonesia, particularly in Maluku, West Papua and Papua. The same trend also occurs in the transition rates from senior secondary school to higher education. The highest transition rates from senior secondary to higher education can be seen in Jakarta and Yogyakarta.[93] Additionally, TVET institutions (excluding AK) are heavily concentrated in the Western part of Indonesia. Except for Sulawesi, other islands in the East have very little provision of TVET skills providers. The most distinctive disparity can be seen in the provision of BLKs, in which there are only 13% of total BLKs available in the Eastern part of Indonesia.[9495]

4.2 Flexible distance learning options

In addition to improving opportunities to attend physical TVET institutions, expanding access to Open and Distance Learning (ODL) could offer a solution. The use of ODL for skills development can enable students from remote and rural areas or as noted in the eastern region of Indonesia – often those from disadvantaged backgrounds – to benefit from innovative TVET programmes where there are few resources in terms of institutions and quality instructors. As Indonesia expands its access to Internet and cellular connectivity as well as energy sources in remote areas, so institutions will be able to access and adapt such online content for distance learning. A model of this is Indonesia's Open University (Universitas Terbuka –UT). Online services, collaboration within national and regional networks and workshops can help to bring high quality instructional content –especially with relevant linkages to the workplace – to students without other means of access.[96] The use of open courseware in the form of Massive Open Online Courses (MOOCs) is expanding rapidly and is revolutionizing education and training by bringing such quality content to students and workers to learn and upgrade skills.[97] The Khan Academy has provided academic content for learners all over the world (including now in *Bahasa Indonesia*) and UNESCO has been involved in using YouTube to develop a multilingual database of educational video resources, which could become the nucleus of a "Khan Academy for TVET".[98]

5. Conclusion and policy options

As discussed, attaining its development and growth goals requires Indonesia to provide its population with the skills demanded from a quickly transforming labour market. Strengthening skills providing institutions is one obvious method of achieving this aim. However, although critically necessary, this is not sufficient. A number of factors that lie beyond the scope of skill providers will also need improvement. For example, government will need to ensure an environment exists that enables individuals, enterprises and learning institutions to access up to date information on a dynamic labour market and use this information guide decisions. Individuals will need opportunities to move between the labour market and a variety of education institutions to upgrade their skills throughout the course of their lifetimes. And institutions will need to work within an overall framework for national skills development to ensure that individuals from diverse backgrounds and regions acquire a broad range of relevant skills for use in different regions within Indonesia, ASEAN and the global marketplace.

Based on the analysis provided in this paper, the following policy options are recommended for consideration by GoI. These recommendations fall into four broad categories:

5.1 Improving the quality and relevance of skill providers;

5.2 Enabling environment, including governance and financing; and

5.3 Reducing regional disparities**.**

Details of more specific policy options are given in Annex B.

5.1 Improving the quality and relevance of skill providers

Improving the quality and relevance of Indonesia's various skills providers is a necessary condition for providing the range of skills demanded in the labor market. The quality and relevance of these skills providers can be improved by:

- hiring good teaching staff with academic and TVET skills along with workplace experience and recruiting and training district pengawas, ensuring they have up to date knowledge of demanded skills;
- developing a curriculum and methodology that provide linkages between the training institutions and industry through programmes such as internships, work experience and innovative apprenticeship schemes while also providing skills for innovation and strengthening TVET providers' capacity to provide a transferable set of core academic skills;
- creating alternative pathways and "second chances" within the context of "lifelong learning" for students and workers to upgrade skills, while providing technical assistance towards the identification of relevant competences and skills;
- using conventional face-to-face instructional modalities as well as online learning, open and distance (ODL) programs, and hybrid TVET courses, especially to extend access to remote areas and disadvantaged groups;
- innovating financing mechanisms that ensure a diversity of funding sources;
- promoting institutional learning by disseminating good practices;
- developing a robust quality assurance system with published results;
- rebranding TVET to change social perceptions and clearly defining the role of AK.

*See **Annex B** for specific recommendations to improve the quality and relevance of skills providers.*

5.2 Improving the Enabling Environment, including governance and financing

Improving the enabling environment can be accomplished by:

- ensuring that skill providers are served by effective governance and coordination mechanisms at and between each level and that government, industry/business and skill providing institutions participate actively within a National Skills Development Framework using mechanisms like sector skills councils;
- improving skills provider-industry links by encouraging an "entrepreneurial approach" to the management and governance of skills while improving the legal framework, providing incentives and establishing internal technology licensing organisations to promote collaboration and technology transfer;
- establishing MP3EI HR planning as part of an overall systemic approach to identifying skills and developing curricula by devloping flexible means of gathering and disseminating up to date labor market information that is shared between skills providers, students, provincial and district MoMT offices and industry through mechanisms such as sector skill clusters, job fairs and career guidance services;
- developing pathways between and within skill providers through establishment of a unit credit system within a National Qualifications Framework to facilitate lifelong learning, short term skill upgrading, social inclusion and mobility within Indonesia and ASEAN;
- providing skill providers with opportunities to increase their resources from public and private sectors and diversify their funding while also providing incentives to efficiently use existing resources;
- developing innovative ways of incentivising firms to train employees allowing them to build skills needed for higher competitiveness and innovation;

- and improving coordination between relevant line ministries and different levels of government.

*See **Annex B** for specific recommendations for strengthening the enabling environment.*

5.3 Reducing regional disparities

Reducing regional disparities supports efforts to promote equity, reduce urban unemployment and enable workers in the informal economy to transition into formal employment. Currently, Eastern and Western provinces are in effect polarised in the amount of wealth they generate and in the ability of their populations to find formal employment. The following recommendations have been made to contribute to this end:

- developing a strategy for extending better provision of training in the eastern part of Indonesia, including through the use of ICT;
- linking TVET and local small scale industry to the development of local infrastructure and construction while including capacity building components in planning to improve skills of government staff, contractors and laborers as well as the employability of those trained and their access to career opportunities in the future. Experience from the Aceh and Nias reconstruction process reveals that involving local small scale contractors in the implementation of road works can lead to benefits such as improved skills in bidding processes, improved skills in financial and logistics management, and enhanced technical skills in construction techniques and work methods;
- establishing a training voucher program to finance skill upgrading in rural areas (see Cambodia's Voucher Skill Training Program) and ease transition from the informal sector for workers and firms (see Kenya's 2008 Technical and Vocational Vouchers Program) while also targeting poverty and dislocation.

Endnotes

1. Skills and National Development

[1]For the distinction between skills acquisition and skills utilization by means of the development of an enabling environment, see Kenneth King and Robert Palmer, "Skills for Work, Growth and Poverty Reduction: Challenges and Opportunities in the Global Analysis and Monitoring of Skills in Relation to Dakar Goal 3 and Beyond", UNESCO Education Working Group, 2008.

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[22] Results for Development Institute. 2012.
[23] ADB. 2009.
[24]World Bank. 2010.

2. Improving the Quality and Relevance of Skills Providers

[25]World Bank. 2012. *Indonesia: Broadening Lifelong Learning Opportunities – Towards an Integrated Education and Skills Development System in Indonesia*. Jakarta, Indonesia: World Bank.
[26]Harding, David C. 2011. *Working Paper on ASEAN Rural Connectivity for Education and Development,* USAID (US-ASEAN Technical Assistance Facility) prepared for the Conference of the same name in Hanoi, Vietnam 20-22 September 2011.
[27]The terms *formal, non-formal* and *informal* applied to education and training, particularly TVET, are used in very different ways, particularly as the characteristics of such training tend to merge as, for example in hybrid programmes with the combination of classroom learning and workplace experience and the increased use of personalized online learning. In this paper *formal* training will apply to a systematic, organized training model, complete with a structured and administered curriculum as regards objectives, content and pedagogy and there is a minimum of classroom attendance. *Formal* education and training takes place in the institutions described in Section B: Service Providers. *Non-formal* overlaps with formal education since education and training can involve a systematic programme that can include formal elements but could be mainly located outside of formal institutions – through distance learning, adult literacy, or forms of apprenticeships and internships. *Informal* is taken to refer to education and training totally outside of formal institutions such as workplace learning – it could be in the form of apprenticeships but these would be unsystematic and without recognized diplomas or certification. BLKs are described as combining elements of formal and non-formal training in the sense that they can take place in formal institutions (with systematic curriculum and pedagogy, certification, etc.) but with considerable workplace experience in the labor market itself.
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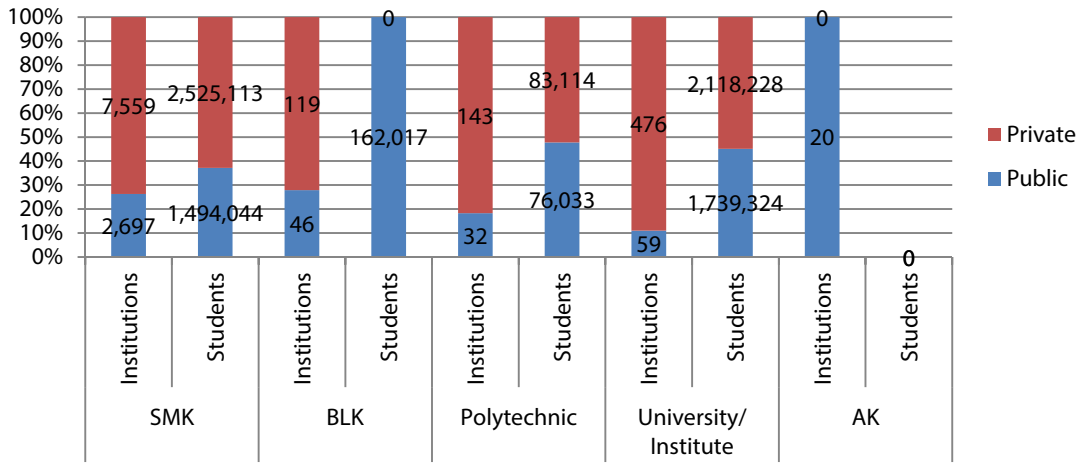
Annex A. Factsheet on TVET (2012 data)

Skills provider		Number of institutions	Number of students (annually)	Amount of Public Spending (in 000)*
SMK	Public	2,697	1,494,044	-
	Private	7,559	2,525,113	-
	Total	**10,256**	**4,019,157**	**IDR 3,073,710,000*** **
BLK	Public	46**	162,017 *	-
	Private	119**	-	-
	Total	**165****	**162,017 ***	**IDR 630,874,000*** **
AK	Public	20**	-	-
	Private	0**	-	-
	Total	**20****	**-**	**IDR 362,500,000****
Polytechnic	Public	32	76,033	-
	Private	143	83,114	-
	Total	**175**	**159,147**	**IDR 589,000,000*** **
University/ Institute	Public	59	1,739,324	-
	Private	476	2,118,228	-
	Total	**535**	**3,857,552**	**IDR 18,621,502,424*** **

* Rough overall estimates from the MoEC annual budget (*Rencana Kerja dan Anggaran Kementerian*/RKAKL and *Daftar Isian Penggunaan Anggaran* (DIPA). The annual budget only breaks down its unit cost based on activities instead of the receiving institutions. This might present an obstacle in reviewing public spending effectiveness for each institution.

** Figures in 2013. BLK figures on institutions taken from http://www.sisfo-lemsar.com/

*** Figures in 2011. BLK figures on public spending is a rough estimation from 2011 World Bank study on BLK.



Note: At this stage, all AKs are public institutions and there is no official figure for student enrolments at the time of writing.

Annex B. Specific Policy Recommendations

5.1 Improving the quality and relevance of skill providers

5.1.1 Developing a robust quality assurance system for review of private tertiary institutions and publishing and disseminating accreditation results to signal a commitment to quality, guide and influence the behaviour of tertiary education institutions, and inform students more clearly about which institutions provide a better education and employment prospects. Closing HEIs and private SMKs that are failing or non-performing should be considered to decrease the number of underperforming schools.

5.1.2: Re-branding TVET to attract higher-calibre students by changing social perceptions of TVET in education and the opportunities that exist in increasing learning relevance, employability and in offering second chances and alternative routes to advanced education levels. Defining more clearly the role of community colleges (AK) to enable them to fill a gap in the education system and develop in a way that complements other skill providers, particularly polytechnics.

5.1.4: Developing demand driven and competency-based curricula at all levels (SMK, BLK, AK, Polytechnic and University institutions) that are, developed systematically with participation from industry and business (large and medium–size enterprises), based on an interlocking unit-credit system, ensuring equivalences as well as the recognition of prior learning (RPL) or *PengakuanSebelum Belajar (PBS)*. The curricula, competencies and credit system would be recognized by both government and industry and strengthened by placing more practitioners on the staff of skills provider institutions and improved consultation mechanisms with industry and other relevant ministries and bodies.

5.1.5: Provide technical assistance to accompany the operation of sector skills councils including industry, academia and government serving to identify competences across occupations within a skills and knowledge cluster. These competences can be identified objectively by looking at the progressive skills and knowledge of master, average and novice practitioners in a particular field before being converted curriculum (e.g. DACUM approach-see Box 3).

5.1.6: Build on the strengths of both vocational and academic tracks to ensure each has a balanced curriculum providing both practical and academic skills while improving literacy, maths, analytical and creative thinking skills by developing a strong core curriculum. Strengthen TVET providers in providing practical knowledge and adapting to labour market needs while providing a solid, transferable set of "core academic skills".

5.1.7: Improving teaching quality, in particular combating teachers' lack of practical skills and experience by encouraging them to obtain dual qualifications (teaching and professional qualifications).

5.1.8: Improving recruitment and training of SMK Principals through existing P4TK and LPPKP institutions to emphasize academic quality, workplace experience and entrepreneurship. In HEIs, senior staff should receive specific upgrading in workforce development, ensuring that key staff has up-to-date practitioner experience through continual exposure to the workplace.

5.1.9: Reviewing and improving all selection procedures of Community Colleges, Polytechnics, and Universities to ensure that the assessment of candidates involves consideration of a balance between academic and vocational aptitude enabling more SMK graduates into HEIs.

5.1.10: Improving the recruitment and training of district *pengawas* supervising SMKs to ensure that they have up-to-date work experience and knowledge of current labour market skills. In addition, establishing a specific TVET supervision /quality assurance system at HEI level.

5.1.11: Disseminating good practices for KPGs, BLKs, Community Colleges, polytechnics and universities focusing on effective links with industry/enterprises, practical and relevant instructional practice and

successful job placement, while integrating good practices into training programmes for KPG principals (through LP4TKs), for senior staff at HEIs and for instructors in BLKs.

5.1.12: Providing skills for innovation in all skills provider institutions by enhancing creative thinking through exposure to different learning and teaching methodologies. Provision of innovation skills will also entail addressing the general lack of international exposure and knowledge on the part of staff members, which might be linked to language barriers.

5.2 Improving the Enabling Environment, including governance and financing

Effective Governance and Coordination is crucial between various skill providers to ensure their provision of a wide range of skills, between government, industry and academia, between ministries and between the central, provincial and district governments. The following actions are recommended to reach this aim:

5.2.1: Supporting the development of a broad framework for a National Program for Skills Development (NPSD) ensuring that in addition to specific prioritized sectors in each economic corridor, a range of skills are developed through a strong cumulative education provided by a variety of complementary skill acquisition partners including informal education programs, on-the-job training and work experience. Promoting the acquisition of a range of skills will help ensure social inclusion and mobility of the labour force within country, ASEAN and the global marketplace. Ensuring a wide range of skills includes building upon PUSPIPTEK's aim to lead in high-tech research, establish a Public Service Board (BLU) with the participation of the business and research sectors (see the point on Sector Skills Cluster Councils).

5.2.2: Providing incentives and promoting an "entrepreneurial approach" to the management and governance of skill providers (SMK, BLK, community college, polytechnics and universities) to improve skills provider-industry links for purposes of curriculum, training and innovation/research. In addition to granting more management flexibility, the government can also play a part in promoting university links by improving the legal framework, strengthening protection of intellectual property rights and providing other incentives for collaboration and technology transfer. Setting up internal technology licensing organisations within institutes of higher education will also help promote collaboration with industry and industrial technology transfer.

5.2.3: Reviewing, designing and implementing a better mechanism for coordination among the three ministries working in TVET (MoEC, MoMT and MoI) by, for example the creation of an inter-ministerial National Skills Council with oversight on TVET and possibly with responsibility directly to parliament.

5.2.4: Aligning central, provincial and district government in improving the quality of skill providers and the enabling environment while strengthening local governments' ability to deliver services and provide necessary incentives to match skill needs and demands. Define responsibilities of each level of government now and in the future, especially with respect to the role of the provincial government in facilitating the establishment of sector skills councils comprising representatives of industry/enterprises, academia (education and training), and government. Building on the work of KP3EI (*Komite Percepatan dan Perluasan Pembangunan Ekonomi*) and supporting its aim to sustain productivity through initiatives to increase each economic corridor's ability to innovate, improve competitiveness and align the needs of industry, academia and government.

Promoting Labour market intelligence is especially important in the context of changing labour markets where fluctuating demands require flexible means of gathering and disseminating data. High labour market intelligence reflects up to date information and anticipates new needs, avoiding the production of static snapshots of the market that lose relevance in short spans of time. The following recommendations were created to promote this objective:

5.2.5: Developing mechanisms for gathering, recording and interpreting data (a comprehensive but user-friendly MIS system) on the changing needs of the labour market. The data gathering would include conduct of tracer studies to identify emerging skill deficits in all sectors reporting difficulty in finding skilled labour, particularly the export sector, during the economic transformation and MP3EI implementation.

5.2.6: Harmonizing data collection and dissemination (again, in a user-friendly way) between public and private skill providers, students, industry and the national, provincial and district offices of MoMT. Technical support would need to be provided in communicating identified skills through sector skill cluster councils, job fairs, career guidance services and by providing increased access to information on job vacancies. Additionally, information on skills demands should be further utilized by finding the best ways for post-basic education to benefit by incorporating/prioritizing such skills in the student competency lists in order to address them in the curricula of skill provider institutions.

5.2.7: Constituting Sector Skills Councils - or equivalent - at the national and provincial levels. Instead of being planned as a stand-alone initiative, MP3EI HR planning should become part of an overall systemic approach to identifying skills and developing curricula according to regional and provincial economic priorities. (See also under Governance).

Building pathways between and within education institutions to promote life long learning, short term skill upgrading, social inclusion and mobility allows individuals from a variety of education backgrounds to move between certification levels and between the labor market and different training providers to maintain the relevance of their skills throughout their lifetimes. Linking institutions within Indonesia and ASEAN will promote the mobility of Indonesian workers, making it more likely they will find employment in all parts of Indonesia and ASEAN. The following recommendations were created to promote this objective

5.2.8: Facilitating the mobility of the labour force within country and in the ASEAN Region by establishing a unit-credit system within a National Qualifications Framework that recognizes prior learning (and that is recognized by and linked with the ASEAN qualification reference framework). Facilitating in-country mobility by ensuring MP3EI is not a stand-alone system but is instead integrated with a National Programme for Skills Development (NPSD) that promotes inclusive growth, the need for labour force mobility, innovation at all levels, in addition to specialization within economic corridors.

5.2.9: Supporting the ongoing development of an effective National Qualifications Framework (MoEC and MoMT in collaboration with ASEAN) ensuring linkages among D1-D4 and S levels as well as pathways from certification level at BLK and short skills upgrading courses to other more formal qualifications. All qualifications should be recognised by industry/business and government (i.e. should be of "dual qualification status").

Financing skill provision entails not only increasing their resources, including up-to-date equipment, through diverse sources but also promoting their efficient usage of existing funds. The following recommendations are aimed at promoting these objectives:

5.2.10: Consider innovative ways of incentivising firms to train their employees allowing exporting and manufacturing firms to build skills that they need for higher competitiveness and innovation (e.g. through a social responsibility tax or *taxe d'apprentissage*- see the example of India and France).

5.2.11: Improve the cost effectiveness of new institutions as well as diversifying sources of funding and using existing funding in a better way. The regulatory frameworks of skill provider institutions will need to be modified in order for them to obtain funding and other support from industry or business while ensuring government oversight and quality assurance.

Chapter 13. Education Financing – Achieving the Goals of the Next RPJM through More Efficient and Effective Public Spending

1. Introduction

Over the last five years, Indonesia has continued to make progress in implementing a comprehensive education reform agenda that began in the early 2000s. In 2001, the responsibility for many aspects of basic education service delivery was devolved to local governments. Further reforms were introduced in 2003 that provided the legal basis for school based management and formalized school committees in an effort to encourage local community participation and strengthen accountability between schools and parents. The Teacher Law of 2005 addressed shortcomings in teacher pay and quality by introducing certification and a strengthened program of continuous professional development. At the same time, the national school grants program (BOS) was rolled-out and gave schools vital resources to support their adoption of earlier school based management reforms.

Despite significant global turmoil in 2008, Indonesia backed up this ambitious reform agenda with substantial increases in public education investments. In 2009, a constitutional obligation to devote a fifth of the national budget was achieved for the first time. This resulted in a more than doubling of public education spending in real terms between 2001 and 2009, a rate seen in few other countries. Since then, public investment in education has continued to grow rapidly. Over the last four years (2009-2013), increases in the overall national budget have supported annual growth in public education spending of about 6 percent in real terms.

So far the reforms and increases in public investment have led to improvements in access, particularly for the poorest, and some modest gains in learning achievement. Between 2008 and 2013, net enrolment rates in early childhood education, junior and senior secondary schooling have increased markedly. Amongst the poorest 20 percent of households, net enrolment rates in junior and senior secondary school have increased by 10 and 16 percentage points respectively over the same period. Improvements in learning achievement have been less encouraging. The most recent international learning assessments show that between 2006 and 2012 mathematics proficiency among Indonesian 15 year old students has declined and reading and science scores have stagnated. This is particularly worrying given that, in 2012, over half of all were judged to be below the lowest international benchmark.

Despite these improvements in performance, increases in public investment have also contributed to significant and growing inefficiencies in the sector. In particular, a large proportion of additional education spending has been directed towards hiring new teachers and paying them more through professional allowances associated with the national teacher certification program. While increased teacher spending has put significant additional burdens on the education budget it is not clear that it has had an impact on education outcomes and particularly learning achievement. Weaknesses in the mechanisms used to allocate resources to local governments and schools have also reduced the impact of public spending increases on education outcomes.

The purpose of this chapter is to document how public education spending has changed over the period of the current medium term development plan (2009-2014) and identify areas of inefficiency in public education spending. It argues that improving the efficiency and effectiveness of public education

investment is vital to ensure that existing sector commitments are fulfilled. It also provides an opportunity to release the resources needed to drive further improvements in education outcomes over the next medium term development plan (2015-2019).

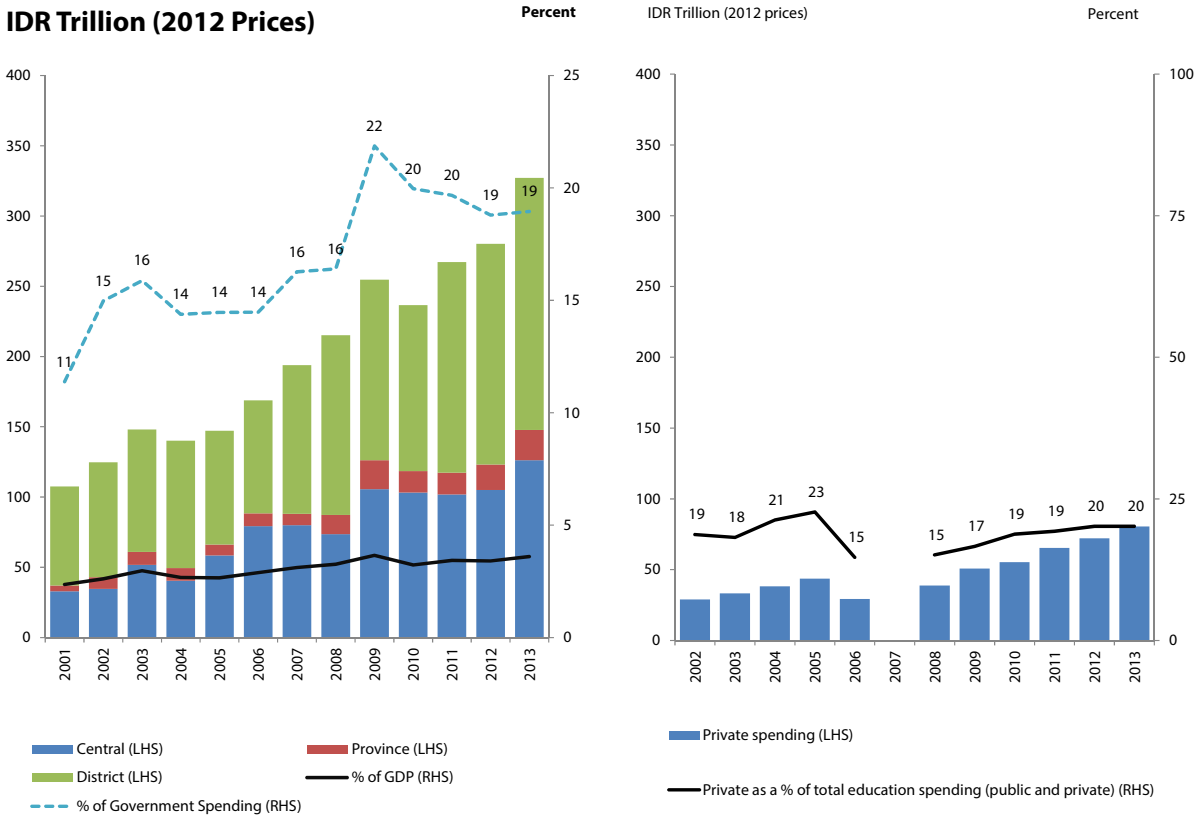
The next section explores how increases in public education spending have been utilized and looks at recent trends in education outcomes. Using a simple costing model, Section 3 shows that the large annual increases in the education budget are unlikely to continue over the next medium term development plan (2015-2019). Moreover, the section demonstrates that fulfilling existing commitments in the education sector will be challenging unless better use is made of existing resources. Section 4 shows how improvements in teacher and school management as well as efforts to strengthen existing financing mechanism could raise spending efficiency and effectiveness. Section 5 estimates the magnitude of potential efficiency savings and Section 6 offers some concluding comments.

2. Looking back over the last medium term development plan - education spending and efficiency

2.1 Patterns and trends in public and private education spending

Public investment in education has risen rapidly in recent times as a result of an increased government commitment to the sector. Between 2001 and 2011 public education spending almost trebled in real terms, an increase very few countries have emulated (Figure 87). Government spending increased most rapidly at the end of the 2000s after a constitutional obligation to spend at least 20 percent of the national budget on education was first achieved in 2009. Since then, the share of education has remained relatively constant but rapid increases in the overall budget have meant that education spending has grown in real terms by 6 percent every year.

Figure 87. Public and private expenditure on education, 2001-2013[25]



Source: 2013 revised plan budget laws, MoF, BPS for Susenas and GDP and CPI deflators

Notes: GDP deflator (CPI) used to create constant price series for public (private) spending. Between 2010 and 2013 central government expenditure is from the revised budget whereas Provincial and District spending are approved budgets.

While significant responsibility for key education services has been devolved to local governments a significant share of total public resources are still spent at the central level. In 2013, approximately two-thirds of public education spending went through provincial and district level budgets. The remainder was spent at the central level predominantly by the Ministry of Education and the Ministry of Religious Affairs. Approximately a third of central level spending was devoted to tertiary education with a similar amount allocated for pre-tertiary education provision.

Private spending on education has reinforced the upward trend in overall spending on education in Indonesia (Figure 87). After a drop in 2006, directly after the introduction of the BOS program, direct household spending on education has increased rapidly and by 2013 household were covering about a fifth of all education spending equivalent to approximately 1 percent of GDP. Between 2009 and 2012 the largest increases in private spending were seen at the tertiary level where access and per-student spending increased most rapidly. For example, between 2009 and 2012 real private spending on tertiary spending almost doubled from IDR 16 to 31 trillion.[26]

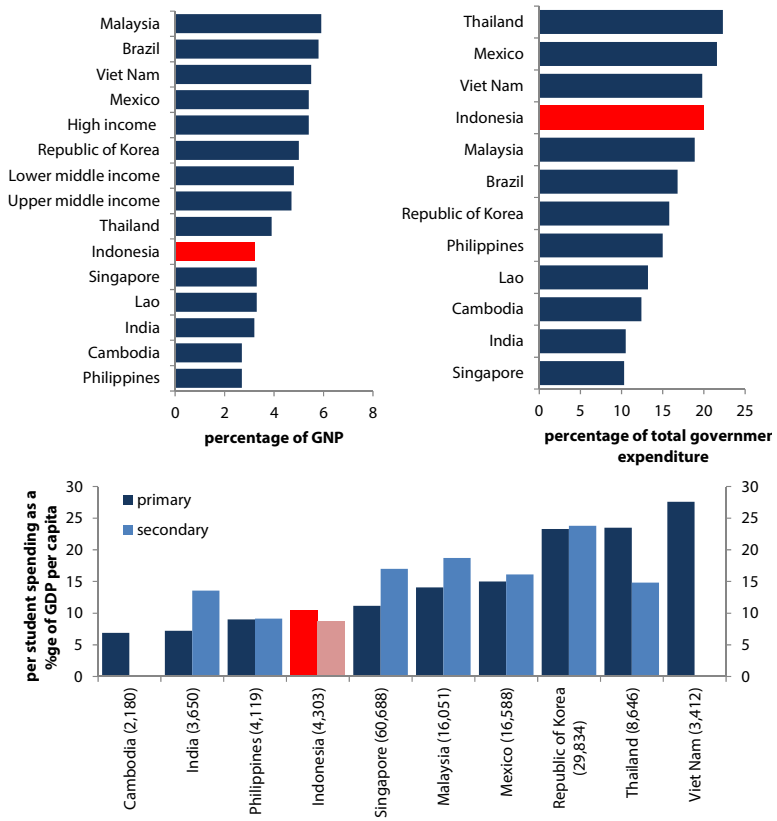
[25] Information on total household education spending for each year is taken from the consumption module of the February/March round of Susenas. Between 2002 and 2010 the information used to calculate total annual household education spending is based on information provided by households on education spending in month prior to survey implementation. Between 2011 and 2013 spending is calculated based on information on monthly average of total household education spending in the three months prior to the survey.

[26] These figures are calculated using average per-student spending and weighted enrolment figures from Susenas.

Despite these large increases, Indonesia still devotes a smaller share of national income to education compared to other middle-income countries (Figure 88). Between 2009 and 2013, Indonesia devoted approximately 3.6 percent of its national income to public spending on education. In contrast, other lower middle income countries spent approximately 4.8 percent in 2010. In East Asia, Indonesia spends a greater share of its national income on education than Cambodia and the Philippines but significantly less than Thailand and Malaysia. Indonesia's low share of education spending in national income is not driven by a lack of prioritization for education in government spending - Indonesia allocates a greater share of government spending to education than most other countries. It is driven primarily by the relatively small share of total public spending in national income.

A small share of national income devoted to education also translates into relatively low levels of spending per student. As a share of per capita GDP, Indonesia spends less per student than most developed countries and its regional comparators (Figure 88). It lags behind particularly at the secondary level where public per student spending is the lowest amongst all the comparator countries shown in Figure 88. These per-capita differences also mask significant differences in the absolute value of education spending per student. For example, based on purchasing power parity conversions, Indonesia spent approximately $370 on secondary education compared to $3,000 in Malaysia.[27]

Figure 88. Public expenditure on education as a share of total government expenditure and as a share of GDP and GDP per capita, selected countries in 2010



Source: UNESCO Institute of Statistics Online Database and UNESCO (2012). Indonesia data for education spending as percentage of GNP and as a share of total government expenditure are taken from Ministry of Finance data.

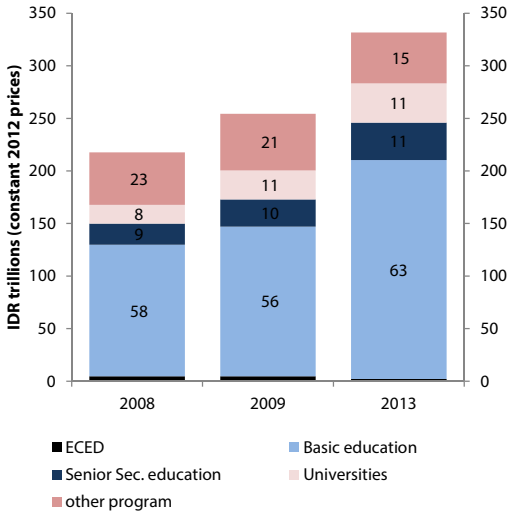
Note: Information for all countries is 2010 or latest available year. Figures in parentheses are GDP per capita figures for 2010 reported in 2009 PPP dollars.

[27] Dollar values are reported in constant 2009 purchasing power parity terms.

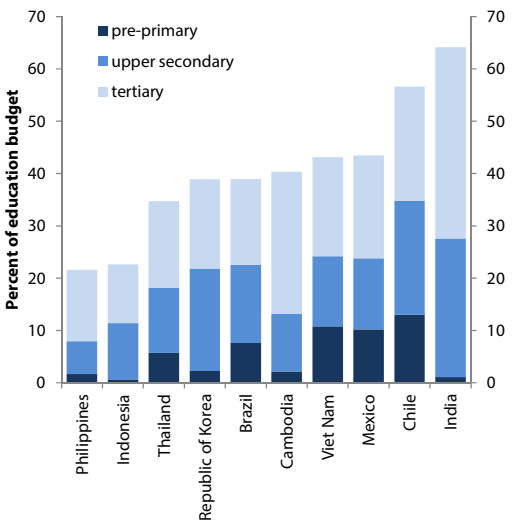
In Indonesia, a relatively large share of public spending is devoted to basic education compared with other comparator countries. Over the last RPJM period spending on basic education has absorbed around 60 percent of the total government education budget (Figure 89). Other countries tend to devote significantly more resources to pre-primary and post-basic education compared with Indonesia. For example, allocations for non-basic education tend to absorb at least a third of total public spending in other comparator countries compared to only 20 percent in Indonesia. In a similar way to other countries, the composition of education spending in Indonesia will need to shift towards non-basic education spending in the future. This shift is partly in response to existing commitments to expanding pre-primary and post-basic education and also to an increasing recognition both within Indonesia and internationally of the significant benefits of investing in early childhood education and labor market demands for skilled workers (World Bank 2013a).

Figure 89. Total education spending by level of education, 2008-2013

Education budget by level



Non-basic education budget, selected countries 2010-2012



Source: World Bank (2013c) and MoF for Indonesia data. Other indicators are from UNESCO Institute of Statistics Online database.

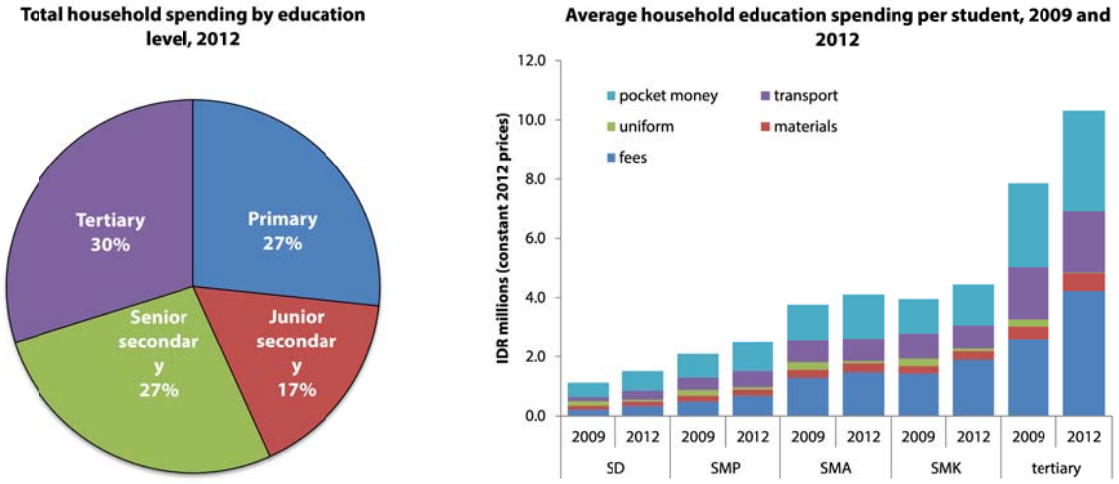
Notes: The breakdown of the education budget for Indonesia in 2013 uses the proportion of teachers in each level to allocate local government education spending to each level (see appendix). Information for 2008 and 2009 uses a more detailed and accurate measure and are therefore not strictly comparable (see World Bank (2013c) for details).

While changes in the composition of spending by education level have been small, the rising education budget has fuelled increased salary and capital spending.[28] In tertiary education, the rising education budget has led to increased capital spending which has supported large infrastructure spending in public universities. In basic and senior secondary education a significant proportion of the increased education budget has been devoted to teachers. The recent public expenditure review estimated that about 60 percent of the additional resources allocated to education, when the 20 percent budget allocation was first met, were devoted to increasing the number of teachers and raising their levels of pay. Professional allowances associated with the national certification program have continued to increase as more teachers become certified.[29] Between 2010 and 2013, these allowances more than doubled in size from IDR 19 to IDR 44 trillion (constant 2012 prices). This represented approximately a third of the total increase in the education budget over the same period.

[28] Due to data availability for district level spending it is difficult to accurately breakdown education spending into recurrent and capital spending. However, the Education Public Expenditure Review estimated that approximately 60% of the total education budget was devoted to teacher salaries and about 70% of the total basic education budget.

[29] The certification program provided an allowance equivalent to basic pay for teachers that achieved certification status. Between 2006 and 2010, an additional 450,000 teachers were recruited, and by 2010 approximately 30 percent of all teachers had been certified.

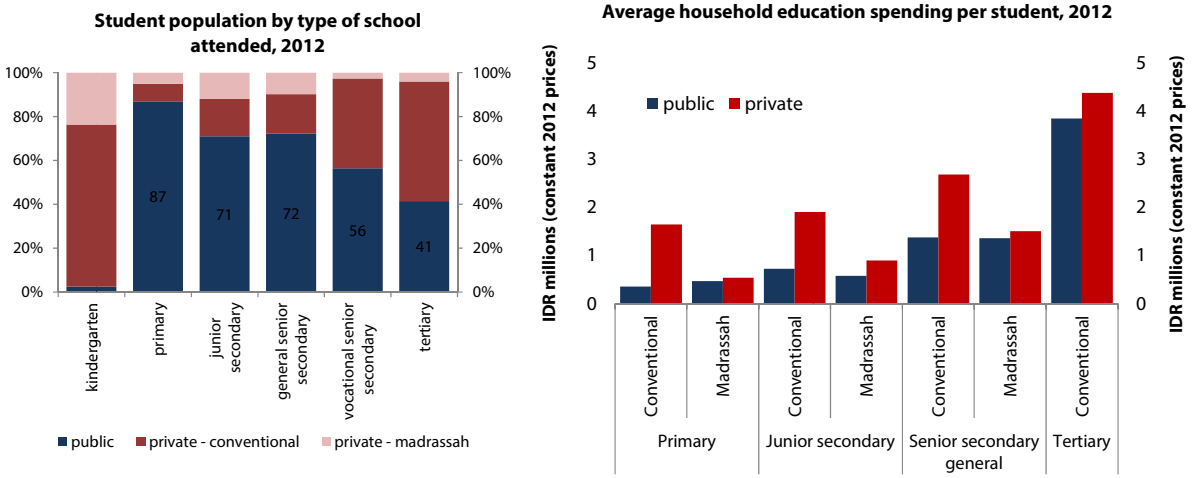
Figure 90. Annual household spending on education



Source: Susenas 2009 and 2012

Patterns of private spending on education are weighted more towards post basic education than public spending. Senior secondary and tertiary education account for over half of all education spending households made in 2012 (Figure 90). Given the lower levels of enrolment in post-basic education, the high share of private spending at this level is largely the result of the much higher levels of per-student spending at post-basic levels (Figure 90). For example, in 2012 the average household spends IDR 10.3 million annually to send a child to a tertiary institution compared to only IDR 1.5 million for primary school. Higher spending is partly driven by much greater spending, in both absolute and relative terms, on fees. In tertiary education, fees made up 41 percent of average household spending in 2012 compared to only 22 percent at the primary level. The higher spending, particularly on fees also demonstrates the greater burden of overall financing that falls on households at higher education levels. In 2012, households covered approximately 44 percent of total (public and private) spending on senior secondary and tertiary education compared to only 18 percent of total basic education spending. Larger spending at the higher education levels is also driven by a combination of a greater share of students attending higher cost non-government schools and institutions (Figure 91).

Figure 91. Government and non-government enrolment and household spending, 2012



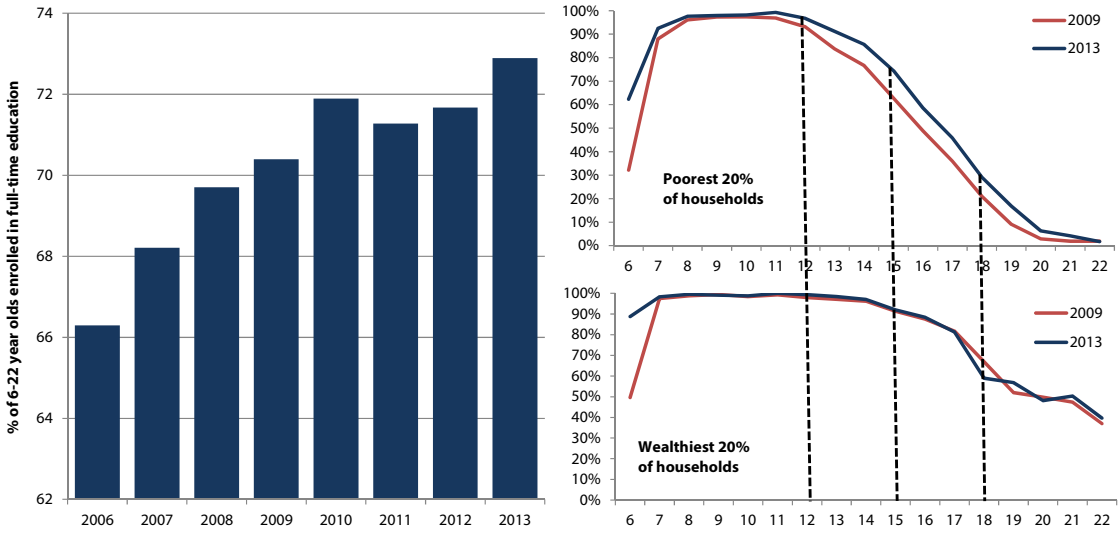
Note: Household spending figures exclude household spending on transport and pocket money.

Source: Susenas 2012

2.2 The effect of increased spending on education outcomes[30]

Over the last 5 years, increases in public investment have led to an expansion of educational opportunities, particularly for the poorest children. Universal primary enrolment has largely been achieved and by 2013, almost all children, including the poorest were in school between the ages of 7 and 12 (Figure 92). Enrolment rates in secondary schooling have also increased significantly and are comparable to other lower middle income countries. And enrolments in tertiary education have continued to rise. Overall, the share of 6-22 year olds that are enrolled in school has increased from 66 percent in 2006 to 73 percent in 2013 (Figure 92). This means that since 2009 and the beginning of the current RPJM an additional 7 million children and young adults have enrolled in the education system.

Figure 92. Share of 6-22 year old children enrolled in school by age and quintile



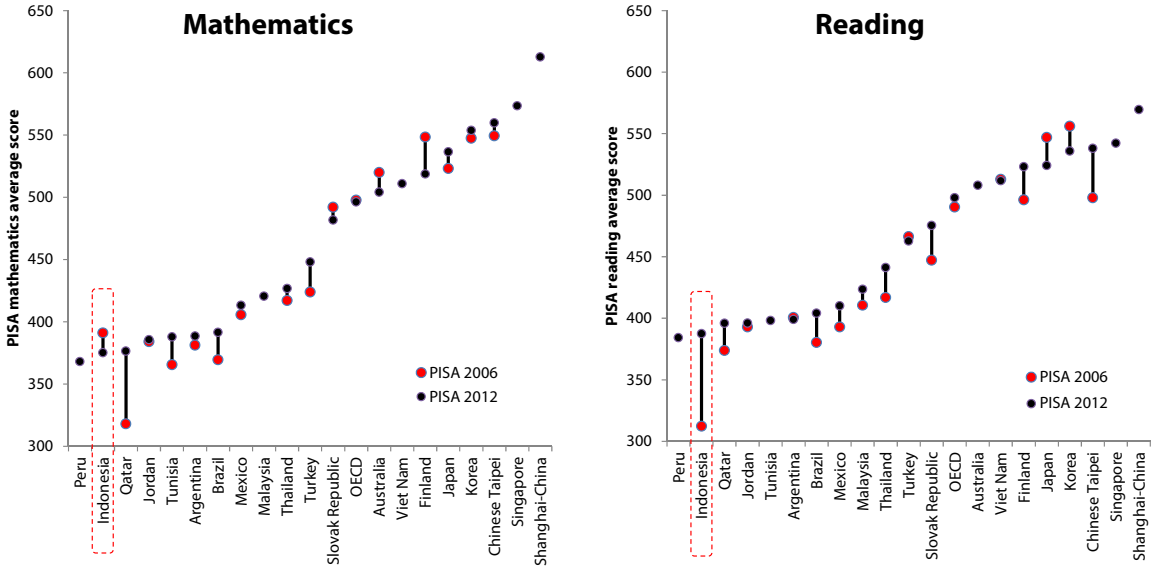
Source: Susenas 2006-2013

Notes: Methodological changes in survey implementation and the incorporation of 2010 population census information are likely to explain the drop in enrolment rates in 2011.

These improvements have been driven by increased participation in education of the poorest households and have led to significant reductions in educational inequality (Figure 92). While enrolment for the wealthiest children has remained high and largely unchanged over the current RPJM, enrolment rates for children from the poorest households have increased significantly. For example, the share of 15 year olds in the poorest 20 percent of Indonesian households enrolled in school has increased from 63 percent to 74 percent between 2009 and 2013. A similar trend for poor and wealthy households can be observed for later ages and illustrates the reduction in inequality seen over this period. However, significant enrolment gaps remain. For example, in 2013 59 percent of 18 year-olds in the wealthiest households were still in school compared to 29 percent in the poorest households.

[30] Since previous chapters have examined in detail the trends in key education indicators this section will only look briefly at recent trends in educational access and learning using two key indicators.

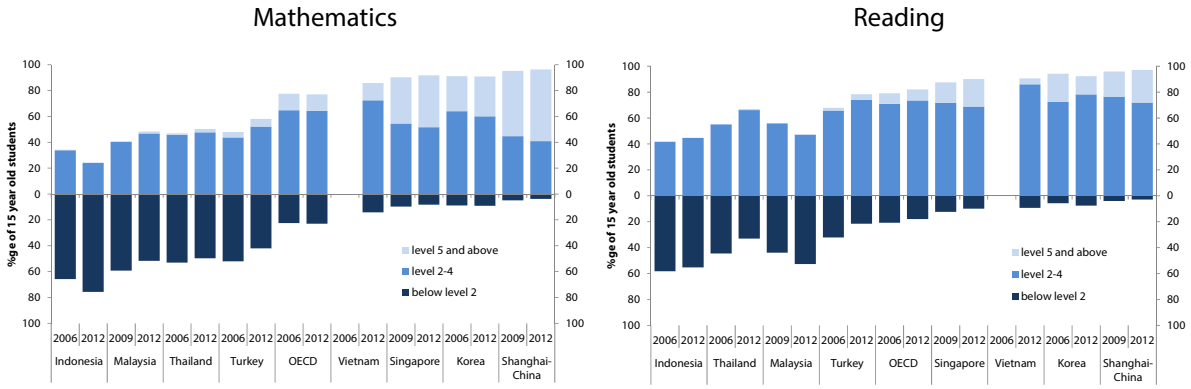
Figure 93. Average levels of learning achievement in selected countries, 2006 and 2012 PISA



Source: OECD (2013)

While increased investment has led to some notable achievements in increasing educational opportunity changes in learning achievement have been more mixed. Indonesia tends to perform relatively poorly in international learning assessments when compared to other countries (Figure 93). For example, Indonesia falls below other countries in the region such as Thailand and Malaysia. Moreover, students in Indonesia register learning levels well below their counterparts in Viet Nam where income per capita is lower. Trends in learning show a mixed picture. Since 2006, learning achievement amongst Indonesian 15-year olds has improved in reading but has remained relatively stagnant in mathematics and science.

Figure 94. Share of students at each PISA proficiency level in mathematics and reading in selected countries, 2006 and 2012



Source: OECD (2013)

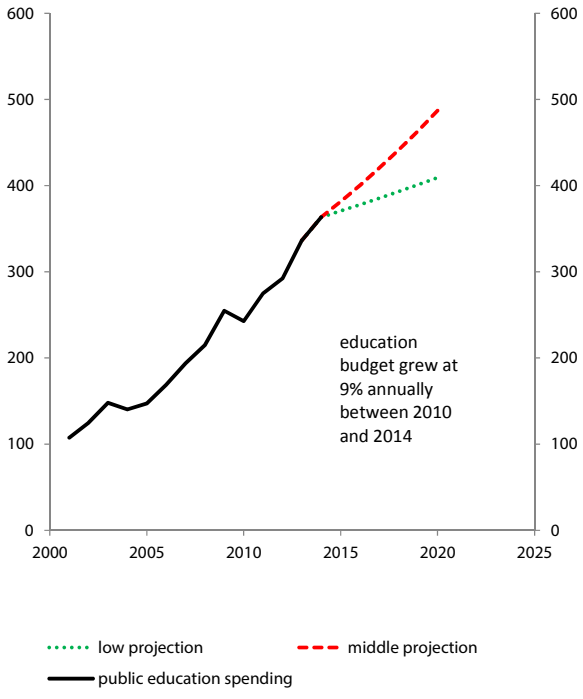
Average levels of learning also hide significant differences across countries in mathematics and reading proficiency levels (Figure 94). In Indonesia, the majority of 15 year-olds fall below level 2 proficiency, a level that in some countries has been shown to be associated with difficulties for student wishing to continue into higher education or transition into the labor force (OECD 2013). In 2012, three-quarters of Indonesian students were at level 1 or below where students are able to do 'very direct and straightforward mathematical tasks, such as reading a single value from a well-labeled chart or table'. Trends also suggest a drop in mathematics proficiency levels between 2006 and 2012.

3. Looking forward: The importance of improved efficiency to achieve future education goals

While improvements in access and equity will have benefits over the long term, the disappointing picture on education quality has raised questions about the efficiency and effectiveness of public spending. These concerns have increased recently because of fears that the resources available over the next RPJM will be insufficient to cover existing commitments let alone fund the additional programs necessary to achieve sector objectives.

The large increases in public investment in education seen during the current RPJM (2010-2014) are unlikely to continue over the next RPJM period. The total education budget grew in real terms at an average annual rate of 9 percent between 2010 and 2014 (Figure 95). The budget increases were partly the result of solid economic growth feeding into higher government revenues and the achievement of the 20 percent allocation to education. The education budget also benefitted from increases in fuel prices which raised the size of subsidies in the overall budget which fed through to education because of the 20 percent rule. The current medium term expenditure framework for 2015 to 2017 assumes that government spending will only grow at 2 percent annually (Ministry of Finance 2013). IMF projections are more optimistic and suggest that the budget will grow at around 5 percent annually (IMF 2013).31 While resource projections differ, it seems clear that the additional resources that will be available to the education sector over the next RPJM (2015-2019) will be smaller. Between 2015 and 2019 the projections suggest that education will receive IDR 1,900 - 2,100 trillion compared to IDR 1,500 trillion over the last plan period (2010 -2014).

Figure 95. Budget outlook over the next RPJM



***Note**: It is assumed that education's share of the total government budget will remain at 20 percent throughout the projection period. Data presented in the graph include both central and local government budgets and projections.*

Source: 2010-2013 revised plan budget laws, MoF (2013) and IMF (2013).

A simple costing model has been developed for this chapter to provide projections of the costs of education provision over the next RPJM period to compare with forecasts of available resources. The model utilizes

[31] IMF projections of government spending include central and local government spending whereas MoF projections only include central government spending (including transfers).

information on enrolment and public education spending to project the overall costs of the education system over the next 6 years (2014-2020). These projections take into account changes in the school age population and also factor in existing government commitments to expanding access to ECED and universalizing primary and secondary schooling (see Box 7). The model also takes account of existing commitments on certifying all PNS teachers. The projected costs are then compared with the likely resources available to the education sector to assess the financial feasibility of sector plans. While exercises of this kind are useful they should not be confused with planning exercises used to calculate program costs. Overall, the cost and resource estimates produced by costing models of this kind should be treated as indicative of the magnitude of costs and resourcing of the education sector over the next 5 years.

Box 7. Basic assumptions for the baseline cost projections

Similar to the structure of other education costing simulation models the model used in this chapter consists of three main modules:

1. **Enrolment projections.** The 3 to 35 year old age group is used as the basis of enrolment projections. The basis of enrolment projections are overall single age population projections provided by the UN population division and based on the 2010 Indonesian population census. Single-age enrolment rates in ECED, primary, junior and senior secondary and tertiary are taken from the 2013 Susenas household survey. These age and level specific enrolment rates are used to estimate total enrolment in each education level. Projections are made by changing the share of children enrolling in school. The model used here assumes that by 2020, 75 percent of 3-6 year olds are enrolled in school and in line with universal basic education commitments, all 7-15 year olds are enrolled in school. Increases in enrolment amongst senior secondary aged children (16-18) are also projected to rise significantly by 2020 in line with universal senior secondary schooling commitments.
2. **Cost projections.**
    - Teacher costs – annual teacher costs are based on an average salary calculated from NUPTK data on teachers and their location on the teacher salary scale. The costs of certification allowances are also included. Overall teacher costs for each level are projected using student teacher ratios, the proportion of PNS teachers and the percentage of teachers that are certified. The costs of school hired contract teachers are not projected directly but through projections of the costs of the BOS program which area are accounted for as part of the non-teacher cost component of the model (see below).
    - Non-teacher costs – scholarships, per-student grants (e.g. BOS) and other non-salary spending. The costs of providing BSM scholarships are projected separately on the basis of the per-student award and the proportion of students covered at each level.

    Classroom construction costs are included as capital expenditure and are based on international average costs of $13,500 per classroom (UNESCO 2010). Given private sector participation and the existing stock, classroom construction costs are projected on the basis of 100 students per classroom. It is expected that pupil classroom ratios will be smaller than this but the funds to construct the additional classrooms necessary to reduce pupil classroom ratios will come from outside the public budget.
3. **Total education costs and budget projections**. The final component of the model combines cost and enrolment projections to calculate the overall costs of the education system between 2014 and 2020. These are then compared to the resources which are projected forwards on the basis of the MoF and IMF forecasts outlined in the main text.

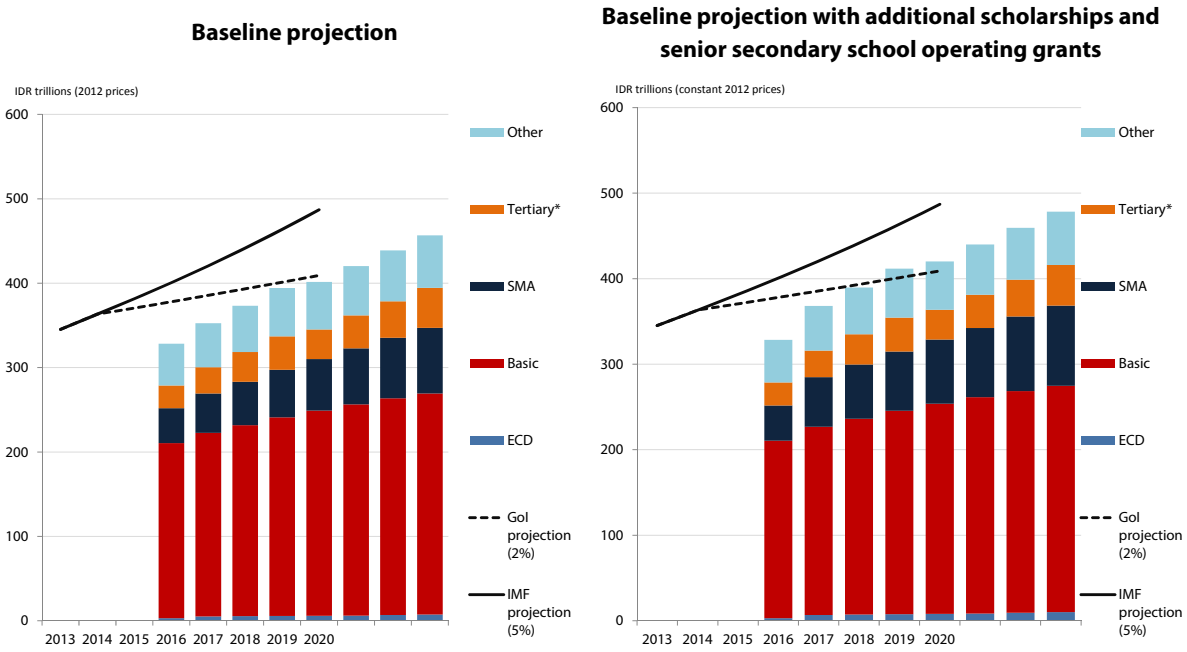
It should be noted that the costing model is not designed to give detailed cost estimates over the plan period but to give a broad indication of the financial feasibility of current and future commitments.

The results of this exercise show that fulfilling existing commitments with current cost structures is unlikely to be sustainable. The baseline projection in Figure 96 is based on enrolment projections that lead to an increase in the proportion of 3-6 (7-18) year olds enrolled in school from 35 (88) percent in 2013 to 75 (95) percent in 2020.[32] Overall, increases in enrolment rates and population growth imply that an additional 17 million individuals are projected to be enrolled in full time education by 2020. Costs are projected on the assumption that per-student costs are similar to 2013 but the certification program continues and by 2020

[32] Gross enrolment rates in ECED (3-6) are projected to increase from 30 percent in 2013 to 64 percent in 2020. Primary enrolment rates are projected to remain the same while junior (senior) secondary rates are projected to increase from 89 percent (69 percent) to 97 percent (96 percent) over the same period.

all PNS teachers are certified. Based on these assumptions, total annual education spending would increase from IDR 326 trillion in 2013 to IDR 590 trillion in 2020 (constant 2012 prices). These levels of costs are only affordable if the more optimistic IMF assumptions on education budget growth are realized. If MoF budget projections are more realistic over the next RPJM period, the education sector is unlikely to have the resources to meet existing commitments to expand education access and certify all civil-service teachers.

Figure 96. Cost and resource projections for the education sector, 2014-2020



Adding even basic improvements to existing programs deemed necessary to achieve current goals will push projected spending over the most optimistic resource scenarios. As Chapter 7 has shown it is unlikely that expansion plans, particularly at the higher education levels, will be achieved without additional support to poor students and schools themselves. Providing a modest ECED and senior secondary school operating grant, and raising scholarship amounts to more appropriate levels increases costs further.[33] Even these relatively modest interventions to support expansion efforts push costs beyond the resources available under the more optimistic IMF budget projections (Figure 95, right hand panel).

These simple cost projections highlight the need to find ways of using existing resources more efficiently in order to realize savings to finance existing and future commitments. If these savings are not found existing commitments will be unaffordable and the new investments necessary to further Indonesia's goals of increasing access and improving education quality will not be possible.

4. Improving efficiency through better teacher management and strengthening financing mechanisms

How can Indonesia make the improvements in efficiency necessary to improve education quality and expand access further? This section looks at the inefficiencies associated with spending on teachers and outlines ways in which the education system could make better use of its most important assets. The section

[33] At ECED it is assumed that facilities would receive an operating grant of IDR 240,000 per student which is similar to current operating funds given to some centers under BOP. At the senior secondary level, the IDR 1 million per-student operating grant is similar to current government plans for universalizing the first 12 years of education. Scholarship amounts are increased to a level that covers half of all the 'out-of-pocket' expenses that poor households face.

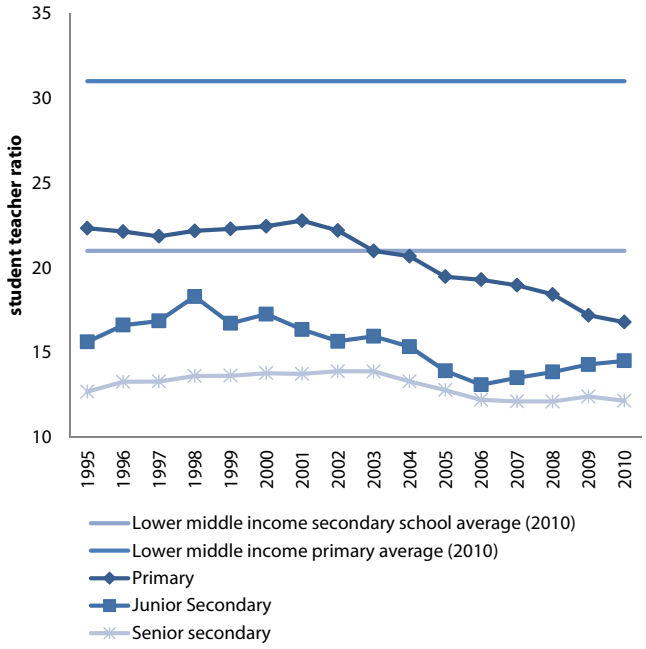
also looks at inefficiencies associated with existing financing mechanisms and how the link between resources, outputs and outcomes can be strengthened.

4.1 Teacher management

Spending on teachers has increased with only a limited impact on the quality of education. Section 2 showed that a significant share of recent increases in public spending have been directed towards teachers. Increases have been largely used to both hire additional teachers and increase teacher remuneration through the provision of a professional allowances for teachers that achieve certification.

Since decentralization reforms were introduced in the early 2000s, teacher hiring has risen at a faster pace than increases in school enrolment. This has resulted in significant declines in student–teacher ratios in basic education (Figure 97), which are now well below levels in comparable countries. In 2008, for example, the average student–teacher ratio in Indonesian primary schools was 18, compared with a ratio of 26 for lower middle-income countries. Moreover, current ratios are below international benchmarks associated with good education quality, and recent evidence for Indonesia shows that, at these levels, the relationship with learning outcomes is weak (World Bank 2013c).[34] This implies that the increases in teacher numbers over the last decade have not really had the impact on learning that might have been expected had student–teacher ratios initially been much higher.

Figure 97. Student-teacher ratios in primary and secondary schools in Indonesia, 1995-2010



Source: MoEC teacher and enrolment data and UNESCO (2012)

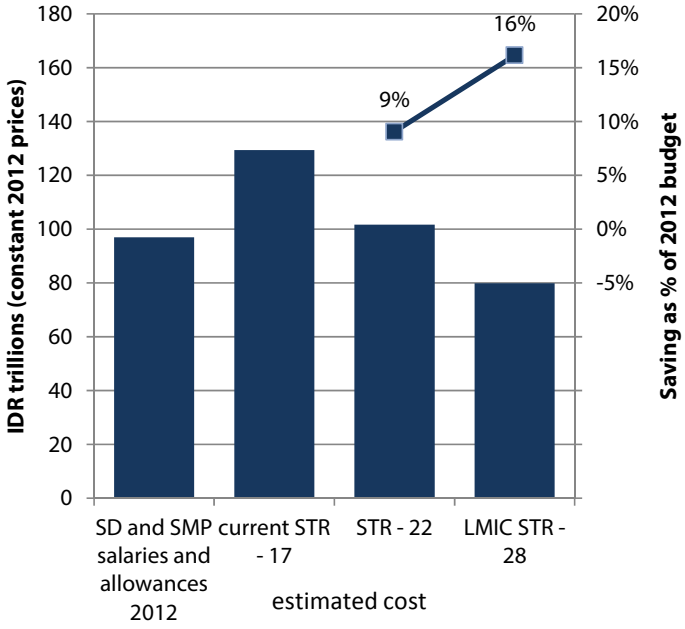
Public spending inefficiencies are exacerbated by the poor distribution of teachers across schools and provinces in Indonesia. A recent study showed that approximately 20 percent of primary and junior secondary school teachers were teaching in schools that already had a surplus of teachers according to current staffing standards (Chang, Shaeffer et al. 2013). In contrast, some poor and remote schools had difficulties in attracting experienced and well qualified teachers. Improving teacher distribution has the potential to increase teacher student interaction for some of the poorest children and raise the effectiveness of education spending considerably.

[34] The recent public expenditure review also showed more generally that increases in district level public spending between 2002 and 2009 was not correlated with better education outcomes (World Bank 2013c).

A teacher certification program also absorbed a significant share of additional resources but has so far had limited impact on student learning. The program was introduced in part to address a perception that the poor quality of the education system was related to low teacher motivation, which in turn was associated with low relative rates of pay. Teachers who were successful in being certified received a professional allowance equivalent to their basic pay. A rigorous evaluation of the impact of the program has shown that while certification has improved some measures related to teacher motivation, it has not improved student learning outcomes (De Ree, Muralidharan et al. 2012).

Improving the use of teachers and raising student teacher ratios may improve efficiency and hold out the prospect of significant savings. Simple simulations demonstrate the significant savings that could be realized by raising student teacher ratios. If the ratio in basic education increased to 22 (the level in Indonesia in the early 2000s), the salary and certification cost would be IDR 102 trillion, or 21 percent less than the cost estimated at the current student teacher ratio. The savings of increasing student-teacher ratios in this way is approximately 9 percent of the total 2012 education budget. Raising student-teacher ratios to the average for all lower middle income countries would result in further significant budget savings.

Figure 98. Potential savings associated with student teacher ratio changes



Source: Estimates from World Bank (2013c).

Note: LMIC = lower middle income, STR=student teacher ratio.

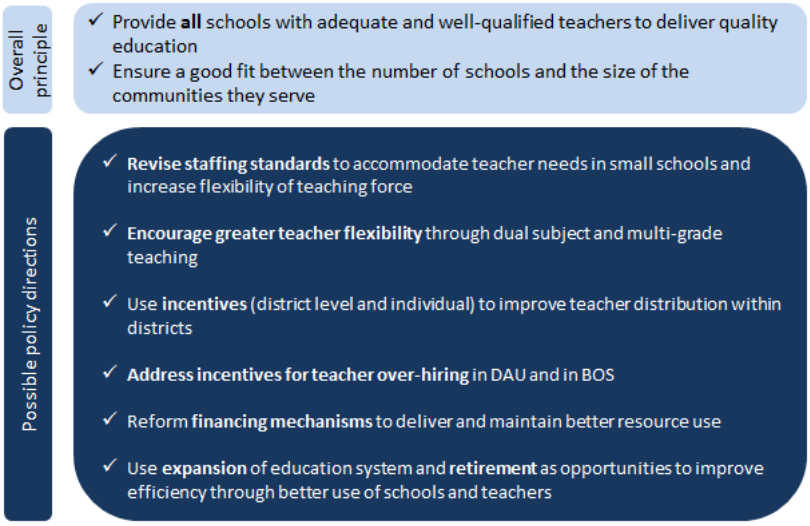
A number of factors drive the inefficiencies seen in teacher hiring and deployment[35]:

- **Incentives for local governments and schools to hire more teachers.** Existing intergovernmental resource transfers are partly determined by the size of a local government's pay roll and incentivize teacher hiring. Recent analytical work has shown that an additional rupiah given to local governments through the main intergovernmental transfer (DAU) induces a 0.9 rupiah increase in staff expenditures (update of figures in World Bank 2012c). Given that teachers make up a large proportion of local government employees, these results suggest that increases in local government education spending are disproportionately spent on teachers.
- **Existing staffing standards.** Recent analysis has shown that the full implementation of current staffing standards would not reduce student teacher ratios significantly (World Bank 2013c).

[35] The main drivers of inefficiency outlined here are discussed in detail in Chapter 8, Part 1.

- **Lack of teaching force flexibility.** Teachers, particularly at the secondary school level, are trained and certified to teach only one subject. This limits the overall use of some teachers where schools are not large enough to offer a full teaching load. Recent efforts to ensure that teachers work a full 24 hour workload may partly address this issue but dual subject training and the greater use of multigrade teaching could contribute to better teacher management.
- **Small schools.** Existing standards when applied to small schools frequently lead to low student teacher ratios. For example, in 2013 almost 20 percent of primary schools had fewer than 90 students. The maximum student teacher ratio in schools of this kind is 15 and many have student teacher ratios well below these levels (World Bank 2012b). While a large proportion of schools have limited enrolment because they serve remote and sparsely populated areas of Indonesia, many schools with low enrolment are in densely populated areas and close to other schools with limited enrolment. For example, in 2013 almost half of all primary schools (47 percent) in East Java had fewer than 120 students despite the province being one of the most densely populated in Indonesia. Moreover, the proportion of small schools is increasing – in 2010 only 39 percent of primary schools in East Java had less than 120 students.

Figure 99. Improving the efficiency of public spending on teachers



In order to tackle inefficiency and improve the effectiveness of public education spending it is crucial that all schools are provided with an adequate number of well-qualified teachers. It is also be important that there is a good fit between the number of schools and the size of the communities that they serve (Figure 99). Achieving these broad principles will require a combination of strategies to tackle the key drivers of the inefficiencies identified in this section. Greater teacher flexibility reflected in staffing standards that address the needs of small schools in an efficient way has the potential to improve the overall use of teachers in the system. Understanding whether current incentive programs are enabling schools in remote areas to attract the effective teachers they need to improve learning for the most marginalized will also be important. Addressing poor teacher distribution by developing standard procedures and support for teachers willing to transfer also has the potential to improve distribution.

Planned expansion and future teacher retirements provide significant opportunities to adjust the size of the teaching force in feasible ways (see Chapter 8). If strategies to improve the efficiency of teacher use are successful it will mean that fewer teachers will be required to teach a fixed number of students. However, student numbers are not fixed and population growth and the significant expansion in the education system mean that the overall number of teachers required over the next RPJM will grow. The demand for teachers will also continue to grow because of the significant number of teachers retiring over the next 5 years. These factors present a unique opportunity to improve the efficiency of teacher use without having to

consider large scale teacher redundancy. It will also be important to try and 'lock-in' any efficiency improvements made by addressing weaknesses in current mechanisms used to finance the sector.

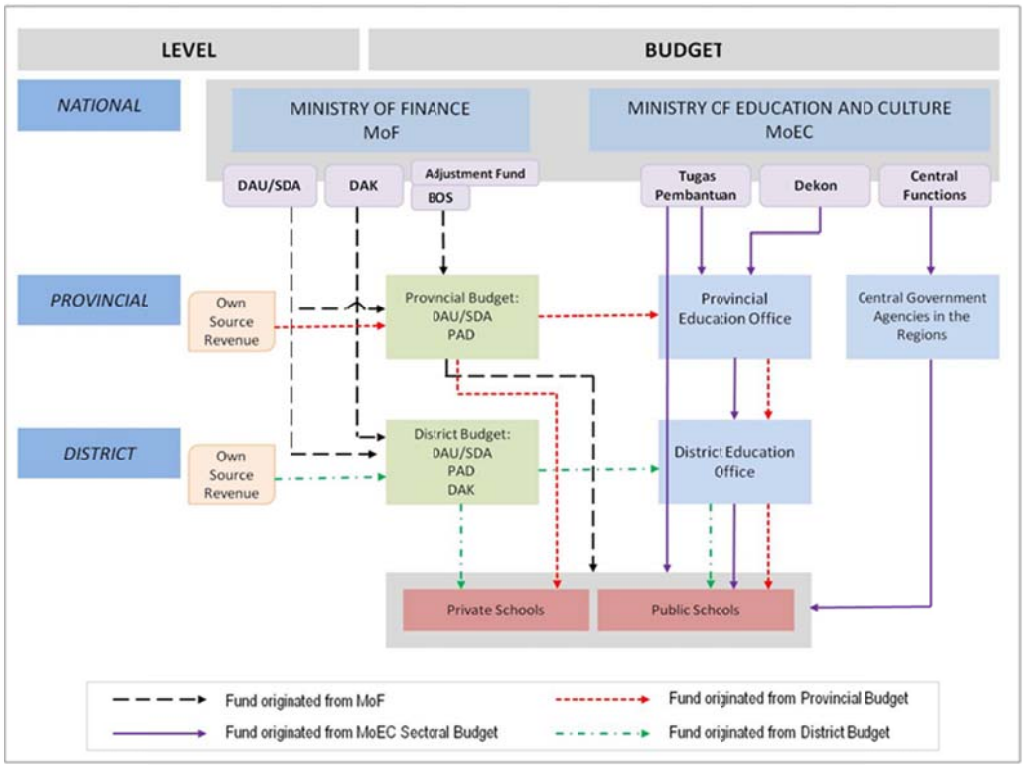
4.2 Strengthening key financing mechanisms

The systems that govern the flow of material and financial resources to schools can be a key source of inefficiency and constrain a systems ability to deliver good quality education. Recent studies have highlighted the significant inefficiencies that arise from the systems governing the allocation and flow of public resources in Indonesia's education sector (World Bank 2012c; World Bank 2013c).

Improving the functioning of existing financing mechanisms has enormous potential to improve efficiency. In recent times, countries facing similar challenges to Indonesia have reformed financing mechanisms to shift funding allocations from inputs (e.g. teachers, textbooks etc.) to outputs (e.g. per-capita funding etc.). This has led to important improvements in the overall efficiency of public spending. For example, during the 1990s and early 2000s many countries in East and Central Europe faced significant challenges due to declining population growth rates and increased rates of out-migration. As school-aged populations decreased, the number of schools and teachers remained unchanged because decisions on the allocation of public resources were input-based. This reduced the efficiency of public education spending and led to significant imbalances in funding across regions. In response, a number of countries introduced funding formula, largely based on population, to address these inefficiencies. The changes have led to a closer match between resource allocation and need. For example, the new formulae allocated more resources to urban areas that were experiencing rapid population growth and less to rural areas with declining populations. The new allocation rules also had a number of other benefits which supported a shift away from inefficient incremental budgeting processes, provided greater transparency in allocation decisions and improved the equity of public spending (Diego Alonso and Sanchez 2011).

Appropriate financing mechanisms can also be a crucial component of efforts to raise education quality and reduce inequality. Through the national BOS program and local school grant programs (BOSDA), Indonesia has made great progress in providing the discretionary resources schools need to improve the quality of education. Developing financing mechanisms of this kind have been shown to hold out the prospect of improved education outcomes (AusAID ERF 2011; Bruns, Filmer et al. 2011). However, their success is conditional on how these resources are managed and how effective local accountability mechanisms are at providing oversight (Levacic and Downes 2004). Evidence from Indonesia also shows the potential for school grants to drive education improvement. The level of discretionary resources Indonesian schools receive has been associated with better student learning outcomes (World Bank 2013c). Research has also shown that learning outcomes are higher where school committees are elected properly and are part of broader local governance structures (Pradhan, Suryadarma et al. 2011).

Figure 100. Transfers and fund flows in the education sector



Source: World Bank (2013c)

In Indonesia, the mechanics of public education financing are extremely complex and information on the size and timing of financial flows is frequently lacking. Schools can receive funds from eight different sources and four different budgets (Figure 100). This level of budget fragmentation makes it extremely challenging to use resources effectively and avoid duplication of effort amongst the different actors financing education. Recent evidence suggests that the necessary coordination between levels of government and across agencies (e.g. Bappeda and DINAS at the district level) to accommodate this level of fragmentation is largely absent (World Bank 2012c). Furthermore there are significant weaknesses in the capacity of local governments to plan and budget effectively for education. The monitoring of such a complex system is also extremely challenging and the lack of good quality information on resource allocations and usage exacerbates this issue. A recent study of local education governance highlighted the weaknesses in existing information systems. While 70 percent of surveyed districts had education information databases less than half had systems in place to verify the information that was collected (World Bank 2013b). Information weaknesses also limit the effectiveness of existing accountability mechanisms because information needed to assess performance is often unavailable.

Box 8. An overview of the main mechanisms used to fund the education sector[36]

This box provides a brief description of the objectives and means by which the various transfer mechanisms from the central government to sub-national governments within Indonesia are determined. These transfers represent the major source of financing for sub-national governments and thus, to a large extent, explain the level and composition of their spending.

General Allocation Fund (*Dana Alokasi Umum*, DAU)

The DAU, according to Law No. 33/2004 Article 1 (21), is a discretionary block grant sourced from the Central Budget

[36] The box excludes local governments own source revenue which is also used to fund the education sector. In 2011, it was estimated that these made up on average about 7% of district government budgets (World Bank 2012c).

(APBN) and aims to equalize the fiscal capacities of sub-national governments. It is transferred monthly and directly from central to sub-national governments. The DAU is allocated based on a national formula and is the sum of a basic allocation (a portion of the sub-national budget for public servant salaries) and the "fiscal gap" (the difference between the estimated fiscal needs and fiscal capacity) of the sub-national government. The basic allocation accounted for about 45.5 percent of the DAU in 2010. Fiscal needs are based on regional variables such as population, area, GDP per capita, Construction Price Index (IKK), and the human development index. Fiscal capacity is measured by a region's own-source revenue and a fraction of total revenue-sharing. Based on Government Regulation No.55/2005, provinces only receive 10 percent of the total DAU, while districts receive 90 percent.

Specific Allocation Fund (*Dana Alokasi Khusus*, DAK)

DAK is an earmarked grant allocated to finance specific investment expenditures that are aligned with national priorities and carried out under the jurisdiction of sub-national governments. The DAK cannot be used for research, training, administration, or official travel. In 2011, 19 economic sectors received DAK allocations including education, health, agriculture, forestry, trade and various infrastructure sectors (road, irrigation, water, sanitation, rural electricity, housing and local government and remote areas infrastructure). Education is a key priority for DAK spending, with about 40 percent of DAK transfers allocated for education and used primarily for school rehabilitation and quality improvement. The DAK allocation has a formula component that takes into account the fiscal gap and has a 10 percent matching requirement. DAK is transferred in three tranches: the first is allocated after the budget is submitted to the central government; the next two depend on the depletion of the previous tranche. Although DAK is earmarked to fund capital spending, the government allowed some routine maintenance expenditures.

Revenue Sharing Fund (*Dana Bagi Hasil*, DBH)

Unlike DAU, which is a horizontal equalization grant, DBH is a vertical equalization grant which consists of revenue sharing from natural resources and taxes. Local governments are obliged to use 0.5 percent of their receipts from the natural resources part of DBH on basic education. DBH represented approximately 20 percent of total sub-national government revenues in 2009.

Special Autonomy and Adjustment Funds including BOS and DID

Special Autonomy Funds include specific grants for Papua, Papua Barat and Aceh (*Dana Otsus*) and Special Adjustment Funds (*Dana Penyesuaian*) which include additional allowances for teachers, such as professional benefits for certified teachers and for uncertified civil service teachers, a School Operational Assistance program (*Bantuan Operasional Sekolah*, or BOS), and local incentive grants (*Dana Insentif Daerah*, or *DID*) for education.

Central government spending at the sub-national level not recorded in sub-national budgets (APBD)

De-concentration (*Dekon*) and Co-Administered Tasks (*Tugas Pembantuan*, *TP*)

Dekon and *TP* funds originate from the central government's budget (APBN), and are administered by the provincial Dinas. The funds cover a variety of projects and activities, including school and classroom reconstruction and school quality improvements, social assistance programs (which included BOS until 2011) and capacity building programs for civil servants.

Source: World Bank (2013c)

The constitutional obligation to allocate 20 percent of the budget for education also weakens education planning and budgeting. The volatility in the overall state budget, partly driven by fluctuations in energy prices and their impact on subsidy spending, makes the education budget unpredictable (World Bank 2012c). In particular, mid-year revisions in the state budget have in some years provided large windfalls to the education sector. Since these windfalls usually occur late in the budget cycle insufficient time is available to plan effectively for the use of these resources and they run the risk of being poorly spent. It has also been common for a large proportion of these funds to go unspent even when there are areas where they could be put to good use.

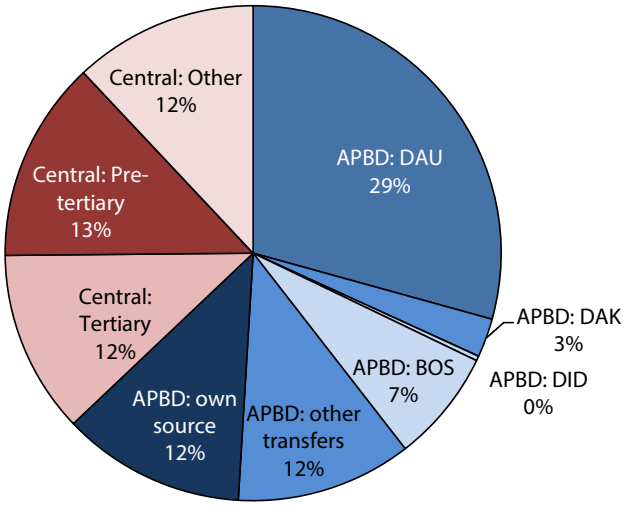
Aside from these weaknesses associated with the overall budgetary framework, there are also a number of specific weaknesses associated with the five main channels used for education funding (see Box 8 and Figure 101).

Dana Alokasi Umum (DAU). The DAU is the largest intergovernmental transfer and MoF estimates suggest that approximately 40 percent is used for education. The formula used to allocate the DAU rewards local governments with larger numbers of civil servants and therefore provides an incentive for increased hiring. Teachers make up a considerable proportion of local government staff and this builds in an incentive to hire more teachers.

Dana Alokasi Khusus (DAK). The education sector received approximately 35 percent (IDR 11 trillion) of total DAK allocations in 2013.

- **Limited targeting**. The DAK is designed to be used to encourage local governments to pursue national priorities. Initially it was designed to be targeted towards a small number of districts where needs were greatest. More recently however, DAK has been allocated to all local governments and the size of allocations is not correlated with indicators of educational need (e.g. low enrolment rates, poor examination scores, poverty etc.). This weakens the impact of DAK on improving education outcomes.
- **Delays in the issuing of DAK guidelines.** Inefficiencies in the use of DAK are further increased because of delays in issuing guidelines which often means that spending needs to occur quickly at the end of the year. This greatly reduces the ability of local governments to plan and use these resources effectively.

Figure 101. An approximate breakdown of key sources of public education funding, 2013



Source: Ministry of Finance data on central and local government expenditure

Notes: Dekon and TP allocations for basic education are included under central pre-tertiary spending. The figure uses MoF estimates of the share of transfers (e.g. DAU) going to education contained in the APBN law adjusted for reported local government planned spending. In 2013, local government own-source revenue was approximately 19 percent of total local government expenditure. It has been assumed that the same share is used to finance APBD education spending.

Dekon and Tugas Pembantuan. It is difficult to gather information on the overall size of these flows in the education sector. In terms of overall allocations, *Dekon* and TP represented approximately 13 percent of total sub-national spending between 2005 and 2010 (World Bank 2012c). While the source of these funds is the central government, they are frequently used to fund activities that sub-national governments are responsible for. However, they do not pass through subnational budgets, and frequently the central government does not inform local governments of the activities that will be funded through these flows in their jurisdictions. This contributes to the overall fragmentation of planning and budgeting and can lead to duplication of effort from a lack of coordination.

Box 9. Assessing school based management in Indonesia

A study was carried out in 2010 to assess progress in implementing the school based management reforms first introduced in the 2003 education law (World Bank 2012d). It collected information from a nationally representative sample of 400 primary schools in 2010. Interviews and data were collected from principals, teachers, school committee (SC) members, parents and officials in the sampled districts. Overall the study found that the institutions (e.g. school committees, district-level supervision, teacher councils) and processes (e.g. school planning processes, teacher consultations etc.) required for the effective implementation of SBM were in place. However, there were significant weaknesses in how SBM was currently operating. More detailed findings included:

- The majority of schools had established all the committees mandated by central government directives. However, the selection of SC members was not transparent and nearly half of all surveyed parents did not know that their school had a school committee
- Most principals perceived that they had autonomy over their school's operational, budgetary, programmatic, and instructional decisions. Teacher participation in decision making was reportedly high but parents generally had a small voice in school matters
- SC participation in decision-making was low. Principals reported that the SC participated in final decisions in an average of 44 percent of schools. However, focus group discussions suggested that their participation was limited. For example, both BOS team and SC focus group members generally agreed that SC members were rarely, if ever, actively involved or consulted in making BOS fund allocations
- Districts were said to continue to exercise a high level of influence on school policies and practices

- In general, principals, teachers, and SC members were found to have insufficient understanding of what SBM required of them and of the functions attributed to the SC, possibly contributing to the mixed implementation of SBM by schools.

The study suggested three main ways to improve the implementation of school based management:

1. Expand principal, teacher, and SC capacity to implement SBM. Strengthening and clarifying the role of the school committee was seen to be crucial to realize the education benefits associated with SBM.
2. Increase the ability of school staff to make managerial and instructional changes. The study highlighted the need for greater professional development opportunities to empower principals and teachers to implement instructional and curriculum changes.
3. Develop district capacity to support schools and SBM. The study argues that improving the implementation of SBM will require altering the role of the district to that of an enabler of change. The study suggests that the role of district supervisor should focus on monitoring SBM implementation and providing on-going technical assistance and mentoring to school teams.

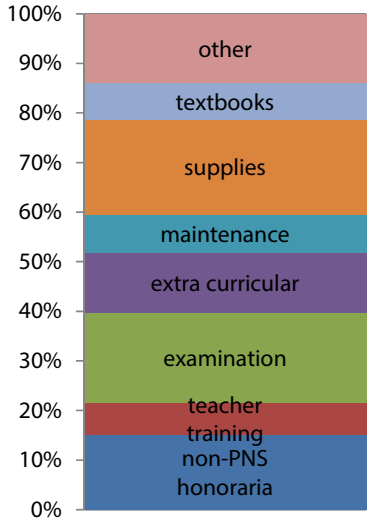
Source: World Bank (2012d)

Bantuan Operasional Sekolah (BOS). In 2013, the BOS program provided all public and private schools a per-student allocation of IDR 580,000 at primary school and IDR 710,000 at junior secondary school. The overall cost of the program was IDR 23 trillion which represented approximately 7 percent of total education spending (Figure 100). Similar programs are also in place at other levels of education although they do not offer full coverage. These programs are important for efforts to improve public spending efficiency as allocations are output rather than input based. As in other countries that have adopted formula funding approaches, these school grants have the potential to maintain efficiency in the future as population growth slows and Indonesia urbanizes. However, the program exhibits a number of weaknesses:

- **The implementation of school based management is weak**. The effectiveness of programs of the BOS program relies on how effective the systems governing the use of resources at the school level are. Recent evidence on school based management in Indonesia has uncovered some significant weaknesses in implementation (see Box 9). In particular, studies have shown that while school committees are in place in most schools their participation in school affairs is generally passive and the accountability of schools to the local community is weak.

- **BOS funding contributes to low student teacher ratios.** Limited oversight and participation of local communities has meant that a considerable share of BOS funds has gone to hiring non civil-service teachers and paying teachers for additional activities (Figure 102).
- **BOS funds are inequitable and do not incentivize performance.** BOS gives the same per-student amount to all schools regardless of their location and the populations they serve. Given the wide variation in costs across Indonesia the real value of the BOS grant differs substantially across districts. While the role of BOS may not be to adjust for these differences it is important that they are addressed to ensure a more equitable distribution of education spending. Some local governments have begun to use their own school grants programs to address differences in local need and even to provide incentives for schools to improve performance (see Box 10). However, only about half of all districts are running programs of this kind and few adjust grants according to need.

Figure 102. Composition of BOS spending in public primary schools, 2011



Source: BOS regional independent monitoring survey, 2011

Box 10. Enhancing equity and performance through local school grants

While the national school operational assistance program (BOS) provides essential funding for schools its fixed per-student allocation does not take account of differences in the operating costs schools face because of the populations they serve and their location. For example, a school in Papua can purchase fewer textbooks and other supplies than a school in Surabaya even with the same amount of BOS. About a half of local governments have attempted to fill this gap between the BOS grants schools receive and their actual operating costs by introducing local school grants or BOS Daerah (BOSDA).

Some local governments have gone further by including additional criteria in the school grant funding formula to address within district inequality and to incentivize school performance. With the support of the Ministry of Education and Culture and the World Bank a pilot program has supported the development of new funding formulas with three main elements:

1. A basic allocation to all schools regardless of their student population or geographic location.
2. An equity allocation to address a school's remoteness, its current state of repair and the socio-economic characteristics of its students.
3. A performance-based allocation that provides incentives for schools to raise learning levels.

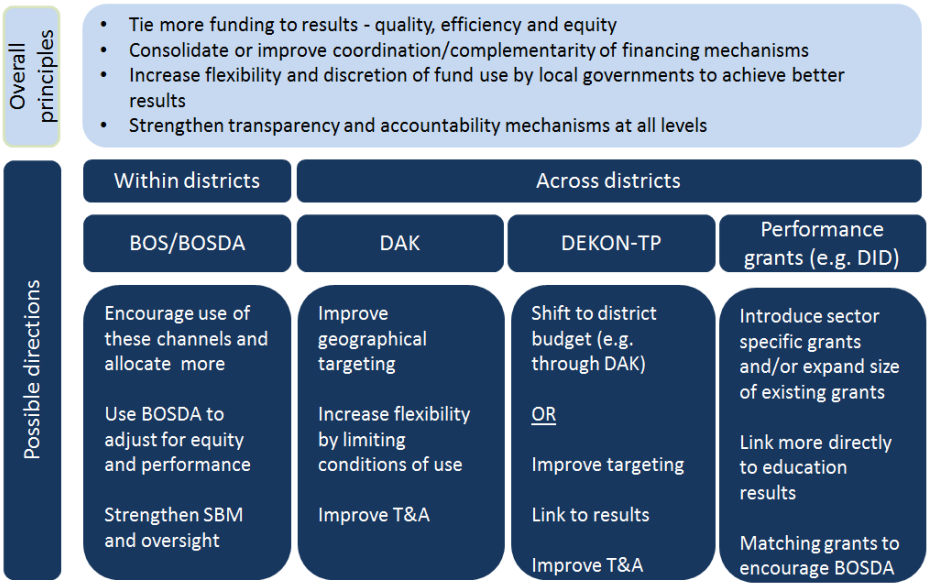
The pilot program operates in 18 districts and 1 province, and early results are promising. In Kaimana, West Papua, the equity and performance allocation was applied and it improved the distribution of resources to small and remote schools. Kaimana has also used annual changes in a school's national examination score as a key performance indicator, in order to provide additional resources under the performance-based allocation.

Source: World Bank (2012a)

Dana Insentif Daerah (DID). DID was introduced in 2010 to reward districts who exhibited good financial management. In 2010, it was expanded to include specific criteria associated with education improvement (e.g. improvements in primary and secondary gross enrolment rates) and human development more generally. While DID is an important example of how a central government performance based grant could work it is currently very small and the number of criteria used to allocate DID funds weakens incentives for improved education performance.

In order to make the most out of current education spending it is important to strengthen these existing financing mechanisms. There are a number of general principles that could usefully be used to guide this process (Figure 103). First, increasing the share of funding that is allocated on the basis of performance has the potential to improve education quality, efficiency and equity. Second, the current complexity of education financing is resulting in a lost opportunity to improve the quality of education across Indonesia. Consolidating the number of financial flows would improve the ability of the system to make better resource allocation decisions and avoid duplication and poor spending. Where it is not possible to consolidate fund flows it is important that mechanisms to ensure better coordination between these different flows are strengthened. Improving the flexibility and discretion that local governments and schools have over their resources is likely to deliver efficiency improvements. Delays in the development of guidelines and limitations in the use of different financial flows complicate planning and budgeting and limits the ability of resources to be more closely linked to need. Greater flexibility needs to be accompanied by efforts to improve transparency and accountability to ensure that resources are used appropriately and to increase a wider involvement in education decision making.

Figure 103. Strengthening education financing mechanisms



The weaknesses identified in this section point to key areas where existing financing mechanisms could be improved. Breaking the link between budget allocations and the size of the DAU could reduce incentives to hire more teachers and improve student teacher ratios.[37] BOS and BOSDA programs hold out a lot of potential as financing mechanisms that could be used to ensure that resources are linked more to outputs and performance. Efforts to encourage local governments to introduce or increase the size of BOSDA programs are likely to deliver better results. However, these efforts need to go forward with a renewed emphasis on school based management (see Box 9). Concentrating DAK resources into fewer regions would likely improve the overall impact of these resources and also support equity objectives. It is also important that central government Dekon and TP resources are not spent on areas that fall under local government

[37] Reforming the DAU goes well beyond the education sector and is not specifically discussed in this chapter. See World Bank (2012c) for a more detailed analysis of the DAU and potential areas where it could be strengthened.

responsibility. This creates confusion and leads to duplication of effort and wasting of resources. While these flows may be important under certain circumstances it is important to consider their overall size and consider shifting these resources so they fall under the direct control of local governments. In this way budget fragmentation could be reduced and local planning and budgeting processes made more effective.

Expanding the use of performance based grants also has the potential to improve learning outcomes. The *Dana Insentif Daerah* (DID) and local BOSDA programs show that grants of this kind are possible in the current context. Different performance based grants have also been used in other sectors to deliver better outcomes (see Box 11). Introducing performance based grants of this kind that link funding allocations directly to education sector performance could provide the right signals to local governments about national priorities and provide the flexibility for them to pursue these priorities in ways that suit their specific circumstances.

Box 11. Water Grant (*Hibah*) Matching Output Based Grants

The Water Hibah grant is an output-based grant designed to provide incentives for local governments to prioritize investments in water authorities to expand water provision especially for poor households. In order to be eligible for grants, local governments must fulfill a number of pre-conditions but grants are only paid upon verification of properly functioning new water connections. Local governments or their water authorities provide funds up front for the implementation of the work to expand coverage and are reimbursed upon verification.

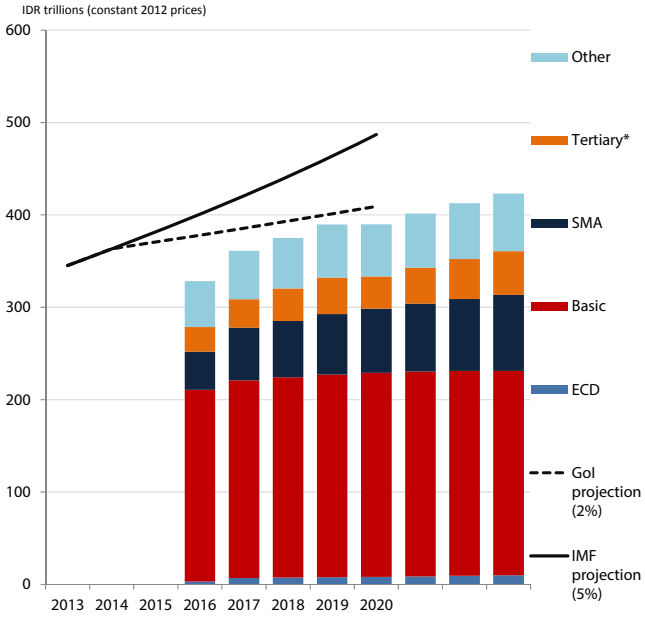
A recent preliminary analysis of the program found that the grants have been more effective at raising investments in the sector than general increases in local government revenue. Furthermore, this increased investment has led directly to an increase in the number of water connections.

Source: World Bank (2012c); and Lewis (2013)

5. The potential for improved efficiency to provide the resources necessary for sector objectives over the next RPJM

Would the efficiency improvements outlined in the previous section provide the savings necessary to make additional room for the investments needed to expand ECED and post basic education? It is difficult to assess the effect of the full package of efficiency improvements outlined in the previous section. However, it is possible to look at the magnitude of savings realized from an increase in student teacher ratios – a key efficiency improvement measure. Figure 104 illustrates the change in costs associated with an increase in the student teacher ratio in primary and secondary education to 25 students per teacher. It shows that savings in the order of IDR 30 trillion per year could be realized when compared to a projection of costs that left student teacher ratios unchanged (see Figure 95). With these changes, the overall costs of increased ECED and post-secondary access are affordable even under the most conservative projections of future resource availability (Figure 104).

Figure 104. Affordability of existing commitments with an increase in student ratios



Notes: The projections are based on the same assumptions as those described in Section 3. They project a significant expansion in both ECED for 3-6 year olds and senior secondary education. The projections also include the introduction of a school grant of IDR 240,000 at ECED and 1 million per student at the senior secondary level and an increase in the amounts covered by scholarship schemes (see Section 3 for full details). The projections are equivalent to those in Figure 95 (right hand side) but with an increase in the student ratio.

While the simulation of the efficiency savings associated with an increase in student teacher ratios is only illustrative it does suggest that the resources could be made available to fulfill existing commitments and provide some additional funding to support further quality improvements. If the more optimistic budget projections are used, significant additional resources would be available to potentially support programs outlined in other chapters to improve education outcomes. For example, by 2020 an additional IDR 100 trillion would be available if student teacher ratios increased. Chapter 7 provides a detailed costing of expanding ECD services across the whole 0-6 age group. Annual costs for this expansion are estimated to be IDR 48 trillion annually and could be covered by the additional savings associated with improving the efficiency of teacher use.

6. Conclusions

The chapter has shown that improving the efficiency and effectiveness of public education investment are vital if existing sector commitments are to be fulfilled and to deliver the additional resources needed to drive further improvement. It has highlighted the savings that could be made from more efficient teacher deployment and distribution and demonstrated the potential for existing financing mechanisms to work harder to improve education sector outcomes.

In Section 2 the chapter highlighted the need for strategic resource reallocations in favor of ECED and post-basic education. In order to achieve these reallocations it will be important to plan carefully how existing and additional resources can be shifted towards these areas. Failure to undertake this planning runs the risk that resources will be allocated to programs that already have sufficient funding.

The focus of the chapter has been on inefficiencies associated with teacher deployment and financing mechanisms. However, it is important to recognize that there are other areas of inefficiency within the

government education budget. While it is difficult to get access to detailed information on existing government programs it is important they are evaluated and efforts are made to move away from incremental budgeting practices which have the potential to sustain programs that have ceased to contribute to sector objectives.

Public investment in education has increased dramatically over the last 10 years but Indonesia spends less than many other middle income countries. Given the competing demands on the government budget and the relatively large proportion of the budget already going to education it is important to explore other ways to support education development. Public-private partnerships have been used in other countries to increase investment in education. While the results of these programs have been mixed, it is important that over the next RPJM, possible partnerships with the private sector are considered. It is also important to go beyond partnerships based solely on the potential for increased funding. For example, Chapter 11 of the review highlights the importance of involving the private sector to ensure that relevant and high quality skills are delivered in skills upgrading programs.

The latest international learning assessments have pointed to the importance of building a strong skills base in order for individuals and economies to prosper. However, they also show that Indonesia is lagging behind many of its competitors in delivering the skills needed to foster strong and inclusive economic growth. Making better use of the resources available to education is crucial if this picture is going to change. The RPJM provides an important opportunity to take stock and address the major weaknesses and inefficiencies in the current education system and put it on track to deliver the skills needed to support Indonesia's continued development.

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Chapter 14. Governance and Education

1. Introduction

Over the last decade, Indonesia has made significant progress in developing its education system to meet the demands of a rapidly growing middle-income country. This progress has been driven by a comprehensive reform program supported by substantial public investment. In 2001, the responsibility for many aspects of basic education was devolved to local governments. Further reforms were introduced in 2003 that provided the legal basis for school-based management and formalised school committees in an effort to encourage local community participation and strengthen accountability between service providers and their clients. The teacher law of 2005 addressed shortcomings in teacher pay and quality by introducing certification and a strengthened program of continuous professional development. At the same time, the national school grants program (BOS) was rolled-out and gave schools vital resources to support their adoption of earlier school-based management reforms.

These reforms have led to improvements in access to education, particularly for the poorest children, but gains in education quality have been more modest. Basic education enrolment has improved and children from poorer families start school in greater numbers and stay longer in school. However, international assessments show that learning improvements have been limited, especially in mathematics and science. The increased public investment in education has not translated into significant improvements in education quality. While many factors determine the quality of education, a key determinant is how effectively the system is managed and governed.

The decentralisation reforms were expected to lead to significant improvements in education outcomes. Firstly, decentralisation has the potential to improve service delivery because decisions on how to provide education of good quality are brought closer to the local parents and students. Secondly, it was anticipated that the introduction of school-based management reforms would strengthen local accountability by giving local communities a bigger role in overseeing school decisions and their effect on education outcomes. While the education sector has become more accessible, it remains frustrated in its ability to deliver quality learning. More than a decade after the introduction of the reforms, it is perhaps timely to assess the governance challenges associated with delivering improvements in the quality of education.

This chapter begins by examining the key achievements and remaining challenges of education governance as it enables and constrains different levels of government to deliver education services. It examines legal and regulatory changes that have impacted on the governance of education and how central and regional governments finance the education system. It looks at how performance differs across districts and what role local governance plays in determining the quality of education. It concludes with a set of proposals for policy directions and strategies to improve the system of governance in education.

2. Achievements in governance of education during the current period of the RPJM

2.1 Strengthened role and clarification of Minimum Service Standards by central government

Education policy, strategy and standard setting are concentrated at the national level, under the direction of the Ministry of Education and Culture (MOEC)[38]. The MOEC and the Ministry of Religious Affairs (MORA) have responsibility for supervising education provision. The National Education System Law (Law 20/2003) required the integration of all schools into a single national system. The Education Ministry (known as MoNE at that time) was named as the implementing ministry for the National Education System Law, but administrative authority and funding channels remained separate. Regulatory authority was, theoretically, united by moving it out of both ministries into autonomous bodies responsible directly to the MOEC Minister.

2.1.1 Two independent national agencies

The National Education System Law established two new non-departmental agencies – the National Education Standards Agency (BNSP) and the National School and Madrasah Accreditation Agency (BAS-MN) – directly under the authority of the Minister. The agencies were set up to implement provisions of the law that applied to both general schools and madrasahs. They were established through MoNE ministerial regulations, with members selected by a team now composed of MOEC and MORA senior officials. Agency directives and decisions are issued as MOEC ministerial regulations. Technical guidelines to implement the decisions of the agencies are issued by MOEC.

2.1.2 Rolling out Minimum Service Standards (MSS) in the education sector

The MSS emerged in Law 32/2004 concerning regional government. Law 32/204 was a revision of the original regional government law (Law 20/1999). The revision ave the Ministry of Home Affairs (MOHA) authority for governing a set of minimum service standards (MSS) for decentralised sectors including education.[39] Minimum service standards for education are set by MOEC in consultation with MOHA and the Advisory Agency for Regional Autonomy (Dewan Pertimbangan Otonomi Daerah/DPOD). They incorporate 27 indicators grouped into two clusters focused on services under the responsibility of the district/city government, and services under the responsibility of the school. Responsibility for implementing MSS lies with local governments, although with supervision from MOHA and with technical supervision from MOEC.

MOEC **Ministerial Regulation 23/2013** referenced key government regulations on MSS **(Government Regulation 3/2007[40]**and **6/2008)** and codified and detailed the application of key provisions of the MSS within the education sector.

The 2013 MOEC MSS regulation had three annexes: Annex 1 – procedures for how to include MSS in district education planning processes; Annex 2 – instructions for how to calculate achievement of the MSS indicators; and Annex 3 – methods to cost out activities required to achieve the MSS indicators.

[38]Previously known as the Ministry of National Education (MoNE).

[39] All sectors, including education, which are part of a district's obligatory functions are governed by minimum service standards.

[40] Concerning the report of provision of regional government [services] to the central government, accountability report from head of region to regional legislative assembly and information report on provision of government [services] to the public.

2.1.3 Strengthening and clarifying role of the Provincial Governor

Government Regulations 19/2010 and 23/2011 clarified the role of Provincial Governors as Representatives of the Central Government within the Province (RCGP). The regulations give authority to the governor for coordination, guidance and supervision meetings. Regulation 23/2011 also permits the governor to give rewards and sanctions to heads of districts. The regulations for district planning and annual work plan and budgeting (WPB) require these be designed to fulfil sectoral Minimum Service Standards (MSS). The governor's role includes not only coordination of activities by districts but also coordination of district activities with central sectoral ministry activities. This type of coordination, together with the authority for supervision and guidance, gives the governor a potentially strong role in supporting the achievement of education system objectives in the districts of the province.

Government Regulation 41/2007 assigns the governor the tasks of guidance and supervision of regional government organisation for the districts in the province (paragraph 38). Paragraphs 39 and 40 define guidance and supervision as a "no objection" process to draft regional regulations dealing with structure of organisation for districts. This regulation was quoted by the civil service reform regulations of 2011 as the basis for tasking the governor with supervision and restructuring the organisational structure of the districts (including employment and deployment of civil serviced teachers) within the province.

Government Regulation 19/2010 concerning implementing the tasks, authority and funding for the governor as the representative of the central government in the province refers to both the 2004 regional government law, for which it is an implementing regulation, and **Government Regulation 7/2008** concerning deconcentration and assistance tasks which was an implementing regulation for the central – regional fiscal balance law (Law 33/2004). The RCGP regulation begins by defining coordination, guidance and supervision, which are the core tasks for the governor as RCGP. Coordination consists of activities directed at effectiveness and efficiency of government while guidance is concerned with achievement of targets and objectives. Supervision is directed toward efficiency, effectiveness and sustainability but specifically within the context of existing rules and regulations. (paragraph 1)

Paragraph 3 sets out the tasks of the governor as RCGP, basically coordination, guidance and supervision of both provincial and district level offices of central ministries (in the case of education, Ministry of Religious Affairs MORA) and district governments. The governor is also permitted to carry out central government functions in the province, in accordance with existing laws and regulations. Government Regulation 23/2011 which revised the 2010 regulation with the specific purpose of strengthening the governor as RCGP, added a new paragraph 3A which instructed the governor to coordinate with the central sectoral ministries on their plans for deconcentration and assistance tasks, i.e. central priorities implemented by lower level governments. As with the tasks noted in the following paragraph, this coordination is in the form of official meetings (rapat kerja).

Paragraph 4 describes the authority given to the governor as RCGP, which consists of inviting district officials to coordination, guidance and supervision meetings. The governor can also "request" (meminta) districts to deal with urgent problems. The paragraph contains a clause which permits the governor to give rewards and sanctions to heads of districts. The governor also "evaluates" draft district regulations concerning budgets (APBD), taxes and fees and spatial planning. The explanation to this paragraph defines the scope of evaluation as determining that the draft regulation does not harm the public good and is not in violation of any existing law or regulation. However, there is no mechanism for the governor to take action on draft regulations that violate the standards.

Paragraph 5 specifies that the governor carries out the tasks as RCGP through the provincial bottom-up development planning process (musyawarah perencanaan pembangunan provinsi) and through a minimum of three official meetings annually. The 2011 revision added a new clause 2a in paragraph 5 which links to the revision in paragraph 3A (coordination with central sectoral ministries) by stating that the outcome of the bottom-up process is a provincial program and priorities which are "synchronised" with the

plans of the central sectoral ministries for funding sectoral activities in the province and/or districts. A revision to paragraph 8 requires districts to implement the decisions taken by the official meetings.

Paragraph 7 threatens sanctions for any district head who does not participate in the coordination activities. Government Regulation 23/2011 added a new paragraph 7A to strengthen the threat. The governor can sanction any district head who does not attend the official meetings without an acceptable excuse[41] by issuing a written warning. After two warnings, the governor can suggest to technical ministries not to provide assistance task funds to the district and MOHA can apply sanctions as part of its authority over district government. Paragraph 9A requires the governor to report the results of the meetings to MOHA, including an attendance list.

The governor as RCGP has the task of mediating disputes among districts but the only tools available are persuasion, negotiation and developing cooperative relationships among the districts (paragraph 10).

Paragraph 17 provides administrative assistance to the governor for implementation of the tasks by establishing a "governor's secretary"[42] position which is filled *ex officio* by the Provincial Secretary[43] and a secretariat consisting of additional staff outside the civil service personnel under his/her authority as Provincial Secretary.

Paragraph 19 provides deconcentration funding from the central MOHA budget (APBN) for these activities. Sectoral ministries can also assign specific tasks to the governor as RCGP and provide funding from their APBN budgets to cover the tasks.

The explanation to the regulation begins by repeating the two basic principles of decentralisation: that provinces are not in a hierarchical relationship to districts and that the central government is the source of all governmental authority, which it retains even with decentralisation. Specific aspects of this central authority, such as coordination, guidance and supervision, can be delegated to the governor as RCGP.

2.1.4 Some improvement in governance capacity at district level

A recent report[44] explores how the quality of local governance affects service delivery and assesses the capacity of local governments to manage education services effectively. There were considerable weaknesses in areas such as management information systems and efficient resource use. On the positive side, the study had some important findings.

Better education governance is associated with better education performance. Districts with better education governance tend to make better decisions. For example, well-governed districts hire a greater proportion of qualified teachers and distribute them more equitably than districts with poorer governance indicators. Ultimately, the report finds that better decision-making is also associated with better education outcomes.

Modest improvements in education governance took place between 2009 and 2012 but weaknesses remain. The overall quality of local education governance improved only marginally over the three years of the study. However, the overall improvement masked differences across specific areas of governance. For example, local governments appear to perform strongly in terms of education service provisions standards but were rated relatively poorly in terms of their management control systems.

Improvements were seen in the quality of education management information systems (EMIS) and in processes to strengthen transparency and accountability. Over the three-year period, local governments made significant efforts to encourage community participation in decision-making by allowing public participation in parliamentary accountability and audit reporting sessions. By 2012, more district education offices had put

[41] The refusal of district officials to accept invitations to meetings convened by the governor is said to be widespread.

[42] The term secretary is used in its Indonesian sense of an assistant official not in its English language sense of administrative staff.

[43] A permanent civil servant responsible for operational aspects of provincial government.

[44] World Bank (2013) *Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts*

in place written procedures and protocols for data collection and verification. However, two thirds of districts had failed to put systems of this kind in place by 2012.

2.1.5 Concurrency and coordination as the basis for partnership between levels of government

Relationships between the levels of government are governed by the principles of non-hierarchy (central, provinces and districts) and concurrence (levels have the same authority and responsibility, differentiated only by geographical area of coverage). The central government also maintains direct control over districts through the governor as RCGP. This favours an approach of coordination cooperation as a basis for partnership between levels.

The coordination approach as the basis for partnerships across levels of government has been highlighted in an academic manuscript (naskah akademis) that has been prepared as the basis for a revision of the regional government law.[45] The academic manuscript for revision of the 2004 regional government law has been submitted to Parliament for discussion and has been assigned to a committee. Although the manuscript has not been scheduled for discussion by the committee and will certainly undergo changes if and when it comes up for discussion, it can still be read as an indication of the direction of thinking about the basic principles for the future of regional autonomy.

The document begins with a detailed discussion of the implications of a unitary (*vis a vis* federal) country and concludes that the functions delegated to regional governments are central functions and the regional governments are responsible to the central government[46] for implementation of these functions (p. 2). The authority of Ministers as "assistants" (membantu) to the President is also specifically mentioned in this context (p. 2).

The discussion of delegation of functions divides functions between those which are absolutely the full responsibility of the central government because of the danger that they could provoke national disintegration if delegated to regions, and the remaining functions which can be delegated to region. However, it is stressed again that the latter can never be fully delegated. Some parts of the function must remain in the hands of the central government (p. 3).

The principle of "concurrency" is defined in terms of scale of authority. Thus, the same authority is exercised by all levels of government but each on its own (geographical) scale (p. 4). The principle of concurrence is specifically applied to policy, as well as implementation of activities (p. 4).

The section discussing relations between provincial and district governments begins by reading the constitutional stipulation establishing provinces and districts, each with its own regional government, as a non-hierarchical relationship between these two levels (p. 6). Concurrence is then applied to produce provincial authority over issues at the inter-district level while district authority applies over the geographical area of the district (p. 6). But the role of the central government as the source of all authority is reiterated, particularly the authority of Ministers to set sectoral norms, standards, procedures and criteria (NSPK) as guidelines for the regional governments in providing public services. The NSPK include details of the division of labour between levels of government (p. 7).

In the section entitled "guidance and supervision", the role of the governor as the Representative of the Central Government in the Province (RCGP) is discussed. RCGP is presented as a practical solution to the central government's responsibility for guidance and supervision over all the districts in the country (p. 7).

[45]The first step in drafting a new law (or revising an existing law via a new law) is an "academic manuscript" (naskah akademis). The academic manuscripts eventually become the explanation of the law.

[46] Rather than the electorate. On p. 3 the document explains that the head of region (governor, regent or mayor) is "recruited" (direkruit) through an election.

The section finishes with a statement that in the context of RCGP, the governor stands in a hierarchical relationship to district governments (p. 7).

Minimum Service Standards (MSS) are discussed in the section on regional finance and linked with unit costs for budgets (p. 11). Regional governments are required to announce their targets and standards for public service provision (p. 15). The governor as RCGP analyses which districts require additional financial assistance in the form of special allocations (dana alokasi khusus DAK) in order to fulfil national priorities (p. 11).

As RCGP, a governor has the authority to void district regulations (p. 14). All regional regulations must have a registration number, with the provincial level issued by MOHA, and the district level issued by the governor. Any regional government official accused of violating a sectoral law or regulation will be permitted to mount a defence that the sectoral law/regulation is inconsistent with regional autonomy. If the MOHA inspectorate agrees, the accusation will be dropped (p. 14).

3. Governance achievements in the financing of education

3.1 The performance-based budget system

The performance-based budget system implemented under the 2009–10 budget reform provides a strong quantitative base for planning, policy and budgets through the use of quantitative (and qualitative) performance indicators. These indicators are derived from plans to form the basis of budgets.
During the preparations for the 2010–2014 Medium-term Development Plan period, the Government decided to move to the medium-term expenditure framework mandated by the 2003 national finance law and link it to a performance-based budget system. The reform consisted of three innovations:

1. a unified budget, bringing transfers to regional governments (and other abnormal items such as grants from international donors) into one budget system
2. a performance-based budget (PBB), linking the budgeting system more closely into the planning system via performance indicators which were taken from the plans into the budget
3. a medium-term expenditure framework, requiring agencies to forecast the future funding needs[47] for the activities they were requesting in the current budget.

The new system was rolled out as a pilot test in 2009 through the **Joint Circular Letter** from Bappenas (No. 042/M.PPN/06/2009) and MOF (No. Se 1848/MK/2009) of June 2009. The pilot project was implemented in six key (major budget users) ministries[48] for the 2010 budget year, which also included the year during which the next sectoral strategic plans (Renstra) were being drawn up for 2010–2014.

MOF **Ministerial Regulation 190/PMK.05/2012** concerning procedures for payments under the budget revised the previous payments procedures to conform to performance-based budget structures. The regulation reaffirmed the principle of a unified budget by stating that the budget implementation documents (DIPA) were the sole basis for all payments and that no payments could be made outside the DIPA. Further, the regulation strongly emphasised the role and responsibility of the program/echelon I staff, who are required to be permanent civil servants.

[47] The explanation to paragraph 5 of Government Regulation 90/2010, discussed below, states that the forecast covers three future years in addition to the year being budgeted.

[48] Bappenas, Ministry of Finance. Ministry of Agriculture, Ministry of Forestry, Ministry of Public Works and Ministry of National Education.

3.2 Grants have been incorporated into the budget process

Previously, grants were outside the budget process. Now, grants to central ministries are incorporated into the ministry budget implementation documents (DIPA). At the regional level, grants are treated in a similar fashion to special allocation funds (dana alokasi khusus DAK). Grant funds are included in the regional budget (anggaran pendapatan dan belanja daerah APBD) but their use is tied to certain specific activities.

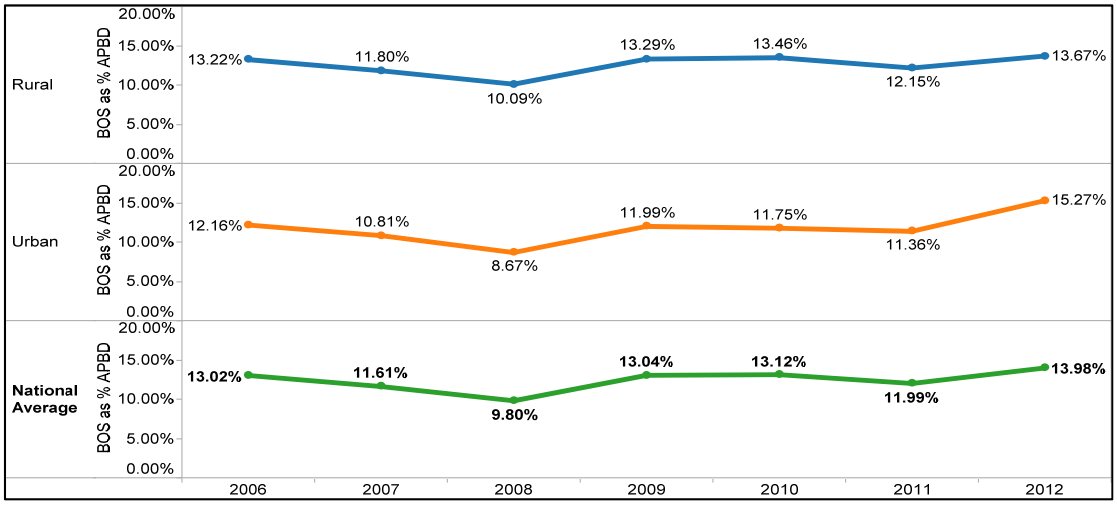
This has been an important step forward in the transparency of funding and a strengthening of the linkage between planning and budgeting by bringing all expenditures under the DIPA. However, in the education sector, it has created a special conundrum. The constitutional requirement for a 20% minimum expenditure for education as a proportion of national public expenditure has been interpreted as a ceiling by the central government. International donor grants are not seen as additional funding but as a part of the 20% target. This creates a possible substitution effect with Government-derived funding for education being removed in direct relation to the amount of international donor financing being contributed every year.

3.3 School operational funding (BOS) flows directly to schools

School operational funding (BOS) and salary supplements for teachers are now classified as transfers. The funds flow direct to regional budgets, not through the MOEC/MORA central budgets. However, these transfers are tied to specific uses, similar to the general allocation fund (DAU) and special allocation funds (DAKs).

The BOS funds are a very important source of discretionary funding for schools. The central government has increased the value of the BOS grants in line with rising costs and partly to assist with the cost of implementing the Minimum Service Standards in schools. By 2012, the average cumulative value of the BOS grants distributed in each district was equivalent to 13% of the total district budget (APBD) in each district.

BOS grants as percentage of Education & Culture Budget 2006–2010 (public schools only)



Source: Rorris (2014)

There remain important questions about the use of BOS funds and related financial reporting at the school level. This reflects the limitations of the school-based management approach (see below for a discussion). However, it also reflects weaknesses of the national BOS reporting and monitoring system since it is now evident there are considerable weaknesses at the school and district levels which impact on the use of BOS funds.

3.4 New funding mechanisms - performance-based and pro-sustainability

A number of new funding mechanisms have been developed in recent years. Two are particularly significant for the education sector.

1. Regional Incentive Funds (*Dana Insentif Daerah* or *DID*)
2. Education endowment / "windfall"

The **Regional Incentive Funds** (DID) represent a new type of transfer to the regional levels, beginning in the 2010 budget. It was created by MOF **Ministerial Regulation 198/PMK.07/2009** with provisions for allocation and general guidelines for the use of regional incentive funds for the fiscal year 2010. DID funds are taken from the "adjusting funds" (dana penyesuaian) item of transfers to regions.

DID is an example of a semi-tied performance-based grant, which is allocated to regions fulfilling specific performance criteria. It may be used at the recipient discretion, within sectoral boundaries. The funds may not be budgeted as regional counterpart funding for DAK activities. They also may not be used for civil servant upgrading/training programs or as grants to regional government owned enterprises.

The DID funds go directly into the regional budget (APBD) and must be spent on activities falling within the education function categories. However, within those boundaries, regions are free to spend the DID funds as they see fit, with three exceptions.[49] The total allocation of DID funds and the allocations to regions (provinces and districts) are calculated by MOF based on various weighting formulas. The full allocation is transferred directly to the region after MOF has received proof of compliance with the criteria for receipt of funds. This is different from both DAU (transferred on a monthly basis) and DAK (transferred in three tranches, based on achievement of performance and expenditure targets).

The criteria for receiving DID is:

- financial performance (measured by unqualified opinion result for audit of previous year's regional budget by Government Audit Agency)
- economic and welfare performance, including education indicators
- good governance (measured by timely passage of the regional budget regulation).

Establishment of an education endowment fund was made possible by "windfall" resources. Funding for the endowment fund was initially provided via the reserve funds (dana cadangan) item in the mid-year revision of the 2010 budget. Setting aside reserve funds had begun in the mid-year revision of the 2007 budget, to provide for possible natural disasters and/or unexpected changes in government revenues or expenditures. In 2009 the funds were reserved for fiscal risks and, particularly, government contingent liabilities (guarantees for large-scale infrastructure projects). By 2010 the reserves were no longer limited to risks, but were budgeted to cover known expenditures.

MOF **Ministerial Regulation 238/PMK.05/2010** concerning procedures for budgeting, disbursement management and financial reporting of endowment fund and education reserve funds was issued under the mid-year revision of the 2010 budget. The budget revision had created a new budget item called National Education Development (pengembangan) Funds. These funds were divided into two parts (paragraph 1):

1. the endowment fund to guarantee the continuity of education programs for future generations, as intergenerational continuity
2. the education reserve (cadangan pendidikan) in anticipation of the need for rehabilitation of educational facilities damaged or destroyed by natural disasters.

[49]The funds may not be budgeted as regional counterpart funding for DAK activities. They also may not be used for civil servant upgrading/training programs or grants to regional government owned enterprises.

The Director-General (DG) Treasury in MOF was designated as the echelon 1 official responsible for budgeting and preparation of budget implementation documents (DIPA) for the funds flowing from the budget into the endowment and reserve (paragraph 3). The funds are disbursed directly into the accounts, separately for the endowment and the reserve, of a new public service agency (badan layanan umum BLU) under the auspices of MOF. The BLU is tasked with managing the funds (investment policy). MOF **Ministerial Regulation 490/PMK.01/2010** temporarily assigned this responsibility to the Government Investment Centre (Pusat Investasi Pemerintah) until the required BLU was established.

MOF **Ministerial Decision 18/KMK.05/2012** established the Institute for Management of Education Funds (Lembaga Pengelolaan Dana Pendidikan LPDP) as the BLU responsible for managing the two funds. The BLU is staffed by personnel seconded from MOF, MOEC and MORA. The three Ministers sit as the board of trustees for the funds. There are two main types of activities funded through the Institute (using the interest from the endowment fund): research projects and scholarships.

Research is focused on "innovative – productive" proposals in the fields of food, energy, governance and economic growth. The scholarship program assists masters and doctoral candidates with the costs of producing theses and dissertations. Scholarships are competitive on an academic performance basis.

3.4.1 The revisions to the Parliamentary budget consultation/discussion procedures

The new budget consultation procedures authorise the Ministry of Finance (MOF) to negotiate on behalf of the government, instead of having each ministry negotiate on its own budget. These enable Parliament to concentrate on policy issues and allocation priorities rather than on details of costs. Not only is the revised system more efficient, but it is in line with the approach of the New Public Sector Management to "let managers manage" while legislatures provide policy direction and priorities.

The 2004 regulation required Ministers to take their draft annual work plans and budgets to Parliament for review and discussion. This resulted in a very detailed review of budget items, cost breakdowns, quantities, locations etc. The 2010 regulation assigns MOF the task of collecting the individual ministerial work plans and budgets, consolidating them into a draft national budget and taking the draft budget to Parliament for review and discussion. **Law 27/2009** concerning the People's Consultative Assembly (Majelis Permusyawaratan Rakyat MPR), Parliament (Dewan Perwakilan Rakyat DPR), Regional Representative Assembly (Dewan Perwakilan Daerah DPD) and Regional Legislative Councils (Dewan Perwakilan Rakyat Daerah) had opened the way for this change. Paragraph 96 of the law specified the role of the Parliamentary sectoral commissions in the budget process:

- hold preliminary consultations with the government (MOF)
- make suggestions for improvement of the proposed budget to the government
- discuss and decide sectoral allocations for functions, programs and activities
- send the results of the discussions to the Parliamentary budget agency (Badan Anggaran Banggar)
- review and improve the results of the budgetary agency compilation. (Note: This task is limited to the level of activities, i.e. policy issues in budget allocation, rather than operational details of costing etc.)

Paragraph 10 of the 2010 regulation emphasised that if the Parliamentary sectoral commission invited a ministry to discuss its budget proposal, the discussions should focus on initiatives the ministry was proposing.

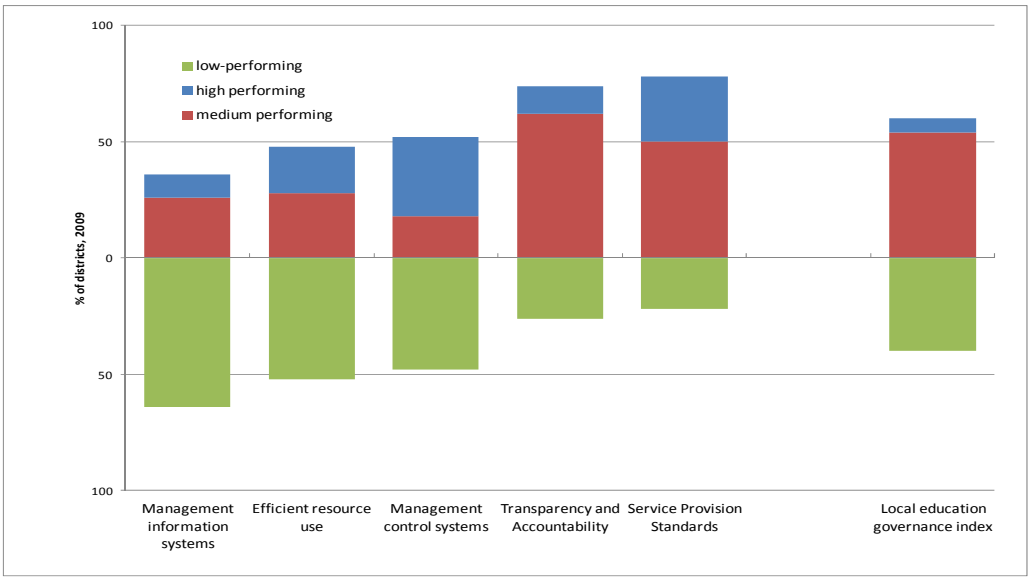
4. Remaining challenges

4.1 Uneven capacity for governance at district level with many districts struggling

A number of recent studies have shown that the quality of local governance is important in determining the effectiveness of public education spending. The uneven capacity of local governance is a contributory factor to the relatively weak relationship between spending and education outcomes. A 2009 survey of local education governance in 50 Indonesian districts found a strong positive relationship between measures of the quality of education governance and education outcomes (World Bank 2010). For example, the study found positive and statistically significant relationships between enrolment rates and a composite measure of local governance quality. Another study explored the link between public spending, education outcomes and the level of corruption (Suryadarma 2011). The study found that there was no statistically significant relationship between spending and enrolment rates in regions that rated high on a corruption perceptions index. However, where corruption was perceived to be low, spending had a significant impact on enrolment rates. The study did not find a strong correlation between spending and national examination rates regardless of perceptions of corruption.

The local education governance survey provides a snapshot of the main weaknesses in local government management of education (World Bank 2010). The survey measured the performance of 50 districts in key areas of education governance (Figure 105). The sampled districts were spread across Indonesia and had slightly poorer education outcomes than the national average**.**

Figure 105. The quality of local governance in 50 Indonesian districts



Source: World Bank (2010).

The sampled districts performed less well in terms of management systems and the efficiency of resource use. In terms of management, incentive systems for teachers, principals and school supervisors were frequently absent, as were mechanisms to feed stakeholder deliberations into local government planning.

Many of the sampled local governments were seen to be particularly weak in terms of the availability of reliable and timely information on the education system. For example, none of the districts had databases that tracked student progress and test score achievements. The reliability of information on the education system was also relatively weak. Table 1 shows an example of the discrepancies in the value of key indicators from a number of different data sources. In some cases, the discrepancies are minor but in others, they are

notably large. For example, there is a difference of 10% in the number of civil service teachers (PNS) recorded in Kotawaringin Timur district information systems, as compared to the national NUPTK database. If the magnitude of the differences were the same across Indonesia, then this difference would represent approximately 100,000 teachers.

Table 7. Differences in key education indicators from different information sources for three districts

	Junior secondary net enrolment rate, 2011 (%)			No. of Civil service (PNS) primary school teachers (2009/10)			Total education budget, 2010 (Rp, billion)		
	Susenas	Local govt.	abs. % diff	NUPTK	Local govt.	abs. % diff	MoF SIKD data	Local govt.	abs. % diff
Kotawaringin Timur – Kalimantan Tengah	65	68	4	1,807	1,645	10	220	220	0
Kulon Progo – Yogjakarta	59	99	40	2,315	2,308	0	271	363	25
Kaimana – Papua	61	63	3	312	274	14	104	112	7

Source: Local government figures taken from LGCA 2012 survey

Notes: Figures from local government for civil service (PNS) teachers are for 2011/12 whereas data from the NUPTK is for the 2010/11 school year.

	Primary enrolment			Primary enrolment		
	BOS (2009/10)	MOEC (2009/10)	abs. % diff	BOS (2010/11)	Local govt (2011/12)	abs. % diff
Kotawaringin Timur – Kalimantan Tengah	52,915	45,014	18	54,045	53,601	1
Kulon Progo – Yogjakarta	34,954	37,893	8	34,655	32,454	7
Kaimana – Papua	8,932	7,913	13	8,932	9,354	5

Source: MOEC school database, LGCA 2012 survey and http://bos.kemdiknas.go.id

Notes: MOC data for the 2009/10 school year, Local government figures for 2011/12 and BOS figures for 2010/11 school year. Figures exclude madrasahs.

Weaknesses in information systems hamper the ability of local governments to plan and budget effectively. The survey found that about half of the sampled districts were rated as low-performing in terms of the processes used to link education priorities to activities and resources. For example, districts often did not set priorities before the start of the budget process and annual plans did not include indicative budgets. Allocations were generally not made on the basis of student need but on, for example, the number of teachers or classrooms in a school. These weaknesses in planning and budgeting resulted in relatively low budget absorption rates and large differences between budgeted and realised spending.

Local level incentives to hire more teachers are exacerbated by the intergovernmental transfer system. After decentralisation in 2001, intergovernmental resource transfers were partly determined by the size of a local government's pay roll. Districts with larger numbers of civil servants receive more from the transfer system. It has been estimated that central government transfers cover approximately 75% of the salary of an additional civil servant or PNS teacher. This in effect subsidises the cost of additional teachers faced by local governments and creates incentives for increased hiring.

Weak local level governance also introduces additional incentives to hire more teachers than standards require and may partly explain the large share of local government spending going to teachers. A recent symposium held at the Ministry of Education and Culture concluded that the appointment of teachers is "characterised by corruption, lack of transparency, primordial regionalism, and co-opted by the political interests of the ruling authorities" and that "many teachers are not appointed in accordance with the

requirements of the minimum standards of teacher competencies".[50] A number of studies have also shown that it is common for payments to be made to obtain access to civil-service teaching posts (Kristiansen and Ramli 2006; von Luebke 2009). Payments of this kind increase incentives to expand the size of the civil service. In addition, where payments are required, it is rare for only the best qualified candidates to gain employment. This can have the effect of reducing the overall quality of the national teaching force.

4.2 Critical weakness in school-based management approach

At the school level, the introduction of school-based management and the BOS program have allowed schools to take an increasing role in decision-making. Evidence from Indonesia shows that improvements in school-based management can raise levels of learning achievement. A recent study found that primary schools with better parental and school committee participation had better learning outcomes. The study showed that the effects of better school-based management (SBM) worked through improved resource allocation decisions and higher teacher attendance rates (Chen 2011).

However, weaknesses in the implementation of school-based management have limited its overall effect on education quality. The study collected information from a nationally representative sample of 400 Indonesian primary schools in 2010. Interviews and data were collected from principals, teachers, school committee (SC) members, parents and officials in the sampled districts. The study found that the institutions (e.g. school committees, district-level supervision, teacher councils) and processes (e.g. school planning processes, teacher consultations etc.) required for the effective implementation of SBM were in place. However, there were significant weaknesses in how SBM was operating. Some of its findings included:

- 1the majority of schools had established all the committees mandated by central government directives, however, the selection of SC members was not transparent and nearly half of all surveyed parents did not know that their school had a school committee
- most principals perceived that they had autonomy over their school's operational, budgetary, programmatic and instructional decisions; teacher participation in decision-making was reportedly high but parents generally had a small voice in school matters
- SC participation in decision-making was low; principals reported that the SC participated in final decisions in an average of 44% of schools. However, focus group discussions suggested that their participation was limited. For example, both BOS team and SC focus group members generally agreed that SC members were rarely, if ever, actively involved or consulted in making BOS fund allocations
- districts were said to continue to exercise a high level of influence on school policies and practices.
- In general, principals, teachers, and SC members did not have a sufficient understanding of their required roles under SBM and of the functions attributed to the SC. This possibly contributes to the mixed implementation of SBM by schools.

Another recent survey showed that while schools have significant autonomy in many areas, community participation is limited. Over 80% of primary school principals surveyed indicated they were the final decision-makers on issues including the curriculum, school facility planning, student admission and promotion (World Bank 2012). The survey also found that most school committees participate in planning and budgeting decisions, particularly with respect to the BOS program. However, qualitative evidence shows that school committees are often only passive participants in school decision-making. For example, the study found that the school principal and teachers agreed on the allocation of BOS funds and only then communicated their decisions to the school committee chair and asked for his/her signature on the appropriate forms.

[50] Report of a 2013 workshop/symposium by Balitbang MOEC on "Recruitment of Teachers in the Future".

4.3 Wide-range of overlapping funding streams makes coordination difficult

Weaknesses in local level planning and budgeting are compounded by the fragmentation of public investments. A key condition for effective planning and budgeting is to ensure that all sources of finance and proposed activities are included in the exercise. This comprehensive approach to planning and budgeting is constrained by the many different sources of education financing in a district. Financing comes from central government funds, transfers to sub-national governments, sub-national governments' own-source revenues, and central government spending at the sub-national level that is not recorded in sub-national budgets. Schools receive funds from at least eightdifferent sources and four different budgets, including the national, provincial, district and school budgets.

The central government transfers to sub-national governments are estimated to have more than doubled in real terms since decentralisation, accounting for more than 85% of district budgets and 40% of provincial budgets[51]. The majority of transfers are not earmarked – making it impossible to determine exactly how they are spent.

For example, over three-quarters of non-salary funding of primary and junior secondary schools bypasses the district education and financing offices. While as much as half of these resources are passed directly to schools in the form of BOS grants, the remainder is allocated outside the local government planning and budgeting process.

This wide range of overlapping funding sources poses significant challenges to planning, coordination of execution and finally reporting. A recent report on district financial reporting found that districts send reports to MOEC with copies to the provincial education service, which then makes a recapitulation summary and sends it to MOEC . However, when the central agencies require data for planning or other purposes (such as a request by a donor agency), they send a new questionnaire/data format to districts to complete.[52]

The unitary nature of Indonesian governance means the policy framework governing operations and standards of education is set by the central government at the national level. The Indonesian school system is therefore highly fragmented and financially dependent on a complex web of intergovernmental transfers. Schools have in place school-based management but formally come under the control of the district level of government, while a great deal of their discretionary expenditure is sourced directly or indirectly from the central government (via the provincial Governor as the representative of central government).

4.4 Cooperation between government agencies and across levels of government

When it comes to schooling, all three levels of government (central, provincial and district) have a stake in the financing and all are involved in its governance. This complexity is overlaid by the split responsibility for schooling across agencies within each level of government. As well as MOEC and MORA (which have a direct service provision role as well as policy and standards setting), MOHA, MENPAN, MOF and Bappenas all have important roles to play in the planning and operation of the schools and broader education system.

Getting this many actors to work in effective partnership is always going to be a challenge. It is further complicated where the jurisdictional responsibilities are not clear or consistent across the regulatory provisions. A key factor that can help overcome these tensions and contradictions is an overriding political commitment to bring the various partner agencies together and insist on their cooperation in a new and effective partnership for education.

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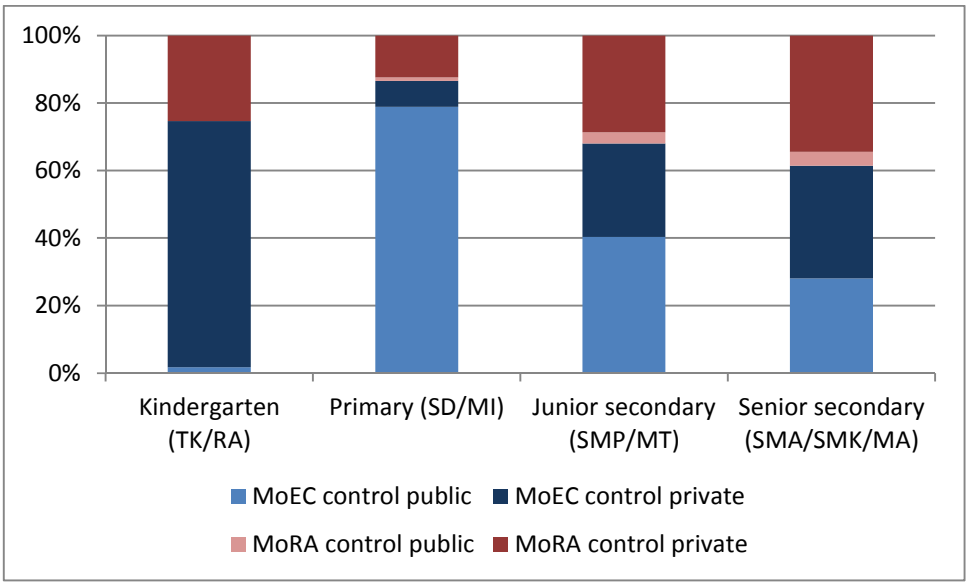
[51] See World Bank (2013) in its reference to the 2009 Revised Planned Budget(APBN-P) which includes planned total education budget and estimates of regional transfers allocated for education, 2009 realized regional budget data (SIKD), MoF

[52] Wirkus (2009)

4.5 Managing the challenge of large numbers of public and private schools

Education is provided largely through schools controlled by the MOEC (Figure 106). In 2010, 80% of schools came under the authority of MOEC with the remaining institutions covered by MORA. MORA madrasahs are most prevalent at the kindergarten and secondary levels where madrasahs make up 28% of all service providers. At the primary level, there are only 22,000 madrasahs compared to 143,000 MOEC schools. The private sector plays an important role in the provision of pre- and post-primary education - 98% of pre-primary and 61% of secondary schools and madrasahs are private.

Figure 106. School providers by level, 2010



Source: MOEC 2010 data

Note: Information on enrolment composition from education module

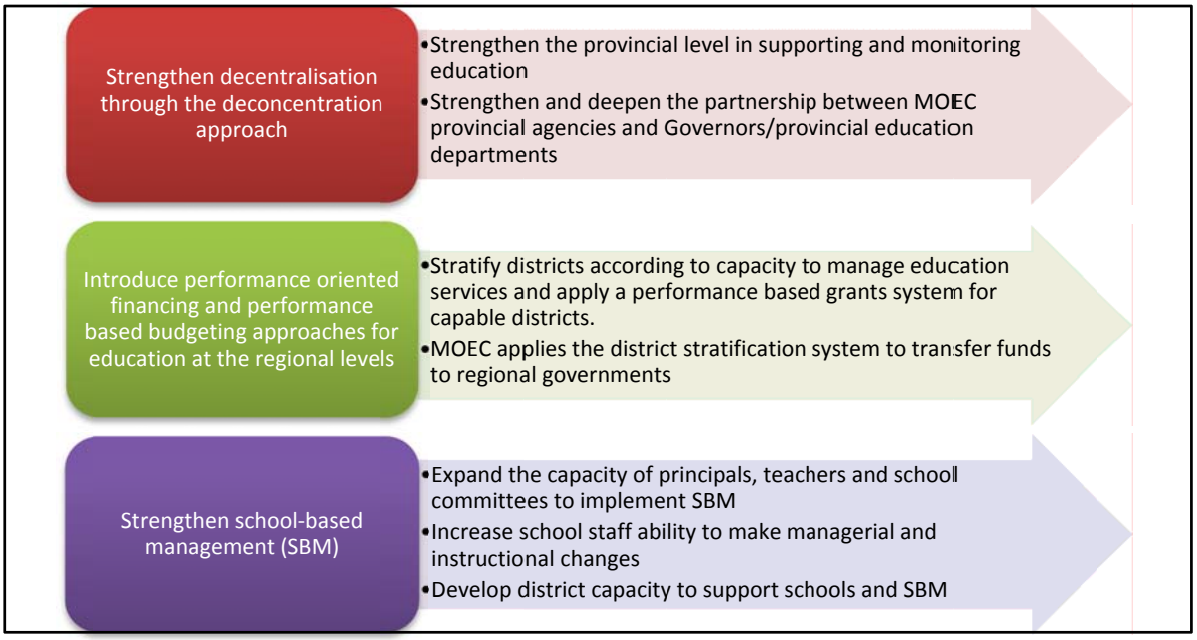
Private schools (both MOEC and MORA) are owned and operated by legal bodies called "foundations" (*yayasan*). These foundations may be responsible for one school or multiple schools and may operate in limited geographical areas or nationally. Private schools teach the same curriculum as government schools, and their students sit the same examinations to graduate. Religious organisations may establish foundations to operate private schools: e.g., there are many private schools under MOEC jurisdiction operated by Muslim foundations, as well as foundations established by Christian, Hindu, and Buddhist organisations. Private schools also receive significant financing from central and local governments through, for example, the BOS program and through the public provision of civil-service teachers. In a similar way to government-run schools, local governments have responsibility for ensuring that standards (e.g. minimum service standards) are met in all private schools.

In the absence of an overarching planning system that matches demand for schooling with supply (both public and private), it is possible that there will continue to be an increase in the number of private schools in areas where there is already sufficient supply. The disbursement of the BOS scheme to all schools has strengthened this financial incentive to expand private provision. This can affect the overall efficiency of the schools as enrolments are divided between schools further reducing the student:teacher ratios which are the key driver of unit costs.

5. Proposed policy directions and strategies

As shown above, there has been a great deal of activity in terms of education governance during the last RPJM period. This chapter identifies three policy directions which can deepen and extend the positive effect of good education governance.

Figure 107. Governance: Proposed policy directions and strategies

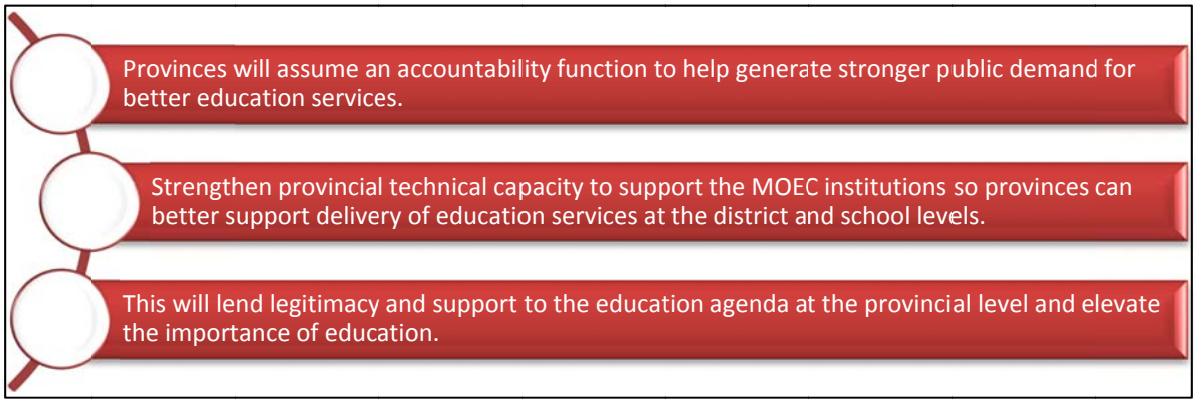


5.1 Policy Direction 1 – Strengthen decentralisation through the deconcentration approach

Under the deconcentration approach to decentralisation, regional governments implement national policies and activities in their geographical areas. This approach is consistent with the unitary nature of government in Indonesia as opposed to a federalist government such as in the USA or Australia, which have a *devolved approach* to the decentralisation of responsibilities. The deconcentration approach requires the central government to retain and enforce its responsibilities regarding the setting of standards and key policies. It retains an obligation on agencies of the central government to supervise and report on outcomes and the quality of services being delivered. It demands districts and provinces to be creative and energetic in developing and applying approaches which can deliver the outcomes expected for the education sector.

The ***deconcentration approach*** of Indonesia (instead of a *delegation approach)* is exemplified by the requirement that medium-term development plans and annual work plans and budgets use minimum service standards set by the central government as performance targets. ***Government Regulation 23/2011*** clarified the role of Provincial Governors as representatives of the central government within the Province. The regulation gives authority to the governor for coordination, guidance and supervision meetings. It also permits the governor to give rewards and sanctions to heads of districts.

5.1.1 Strategic intent of the policy direction



A renewed focus on developing the capacities of the provinces will go hand in hand with the regulatory changes that have been outlined above. This is important as the districts are too many and too far away for the central government to manage.

The provincial level of government (via the Governor as the representative of the central government) becomes an important vehicle to bridge the gap between the central level and the districts. But for the provincial level to be able to fulfil this role, it requires more than enabling regulations. This has been the lesson from the recent RPJM period.

It is important to develop real capacity so that provinces can show real leadership and motivate the districts. The two proposed strategies serve to: (i) develop the capacity of the provincial level of government itself; and (ii) strengthen and deepen its partnership with the MOEC provincial office.

5.1.1.1 Strategy 1 – Strengthen the provincial government level in supporting and monitoring education

There are now more than 500 districts with responsibility for delivering public school services. These districts are spread across the country and their number has been growing almost every year. As a consequence, districts are too numerous and too far away from the centre for the central government to be able to effectively fulfil its tasks related to policy setting, coordination and quality assurance.

Empowering and enabling provincial governments will help them show real leadership and motivate the districts. Some possible interventions to help deliver this objective are listed below.

Political

- Establish a national/provincial level taskforce on education in each province. The taskforce will be composed of high-ranking officials from central agencies (MOEC, MORA, Bappenas, MOHA, and MOF), local teacher training universities and faculties, and the provincial governors. The taskforce's purpose will be to draw political attention to education (particularly on quality) and help the provincial level leverage district improvements in their capacity for delivery of services.

Administrative

- Enforce existing regulations and policy, particularly those governing planning, reporting and evaluation.
- Enforce the planning mechanisms, especially those relating to minimum service standards.
- Simplify the reporting requirements and formats, and then use these reports as a basis for supervision of districts

Resourcing

- MOF and/or MOEC is to fund the establishment of a high-powered education policy office at the provincial level. The office is to be staffed by experienced and competent technocrats that can provide the best possible technical advice to the Governor and Dinas. The education policy office will have clearly recognised responsibility, with the necessary financial and human resources to perform the role.

- Any additional resourcing will need to be focused on delivery of coordination and monitoring functions by the provincial level of government through the office of the Governor.
- The quality of the human resources will be the critical factor – they will have to show leadership and win the districts and schools.

5.1.1.2 Strategy 2 – Strengthen and deepen the partnership between provincial MOEC agencies and the Governor and provincial education department

The MOEC agencies at provincial level are the closest interface with the Province Governor and Dinas – they are the arm of MOEC at the regional level. The Institutes for Education Quality Assurance (LPMP) and Centres for Development and Empowerment of Teachers and Education Personnel (P4TK) are vital institutions for the implementation of national policy, professional development and for quality assurance processes at the regional level. At the same time, the Provincial Governor has the democratic mandate and responsibility as the representative of central government.

The MOEC and Province Governor/Dinas will maximise their impact where they can work closely together across each province. A proactive national strategy can connect these institutions through combined programmatic activity, as well linkages that reinforce each other's programs.

It is proposed that MOEC initiate a joint education working party in each province. The working party will comprise the head of the provincial education Dinas, as well as the leading officials in the district of the key MOEC agencies (LPMP and P4TK), MORA, and training universities and faculties. The purpose of the working party will be to facilitate closer cooperation between the MOEC agencies and the provincial Dinas. This strategic option would provide stable and sustainable bases for horizontal and vertical synergies. It would strengthen MOEC's ability to detect and follow up on problems in achieving education goals and objectives across the entire national education system.

Some interventions undertaken by the working party to strengthen the cross agency partnership would include:

- expand the role of the LPMPs to act as implementation units for all aspects of education quality in the province, under the coordination of the Governor as representative of the central government
- establish reporting procedures and protocols between MOEC and the Governor's office
- joint activities in the evaluation of programs at district and school levels
- mutual capacity development activities of MOEC personnel at province level and provincial Dinas

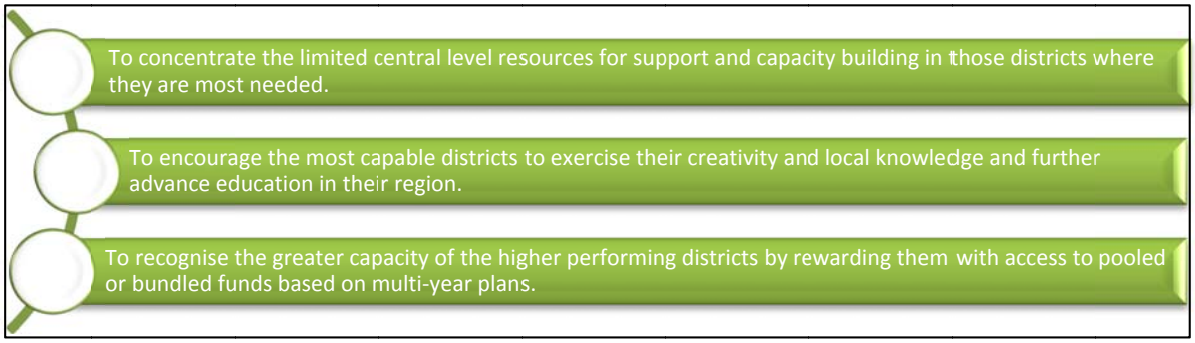
Expanding the role of the LPMPs would require substantial additional resources, both human and financial. These would have to flow through the MOEC budget as LPMPs are part of the central MOEC agency. Deconcentration funds, which also flow through the central MOEC budget, could also be used to cover the additional costs incurred by the Governor as RCGP.

5.1.1.3 Strategy 3 – MORA central office to "re-energise" provincial Madrasah Development Centres (MDC) with human and financial resources in order to become the partners of LPMP for quality assurance

While MOEC is an entire ministry, madrasah schools are just one of MORA's responsibilities and its director general must also oversee Islamic boarding schools (pesantren), Islamic tertiary institutions and Islamic education in non-MORA schools. The availability of human resources and institutional support for horizontal synergies, in addition to routine duties, is much more limited for MORA officials tasked with managing the madrasah sub-system.

5.2 Policy Direction 2 – Introduce performance oriented financing and performance based budgeting approaches for education at the regional levels

5.2.1 Strategic intent of the policy direction



The large population and archipelago nature of Indonesia creates diverse operating conditions for the education sector. It is not surprising that education development is uneven across the country and that this often reflects the nature of economic activity and level of development of each district. At the same time, there are also differences in education performance between very similar districts, reflecting varying capacities and commitment of districts towards education.

The large number and highly varied capacity of districts delivering education services is problematic for MOEC as the central agency responsible for education. One way to moderate this challenge is to begin to use these diverse and uneven district capacities as a way of structuring MOEC engagement with districts. At one end, those districts which have the weakest capacity should be able to benefit from a greater engagement by MOEC in terms of support and supervision. At the other end, the best performing districts could benefit from being given greater freedom to implement their programs and activities with greater latitude and less supervision from MOEC (as long as they maintain their good performance). Many districts would be in the middle performance range and require a level of engagement and supervision similar to the status quo.

There are two critical advantages to this approach. Firstly, it enables MOEC to focus more of its energy and resources on those districts which are weakest and have the greatest need for support. Secondly, it enables the best performing districts to expand their effective policies and initiatives.

5.2.1.1 Strategy 1 – MOF to make available a multi-year funding stream to education's best performing districts across a range of categories (e.g. urban, rural, remote)

One possibility is to expand the use of MOF's four-quadrant mapping system into a performance based grants system. This could mean, for example, maintain fiscal capacity as the first indicator but use performance indicators (or minimum service standards/national education standards) as the second variable in order to link the grants more tightly into the performance based budgeting system.

A given number of districts which are shown to be the best in using their resources (below the national average on fiscal capacity but above the national average on the target variable) should be provided with access to semi-tied funds for the education sector. The value of these semi-tied funds could be based on the cumulative value of the existing disbursements provided by MOF for a given set of education-related funding streams.

This is an example of extending the use of an existing financial tool (MOF's four-quadrant mapping system) to facilitate the distribution of a new type of education funding mechanism.

5.2.1.2 *Strategy 2 – MOEC applies the district stratification system to transfer a pool of funds to regional governments*

Another strategy would be apply the rationale described in Strategy 1 and apply it to the distribution of MOEC funding to districts. This could mean, for example, the most capable districts would be able to access a new pooled fund from MOEC which would bring together a portion of funds that are currently under the control of individual directorates within MOEC.

Ideally, the most capable districts would have access to this pooled fund over a multi-year period (subject to satisfactory performance and financial reporting) with very few controls and limitations on their use. A competitive submission-based process might be used to evaluate and award access to the pooled fund. This could require a multi-year plan with a clear articulation of the use of funds with performance based indicators. It might also be decided that access to the pool should require some component of innovation that might be otherwise difficult to fund as a way of further encouraging development and innovation. Another criterion might be to enable districts to contribute funds from their own revenues as a way of leveraging a greater contribution from the central government.

Average performing districts could retain the existing arrangements with MOEC.

The poorest performing districts would be entitled to greater support and monitoring in the planning and operations for education than is currently provided. This support and monitoring would be coordinated by MOEC in cooperation with the Provincial Dinas on the delegated authority of the Governor. This would link to Policy Direction 1 described above.

The streaming of districts could be based on an independent assessment of their capacity to deliver quality education services (utilising the existing LPMP assessments if these are considered adequate). The assessment could take into account readily available education indicators such as NER, graduation rates, percentage of MSS and NES schools, as well as governance and finance related indicators.

District learning partnerships – as part of this process, other districts that are interested in participating in the pooled grant scheme in the future might be partnered with similar districts that are participating. Districts could learn from the experience of others that are slightly more advanced to help them develop more quickly.

5.2.1.3 *Strategy 3 – Improve coordination and governance of inter-governmental transfers through the incorporation of simple, quality based, performance indicators into plans and budgets at all levels of government and in schools*

Critical to the successful implementation of a performance based budget system is evaluation and feedback of achievement of performance indicators. MOF and Bappenas, together with the State Auditor BPK, provide evaluation of performance indicators within the framework of budget expenditure. Budget users receive reports of the evaluation but follow-up supervision maybe weak. The Ministry for Administrative and Bureaucratic Reform (MENPAN & RB) provides evaluation of the annual reports on achievement of performance indicators. However, the Public Performance Accountability report (LAKIP) indicators are not the same as the budget performance indicators and, again, follow up can be weak. For MOEC in particular, the relationship between the strategic plan performance indicators and the LAKIP performance indicators can be tenuous, in part because MOEC was one of the first (experimental) departments to introduce performance based budgeting, and, in part, because of the reorganisations of MOEC which have required revision of the strategic plan.[53]

Implementation of this strategic option would require that the Minimum Service Standards (MSS) and National Education Standards (NES) be matched with MOEC's organisational and budget structure to allow

[53] There have been three MOEC Strategic Plans for the 2010 – 2014 period because the programs and activities in the plan and budget are based on the organisational structure of the ministry, i.e. echelon I and II jobs.

their use as performance indicators. Note that this strategic option does not limit the performance indicators to quality based indicators but it does require that MSS and NES achievement be explicitly recognised.

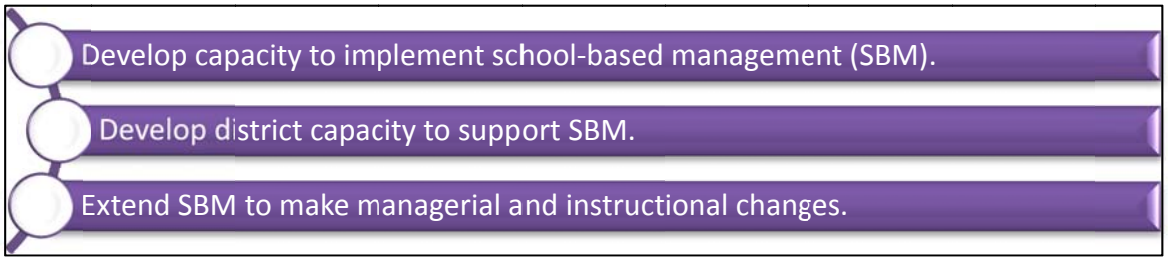
There are two proposed activities for this strategic option.

Activity 1 – Formalise the MSS and NES as performance indicators for education at the central, regional and provider (school) levels. This would incorporate the MSS into the education quality system in accordance with the interpretation of MSS as the "lowest step" of the hierarchy (MSS, NES and above NES). School development plans would focus on achievement of the accreditation indicators at the NES or "above NES" level. This activity would require a MOEC ministerial regulation incorporating MSS into the hierarchy of quality assurance indicators. Use of the QA indicators as performance indicators in the medium-term plan and budget would not require explicit regulatory changes. They could be incorporated into the existing planning process.

Activity 2 – Encourage regional governments to move in the direction of performance based budgeting, with performance indicators including achievement of MSS and NES. This activity could be enacted in the form of a Ministry of Home Affairs ministerial regulation revising the existing planning and budgeting regulations.

5.3 Policy Direction 3 – Strengthen school-based management[54]

5.3.1 Strategic intent of the policy direction



5.3.1.1 Strategy 1 – Expand the capacity of principals, teachers and school committees to implement SBM

- Clarify the roles of the school committee (SC) and the principal in regard to professional leadership and accountability oversight. Principals already have some level of professional control of school operations in many respects in Indonesia.
- Make it easier for SC members to participate in school affairs by requiring that schools meet with the SC during hours convenient for their members, and provide SC members with an incentive to participate in the form of a small stipend to cover transportation and other meeting costs.
- Upgrade the knowledge of SC members by providing training about the goals and purposes of SBM, about SC functions, and how to fulfil these functions (including how to conduct meetings, develop a school vision, engage in participatory planning and budgeting, and monitor school indicators to assess school activities).
- Strengthen the oversight function of the SC by measures such as: (i) clarifying the policy regarding SC fundraising activities; (ii) linking the school and the SC with the village government; (iii) providing the SC, parents and the public with comparative information on schools to help parents make informed school choice decisions; and (iv) providing principal leadership training.

[54]This policy direction and its strategies were developed and presented in the World Bank study (2012) *School based management in Indonesia.*

- Clarify the authority devolved to the school. Clarify the legal definition first then issue updated guidelines based on the new government regulations for education management and funding. The current SBM guidelines decreed by the Ministry of Education and Culture are ambiguous, leaving room for the district to continue to play its traditional authoritative role over schools.

5.3.1.2 Strategy 2 – Develop district capacity to support schools and SBM.

Improving the implementation of SBM will require altering the role of the district to that of an enabler of change. The role of district supervisor should focus on monitoring SBM implementation and providing ongoing technical assistance and mentoring to school teams. Possible interventions to be considered include:

- repeal the regulations that allow non-teachers to be appointed as supervisors because "there are not enough teachers" in the schools
- expand the capacity of supervisors to provide ongoing technical assistance and staff development to principals, teachers and SC members
- ensure that the functions of district supervisors are principally to monitor school SBM implementation and improvements and provide supportive technical assistance and mentoring
- provide supervisors with adequate training so that they can provide this ongoing support
- evaluate performance and return supervisors to classroom if they do not perform as supervisors.

5.3.1.3 Strategy 3 – Increase school staff ability to make managerial and instructional changes.

There is a need for greater professional development opportunities to empower principals and teachers to implement instructional and curriculum changes.

- Assess the need for professional development and provide it if required.
- Expand access to teaching aids. Other support teachers might need to improve the quality of their schools includes having greater access to teaching aids, from simple maps, scales and visual aids to science and mathematics kits.
- Address resource disparities among schools. Effective development and implementation of programmatic improvements depend, in part, on whether schools have sufficient resources to finance them. Schools differ markedly in the discretionary resources available to them because of unequal contributions made by provinces and districts, raising the question of the role that each level of government (provincial, district and local) ought to play in financing education. A first step in addressing this question would be to make use of the existing detailed information collected on the current financing of education by districts and provinces and their fiscal capacity.

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